The Next Growth Arc
Capturing the India–Australia Advantage

Insights from the Bilateral Business Roundtables

Contents

We acknowledge the Traditional Owners of Country throughout Australia and recognise their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures, and to Elders past, present and emerging.

Dr. S. Janakiraman

Consul General of India in Sydney

It is with great pleasure that I present this compilation of insights from the series of bilateral business roundtables jointly convened by the Consulate General of India in Sydney and Newland Global Group (NGG). These 5 roundtables spread over 8 months of key sectors of mutual interests spanning from advanced manufacturing to skilling to net zero to critical minerals, have provided a rare forum where business leaders, policymakers, and industry experts could engage in frank, solution-oriented discussions and brainstorming to enhance business, trade and investment relations.

With the execution of Australia India Economic Cooperation and Trade Agreement (AI-ECTA) in December 2022 and the ongoing negotiations on the Comprehensive Economic Cooperation Agreement (CECA) which is poised to expand our trade and investment ties, such outcome-oriented discussions and exchanges are vital. The rich discussions not only identified opportunities but also addressed practical pathways to realise them.

This publication serves both as a record and a resource, capturing the perspectives of those directly engaged in shaping the India–Australia economic partnership. It reflects our shared ambition to translate goodwill into tangible outcomes, and to ensure that collaboration is underpinned by mutual respect, innovation, and strategic alignment.

I thank all the participants, sector partners, and supporting organisations whose contributions have enriched these discussions. I am confident that the insights contained here will inspire continued engagement and forge new pathways between our two countries.

Dr. S. Janakiraman
Consul General of India in Sydney

Dipen Rughani GAICD

Founder & Chief Executive Officer, Newland Global Group

The India–Australia relationship has never been more dynamic and full of opportunity. These bilateral business roundtables, delivered in partnership with the Consulate General of India, have been designed to move the conversation beyond potential and into practical action. Across each session, whether on Australia-India Economic Cooperation Trade Agreement (AI-ECTA), advanced manufacturing, or emerging sectoral opportunities through energy transition or critical minerals, participants brought candid perspectives, and explored solutions grounded in the realities of both markets. This handbook distils those conversations into a usable reference for business leaders, policymakers, and institutions seeking to navigate and leverage this important corridor.

What stands out from these discussions is a shared recognition: success in this bilateral partnership requires trust, persistence, and an understanding that growth is built over time.

I extend my sincere thanks to the Consul General and the Consulate team for their collaboration, to our sector partners for their insights, and to every participant for their openness and vision. It is my hope that this compilation not only reflects where we are today but also serves as a catalyst for the opportunities that lie ahead.

Dipen Rughani GAICD
Founder & Chief Executive Officer, Newland Global Group

Looking Ahead: Australia-India Comprehensive Economic Cooperation Agreement (CECA)

February 2, 2024

ROUNDTABLE OBJECTIVES

- Strengthen collaboration and gather sector-specific insights to inform CECA negotiations.
- Deepen engagement with key bilateral stakeholders and enablers.
- Open pathways for new commercial partnerships and tangible outcomes.
- Present recommendations to capitalise on opportunities and address operational challenges.

Delegates

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Tim Thomas, Chief Executive Officer, Centre for Australia India Relations

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Dianne Tipping, Chair, Export Council of Australia

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February 2024 marks one year since negotiations commenced to transform the Australia-India Economic Cooperation and Trade Agreement (AI-ECTA) into a Comprehensive Economic Cooperation Agreement (CECA).

Background

Both sides are pursuing broader and deeper commitments under five tracks, goods, services, digital trade, government procurement, and product-specific rules of origin while also covering MSMEs, competition policy, and emerging areas such as gender, labour, innovation, and sports

Seven rounds of negotiations have been completed. Australia's DFAT has sought submissions on issues including goods market access (tariffs and quotas), rules of origin and related procedures, non-tariff barriers, cross-border services, financial services, investment (including investor-state dispute settlement), government procurement, intellectual property (including geographical indications), and barriers in high-growth industries such as biotechnology, AI, and IT incubators.

This second phase is expected to be more challenging. Many easier commitments were secured in AI-ECTA; remaining issues, particularly in sensitive areas such as agriculture, will require carefully crafted, win-win solutions with long-term implementation pathways.

Both countries recognise that waiting for a "perfect" agreement risk delaying progress. This mindset drove the AI-ECTA's conclusion and will guide CECA negotiations. The agreement also holds strategic value, as both economies seek to diversify exports.

With AI-ECTA in force since 29 December 2022, Australia aims for India to become its second-largest trading partner after China, while India seeks to double bilateral trade within five years. Two-way goods and services trade grew from US$25.6 billion to nearly US$46 billion in 2022 (CAGR 12.5%).

Key market access outcomes under AI-ECTA:

- 85% of Australian exports to India tariff-free, rising to 90% in six years.
- 96% of Indian imports to Australia tariff-free, rising to 100% in four years.
- Gains for Australia in sheep meat, wool, rock lobsters, coal, alumina, titanium dioxide, critical minerals, cotton, lentils, almonds, and citrus.

India's imports from Australia remain heavily concentrated in coal (82% of total imports in 2022). Australia ranks as India's 13th-largest import source, with significant potential to improve.

Key Discussion Themes

Trade & Investment

- Agricultural exports to India rose 50% (notably sheep meat, seafood, broad beans, citrus, almonds); industrial exports grew 30% (pharmaceuticals, wood, paper, cochlear implants). Growth appears driven by existing exporters, with limited evidence of new entrants.
- Indian exports to Australia still lag; expanding this flow remains a priority.
- Australian exporters cite cultural and market-structure challenges not addressed by trade agreements, underscoring the need for business literacy strategies.
- Indian exporters face delays securing Certificates of Origin; QVC (quality value content) calculations add complexity. Goods wholly produced in either country qualify as originating; mixed-source goods must meet specific formulas. Awareness of these rules remains limited.
- Non-tariff barriers (e.g., phytosanitary measures, labelling) cause border delays and require ongoing government attention.
- Question to address: Could higher imports from India help ease Australia's rising cost of living?
- Indian MSMEs have untapped opportunities in Australia's defence equipment sector.
- Both Australian and Indian exporters lack sufficient understanding of each other's regulatory and cultural environments.
- Australian investors remain cautious on India, partly due to its non-OECD status.
- New exporters should focus on high-value, complementary sectors offering long-term bilateral benefit.
- Strengthening India's exports in pharmaceuticals, textiles, garments, and electronics, where India has a global competitive edge is critical.
- A recent decision for Indian and Australian drug regulators to coordinate more closely should support pharma and medical device trade.
- Government and business chambers must expand promotion efforts.
- Trade agreements should be leveraged to drive domestic reforms, improve competitiveness, and position both countries as attractive "China+1" destinations.

Building business literacy, growth sectors & role of business chambers

- Both countries must update outdated perceptions of each other, a longstanding barrier.
- Building bilateral business literacy is critical, especially for new stakeholders with no India exposure.
- Focus should be on high-value partnerships in next-generation services and technology (health, space, AI, quantum, workforce skills).
- New sectors of Australian industry should engage with India.
- Business NSW's "India Series 2024" and planned trade mission are examples of targeted outreach.
- Businesses need objective, data-driven insights to assess India opportunities.
- Amplify "Brand Australia" and its value propositions; deepen diaspora-led entrepreneurship.
- Education sector success in India will hinge on research and development, not just program delivery.
- A five-pillar ecosystem approach, government, academia, industry, regulators, philanthropy is needed.
- Barriers must be addressed through institutionalised, coordinated responses.
- Mainstream India–Australia opportunities in both countries' media.
- US–India engagement offers relevant lessons, particularly in talent mobility via higher education.
- Indian advanced analytics firms show strong interest in Australia; AI-driven university collaborations are expanding.

Healthcare

- Healthcare faces constant pressure from technology change and demographic shifts. Global health workforce demand will grow 30% by 2030, but shortages of 10–18 million workers are projected.
- India supplies up to 13% of foreign-trained physicians and 6–7% of nurses in OECD countries. Australia's health workforce is over 50% foreign-born doctors and 30% foreign-born nurses.
- Australia faces a shortage of 100,000 nurses by 2025; India trains over 280,000 nurses annually.
- India has the world's largest number of medical colleges and produces ~90,000 medical graduates annually vs Australia's ~4,100.

Opportunities for Collaboration:

- Co-invest in health workforce training and curriculum reform to meet domestic and global needs.
- Develop nurse leadership to influence health policy and system reform.
- Prioritise health workforce investment in bilateral advocacy.
- Establish joint India–Australia centres for curriculum and quality improvement, modelled on IT-sector global capability centres.

Role of the Diaspora

- Indians are Australia's fastest-growing diaspora (3% of the population); projected to overtake Chinese-born Australians by 2030.
- Second-highest taxpaying diaspora; concentrated in VIC, NSW, and QLD.
- Potential remains under-realised compared to peers in the US, UK, Canada, and Singapore.

Actions:

- Treat diaspora as a strategic asset with linguistic, cultural, and network advantages.
- Recognise its diversity and establish institutional mechanisms to coordinate engagement.
- Expand diaspora contributions beyond remittances to FDI, outsourcing, technology transfer, and knowledge flows.
- Create Diaspora Advisory Committees for key ministries.
- Establish diaspora councils in high-presence countries to support sustained bilateral progress.
- Leverage diaspora expertise in sectors such as energy, urban infrastructure, water, and poverty alleviation.

Recommendations

Concentrated focus and a coherent strategy

Concerted focus and a coherent strategy required towards building actionable business literacy and awareness among Big Corporates and MSMES of both countries on the bilateral potential and existing opportunities. There is also a need to work on upgrading the perceptions of each other's strengths that have developed over the past few decades. This can be progressed through creating a dedicated academia-industry leadership group responsible for amplifying the message, through targeted sectoral roundtables and interactions

Dedicated economic modelling

Dedicated economic modelling is required to understand the benefits of AI-ECTA's execution, and assess data on existing and new exporters, capitalising on the benefits of AI-ECTA

Build sectoral insights

Based on one year of ECTA experience it is important to build sectoral insights that provide information on regulatory bodies, technicalities and processes involved, approvals required across varied sectors for exporters to ensure ease of doing business as well as addressing disputes emerging out of the business

Mainstream India conversations

There's a need to focus on ways to mainstream India conversations in the Australian media and Australian opportunity conversations in the Indian media. This could be done through involving Australian national sector-based councils and groups (e.g. National Minerals Council of Australia, Wool Council of Australia, Meat and Livestock Australia), similarly the Indian counterparts (including sectoral exports councils) to address their issues and concerns

Position workforce shortage and mobility at the top of the agenda

Position workforce shortage and mobility at the top of the agenda. If India were to invest in building the capacity of its health workforce (including other sectors where skills shortage is a global issue), it can meet its own needs and that of the world. For instance, Australia can collaborate in this effort to enhance the caliber of nursing professionals by developing partnerships in training and curriculum reforms, as well as facilitating skill transfers to tackle workforce shortages

Reinvigorate the role of Diaspora

Considering the significant populations, with over a million individuals of Indian heritage in Australia, there is an imperative to reinvigorate the role of Diaspora and its function as knowledge partners. Diaspora Advisory Committees (DAC's) for crucial ministries in the federal government, especially for specific growth sectors to harness right talents could be an option. This can be an encouraging step forward for greater involvement of the Indian diaspora in different economic sectors and crucial federal ministries such as Foreign Affairs, Education, Health, Water Development, Law, Science and Technology, etc.

Accelerating the Transition to Net Zero: Opportunities and Challenges Between Australia and India

April 30, 2024

ROUNDTABLE OBJECTIVES

- Strengthen collaboration and invite sectoral insights to inform the CECA negotiations going forward.
- Amplify interactions and build relationships with key sectoral stakeholders.
- Open new commercial partnerships and outcomes.
- Explore recommendations to capitalise on existing opportunities and identify ways to navigate operational challenges.

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Key discussion points

- **Strategies for transitioning and adoption of renewable energy sources**
- **Technology transfer and collaboration**
- **Access to finance and investments**
- **Joint investment projects and partnerships**
- **Policy and regulatory frameworks for net-zero emissions transition**
- **Developing technical expertise and human capital in clean energy technologies**
- **Expanding trade in environmental goods and services**
- **Carbon pricing and market mechanisms**
- **Integrating such mechanisms into trade agreements to promote sustainability**

The focus of the bilateral fact-finding roundtable was to collectively reflect on Australia and India's net zero aspirations, identify practical actions for both countries to collaborate on reducing GHG emissions across value chains, existing drivers, and barriers and to gather data that goes beyond anecdotal assumptions.

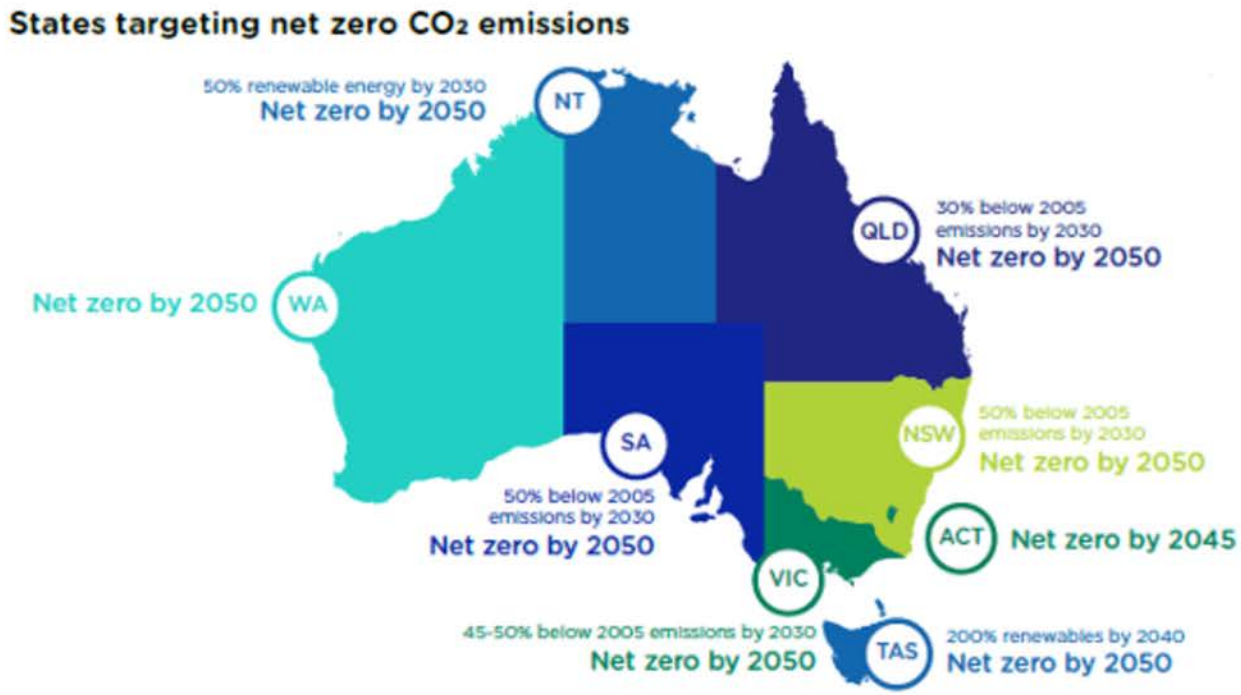
Background

Australia has committed to reducing greenhouse gas emissions by 43% from 2005 levels by 2030 and reaching net zero by 2050. These targets are supported by key legislated initiatives, including a goal of 82% renewable energy by 2030 and the Safeguard Mechanism, which requires 215 of the country's largest emitters to cut net emissions by 5% annually. These emitters account for 28% of national emissions. Additional funding includes a $20 billion Rewiring the Nation Fund and a $2 billion Hydrogen Headstart Program.

Reaching net zero will require major changes across sectors. Energy production, fuel use, and transport together contribute 80% of emissions, while sectors like steel and agriculture make up the remaining 20%. To coordinate this transition, the government has announced a Net Zero Authority, following the setup of a Net Zero Agency and Advisory Board. These bodies will work with governments, industry, unions, investors, regional groups, and Indigenous communities.

Australia's federal strategy includes six sector-specific decarbonisation plans: electricity and energy, industry, resources (including critical minerals and mining), the built environment, agriculture, and land transport. The industry plan will also cover waste, and circular economy principles will be applied across all sectors.

The global net zero transformation is a critical response to the climate change crisis. Australia and India face similar challenges due to their reliance on fossil resources, growing energy demand, and agricultural emissions. However, differences exist in population, industry, and development.



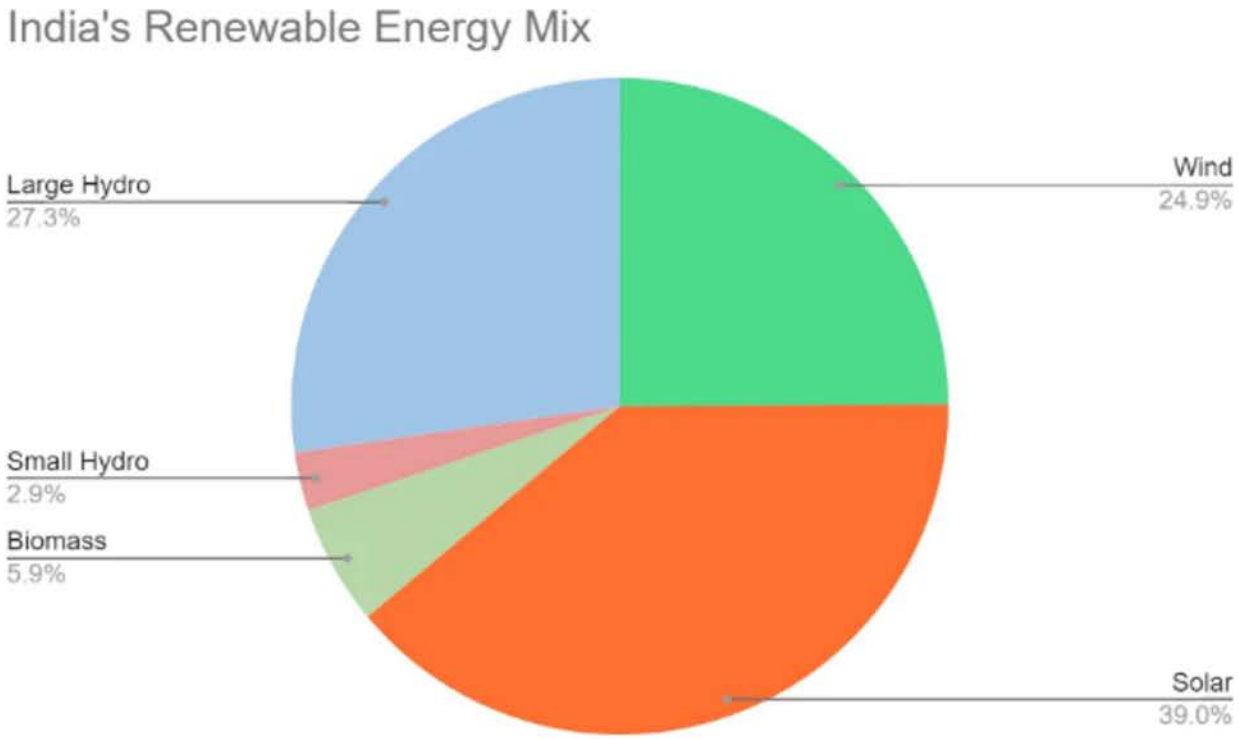
Chadmin. (2024, March 28). Energy Vision:Networks delivering net zero. Energy Networks Australia.

India's transition to net zero is also driven by a wide range of initiatives. As the world's third-largest electricity producer, around 60% of India's energy still comes from thermal power. Its greenhouse gas emissions are spread across power, industry, transport, buildings, energy, and agriculture. India has pledged to reduce CO_2 emissions by 45% from 2005 levels by 2050 and to achieve net zero by 2070. At COP26 in Glasgow, India announced a five-fold strategy that includes installing 500 GW of non-fossil fuel energy capacity and meeting 50% of its energy needs through renewables by 2030. However, the high capital costs of low-carbon technologies remain a key challenge for the country.

The National Solar Mission forms the backbone of India's renewable energy push, targeting 100 GW of solar energy capacity. It is closely aligned with the National Clean Energy Policy. India also plays a leading role in the International Solar Alliance (ISA), a global coalition for solar energy promotion co-founded and led by India. To integrate renewables into the national grid, India has invested in Green Energy Corridors. Its broader climate strategy is laid out in the National Action Plan on Climate Change (NAPCC), which includes eight missions focused on areas such as solar energy, energy efficiency, sustainable habitat, water, the Himalayan ecosystem, forestry, agriculture, and climate research. Additional efforts include promoting electric vehicles, expanding domestic manufacturing under production-linked incentives, improving energy efficiency, and supporting hydrogen technologies.

Since 2016, India and Australia have strengthened cooperation through the bilateral Energy Dialogue. Areas of joint work include pumped hydro storage, cost-effective battery technology, clean energy adoption, fly ash management, solar forecasting and scheduling, grid infrastructure investment, renewable energy technologies, green hydrogen, and the critical minerals and battery supply chain.

Other areas of collaboration include climate finance, clean coal technology, surface coal gasification, coal bed methane, fire quenching, coal-based hydrogen, and carbon capture, utilisation and storage.



Srivastava, S. (2025, May 26). Complete Guide to India's Renewable and Green Energy Sector: Top Clean Energy Stocks

Australia plays a leading global role in the exploration, extraction, and export of critical minerals. It is among the few countries capable of producing all key critical minerals using ethical and environmentally sustainable practices. These minerals are essential for modern technologies, including energy storage systems, e-mobility, electronics, aerospace, and defence.

Under the bilateral MOU on critical minerals, the Australia–India Joint Working Group supports business and research partnerships. Australia is the world's largest lithium producer, second in zirconium and rare earths, and ranks among the top five for cobalt, manganese, antimony, titanium mineral sands, niobium, tungsten, and vanadium.

This partnership aligns with India's recent efforts to secure overseas mineral resources. The government launched the international exploration program Khanij Bidesh India Ltd (KABIL), a joint venture of National Aluminium Co, Hindustan Copper Ltd, and Mineral Exploration Corp. KABIL focuses on sourcing lithium, nickel, cobalt, and rare earths to meet growing domestic demand. Australia, with 24 advanced critical mineral projects open for offtake and investment, offers India a strategic opportunity. India currently imports 100% of seven out of 12 identified critical minerals and has no known domestic reserves for them.

Australia can help address India's critical mineral needs and support its clean energy transition. KABIL has signed an MoU with Australia's Critical Minerals Facilitation Office to jointly assess lithium and cobalt assets. The India-Australia critical minerals investment partnership aims to enable joint investments in these sectors, which are vital for India's energy goals. A Letter of Intent has also been signed to lower the cost of renewable energy technologies and scale up manufacturing in low-cost, clean hydrogen production.

Given the broad scope for future collaboration, Australia and India have agreed to work towards establishing a Renewable Energy Partnership, recognising that joint initiatives can help lower renewable energy costs and support both countries' energy transitions. They continue to engage internationally through platforms such as the QUAD, G20, UNFCCC, and the International Solar Alliance (ISA). Current collaboration focuses on solar photovoltaic (PV) and hydrogen technologies, both critical to national energy goals, supported through the Australia–India Solar Taskforce and the India-Australia Hydrogen Taskforce.

Australia's commitment to deeper economic ties with India was outlined in its 2018 strategy, An India Economic Strategy to 2035 (IES), which identified 10 priority sectors for engagement. In response, India released its Australia Economic Strategy (AES) in 2020, the only country-specific strategy ever issued by the Indian government. AES focuses on three pillars: resources, technology and services, and research and innovation. Over the past five years, this strategic alignment has led to significantly strengthened bilateral relations.

In December 2022, the Australia-India Economic Cooperation and Trade Agreement (AI-ECTA) came into force, opening new opportunities for two-way trade. Since February 2024, both countries have been negotiating to upgrade this agreement into a Comprehensive Economic Cooperation Agreement (CECA). Negotiations are progressing across five key tracks: goods, services, digital trade, government procurement, and product-specific rules of origin. They also include cooperation on MSMEs, competition policy, and emerging trade-related themes such as gender, labour, innovation, and sports.

As CECA discussions advance, bilateral knowledge sharing will be essential. It will play a critical role in ensuring the evaluation, adoption, and implementation of effective solutions, especially those supporting the transition to net zero.

Key Discussion Themes

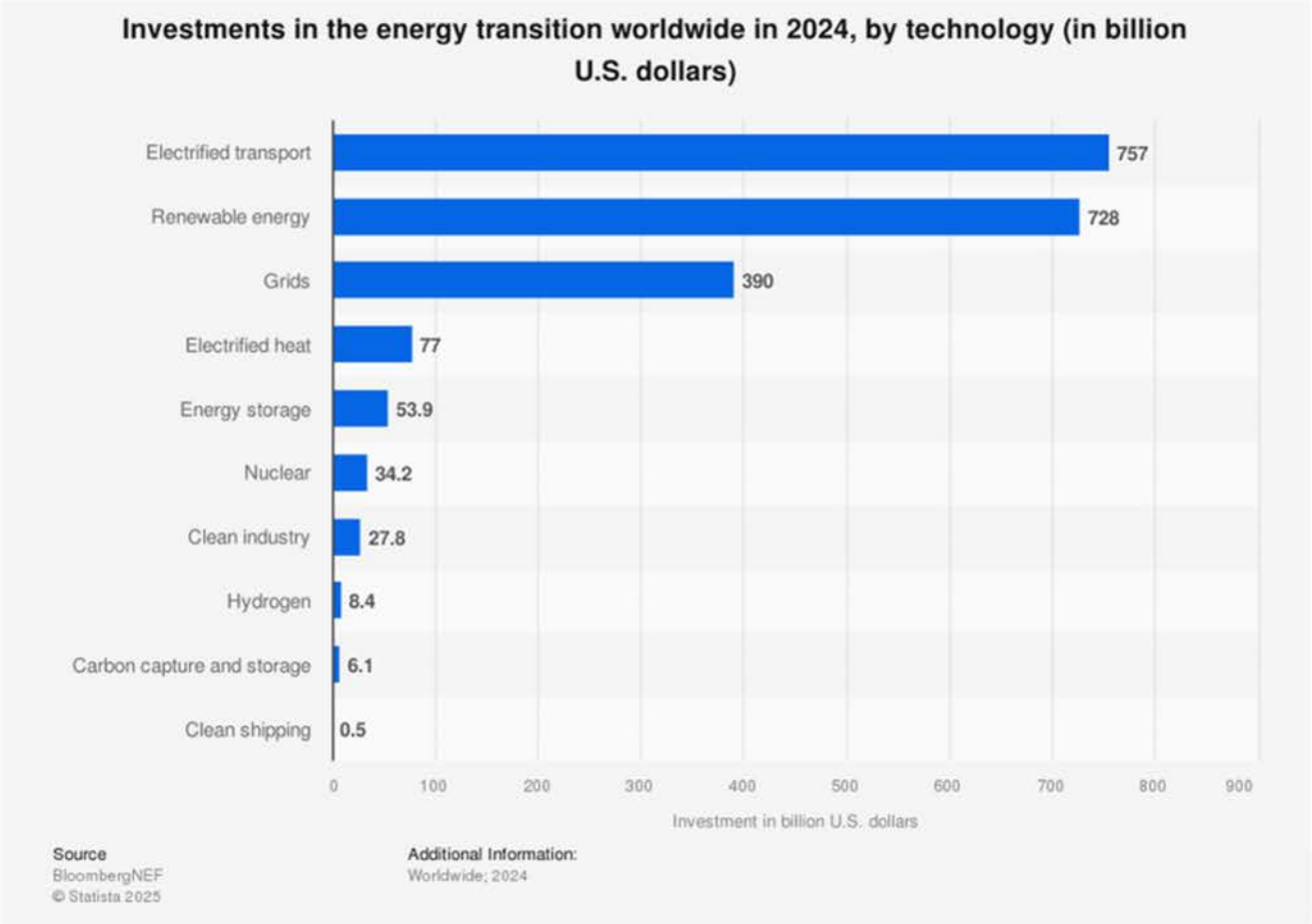
Trade & investment impact

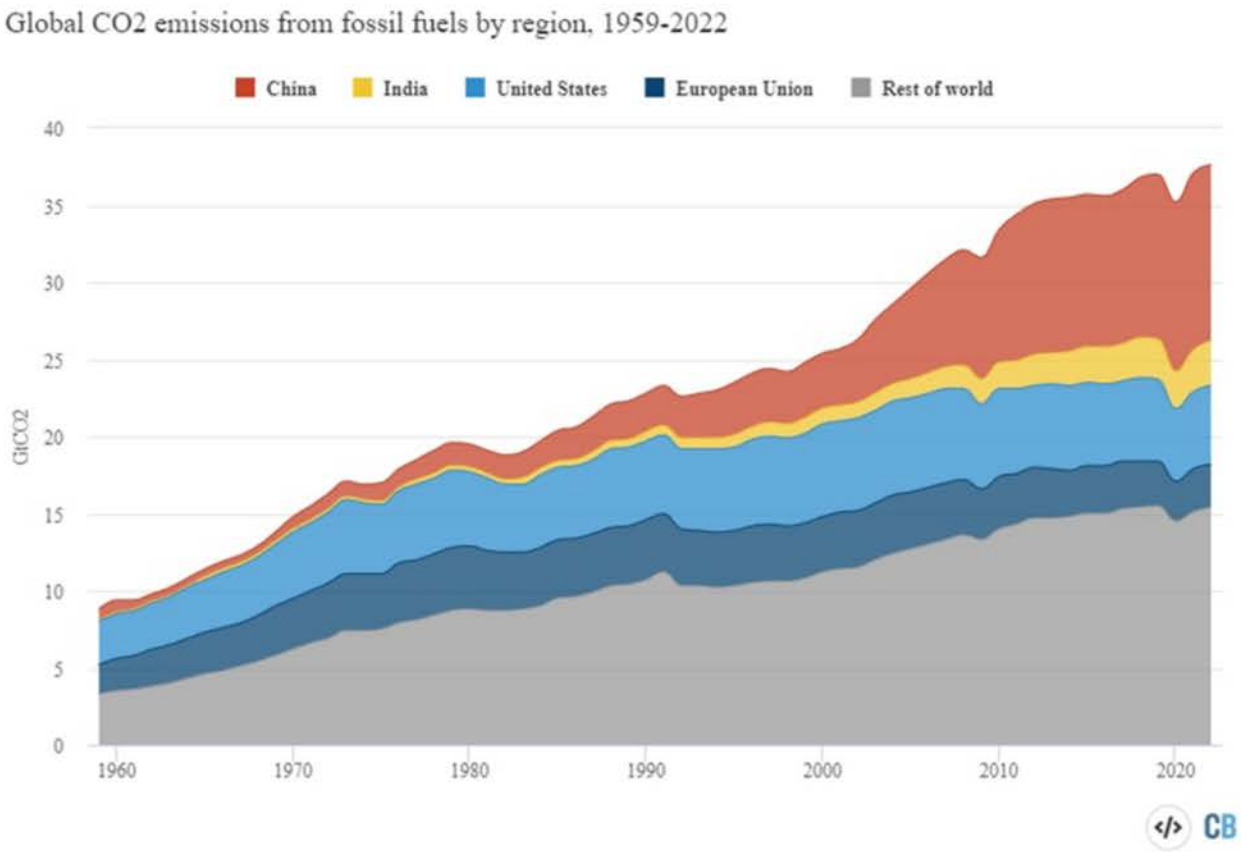
- India is on track to meet its Nationally Determined Contributions target, but it will require an investment of US$12.7 trillion to achieve net-zero emissions by 2070
- India is increasing its reliance on solar and wind energy, nearly doubling their share in electricity generation
- The electric vehicle industry in India is expected to grow at a remarkable 49% CAGR between 2022 and 2030, creating 50 million jobs by 2030
- Pro-transition policies like the Energy Conservation Act are encouraging investment and a catalyst for industry growth
- The future composition of trade and investment will depend upon the initiatives and policies adopted by both countries in pursuit of the net-zero goals
- There's a growing call for cleaner, greener trade and investment, which will deeply shape and impact industries of the future like Industry 5.0, 6.0, 7.0, and beyond
- Decarbonisation will be the primary determinant for (a) industrial growth, (b) sectoral transitions, and (c) the nature of future trade, hence adhering to emission standards is extremely important and will have significant consequences, especially for small and medium-sized industries across various sectors
- Considering different target dates, of Australia and India, challenges are particularly predicted in mining activities, notably for commodities like coal, which experience high demand in India, and for critical minerals crucial for energy transition
- The energy sector, responsible for approximately three-quarters of greenhouse gas emissions, faces significant scrutiny. India ranks as the third-largest emitter of greenhouse gases, following China and the United States (2022 data), while Australia is in the 14th position in the rankings
- Australia provides 80% of India's metallurgical coal imports, a primary component in bilateral trade required for steel production. With a growing focus on the decarbonisation of the industry facilitated by clean coal technology, and rising demand for steel, a very narrow supply base can be a major cause of disruptions and volatility. Likewise, other products may face decreased competitiveness in the global market as they strive to adhere to stringent emission regulations
- The Zero Emission Government Fleet Declaration was introduced in 2022 under the Electric Vehicles Initiative (EVI), signifying a firm commitment by governments to transition to 100% zero-emission vehicles in public procurement
- The transportation sector accounts for roughly 16% of greenhouse gas emissions. However, viable alternatives for shipping and aviation fuel have yet to be identified
- Another consideration is how the Australian National Environmentally Sustainable Procurement Policy could present challenges related to increased costs and supply chain dynamics compared to the AI ECTA. What avenues are available for countries to expedite their net-zero goals through nuclear energy?

The transition to green energy initiatives will likely raise production costs, emphasising the critical importance of adopting new technologies. This shift may render many export items less competitive, posing significant challenges for industries, especially small and medium-sized enterprises.

These businesses may struggle to afford and implement newer technologies and could face difficulties in complying with evolving green regulations.

Renewable energy sources, particularly solar and wind, have become the most economically viable options, underscoring their potential to drive future energy infrastructure investments.





Analysis: Global CO2 emissions from fossil fuels hits record high in 2022. (2025, June 3). World Economic Forum.

Developing technological expertise through research and industry linkages

- There is a significant opportunity to amplify and extend partnerships in energy research and technology development.
- Decentralisation and digitalisation will complement the decarbonisation of the energy systems. The first is to leverage and promote the rapid expansion of rooftop solar in both countries – the decentralisation of energy systems. The widespread adoption of distributed generation has transformed the operation of electricity grids, paving the way for a two-sided energy market, and representing a significant systemic shift. Australia leads the world in per-capita uptake (more than 35% of houses have solar on their roof) but India has high ambitions to deliver solar to 10 million households. Partnerships can be investigated into grid integration, market design and social equity in energy access.
- Digitalisation of electricity presents another area of collaboration. With a growing global market for smart technologies, data systems, and cyber-secure infrastructure, many of which are developed in India, means both countries can jointly target a share of the $2-3 trillion global market, especially in AI, cybersecurity, and computer science.
- Energy transition opportunities go beyond power generation to include transport, clean water, desalination, irrigation, and agriculture. India's Production Linked Incentive (PLI) schemes for manufacturing can support the development and scale-up of these clean technologies.
- Academic and research partnerships are already in motion. Supported by the Australia-India Strategic Research Fund (AISRF), researchers from universities like UNSW are collaborating with Indian counterparts in areas such as photovoltaics, waste management, transport, and urban infrastructure.

- The transition to green energy initiatives will likely raise production costs, emphasising the critical importance of adopting new technologies. This shift may render many export items less competitive, posing significant challenges for industries, especially small and medium-sized enterprises. These businesses may struggle to afford and implement newer technologies and could face difficulties in complying with evolving green regulations
- Renewable energy sources, particularly solar and wind, have become the most economically viable options, underscoring their potential to drive future energy infrastructure investments.

Developing technological expertise through research and industry linkages

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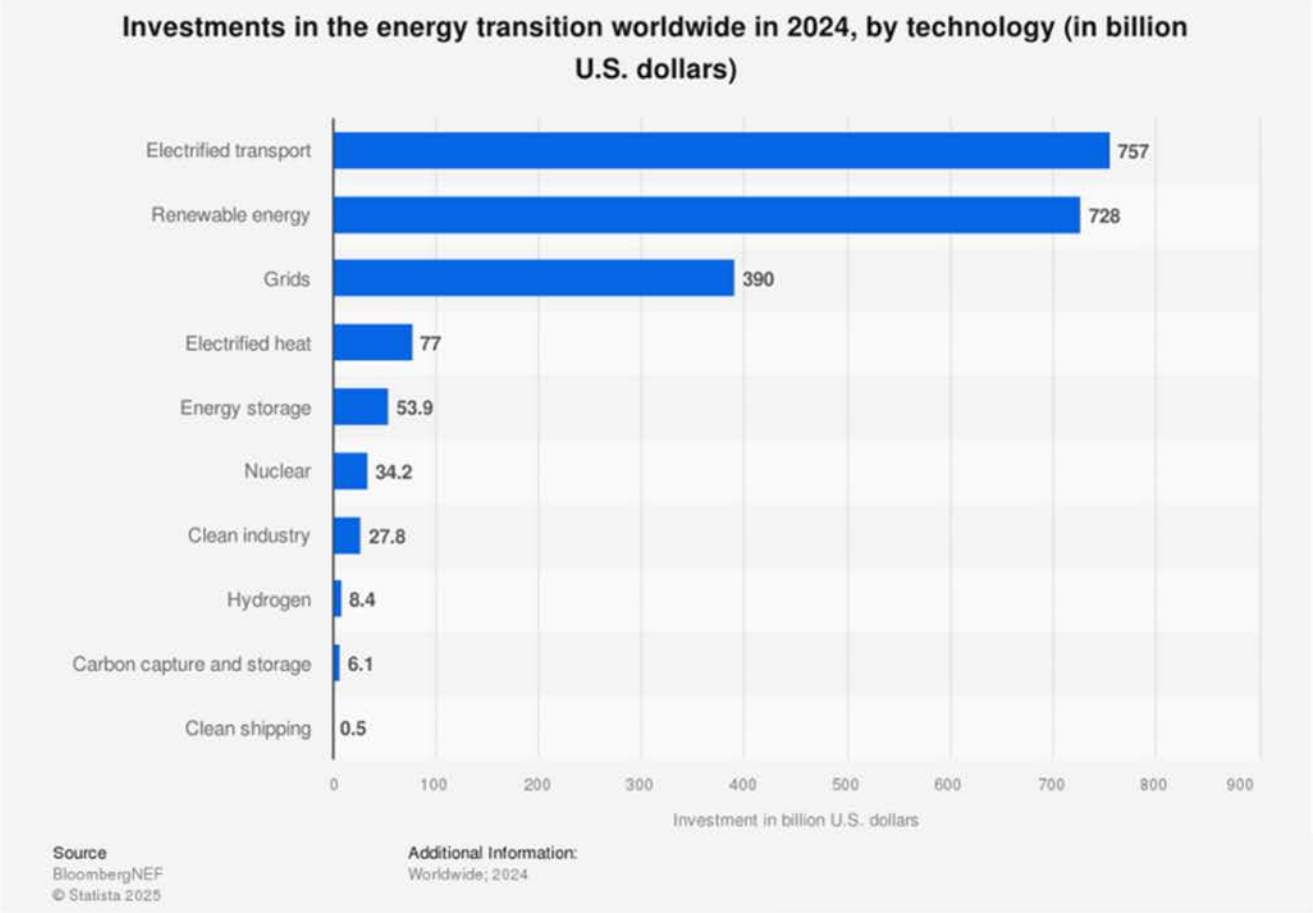


Analysis: Global CO2 emissions from fossil fuels hits record high in 2022. (2025, June 3). World Economic Forum.

- The energy transition offers four key outcomes: cleaner, more affordable, reliable, and equitable energy. These gains also support broader social and economic goals. Enhancing energy efficiency, expanding renewable energy, and decentralising supply can lower cost of living, increase resilience to climate extremes, and promote health and well-being, especially for vulnerable populations.
- R&D collaboration provides a long-term foundation for bilateral engagement. Academia is naturally cross-border, making it easier to form partnerships around shared interests. There is vast scope to accelerate commercialisation of new technologies developed within universities. At UNSW, efforts are underway to cut tech development timelines from 10 years to 2-6 years, supported by the NSW Decarbonisation Innovation Hub.
- However, both India and Australia underinvest in R&D compared to the OECD average of 2.7% of GDP. India spends 0.7%, according to The Economist, and Australia spent 1.68% in 2021, as reported by the Australian Council of Learned Academies (ACOLA), highlighting a shared area for improvement and collaboration.

Enhancing knowledge sharing, capacity building and moving outside traditional value chains

- India has an opportunity to align with Australia's latest green energy initiatives, strengthening cooperation in clean energy manufacturing, innovation, and supply chains.
- In March 2024, the Australian Government announced up to $1 billion for the Solar Sunshot program to develop domestic solar photovoltaic (PV) manufacturing. The program supports innovation across the solar PV supply chain, including polysilicon, ingots, wafers, cells, and module assembly, as well as related components like solar glass, module frames, and deployment technologies.
- The Government is also investing $4 billion in the Hydrogen Headstart program, which will offer revenue support for large-scale renewable hydrogen projects via competitive production contracts. The aim is to fast-track Australia's hydrogen sector, foster clean energy industries, and connect to global hydrogen supply chains.
- An additional $50 million has been committed to support the development of secure and diversified clean energy supply chains in the Indo-Pacific. This includes feasibility studies and investment readiness work for projects involving solar ingots, wafers, battery cell components, hydrogen electrolysers, and solar PV systems. This investment builds on the QUAD Clean Energy Supply Chain Diversification Program announced at the May 2023 QUAD Leaders' Summit.
- CSIRO is supporting the India-Australia RISE Accelerator (Rapid Innovation Startup Expansion), helping climate and environment-focused startups and SMEs in their commercialisation journey. CSIRO is also advancing the India-Australia Critical Minerals Research Partnership, the Green Steel Partnership, and the Minerals Scholars Network, further strengthening collaboration in sustainable resource innovation.

Insights on environmental reporting and governance from an Australian ASX-listed property company

- One of Australia's leading property groups, that owns, develops, and manages a $32.6 billion portfolio of high-quality retail, office, and logistics assets, all of which are in Australia is an acknowledged leader in environmental, social and governance matters. All its assets of large commercial buildings have been certified as operating carbon neutrally under the Australian Government's Climate Active Carbon Neutral certification scheme. The company is among the "early adopter" Australian firms reporting in alignment with both the Task Force on Nature-related Financial Disclosures (TNFD) framework and the Task Force on Climate-related Financial Disclosures (TCFD) framework.
- The company's sustainability insights, which are used to inform decision-making, are science-based and data-driven. The company employs a highly experienced sustainability team, which includes some scientists and engineers, a meteorologist responsible for climate adaptation planning, and an ecologist, responsible for biodiversity and other nature-related matters. The company has been collecting and reporting detailed data on energy, water, and waste since 2005
- For its operational buildings, the company currently eliminates about 88% of emissions, 45% through energy efficiency measures and 43% through renewable energy. The remaining emissions are offset via two programs: the Gold Standard and an Australian reforestation project covering 1,100 hectares in Queensland.
- Emission reduction strategies include rooftop solar, battery storage, and demand-side electricity management across its portfolio.
- All investment decisions must account for sustainability risks and opportunities, with dedicated senior management oversight embedded through internal governance structures.
- The company also maintains an independently certified Environmental Management System, aligned with ISO 14001, providing a formal framework for identifying and managing environmental impacts and risks.

Focus on "Just transition"

- The notion of a "just transition" has gained prominence as a fundamental principle for achieving climate goals. The concept proposes a comprehensive approach that ensures a fair distribution of both the benefits and burdens of any significant economic transition.
- Opportunity exists for Australia and India to provide greater clarity on how this term will be used in the transition to net zero
- Bilateral negotiations should provide greater specificity on how the term 'just' will be applied (e.g., who will be captured in mechanisms to provide greater equality and equity). As an example, recent research on the automobility's transition to net zero identifies that most initiatives focus on environmental benefits and fail to examine the broader social costs and benefits.

Recommendations

Leverage and promote the rapid expansion of rooftop solar in both countries

Leverage and promote the rapid expansion of rooftop solar in both countries – the decentralisation of the energy system. Opportunities should be investigated in partnerships related to grid integration, market design and social equity

Digitalisation of electricity

Support the digitalisation of electricity. "There is a growing global market for smart technology, smart data, and digital systems. Australia and India can work together to get a fair share of this $2-3 trillion global market"

Innovative and creative financing approaches

Explore innovative and creative financing approaches to ensure that the advantages of distributed generation are accessible to all socio-economic groups, not just the affluent

Share good practice

Share good practices and learn from each other to improve the efficiency of grid connections for large-scale renewable energy projects, which would enhance the integration of these resources into national grids

Expand wind turbine supply chains to create more competition and new entrants

Expand wind turbine supply chains to create more competition and new entrants, noting the potential for creating new manufacturing jobs and boosting economic growth in both nations

Importance of environmental reporting and governance

Focus on the importance of environmental reporting and governance and considering the integration of stakeholders, such as suppliers in decision-making processes, moving toward shared (or polycentric) governance, embedding net zero across operations

Identifying new commericial models

Identifying new commercial models, both private and government funding alone cannot meet the colossal financial demand. However, leveraging global resources such as the UN's fund and initiatives like the Glasgow Financial Alliance for Net Zero (GFANZ) and the Climate Finance Leadership Initiative could provide crucial support

Collaborate on developing recycling solutions for renewable energy systems

Collaborate on developing recycling solutions for renewable energy systems at the end of their lifecycle, promoting sustainable disposal and recycling practices. Collaborate across research-led initiatives including Head-start programmes

Support Solar System Design & Installer Training Initiative

Support Solar System Design & Installer Training Initiative (Smart Energy Council, SEC, and National Solar Energy Federation of India, NSEFI)

Support offtake agreements for green ammonia

Develop a bilateral agreement to support offtake agreements for green ammonia from both countries

Peak industry body collaboration across the QUAD

Build on peak industry body collaboration across the QUAD for building solar manufacturing capacity & capability

The Australian Climate Leaders Coalition (CLC)

The Australian Climate Leaders Coalition (CLC) started in 2020 as a forum where companies could share their insights and experiences on their journey to net zero. Memberships require a commitment to net zero, a Paris-aligned target and a Climate Transition Action Plan (CTAP). Membership of 47 CEOs with their companies accounting for 25% of Australia's emissions. The CEOs meet four times a year to share progress, challenges, and opportunities, and to set goals for their sustainability teams to collaborate, for example, on reducing scope 3 emissions, circular economy, or themes like "net zero haulage". These projects involve the teams working on real outcomes together. The CLC model or its elements could be possibly adopted and collaborated by Indian industry groups (CII, FICCI), which could explore learning and progress

Sustainable Habitat, Water, Natural Ecosystem and Sustainable Agriculture

Noting that the Indian National Action Plan on Climate Change includes areas such as Sustainable Habitat, Water, Natural Ecosystem and Sustainable Agriculture. These are increasingly important for Australia (and businesses in Australia) too, especially given TNFD and sectoral plans. The opportunity for India and Australia to collaborate on nature, given the natural bounty and advantages that both countries share, should not be missed

Bilateral discussions around net zero workforce

Focus on building bilateral discussions around net zero workforce needs, an important benchmark to guide the current bilateral mobility discussions including clean energy skills, training, migration, and industrial requirements. Nations transitioning towards clean energy sources and sustainable technologies present opportunities in project engineering, design, construction, advisory services, and technology development

Build collaborative pilot trials

Focus on opportunities to build collaborative pilot trials with organisations like Hydrogen Technology Cluster Australia, New H2 that support the development of the hydrogen supply chain, reduce overlaps, and identify gaps in the development, deployment, and commercialisation of new hydrogen-focused technologies. NewH2 has been formed by a range of industry associations, businesses, TAFE, and the University of Newcastle.

Australia-India - Bridging Workforce Gaps Through Mobility and Skilling

June 28, 2024

ROUNDTABLE OBJECTIVES

- Strengthen collaboration and provide insights for CECA negotiations
- Enhance interactions and relationships with key sector stakeholders
- Collectively reflect on Australia and India's workforce skills and mobility aspirations
- Identify practical actions for both countries to collaborate on
- Understand existing drivers, barriers, gather real-time data
- Advance new partnerships and outcomes
- Explore recommendations to leverage existing opportunities

Delegates

Dr. S Janakiraman, Consul General of India, Sydney

Prof. Barney Glover AO, Commissioner, Jobs & Skills Australia

Nirav Sutaria, Consul Commercial, CGI Sydney

Dipen Rughani, Chief Executive Officer, Newland Global Group

Kylie Cooper, Director, Study Queensland, Trade and Investment Queensland (TIQ)

James Flannagan, Director International, TAFE NSW

Ravi Lochan Singh, Managing Director, Global Reach, Past President, The Association of Australian Education Representatives in India (AAERI)

Darryl Mohr, Senior Strategy, Partnerships & Policy Advisor, Australia India Institute

David Harding, Executive, Director, Business NSW

Siobhan O' Sullivan, Chief Operating Officer, Australian Computer Society (ACS) Dani Alexander, CEO, UNSW Energy Institute

Scott Hamilton, Senior Advisor, Smart Energy Council

Natasha Jha Bhaskar, Executive Director, Newland Global Group

Deep Mukherjee, Co-Convenor, Education & Skills, Australia India Chamber of Commerce (AICC), Co-Founder TeamLease, India's largest HR firm

Nigel Palmer, Senior Policy Manager, Skills and Education, Business NSW

Kumar Srinivasan, Chair, Risk Engineering Society, NSW, Engineers Australia, CRO, UTS and Former CRO, Sydney Metro

Kala Philip, Chief Executive Officer, BSI Learning

Observers

Anji Kurian, National Manager, Programming, Governance Institute of Australia

Sudhir Basavaraju, India and Middle East, Global Markets, Investment NSW

Ramanpreet Wadhwa, Strategic Partnership, Industry and Trade Alliances Manager, Business NSW

Sunny Gupta, Trade and Investment, Newland Global Group

Sudip Bhattacharya, Trade and Investment, CGI, Sydney

James Robert, Trade and Commerce, CGI, Sydney

Consultations

Ashish Trivedi, Confederation of Indian Industry (CII), India

Vishal Gupta, Ex-Regional Director, IELTS (South Asia)

Brett Galt-Smith, Manager Stakeholder and Government Relations, VETASSESS

Background

The tertiary education sector includes vocational education and training (VET) and higher education (HE).

India's tertiary education system has gained global attention since the release of its National Education Policy (NEP) in July 2020. The NEP aims to overhaul existing structures, modernise education, meet future workforce needs, and improve access to quality education for millions of young Indians. It targets raising India's gross tertiary enrolment rate from 28.4% to 50% by 2035.

Australia is a recognised global provider of secondary, university and vocational education, with strong ties to Indian students, institutions, the diaspora and government. Australian VET, also referred to as Technical and Vocational Education Training (TVET) or skills training, is mainly delivered through TAFE (Technical and Further Education) institutes. All VET providers must meet national quality standards for registered training organisations (RTOs), monitored by the Tertiary Education Quality and Standards Agency (TEQSA) and the Australian Skills Quality Authority (ASQA).

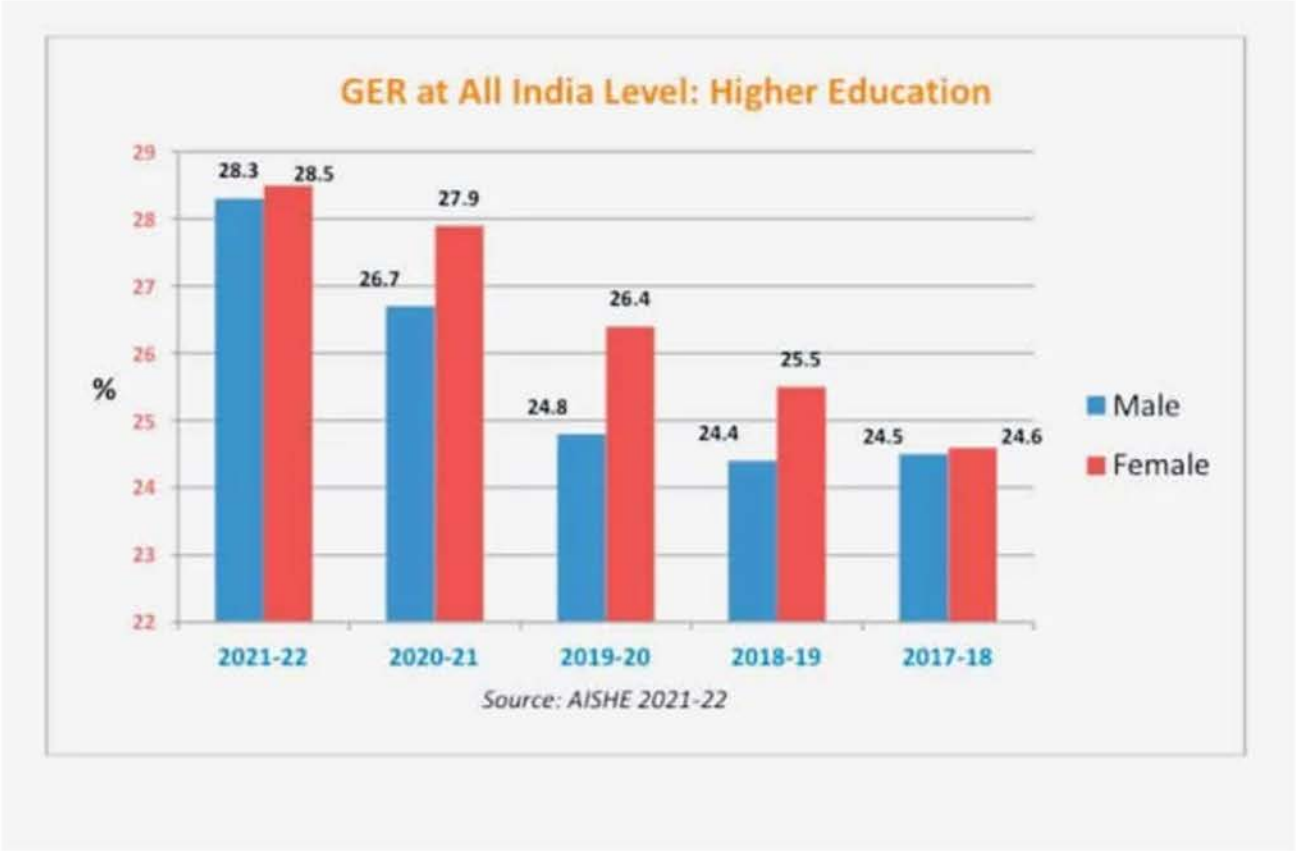
Australia and India strengthened VET cooperation under a 2020 MoU. This includes collaboration on digital delivery and quality assurance. Australian institutions continue to work with Indian counterparts on joint research, degree twinning, and student and faculty exchange.

Skilling, workforce availability and mobility

Skills development remains a key priority in the Australia–India bilateral agenda. In November 2023, the first Australia India Education and Skills Council (AIESC) meeting resulted in a Joint Communiqué between both governments. India was represented by the Ministry of Education and the Ministry of Skill Development and Entrepreneurship, while Australia was represented by the Department of Education and the Department of Employment and Workplace Relations. The communiqué outlined the following priority areas for collaboration:

Ministerial acknowledgments and agreements

- International Skills Training (IST) Program: Includes cybersecurity and aged care sectors
- Developing critical skills in India project: Trialling a model of transnational skills development
- Mechanism for mutual recognition of qualifications: To expand institutional partnerships and educational mobility
- VET Sector approaches for clean energy: Agreement to share workforce development strategies



[Admin. (2024, September 1). Trends & Analysis of Gross Enrolment Ratio (GER) in Higher Education in India (2024) | Education for All. Education for All in India.

Ministerial acknowledgments and agreements

- Shared Opportunities: Recognising workforce availability, skilling, and mobility, and agreeing to strengthen education and skills partnerships. The development of an Australian Skills Strategy for India
- Focus on Priority Sectors: Healthcare, agriculture, renewable energy, digital, mining, and logistics
- Virtual Clean Energy Workforce Roundtable 2024: To discuss skills needs for a clean energy economy
- Internationalisation of Vocational Education: Exploring delivery models for skills training in India
    a. India-Australia Skills Summit 2024: Initiative to host a summit on skills collaboration
    b. Study on International Student Pathways and Outcomes: Jobs and Skills Australia (JSA) to undertake this in 2024

Importance of skills for economic growth

- Collaboration in VET delivery: Identifying and promoting models for collaboration between Australian and Indian VET regulators
- Partnerships and new initiatives:
    - National Skills Development Corporation (NSDC) and Deakin University Partnership
    - New Cybersecurity Course: Under Australia's IST courses program
    - Planned Development of IST Course in Aged Care: Upcoming initiative
    - Progress on Developing Critical Skills Courses in India: Piloting collaboration for India's agriculture sector
    - Cooperation between the Australian Skills Quality Authority (ASQA) and India's National Council for Vocational Education and Training (NCVET) to mutually recognize qualifications in priority sectors

The Australia India Education and Skills Council (AIESC) will serve as a dynamic forum for policy and program engagement across education, skills, and research. It will focus on shaping future workforces, strengthening institutional partnerships, and enhancing research impact through international collaboration. The Ministers agreed to hold the next AIESC meeting in Australia in 2024.

From AIESC, Editor in chief. (2023, November 6). Dharmendra Pradhan co-chairs 1st Australia India Education and Skill Council meeting. Odisha News Today, Latest Oriya News Bhubaneswar.

Key Discussion Themes

Existing skill shortages: Impact on business

- Labour Market Needs: Aligning skills of the migrating workforce with the demands of the local labour market
- Priority Sectors: Collaborate to address skill shortages in sectors such as renewable energy, biotechnology, healthcare, aged care, agriculture, digital, mining, hospitality, construction, logistics and advanced manufacturing
- Tradie Shortages: 90,000 extra construction workers are required in the next three months for the government to meet its target of 1.2 million new homes by 2029 (BuildSkills Australia)[i]

Australia depends on skilled migration to fill workforce gaps. Since the pandemic, labour shortages have doubled. In 2021, there were 153 shortage-listed occupations. By 2022, that number had risen to 286 (National Skills Commission). The Australian Bureau of Statistics reports that one in four businesses struggles to find suitable staff.

By 2030, Australia expects to face a shortfall of 123,000 nurses and 653,000 technology workers. A survey by the Australian Information Industry Association (AIIA) found that skill shortages are the biggest barrier to business growth. Half of Australian companies outsource IT roles overseas, especially in AI and cybersecurity.

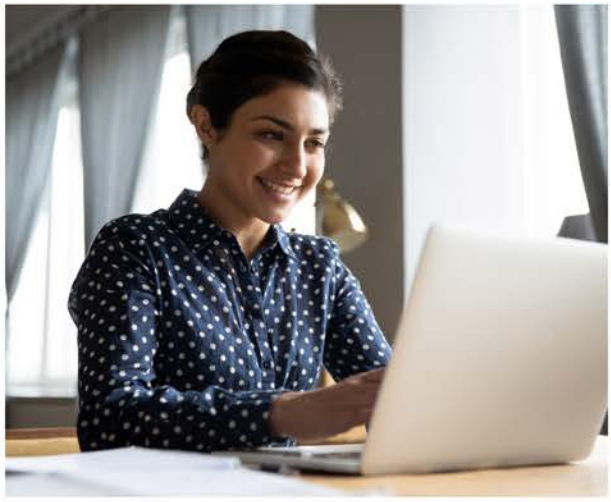
There is also a projected shortfall of 200,000 engineers by 2040. Although Australia has 147,000 trained engineers, only 47% are working in the field (Engineers Australia). In ICT, nearly 60% of professionals come from overseas. The Australian Computer Society expects a need for 1.3 million tech workers by 2030.

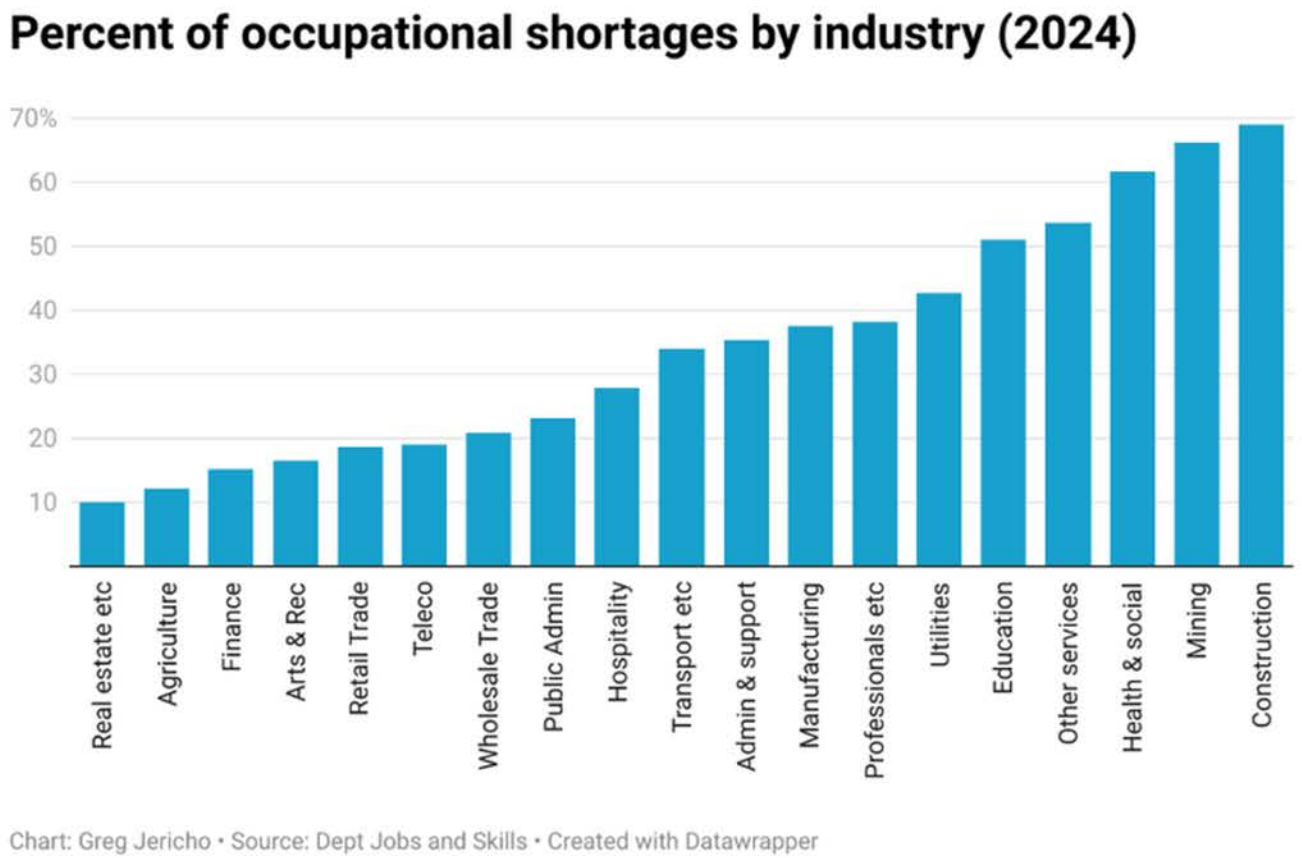
Occupational licensing can block migrants from working in their fields. This is common in healthcare, teaching, accounting, and trades. One in five workers is affected. The Committee for Economic Development of Australia (CEDA) found that easing licensing rules could improve productivity and workforce mobility, adding up to $5 billion to the economy. Using skills-based assessments, instead of fixed qualification rules, could help address shortages while maintaining safety.

Business NSW, Settlement Services International, and Deloitte Access Economics found that more than 620,000 migrants are not using their full qualifications. If fully utilised, they could add $70 billion to the economy over the next ten years.

Globally, the problem is larger. By 2030, 85 million jobs may go unfilled, costing the global economy $8.5 trillion in lost GDP. In the next 20 years, labour forces in developed countries are expected to shrink by 4%. India's is expected to grow by 32%. By 2047, India may provide 25% of the world's workforce and 15% of global GDP.

Indian workers already support global industries like construction, nursing, healthcare, and IT, especially in the Middle East. This trend is expected to grow by 28 to 30% over the next five years.



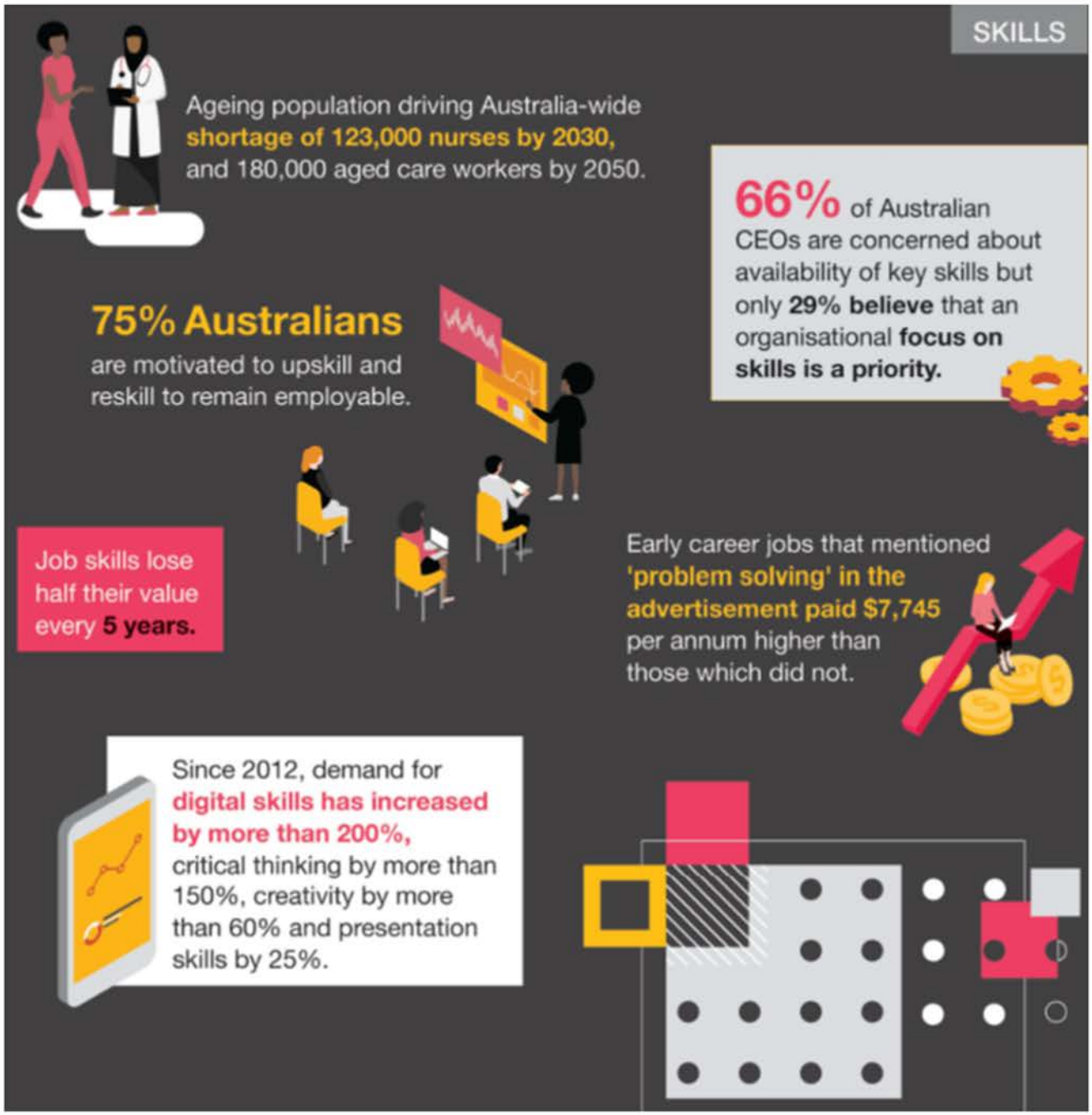


[Jericho, G. (2024, October 17). Here's a way to fix Australia's skills shortage – and raise wages at the same time.

Barriers to workforce mobility

Visa Policies: Visa Policies misaligned with skill shortages

- Visa Policies: Visa Policies misaligned with skill shortages
- Regulatory Hurdles: Occupational Licensing requirements
- Recognition of Qualifications: Ensuring mutual recognition of educational qualifications and professional certifications to ease workforce mobility (Mechanism of mutual recognition of qualifications between Australia and India, signed on 2nd Mar 2023)



[PricewaterhouseCoopers. (n.d.). Parliament House event. PwC.

Australia's visa grant rate for Indian "primary applicants" applying from outside the country is about 65% for higher education degrees. In contrast, the grant rate for vocational qualifications is around 10%, up slightly from just 6% last year. This means that applicants for TAFE and skill-based courses, which are designed to meet shortages in sectors like health, construction, and trades, are more likely to be refused than accepted.

Even the 65% grant rate for higher education is low compared to other study destinations. Countries like Bangladesh, Bhutan, and Sri Lanka have higher grant rates. Indian students also face longer visa processing times. Despite many applying to universities, Australia still classifies India as a "high-risk" student source, while countries like Bangladesh and Bhutan are considered lower risk.

The Indian diaspora in Australia and many skilled migrants began their journey as international students. There is a growing need to improve access for quality Indian students, including those pursuing vocational and trade qualifications. Institutions in Australia, the UK, and Canada increasingly rely on international students to fund research and support domestic education costs.

In 2022, the UK issued more student visas to Indian nationals than to Chinese for the first time in years. A similar trend is emerging in the US. Indian students often choose shorter, more affordable courses and are more likely to enrol in postgraduate programs, which are easier to fund than full undergraduate degrees. In the UK, the average Indian student spends about half as much on tuition as a Chinese student.

Most major destination countries offer post-study work visas, allowing graduates to stay on for a few years after completing their courses. These policies play a major role in students' decisions about where to study.

Skill training and capability

- **Educational partnerships:** Further and deeper collaboration between Australian and Indian universities and VET institutions to enhance skill development
- **Exploring new models of cooperation:** Collaboration with Australian agencies can enhance training curricula, align Indian accreditation with global standards, improve trainer quality, and enable joint training workshops. The Indian Government, through awarding Bodies approved by NCVET, can map vocational courses across sectors of importance to global frameworks, boosting the mobility of skilled Indian workers. The German and Swiss systems have long set the standard for skill training in India's manufacturing sector
- **Setting up the MPR for each sector (Minimum Professional requirement):** Detail down the requirements (English proficiency level, education background required, technical skills etc.) for each sector
- **Building an enabling framework:** This partnership can focus on skills development in areas of national priority for both countries. Opportunities can span working with the Indian Government, a joint partnership between Australian and Indian training providers for onshore and offshore courses and collaborating with large Indian and Australian corporates as well as mid-sized businesses to meet their skills needs. A key aspect of this engagement for student upskilling should be training that leads to employment outcomes.
- **Demand allocation:** Assessment and clarity of demand(budgeting) at the beginning of the year for each sector to build the pipeline to fast-track placement and make the whole process more structured and well-organised.

The Australia India Institute (AII) report, "Opportunities for Transnational VET in India: Insights for Australia", highlights that India's NSDC and NCVET hold the Australian Qualifications Framework (AQF) and the Australian Skills Quality Authority (ASQA) in high regard. Australia's strong regulatory framework has enabled dual-sector universities, TAFEs, and private RTOs to develop innovative training and degree programs across a wide range of industries.

Through its research, AII identified 12 priority sectors for VET collaboration in India: automotive, banking, financial security, insurance, capital goods, construction, electronics, healthcare, IT, IT-enabled services, life sciences, logistics, media, entertainment, retail, tourism, and hospitality.

India's e-learning market is projected to reach USD 14.1 billion by 2028. Australia's "India Economic Strategy 2018" and its 2022 update encourage partnerships between higher education institutions and industry to expand digital and blended course offerings, taking advantage of EdTech advances.

Policy reforms under India's National Education Policy (NEP) 2020 now allow up to 40% of academic credit to be earned through online learning. This creates a significant opportunity for Australian providers of EdTech, online platforms, and digital curriculum content.

South, South-East and Central Asian Enrolment by Sector 2019 - May 2025]

[Nonu. (2024, April 10). Australia-India Future Skills Initiative steps ahead to build two-way market literacy and skills partnership momentum. Skill Reporter.

Recommendations

Mobility and skilling are two sides of the same coin – interconnected and interdependent, each with the potential to enhance the other through different policy and strategy approaches. For India and Australia, this represents a mobility and skilling partnership of equals, offering significant net benefits to both countries. Key recommendations –

Initiate sector-specific pilot trials to evaluate the competence of Indian candidates for Australia's skill-shortage sectors

- Launch pilot trials across sectors in Australia with acute labour and skills shortages, such as mining, hospitality, agriculture, construction, electrical work, care services, transport, and automotive trades. These trials would allow Australian employers to assess and hire Indian talent directly. The model could build trust and reliability but will require dedicated funding from both government and industry.
- Assess the feasibility of conducting these trials under current migration pathways. Where gaps exist, review and adapt the migration system or introduce new visa categories that align with immediate sectoral needs.
- Involve industry in identifying workforce gaps and revising visa settings to ensure alignment with real-time labour market demands.
- Develop a dedicated Memorandum of Understanding (MoU) between both governments to support structured recruitment of Indian workers. Implementation could be led by key entities such as India's Ministry of External Affairs, Ministry of Skill Development and Entrepreneurship (MSDE), Australia's Department of Skills and Training, Department of Home Affairs, and the High Commission of India in Australia.
- Expand the use of Designated Area Migration Agreements (DAMAs) and Industry Labour Agreements (ILAs) as targeted tools to address specific sector shortages.

Occupational licensing, cross-mobility and mutual recognition of qualifications

- Lower application barriers by reducing visa fees, improving recognition of overseas trade qualifications, and easing English test requirements, especially in nursing. Japan's TITP and SSW visa programs support Indian workers through six months of language and culture training. Over 1,400 interns have been placed in roles such as care work, mechanics, electronics, agriculture, construction, and tailoring.
- Introduce a visa pathway for vocational (tradie) VET courses with work rights, currently only available for higher education. Finland is hiring Indian workers in aged care, shipbuilding, and automotive roles, with relaxed visa rules and no minimum English requirement. Other EU countries have signed Migration and Mobility Partnership Agreements (MMPAs) with India for similar purposes.
- Germany is recruiting Indian professionals in nursing, aged care, hospitality, automotive, and manufacturing to address shortages. It has lowered its minimum language requirement from B2 to A2.
- More EU countries are adopting MMPAs with India to streamline the mobility of skilled Indian workers.
- Simplify Australia's licensing process for foreign workers, which is often costly and complex. Also, provide English training after employer selection to support smoother onboarding.

- Review Australia's migration offerings in light of global trends. Canada, for example, offers straightforward work permits in construction and a direct path to permanent residency, even without a prior job offer.
- Create special visa categories for high-demand roles in critical sectors. These should include relaxed rules for hiring skilled Indian talent, with an annual cap on hires per job role.

Bilateral skill training collaborations to be defined by definite employment outcomes

- **Introduce industry-specific micro-credentials and VET courses** linked to clear job outcomes to build aspirations around vocational education.
- **Establish world-class Centres of Excellence (CoEs)**, following models like the iACE in GIFT City, Gujarat. This CoE, developed by Bendigo Kangan Institute in partnership with the Gujarat Government and Maruti Suzuki, focuses on automotive skills. CoEs are gaining momentum, backed by Australia's $325 million, five-year investment. In June 2024, the Australian Government also announced a joint $70 million TAFE Clean Energy Skills CoE in Western Australia, supported by both federal and state governments.
- **Offer competitively priced, capacity-building VET courses.** Australian TAFEs could partner with one or two Indian state governments and their Skills Development Corporations to establish world-class skill centres.
- **Advance cooperation on mutual recognition of skills and Recognition of Prior Learning (RPL)** through agreed nodal agencies on both sides.
- **Explore skills development in sport**, which offers significant opportunity. India's vast youth population (over 400 million under 25), 2 million schools, and more than 1,000 universities present a large market. Australia's integrated TAFE and higher education system offers strong potential for partnership. An example is the VET by EHL Swiss Hospitality Diploma, offered in collaboration with CII. Over 800 Indian candidates are currently training in ITC and Taj Hotels in areas such as culinary arts, room service, and food and beverage service.

Be a signatory of multilateral agreements

- India is not yet a signatory to the Seoul Accord, which governs international recognition of computing and IT qualifications. However, it is a signatory to the Washington Accord, ensuring global recognition of professional engineering degrees.
- Leverage the Groningen Declaration principles to promote cross-recognition, upskilling, and mobility. Business NSW is the first employer body worldwide to sign the Declaration, which supports global graduate mobility. India's National Academic Depository (NAD) was a founding signatory. Business NSW is also working with the Australian Government on a National Skills Passport. VETASSESS, also a founding signatory, is developing digital credentials linked to migration assessments to improve recognition of migrant skills both offshore and onshore.
- Deepen engagement with professional bodies to enable mutual recognition of qualifications and charterships. Focus first on key sectors like energy, manufacturing, architecture, engineering, project management, financial services, and healthcare. Prioritise the Australian Health Practitioner Regulation Agency (AHPRA) to develop early solutions in the healthcare sector.
- Strengthen support for government-led initiatives such as the Future Skills Initiative (FSI), managed by Austrade's Delhi office. The FSI has supported multiple skills and industry delegations from 2023–2024 and provides strategic and branding support to Australian VET providers. For example, BSI Learning has launched Australian-accredited IT, cybersecurity, and hospitality qualifications in India under the FSI, aligned with the Free Trade Agreement and mutual recognition MoU.

Set up a dedicated consultation committee for skill training and workforce mobility issues

- Establish a dedicated forum to tackle existing barriers and complexities. This forum would coordinate with organisations to align needs and capabilities and provide information to help navigate current challenges. The committee should include industry stakeholders in developing targeted workforce mobility policies that align with visa pathways at both the federal and state levels
- The opportunity is also to shift the ecosystem emphasis by building networks of influence at the board level to advocate for global talent. This can't happen if the board comprises the same people, rather than a diverse representation to avoid groupthink bias and embrace true diversity of thought by recruiting new talent from outside
- Australian and Indian regulators, with support from industry and VET providers, should agree on a framework for mutual recognition of VET learning and qualifications between Australia and India
- The agreed framework would use a standardised national curriculum to establish a suite of Australia-India equivalence credentials that support recognition and mobility between the nations
- Develop a suite of Australia-India certifications that provide mutual recognition of qualifications to students from both countries, enhancing the global movement of job-ready VET graduates between Australia and India
- Ensure balanced reciprocity and visa policy settings that allow for adequate access to student and labour mobility, supporting professional development opportunities through work-integrated learning and paid internships in both countries
- Identify and prioritise sectors facing skill shortages to enable the outflow of a skilled workforce in sectors with substantial potential, and develop joint, dual, and twinning courses and qualifications in areas of mutual interest.

A great opportunity awaits both countries in creating a more dynamic ecosystem for skills, education, and training, one that seamlessly connects Australia and India within the increasingly sophisticated global talent and opportunity market, this should not be missed

Building Advanced Manufacturing Capabilities between Australia and India

Septemeber 18, 2024

ROUNDTABLE OBJECTIVES

- Strengthen collaboration and invite sectoral insights to inform the CECA negotiations going forward
- Amplify interactions and build relationships with key manufacturing stakeholders
- Open new commercial partnerships and outcomes
- Explore recommendations to capitalise on existing opportunities and identify ways to navigate operational challenges

Delegates

Dr. S Janakiraman, Consul General of India, Sydney

Nirav Sutaria, Consul Commercial, CGI Sydney

Dipen Rughani, Chief Executive Officer, Newland Global Group

Dr Jens Goennemann, Managing Director, Advanced Manufacturing Growth Centre (AMGC)

Paul Cooper, Director, Rinstrum, Chair, AMGC

David Timms, Group CEO, Callington Group of Companies

Tyson Bowen, State Director (NSW), AMGC

Natasha Jha Bhaskar, Executive Director, Newland Global Group

Kristi Riordan, CEO and Co-founder, Harvest B

Daniel Rodgers, Founder and CEO, OmniTanker

Alan Lipman, CEO, Romar Engineering

Peter Cull, Director (Founder and Inventor), ICT International

Michael Junger, Director – Industry and Government Relations, Vaxxas

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Ram Iyer, General Manager, Operations, Arna Pharma

Sekhar Meka, Technical Director, Arna Pharma

Sudip Bhattacharya, Trade and Investment, CGI, Sydney

James Robert, Trade and Commerce, CGI, Sydney

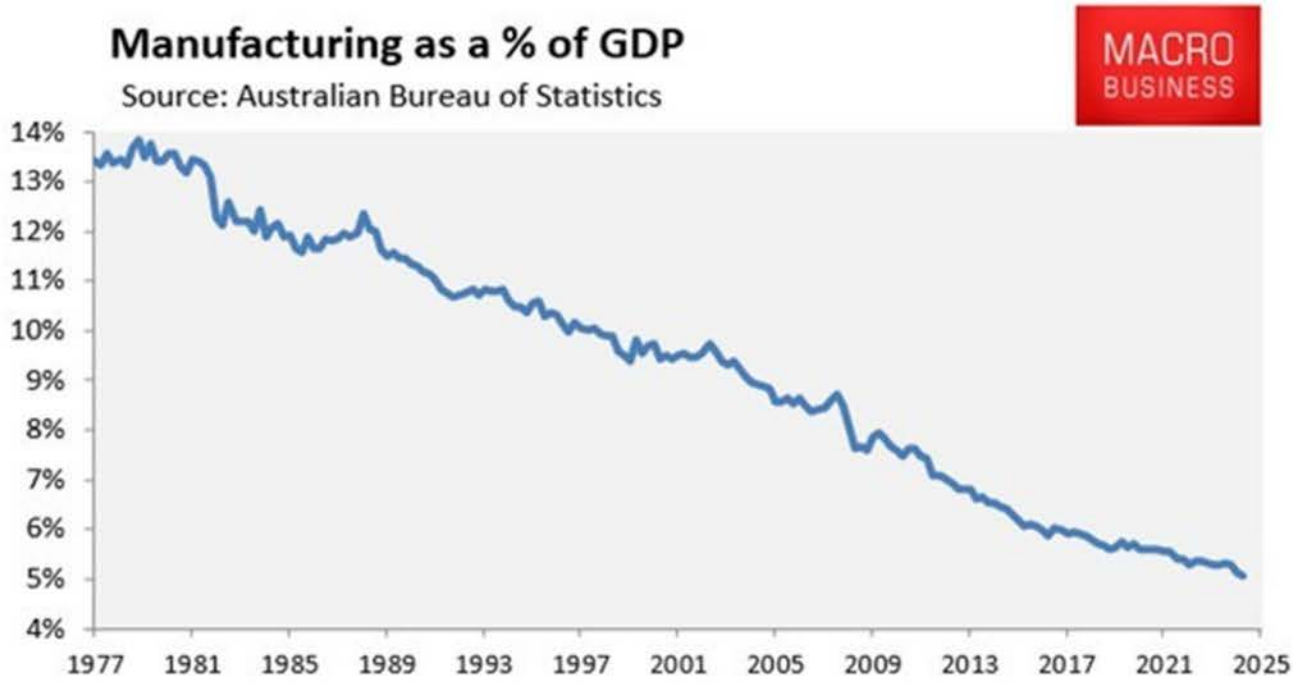
Background

Manufacturing has been in a state of transition for decades. Lower tariffs, advancing technologies, and the shift to low-cost economies have continually reshaped the sector.

The pandemic further exposed vulnerabilities in the globally connected manufacturing system, reinforcing the need for countries to diversify production and strengthen domestic capabilities. Heavy reliance on a few production hubs led to major export and supply chain disruptions. In this context, attention turned back to manufacturing's role in Australia's economy. In the late 1950s, it contributed nearly 30% of GDP. Today, it stands at just 5.7%, its lowest level in over 30 years. While there is renewed momentum to rebuild the sector, there's also recognition that competing directly with low-cost global manufacturers remains a challenge.

Despite these pressures, Australia's advanced manufacturing sector presents a competitive edge. It brings together a broad set of enabling technologies, processes, and practices that enhance productivity, efficiency, and resilience. Often grouped under Industry 4.0, these capabilities allow manufacturers to optimise the entire production value chain and better adapt to changing conditions. Advanced manufacturing is particularly vital in high-growth, high-tech areas such as renewable energy, electric vehicles (EVs), batteries, and semiconductors.

This sector now accounts for nearly half of Australia's A$100 billion-plus annual manufacturing output and is one of the fastest-growing export segments. Its growth has been supported by close collaboration between R&D institutions and industry, and a growing focus on commercialising innovation. Core technologies include 3D printing, robotics, advanced materials, artificial intelligence, nanotechnology, and biotechnology, positioning Australia as a key player in high-value, innovation-led manufacturing.



[MacroBusiness. (2025, August 4). Australian manufacturing is dying and nobody cares. MacroBusiness.

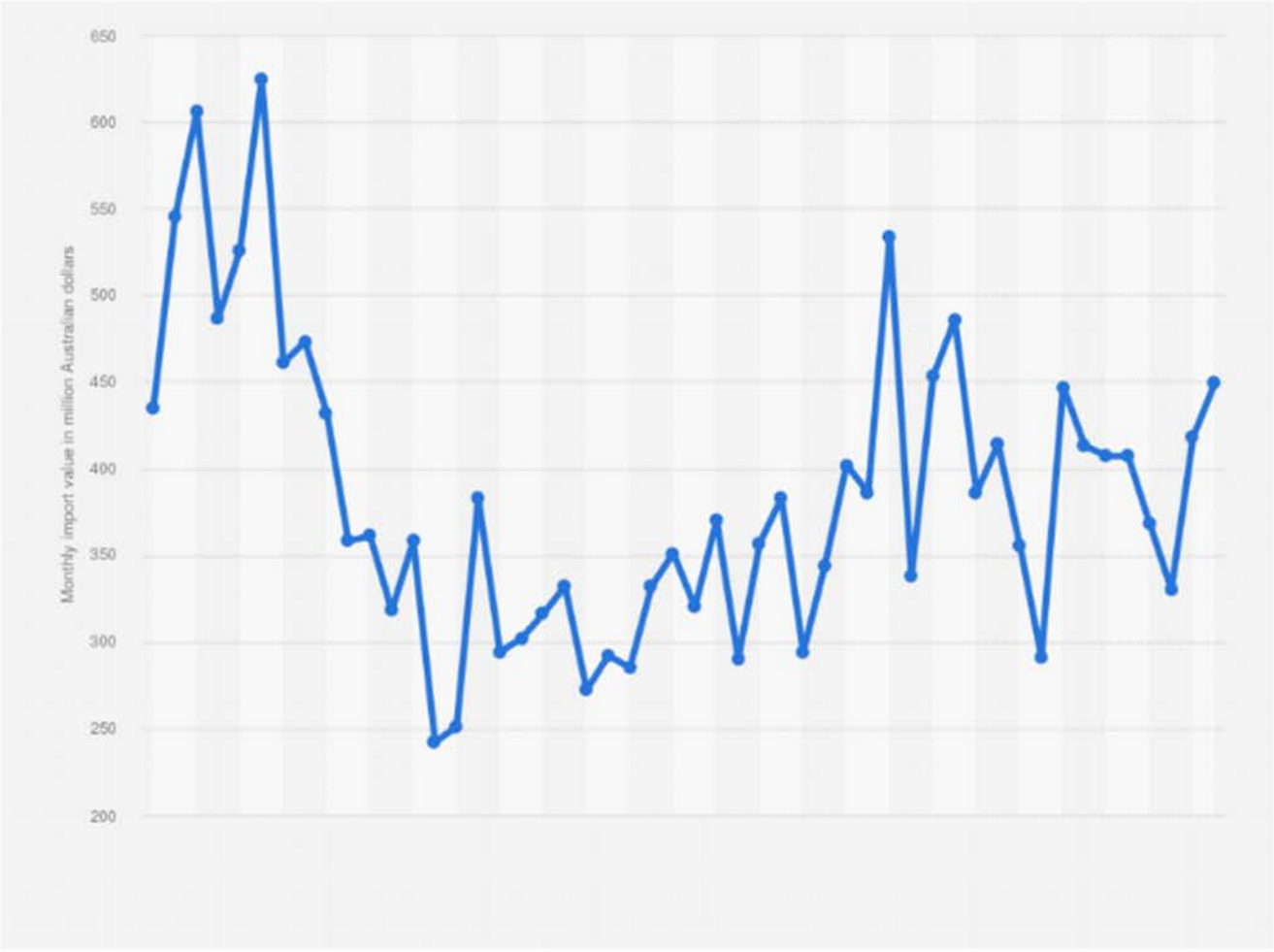
India, too, is looking to scale its advanced manufacturing capabilities under 'Make in India 2.0'. Areas of focus such as robotics, genomics, chemical feedstock, and electrical storage align well with Australia's expertise. These technologies are critical for global competitiveness in cost, quality, speed, and innovation. Australia's strength lies in high-value, low-volume manufacturing built on design, R&D, and process innovation. Yet, its R&D expenditure as a share of GDP has been declining. With the launch of the "Future Made in Australia" (FMA) policy, both countries now have a timely opportunity to align their goals and leverage their complementary strengths.

[Roberts, P. (2024, April 11). A Future Made in Australia – Anthony Albanese in his own words. Australian Manufacturing Forum.

India has set ambitious targets, aiming for manufacturing to contribute 25% of GDP by 2025. Australia's FMA initiative reflects a broader regional trend, with countries promoting investment by offering diversified supply chains, skilled labour, and favourable policy environments. These efforts have led to major cross-border investments, such as Foxconn and Micron's semiconductor projects in India. In the Asia-Pacific region, 47% of advanced manufacturing FDI is going into renewable energy, followed by semiconductors at 35%, and EVs at 18%. As the region moves toward leadership in smart manufacturing, investment in these sectors is expected to rise.

As global manufacturing enters a phase of rapid technological transformation, Australia and India are well placed to partner in this shift. India's drive for cost-effective, high-volume output matches Australia's innovation capacity in advanced manufacturing. There are two pathways forward. First, Australia can manufacture in India, benefiting from its cost advantages, raw material access, and skilled workforce, helping Australian firms scale globally. A partnership model based on "Designed in Australia - Made in India" could emerge. Second, Indian manufacturers can adopt Australian technologies to upgrade their own capabilities.

India's pharmaceutical industry offers a strong example of its manufacturing potential. From being import-dependent before the 1970s, India has grown into the third-largest pharmaceutical producer by volume.



[Statista. (2025, July 9). Value of monthly exports of medical and pharmaceutical products Australia 2020-2024.

Eight of the top 20 global generic companies are Indian. With deep technical expertise and innovative processes, India is a natural partner for Australia in sectors like medical technology, biotechnology, and pharmaceuticals. Australia's strengths here are significant, but its limited domestic manufacturing capacity, due to high labour costs and regulatory constraints, places it at the far end of global supply chains.

This vulnerability is particularly evident in pharmaceuticals. A report by the Institute for Integrated Economic Research Australia highlights that over 90% of medicines in Australia are imported. This dependency exposes the country to serious supply chain risks. India, with its scale and capability, can help close this gap. For Australia, the path forward involves boosting productivity, refining product development, and simplifying supply chains to move further up the manufacturing value chain.

Focus on 'FMA' is expected to address some of the issues. Australia intends to invest $22.7 billion over the next decade to build a Future Made in Australia. This plan is about maximising the economic and industrial benefits of the move to Net Zero and securing Australia's place in a changing global economic and strategic landscape. The plan for a Future Made in Australia is about:

- Attracting and enabling investment
- Making Australia a renewable energy superpower
- Value adding to its resources and strengthening economic security
- Backing Australian ideas: innovation, digital, science
- Investing in people and places

As part of this plan, the Government will create a Future Made in Australia Act and establish the National Interest Framework which will to guide the identification of priority industries and prudent investments in the national interest enables fresh manufacturing environment in Australia.

Through the Framework, priority industries will be identified under two streams. The 'Net Zero transformation' stream will identify industries that can make a significant contribution to achieving Net Zero, where Australia has grounds to build enduring comparative advantages. The 'economic security and resilience' stream will identify sectors that are critical to our resilience, are vulnerable to supply disruptions and require support to unlock sufficient private investment. In the 2024–25 Budget, five industries are aligned with the National Interest Framework:

- Renewable hydrogen
- Critical minerals processing
- Green metals
- Low carbon liquid fuels
- Clean energy manufacturing, including battery and solar panel supply chains

The future of manufacturing depends on operating seamlessly across all channels, including manufacturing, inventory, supply chain, marketing, sales and distribution. Core to the changes will be a symbiosis between traditional and advanced manufacturing. There is no doubt that manufacturing is evolving rapidly in Australia and around the world. While some businesses continue to create entire finished products within their factory walls, it is now more common for companies to specialise in manufacturing specific components to feed into national or global supply chains, with 75% of global trade now made up of intermediate, or unfinished goods. Many Australian firms specialise in providing intermediate goods that are used by leading manufacturers around the globe.

Co-create, Co-innovate and Co-produce should be the way forward for the Australia-India relationship in the advanced manufacturing industry. The advanced manufacturing industry will continue to grow in the coming years and redefine how we think about manufacturing around the world. However, equally important is the region-wide availability of production and manufacturing talent to support the industry's growth.

Key Discussion Themes

Strengthening partnerships

- **Goal:** Foster robust collaboration between industry leaders, governments, and R&D institutions from Australia and India
- **Key Discussion areas:**
  - Building and enhancing industry-government-academic networks for greater innovation
  - Understanding the mutual benefits of collaborative efforts in manufacturing, particularly in areas like food security, health, and climate change
  - Defining mechanisms for sustainable and long-term partnerships in joint ventures, research, and development projects
  - Expanding bilateral agreements on technological and industrial cooperation

Technology transfer and innovation

- **Goal:** Enable smoother transfer of technology and innovative manufacturing practices between Australia and India
- **Key Discussion areas:**
- Mechanisms to facilitate the exchange of advanced manufacturing technologies, particularly in renewable energy, sustainable manufacturing, and biosecurity
- Overcoming intellectual property (IP) barriers and ensuring security for joint innovation projects
- Aligning R&D goals to address global challenges like food security and climate change through cutting-edge manufacturing techniques
- Promoting joint innovation hubs for developing eco-friendly products and sustainable chemistries
- Challenges in scaling up innovations, particularly for SMEs, and ensuring affordable, impactful solutions

Navigating operational challenges

- **Goal:** Identify and resolve operational and regulatory barriers in cross-border manufacturing collaboration
- **Key Discussion areas:**
- Regulatory hurdles that slow down innovation, product development, and market entry
- The impact of tariffs, non-tariff barriers (e.g., transfer pricing rules), and local content procurement regulations on business operations
- Streamlining approval processes for projects of national significance (e.g., renewable energy, critical minerals)
- Aligning the pace of regulatory change to keep up with rapid technological advancements
- Addressing barriers to efficient business operations through reforms in customs, taxation, and labour regulations

Investment opportunities and commercial partnerships

- **Goal:** Explore avenues for joint investment projects and commercial partnerships leveraging the manufacturing strengths of both countries
- **Key Discussion areas:**
  - Identifying priority sectors for investment under the Make in India and Future Made in Australia agenda (e.g., clean energy, advanced manufacturing, critical minerals)

- Leveraging Australia's advanced manufacturing capabilities and India's growing strength in supplying intermediate goods
- Attracting foreign direct investment (FDI) to critical sectors, including renewable energy, electric vehicles, and sustainable technologies
- Utilising advanced technologies (e.g., automation, robotics, data analytics) to improve supply chain efficiency and competitiveness
- Fostering collaboration in Global Value Chains (GVCs), leading to greater innovation, productivity, and skills development

- Mechanisms to provide a single point of contact for investors with major proposals, facilitating smoother investments
- Exploring funding options for new chemistries and high-tech manufacturing solutions in sectors like food processing and sustainable chemicals

Enhancing global value chains

- **Goal:** Strengthen Australia's and India's participation in global manufacturing supply chains
- **Key Discussion areas:**
  - Diversifying global supply chains through joint ventures and cross-border collaborations
  - Addressing supply chain disruptions, and securing a more resilient, cost-effective supply of intermediate components
  - Identifying synergies between Australia's high-value manufacturing and India's cost-effective, scalable production capabilities

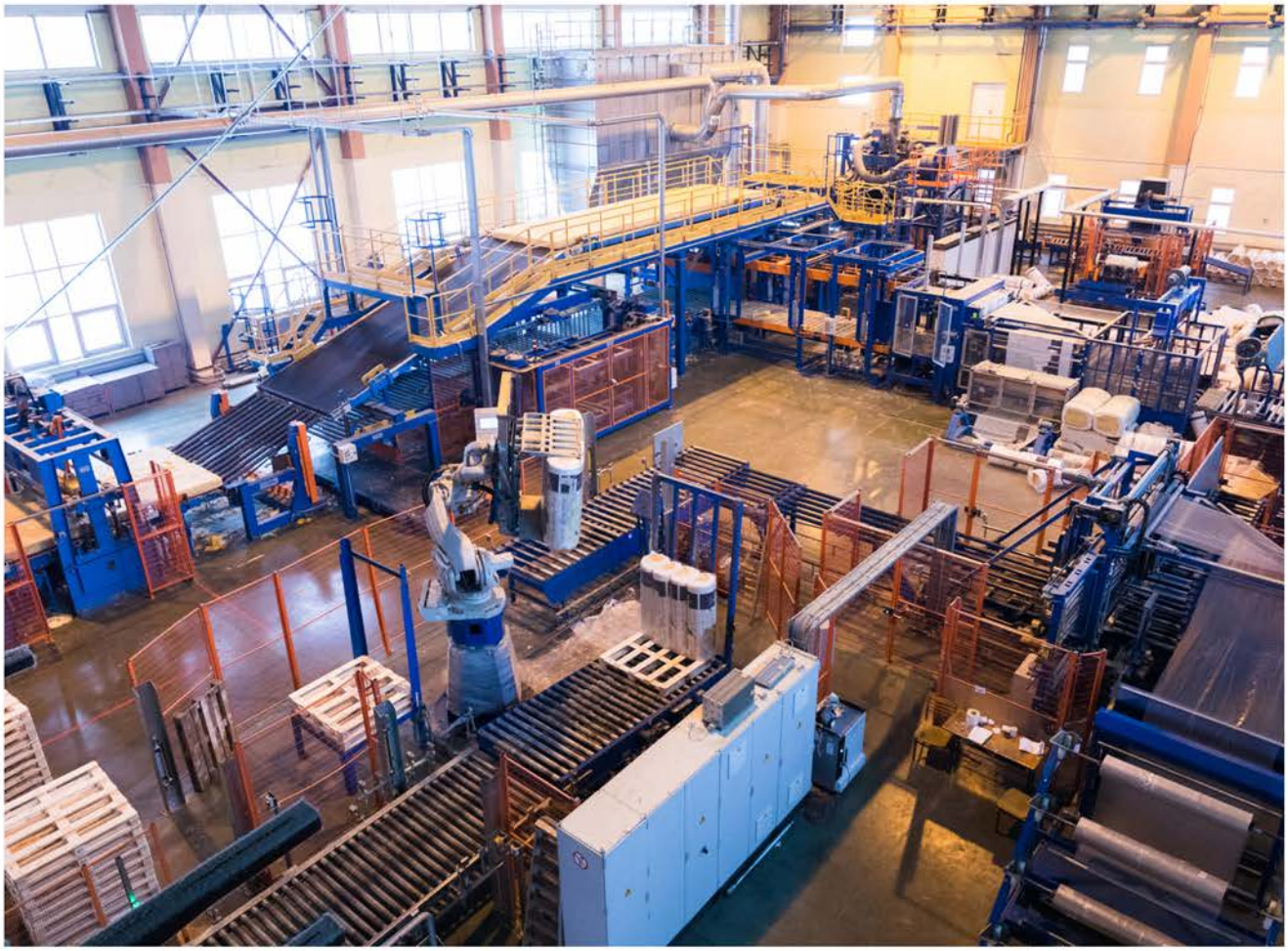
Regulatory harmonisation and standards

- **Goal:** Ensure alignment of manufacturing standards and regulations across Australia and India to facilitate smoother trade.
- **Key Discussion areas:**
  - Harmonising industry standards and compliance requirements for easier market access
  - Addressing the impact of evolving biosecurity standards on cross-border manufacturing, particularly in the pharmaceutical and food sectors
  - Overcoming regulatory bottlenecks, such as complex tariff structures and restrictive labour laws
  - Leveraging the Australia-India Economic Cooperation and Trade Agreement (AI-ECTA) to streamline processes and remove barriers to trade
  - Accelerating regulatory reforms that address emerging challenges like digital infrastructure, IP protection, and international standards in manufacturing

Skills, training, and workforce development

- **Goal:** Enhance skills and training capabilities to meet the demands of advanced manufacturing
- **Key Discussion areas:**
  - Building a skilled workforce to support advanced manufacturing, focusing on automation, digital technologies, and engineering
  - Fast-tracking skilled labour mobility and recognising qualifications across borders
  - Encouraging collaboration between industry and academia for research-driven solutions and customised training programs
  - Developing workforce capabilities in emerging fields like robotics, AI, and clean energy manufacturing

[Looking Ahead: Manufacturing – Australia's future is not its past. (2021, August 6). Asia Society.



Pathways for establishing a presence in India

- **Goal:** Identify strategic pathways for Australian manufacturers to establish operations in India.
- **Key Discussion areas:**
  - Understanding the legal, regulatory, and market entry requirements for Australian manufacturers in India
  - Leveraging India's competitive advantages, such as access to low-cost labour, strong infrastructure, and a rapidly growing domestic market
  - Facilitating ease of market entry by Australian firms through incentives, grants, and partnerships with Indian businesses
  - Sharing best practices and experiences from other Free Trade Agreements (FTAs) to smooth the process of market entry and business expansion
  - Reviewing successful case studies of manufacturing collaboration from other FTAs
  - Understanding the role of trade facilitation measures (e.g., reduced tariffs, simplified customs procedures) in boosting manufacturing trade.

Recommendations

Identify key national needs

Analyse critical challenges in India that Australian technology can address, aligning strategic priorities to foster targeted capacity building.

Foster local-international collaborations

Create an ecosystem connecting Indian companies with international partners to promote seamless collaboration and innovation.

Ease regulatory barriers

Simplify regulatory, banking, and legal processes to ease foreign entry and operations in India.

Support for health technology

Look to global benchmarks like the US's BARDA (Biomedical Advanced Research and Development Authority) organisation and Europe's HERA (Health Emergency Preparedness and Response) for developing critical health technologies. Rapid identification of unmet needs and swift government-backed solutions is key.

Government support for new technologies

Ensure government departments actively support the introduction of disruptive health technologies, including providing infrastructure, training, and financial incentives.

Pragmatic regulatory approach in healthcare

Regulatory bodies should adopt a consultative, flexible approach to new healthcare technologies, similar to the FDA's enabling programs.

Streamline biologic transfers

Minimise bureaucratic hurdles in Materials Transfer Agreements to facilitate the smooth exchange of biological materials for R&D.

Leverage complementary expertise

Minimise bureaucratic hurdles in Materials Transfer Agreements to facilitate the smooth exchange of biological materials for R&D.

Regulatory approval alignment

Securing FDA and EU approvals for vaccines and drugs can help open new market opportunities, especially in SE Asia.

Enhance pandemic preparedness

Capitalise on India's vaccine manufacturing expertise and Australia's Vaxxas vaccine delivery platform to address pandemic challenges and improve vaccine distribution efficiency.

Sustainability through patch vaccinations

Promote patch vaccines to reduce cold-chain reliance, extend vaccine reach to remote areas, and optimise vaccine stock utilisation.

Expand vaccine delivery solutions

Australia's Vaxxas platform can amplify the effectiveness of vaccines, leveraging India's vast manufacturing capabilities.

Safer chemical transport technology

Support adoption of Omni Tanker's innovative technology in India's chemical transport sector to improve safety and efficiency.

Emerging hydrogen transport sector

Explore the potential for Omni Tanker's technology in India's emerging hydrogen transport market.

Market analysis for Australian tech

Conduct an initial streamlined analysis to identify opportunities for Australian technology in India, similar to initiatives in the US like UCLA's Global Access Program.

Facilitate market opportunities

Set up services that identify opportunities for collaboration, especially in transport, renewables, and manufacturing sectors, to fast-track partnerships.

Support JV collaboration

Facilitate joint ventures (JVs) by providing regulatory, distribution, and partnership frameworks that ensure mutual benefit and seamless market entry.

Set up joint collaboration agency

Establish an agency dedicated to helping facilitate, nurture, and introduce joint collaborations between Australian and Indian companies, supported by tax incentives for startups.

Funding and paperwork support:

Provide assistance with securing funding, facilitating material exchanges, and supporting administrative processes for Australian companies in India.

Address market fragmentation

Create a more structured, less chaotic business environment to enhance foreign company operations in India. Drawing from PEZA's success in the Philippines, India can build an economic zone framework with clear incentives to attract foreign manufacturers.

Forest monitoring systems opportunity

Address urgent needs in forest monitoring in India to prevent environmental degradation, leveraging ICT International's expertise in monitoring technologies.

Model economic zones on PEZA

India can adopt lessons from the Philippines' Economic Zone Authority (PEZA) to create a conducive environment for foreign investment and manufacturing, streamlining operations for companies like ICT International.

Australia-India Critical Minerals Partnership: Addressing Key Challenges, Shaping Practical Solutions

February 18, 2025

ROUNDTABLE OBJECTIVES

- Strengthen collaboration and invite sectoral insights to inform the CECA negotiations
- Amplify interactions and build relationships with key government, industry and academia stakeholders
- Open new commercial partnerships and outcomes
- Explore recommendations to capitalise on existing opportunities and identify ways to navigate operational challenges

Delegates

Dr S Janakiraman, Consul General of India, Sydney

Nirav Sutaria, Consul Commercial, CGI Sydney

Dipen Rughani, Chief Executive Officer, Newland Global Group

David Harding, Executive Director, Business NSW

Shannon O' Rourke, CEO, Future Battery Industries (FBICRC)

Joe Kaderavek, CEO, Cobalt Blu Holdings

Michael Helleman, Head of Asia, Investment, (AUSTRADE)

Meg Fletcher, India-Australia Partnerships, Mineral Resources, (CSIRO)

Natasha Jha Bhaskar, Executive Director, Newland Global Group (NGG)

Kerry Atkins, NSW Director, Association of Mining and Exploration Companies (AMEC)

Tony Truelove, COO, FirstTin

Alison Airey, Assistant Secretary, FTA Services, DFAT

Sam Riggall, CEO, Sunrise Energy Metals

Jeneta Owens, MD, Godolphin Resources

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Sapna Vaswani, Marketing Assistant, CGI Sydney

Key discussion points

- The current state of play in the Australian industry
- Existing opportunities and challenges
- Areas of common industrial focus (e.g. net zero)
- Technology transfer and collaboration
- Access to finance and investments – role of government incentives and private investment
- Joint investment projects and partnerships
- Skills gaps in mining, processing, and technology sectors
- Impact of the Australia-India economic cooperation and trade agreement (AI-ECTA)
- Best practices and experiences from other countries
- Offer short-mid-long term implementable recommendations

Background

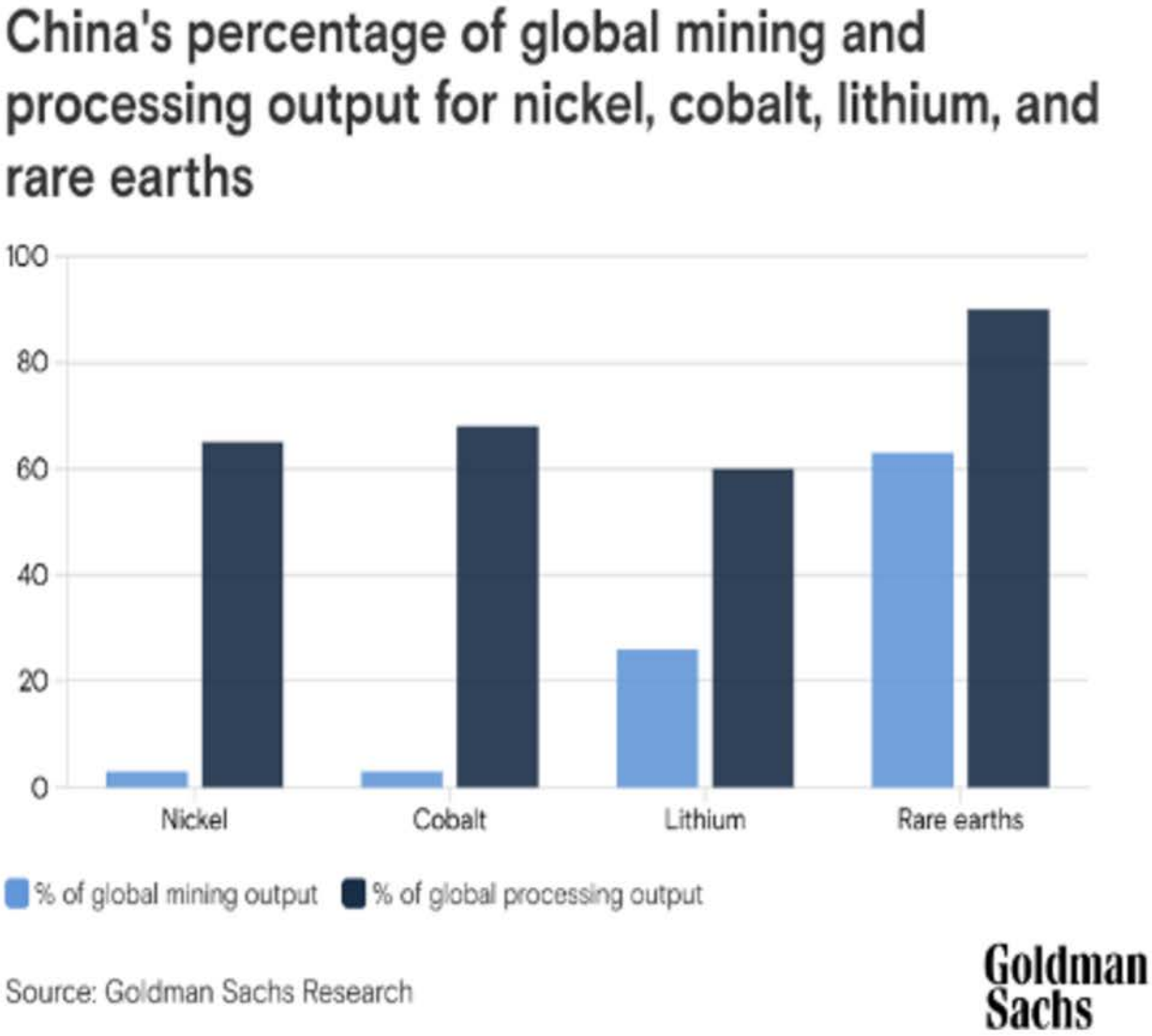
The global scramble for critical minerals has picked up considerably over the last 10 years. The shift to advanced and sophisticated technologies in industrial, defence, scientific and renewable applications are integral to a country's future competitiveness and economic growth. Regional and geopolitical supply chain risks, trade wars and economic uncertainty drive towards a new wave of industrial revolution where green technologies play a major role.

Geopolitics of critical minerals in the new energy economy

The economic importance of critical minerals (e.g., chromium, tungsten, gallium, tantalum, germanium, selenium, cobalt, lithium, cadmium, rhenium, tellurium, platinum group of elements, rare earth elements etc.) for key industries, and their supply risks make them strategically important. The minerals are critical for several finished goods, including automobiles, mobile phones, wind turbines, computers, aircraft, and advanced manufacturing high-tech applications. As countries poise to transition to cleaner energy, the demand for critical minerals has surged, with clean energy technologies such as solar panels, wind turbines, and electric vehicles requiring significantly higher quantities of these minerals compared to conventional energy systems. In comparison to a conventional vehicle, an electric vehicle uses five times more minerals; wind farms require eight times more minerals than a gas-fired plant of the same capacity. Technologies and equipment with higher efficiency and lower emissions rely heavily on the use of these critical minerals.

Criticality is a subjective concept (dependant on context and dynamics); hence each country has identified its own set of critical minerals according to its industrial needs and energy endowments as well as net zero targets. Many of these critical minerals are mined both as primary products as well as extracted as companion products or in traces while mining other minerals.

Extraction, processing and refining of these minerals (which are both expensive and damaging for the environment) are factors that have restrained access to these deposits in other countries and has led to geographical concentration of these minerals. China's dominance of critical minerals refining processing and supply chains is indisputable. Almost 50 to 70 percent of global lithium and cobalt refining, 90 percent of processing operations converting rare earths into metals and magnets and 70 percent of global electric vehicle manufacturing capacity with the largest number of lithium-ion battery mega factories under construction are dominated by China. China values its dominance of the rare earth elements market more for geopolitical reasons than commercial ones, as a leverage to deal with trade conflicts and to address fierce power contest.



The appreciation of risks arising from excessive reliance on China has led to countries collaborating with other like-minded countries to build mining-exploration and mineral processing alliances. The critical minerals market is expected to grow between two and fourfold by 2030. The aim is to de-risk supply chain dependency and monopoly of minerals, bullet-proof complex and interconnected supply chains vulnerable to disruption, and expand greater manufacturing of mineral-based products important to economic and national security.

Australia's critical minerals

Australia is home to some of the world's largest reserves of critical minerals, including lithium, cobalt and rare earths. Australia is known as one of the world leaders in resources exploration, extraction, production and processing and the industry has a reputation for safety, high labour standards, First Nations (indigenous) engagement and environmental responsibility.

The Australian Government publishes a Critical minerals list consisting of metallic or non-metallic materials. These materials are essential to modern economies, technologies, and national security, and whose supply chains are vulnerable to disruption.

This list consists of minerals important for the global net zero transition and broader strategic applications. These applications are in demand for international partners. However, their supply chains are not currently vulnerable enough to be considered critical minerals. The Strategic Materials List includes aluminium, copper, phosphorous, tin, and zinc. These minerals are not eligible for the Australian Government's critical minerals support and finance. However, the Government continue supporting the extraction and processing of these minerals and monitoring their market developments.

In December 2023, alongside the Critical Minerals List revision, the Australian Government also released a Strategic materials list. This list consists of minerals important for the global net zero transition and broader strategic applications. These applications are in demand for international partners. However, their supply chains are not currently vulnerable enough to be considered critical minerals. The Strategic Materials List includes aluminium, copper, phosphorous, tin, and zinc. These minerals are not eligible for the Australian Government's critical minerals support and finance. However, the Government continue supporting the extraction and processing of these minerals and monitoring their market developments.

The Australian government's critical minerals strategy 2023–2030 sets out a vision to grow Australia's critical minerals wealth, create Australian and strengthen global clean energy supply chains. Implementation of the Strategy includes support to finance critical minerals mining and processing projects and investing in Australia's' international partnerships.

Comprehensive financial incentives

The Critical Minerals Strategy and Future made in Australia plan include a range of incentives, finance facilities, grants and other support for the critical minerals sector:

- The A$4 billion Critical minerals facility supports projects aligned with the Critical Minerals Strategy, in Australia's national interest.
- Up to A$500 million of the A$5 billion Northern Australia infrastructure facility is earmarked to help finance projects in the NT, QLD and WA.
- The Critical minerals production tax incentive will provide a production incentive valued at 10 per cent of relevant processing and refining costs for Australia's 31 critical minerals. This incentive will be applicable for up to 10 years per project. The incentive covers production between 2027–28 and 2039–40, by projects that reach final investment decisions by 2030.

- Up to A$1 billion of the A$15 billion National reconstruction fund is earmarked for value-addition in resources. processing, refining and using critical minerals here in Australia. This is designed to help transform the economy and drive innovation.
- The A$10 million Critical minerals national productivity initiative to develop pre-feasibility studies of common-user infrastructure for the critical minerals sector.
- Direct investments, debt and asset finance through the Clean energy finance corporation. The Australian Government's specialist investor is at the centre of efforts to deliver on Australia's ambitions for a net zero future.

Australia's identified mineral resources 2023 shows that, in 2022, Australia retained its position as the world's top lithium producer (52%) and was also a top five producer for cobalt (3%), manganese ore (10%), rare earths (5%), rutile (27%), tantalum (4%), and zircon (25%).

Australian government's critical minerals ecosystem

The Australian government provides extensive support for critical minerals through various agencies, often in collaboration with state governments:

Policy and service delivery:

- Austrade: Develops partnerships to connect Australian companies with investment and offtake opportunities, focusing on critical minerals projects.
- Critical Minerals Office (CMO): Provides national policy and strategic advice to grow the critical minerals industry.
- Department of Foreign Affairs and Trade (DFAT): Engages in international partnerships to secure global supply chains and attract investment.
- The Treasury: Manages major investor engagement through the Future Made in Australia initiative.

Financing Bodies:

- Export Finance Australia (EFA): EFA supports critical minerals projects, infrastructure, and export supply chains through the A$4 billion Critical Minerals Facility. It aims to address market funding gaps by providing:
  - Longer-term loans for extended construction periods
  - Structured amortisation and interest-only periods
  - Greater flexibility on offtakes and new export markets.
- Clean Energy Finance Corporation (CEFC): Invests to accelerate the transition to net-zero emissions.
- Northern Australia Infrastructure Facility (NAIF): A$5 billion lending facility that provides loans for infrastructure projects in northern Australia. NAIF investments support the development of new infrastructure or significant enhancements to existing ones.

Additionally, the Australian Government has allocated A$500 million to NAIF to help secure the reliable supply of critical minerals for proponents and end users.

- National Reconstruction Fund (NRF): The A$15 billion National Reconstruction Fund (NRF) was created to drive targeted investment, diversify and transform Australian industry, create secure well-paid jobs, and enhance sovereign capability. The NRF offers debt, equity, and guarantees to support high-value industry transformation projects. A$1 billion is allocated for resource sector activities that add value, including:
  - Manufacturing innovative products related to mining, such as exploration and drilling technology, safety solutions, and transport.
  - Processing, refining, and utilising minerals in Australia, including materials for battery manufacturing.
  - Developing products and technologies to advance mineral processing, refining, and fabrication.

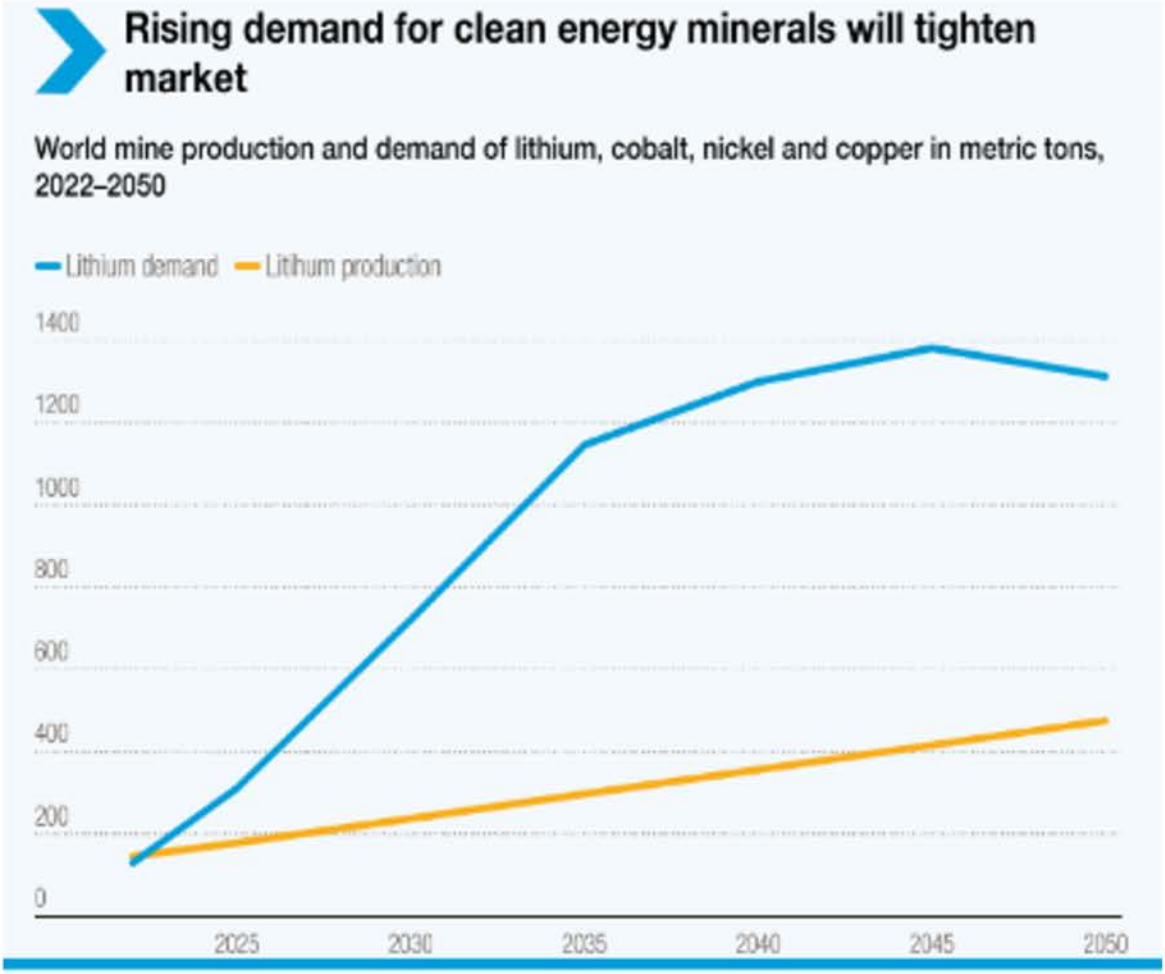
Scientific and research institutions:

- Geoscience Australia (GA): Provides geoscience information to support critical minerals exploration.
- Australian Nuclear Science and Technology Organisation (ANSTO): Contributes to the development of sustainable alternative supply chains for the Australian critical minerals industry. Specialises in processing rare earths and specialty metals.
- Commonwealth Scientific and Industrial Research Organisation (CSIRO): Focuses on innovation in critical minerals processing, including collaboration through the Australian Critical Minerals Research and Development Hub R&D Hub to support clean energy and net-zero goals.
- Future Battery Industries Cooperative Research Centre (FBI-CRC): Supports the battery value chain to advance Australia's battery industry.

India's critical minerals

India is heavily reliant on imports for energy transition minerals, with 100% dependency on lithium, cobalt, and nickel. This dependency is expected to persist as demand for critical minerals is projected to more than double by 2030.

- India is ranked 4th globally in renewable energy capacity, aiming to achieve 50% non-fossil fuel-based power by 2030 and reach net-zero emissions by 2070. These goals, however, depend on a stable supply of critical minerals.
- Geopolitically, India is collaborating with the US, Australia, the EU, Argentina, Chile, the Quad, and the G20 to ensure reliable supply chains.
- Domestic production is being boosted through regulatory reforms, private investment, and auctioning critical mineral blocks, although substantial financial and technological investment is needed.
- To mitigate supply chain risks, India is adopting a dual approach – strengthening domestic production while expanding international partnerships.



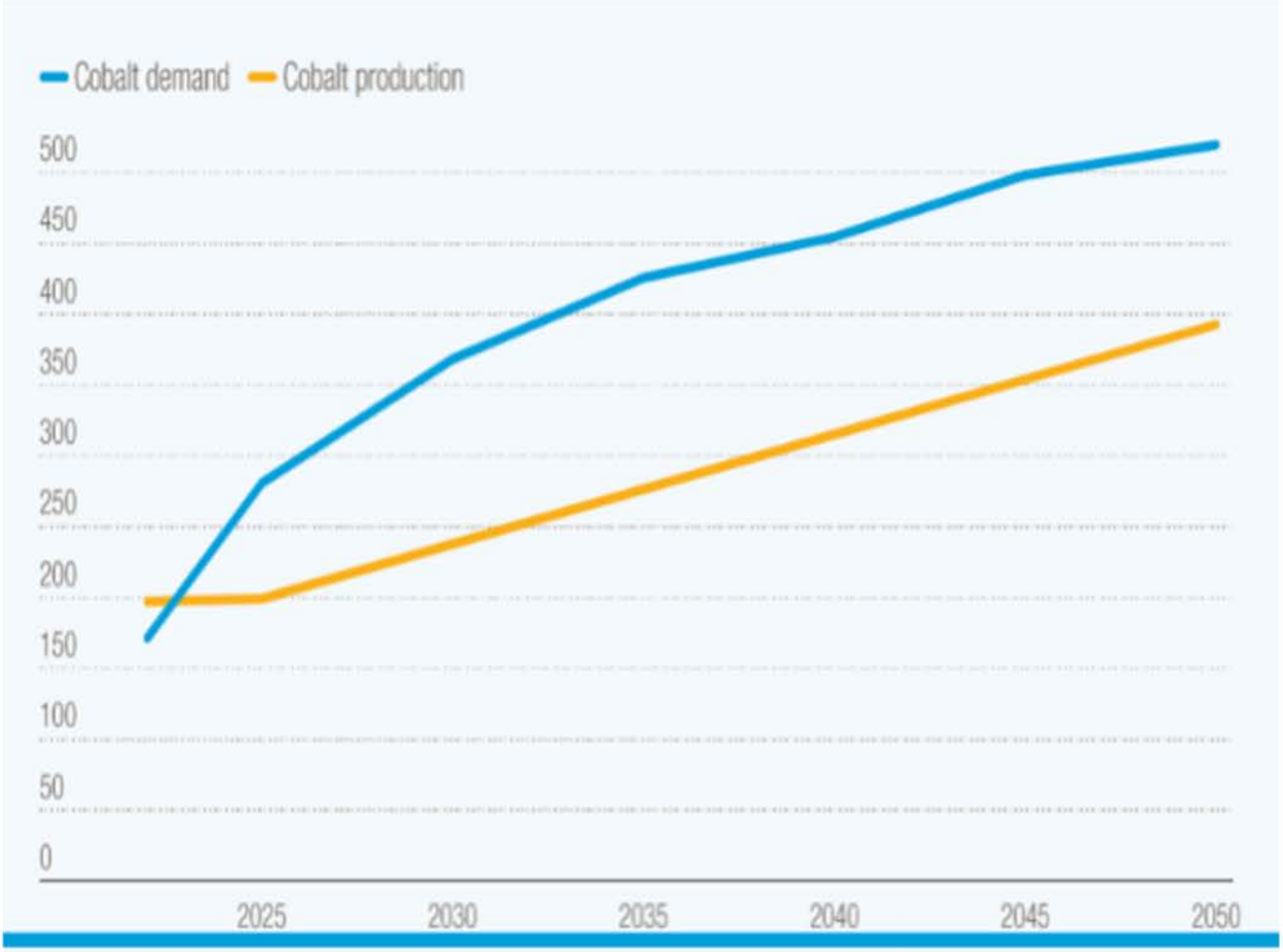
India's climate action targets:

- Reduce emissions intensity of GDP by 45% by 2030 (from 2005 levels).
- Achieve 50% of cumulative installed electric power capacity from non-fossil fuels by 2030.
- Generate 500 GW of non-fossil fuel power by 2030.
- Reach net-zero emissions by 2070.

The Ministry of Mines formed a seven-member committee in November 2022 to identify critical minerals for India. The committee conducted a three-stage assessment:

- **Study of global strategies:** Reviewed critical mineral lists from countries like the US, Australia, Canada, and South Korea, as well as domestic research from CSEP and CEEW.
- **Interministerial consultation:** Engaged with sectors like power, renewable energy, atomic energy, and electronics to identify minerals critical to their needs.
- **Criticality Index:** Developed using the EU methodology, considering economic importance and supply risk. Minerals like limestone, iron ore, and bauxite were also deemed critical.

The assessment identified 30 critical minerals based on economic importance, supply risk, and domestic production potential. These include antimony, cobalt, copper, lithium, nickel, rare earth elements (REE), and others. The committee recommends establishing a Centre of Excellence for Critical Minerals (CECM) under the Ministry of Mines to periodically update the list and execute strategies to develop the critical mineral value chain.



The government is tackling critical mineral challenges with a new Critical Minerals Mission, announced in the 2024 Union (Federal) Budget, aimed at developing domestic processing and refining capabilities. India's heavy reliance on critical mineral imports has prompted strides in boosting domestic capacity. To promote self-reliance, India is accelerating exploration and extraction of critical minerals, learning from past fossil fuel-related supply chain disruptions.

India's National Critical Minerals Mission (NCMM) is a comprehensive initiative aimed at securing critical minerals essential for the country's energy transition, technological advancement, and economic growth. It seeks to position India as a key player in the global mineral market.

Key features of the mission

1. Financial outlay:

- Total funding of 7 billion AUD over seven years (till FY 2030-31) including government expenditure and private investment.

2. Core objectives:.

- Increase domestic exploration and production of critical minerals like lithium, cobalt, nickel, and rare earth elements.
- Acquire overseas mineral assets through PSUs and private sector participation.
- Promote recycling of critical minerals from alternative sources such as industrial waste.

3. Regulatory and policy reforms:

- Fast-track approval processes for exploration and mining projects.
- Elimination of import duties on critical minerals to boost competitiveness.
- Establishment of mineral processing parks and a Centre of Excellence on Critical Minerals.

4. Research & development:

- ₹500 crore Indian rupees (AUD$91,653,200) allocated for R&D to develop advanced technologies for mineral processing and recycling.
- Collaboration with institutions like CSIR, IITs, and IISc to foster innovation.

5. Exploration projects:

- Undertaking 1,200 exploration projects and auctioning over 100 mineral blocks by 2031.

The critical minerals policies in India focus on two main aspects:

(i) Boosting domestic production:

- Amending the Mines and Minerals (Development and Regulation) Act to facilitate private sector exploration and mining of strategic minerals
- Auctioning critical mineral blocks to state-owned and private mining companies
- Establishing the National Mineral Exploration Trust (NMET) and setting reduced royalty rates

(ii) Securing international supply chains:

- Creating Khanij Bidesh India Ltd. (KABIL) to secure critical mineral supplies from other countries.
- Collaborating with international partners such as the USA, Australia, and the European Union. The delegation from KABIL visited Australia in 2023 during IMARC.
- The policy aims to address potential supply chain vulnerabilities and guide resource allocation and development priorities.

India is collaborating within the Quad (with the US, Japan, and Australia) to establish principles for clean energy supply chains in the Indo-Pacific. In June 2023, India joined the Minerals Security Partnership (MSP), a US-led initiative aimed at creating resilient and secure supply chains for critical minerals.

This partnership focuses on promoting sustainable mining practices, reducing dependency on single-source suppliers like China, and mitigating disruptions such as the COVID-19 pandemic and geopolitical tensions, including Russia's war in Ukraine. India's inclusion in the MSP is significant, reflecting its market size, growing role in global climate governance, and representation of the Global South.

The MSP offers India access to resources, technology, and investment, supporting its industrial growth and ambitious renewable energy goals. In 2021, India, Japan, and Australia launched the Supply Chain Resilience Initiative, aiming to identify alternatives to China in critical sectors. Within the Global South, India is also engaging with other resource-rich countries like Argentina and Chile, both through the MSP and independently. In January 2024, India's Khanij Bidesh India Ltd. (KABIL) signed a USD 24 million deal with Argentina for the rights to explore and develop five lithium blocks in Catamarca. This strengthens India's efforts to secure long-term access to vital resources in Latin America, supporting its critical mineral strategy.

Sl. No.	Critical Mineral	Percentage (2020)	Major Import Sources (2020)
1.	Lithium	100%	Chile, Russia, China, Ireland, Belgium
2.	Cobalt	100%	China, Belgium, Netherlands, US, Japan
3.	Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
4.	Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
5.	Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
6.	Germanium	100%	China, South Africa, Australia, France, US
7.	Rhenium	100%	Russia, UK, Netherlands, South Africa, China
8.	Beryllium	100%	Russia, UK, Netherlands, South Africa, China
9.	Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
10.	Strontium	100%	China, US, Russia, Estonia, Slovenia
11.	Zirconium(zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
12.	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
13.	Manganese	50%	South Africa, Gabon, Australia, Brazil, China
14.	Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
15.	Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

India's import reliance on critical materials (2020)
Source: Critical Minerals for India, Ministry of Mines, Government of India

Australia-India critical minerals roundtable context



Australia and India have a long-standing and robust relationship in the resources sector, marked by Australia's exports of bulk commodities and energy minerals, and India's reliance on Australian mining equipment, technology, and services (METS). Australia's 2019 critical minerals strategy aimed to position the country as a global leader in critical minerals. In June 2020, both countries elevated their relationship to a comprehensive strategic partnership, which included a memorandum of understanding (MoU) to enhance trade, investment, and R&D in critical minerals, focusing on information sharing, research collaboration, and building stable, secure supply chains. In November 2020, the first India-Australia Critical and Strategic Minerals Joint Working Group meeting formalised actions in these areas.

The Australia-India Economic Cooperation and Trade Agreement (AI-ECTA), operational from December 2022, eliminated tariffs on Australian critical minerals, providing India with better access to these resources.

A range of initiatives are being pursued in the critical minerals sector, including critical minerals research and investment partnerships aimed at strengthening supply chains, adding value to exports, and fostering collaboration on technology commercialisation. The METS industry market access program helps companies understand and navigate the South Asian market. Through its Global mining India challenge - Indian miners are connected with Australian solutions to address technical challenges.

Khanij Bidesh India Ltd. (KABIL) is a joint venture established under the Ministry of Mines, with participation from three Central Public Sector Enterprises: National Aluminium Company Ltd. (NALCO), Hindustan Copper Ltd. (HCL), and Mineral Exploration Company Ltd. (MECL). KABIL's primary objective is to secure a consistent supply of critical and strategic minerals for India's domestic market. It aims to ensure mineral security while supporting import substitution efforts.

KABIL is tasked with identifying, acquiring, exploring, developing, mining, and processing strategic minerals overseas for commercial use. It will source these minerals through trading opportunities, government-to-government collaborations, and strategic acquisitions or investments in exploration and mining assets in producing countries. KABIL is also working with the Australian government to identify opportunities in cobalt and lithium assets, ensuring a reliable supply of critical minerals for India.

Through a comprehensive three-stage assessment, 30 minerals have been identified as critical for India, including those essential for fertilisers and supporting India's energy transition and technological progress. This list will be regularly updated to align with India's resource and reserve position, ensuring it meets national priorities.

1. Antimony
2. Beryllium
3. Bismuth
4. Cadmium
5. Cobalt
6. Copper
7. Gallium
8. Germanium
9. Graphite
10. Hafnium
11. Indium
12. Lithium
13. Molybdenum
14. Niobium
15. Nickel
16. PGE
    - i. Platinum
    - ii. Palladium
    - iii. Rhodium
    - iv. Ruthenium
    - v. Iridium
    - vi. Osmium
17. Phosphorous
18. Potash
19. REE
    - i. Lanthanum
    - ii. Cerium
    - iii. Praseodymium
    - iv. Neodymium
    - v. Promethium
    - vi. Samarium
    - vii. Europium
    - viii. Gadolinium
    - ix. Terbium
    - x. Dysprosium
    - xi. Holmium
    - xii. Erbium
    - xiii. Thulium
    - xiv. Ytterbium
    - xv. Lutetium
    - xvi. Scandium
    - xvii. Yttrium
20. Rhenium
21. Selenium
22. Silicon
23. Strontium
24. Tantalum
25. Tellurium
26. Tin
27. Titanium
28. Tungsten
29. Vanadium
30. Zirconium

Source: Critical Minerals for India, Ministry of Mines, Government of India

India's partnership with the Australian critical minerals industry can strengthen supply chain security and drive prosperity. With India offering economies of scale for offtake projects and a pipeline of manufacturing-led innovation, Australian companies and institutions can collaborate with India to:

- Supply critical minerals and rare earths
- Attract investment for Australian mining and mineral processing projects
- Export services and technology for processing, refining, recovery, and recycling of critical minerals
- Assist with mineral exploration in India
- Support India's mining-related environmental management
- Conduct joint research projects



Key Discussion Themes

Critical Minerals

Critical minerals are a key strategic and economic asset. Supply chains are fragile, monopolies control markets, and policy misalignment slows progress. Australia has the resources; India has the demand – still we're not moving faster. Unlike mature commodities, critical minerals face complex value chains, concentrated power, and market-distorting policies. Factors like technology availability, viability of processing at mines, risk appetite, and access to capital dictate the viability of this sector. So, are the key issues –

- Is capital going where it's needed, or is risk appetite stalling growth?
- Are policies unlocking opportunities or creating bottlenecks?
- What regulatory shifts are essential for a competitive, resilient supply chain?
- What breakthroughs will define the sector's future?
- What are the market aspirations of critical mineral companies?
- What are the key hurdles, policy gaps, financing challenges, or market access barriers?

De-risking investments & financing mechanisms

- Enhancing bilateral agreements for secure, long-term supply of critical minerals
- Developing bilateral financial instruments like sovereign-backed funds, credit guarantees
- Encouraging blended finance models to attract private capital while mitigating geopolitical and market risks
- Strengthening financing frameworks through multilateral institutions and frameworks (eg. Quad, SCRI).

Enabling cross-border investment & JV structures

- Streamlining FDI policies to facilitate Australian investment in India's critical minerals sector and vice versa
- Structuring tax incentives, subsidies, and special economic zones (SEZs) to attract large-scale investments
- Identifying investment-ready projects for Australian superannuation funds and Indian institutional investors.

Developing critical minerals value chains & refining capacity

- Financing midstream and downstream processing infrastructure to reduce reliance on China and other third-party nations
- Supporting joint ventures for mineral beneficiation, battery-grade material production, and rare earth refining
- Exploring co-investment models for setting up industrial clusters near ports and strategic hubs.

Strengthening trade & investment agreements

- Leveraging the India-Australia economic cooperation and trade agreement (ECTA) to reduce trade barriers
- Aligning tax structures, duties, and royalties to create a seamless investment climate
- Facilitating policy certainty through long-term off-take agreements and investment protection treaties.

Mobilising private capital & institutional funding

- Attracting venture capital and private equity into critical mineral and innovation-driven projects
- Creating dedicated financial instruments like green bonds and sustainability-linked loans for ESG-compliant mining
- Establishing government-backed funds to co-invest with private players in high-potential critical mineral assets.

Current investment landscape

- Chinese investment (~US$60 billion) in Indonesia (nickel) and DRC (cobalt) has created oversupply, leading to depressed prices and limited Western investment
- Slower electric vehicle (EV) demand growth and regional protectionism are causing Western automakers to reassess electrification plans
- Financing new projects is more difficult; dependency on Chinese battery suppliers is increasing
- Countries aiming to benefit from critical mineral supply chains must clearly define their industrial strategy and value-add potential.

Approaches to engagement

- India follows a government-to-government (G2G) approach
- Australia prefers a business-to-business (B2B) model
- Financing is central to project viability
- China integrates strategic financing with offtake agreements, enabling dominance:

1. Leverages low-cost processing
2. Absorbs higher raw mineral prices
3. Creates overcapacity upstream to control input costs and capture downstream value

- Potential for Australia and India to collaborate through syndicated financing vehicles like NRF (National Reconstruction Fund) and CEFC (Clean Energy Finance Corporation).

Investment challenges in current climate

- Junior exploration companies heavily depend on equity markets
- Australian investors are guided by commodity price trends; higher prices attract more investment
- Rare Earths market is poorly understood compared to gold, copper, coal, and iron ore
- Rare Earths pricing is dominated by China, impacting project viability
- Despite long-term demand forecasts, current Rare Earth prices remain soft
- Alternative financing models will be essential to move projects beyond exploration and build resilient supply chains.

Recommendations

Adopt an integrated value chain strategy

- Support the full value chain - mining, processing, manufacturing - not just raw material extraction
- Map critical mineral supply chains for strategic industries (e.g., EVs, batteries, renewables)
- Establish a National critical minerals index to assess India's resource capacity, sourcing options, and value of minerals - similar to the National coal and minerals index
- Recognise that critical minerals require a manufacturing mindset, not a traditional mining approach.

Build strong international and bilateral partnerships

- Set up an Australia-India critical minerals forum to bring together governments, miners, processors, and end-users
- Facilitate long-term offtake agreements between Australian miners and Indian manufacturers/companies
- Given the current low prices of critical minerals, it is recommended that now is an opportune time for strategic acquisitions or offtake agreements. Taking advantage of these favourable market conditions would allow businesses to secure valuable resources at a lower cost, positioning them for long-term growth as demand for critical minerals rises
- Establish joint ventures for refining and battery material processing plants in India
- Promote Indian investment in Australian mining projects to secure upstream access
- Encourage joint R&D programs in mineral processing, battery recycling, and sustainability.

Mobilise diverse financing mechanisms & de-risk investments

- Offer targeted financial incentives:
  - Access to capital for early and mid-stage projects
  - Binding offtake agreements to attract investors
  - Risk-sharing frameworks to address political, market, and technical risks
- Educate and engage investors on the strategic importance and long-term value of critical minerals like Rare Earths
- Diversify funding sources:
  - Engage sovereign wealth funds, government-backed critical minerals initiatives, and industry-led investment pools
  - Explore blended finance models (e.g., KfW) - KfW, Germany's state-owned development bank, has become a key player in financing critical minerals projects to secure supply chains essential for the green energy transition and industrial needs. The bank operates both as a development financier (KfW Development Bank) and as a commercial lender (KfW IPEX-Bank), supporting projects aligned with Germany's and the EU's strategic interests.

Key features of KfW's critical minerals financing:

1. **Strategic objective:**
   - Secure long-term supply of critical raw materials (e.g., lithium, cobalt, nickel, rare earths) essential for EV batteries, renewable energy, semiconductors, and defence
   - Diversify supply chains to reduce dependency on China and mitigate geopolitical risks.

2. **Types of support:**
    - Debt financing (loans, project finance, export credits)
    - Equity investments in mining and processing projects
    - Public-private partnerships (PPP) to co-invest with German and EU industrial players
    - Offtake-backed financing where German industries commit to long-term purchasing agreements, enabling KfW to support upstream mining and processing.

3. **Focus areas:**
    - Financing projects outside Europe, particularly in Australia, Africa, Latin America, and Canada, that can supply critical minerals to Germany and Europe
    - Support for processing and refining capacities near mining sites to secure cleaner and traceable supply chains
    - Promoting environmental, social, and governance (ESG) standards in funded projects.

Define India's competitive role in global supply chains

- Clarify where India adds value – e.g., processing, manufacturing, recycling
- Focus on industrial logic, not just securing raw materials - build competencies aligned with national strengths
- Avoid "iron ore/coal mindset" - prioritise value-added participation over commodity import/export.

Build public-private hybrid models for long-term partnerships

- Combine public sector strategic vision with private sector capital and innovation to build resilient supply chains
- Align incentives for miners to accept lower initial returns in exchange for long-term financing and offtake security
- Accelerate joint ventures, co-investments, and R&D partnerships between India and Australia
- Promote pooled investment models among end-users to diversify risk and secure critical supply.

Improve communication and process clarity in India-Australia engagements

- Implement transparent timelines and consistent feedback loops in investment engagement processes
- Ensure timely communication, even for negative outcomes, to build trust and prevent resource wastage
- Define clearly which minerals are sought, at what stages of processing, and to what quality standards
- Align Australian capabilities with India's industrial and strategic needs.

Facilitate long-term offtake agreements and encourage end-user participation in upstream investments

- Combine public sector strategic vision with private sector capital and innovation to build resilient supply chains
- Align incentives for miners to accept lower initial returns in exchange for long-term financing and offtake security
- Accelerate joint ventures, co-investments, and R&D partnerships between India and Australia
- Promote pooled investment models among end-users to diversify risk and secure critical supply.

Raise awareness of emerging supply chain risks, enable new project development in stable jurisdictions

- Educate end-users on risks including:
  - Weaponisation of supply chains
  - Imminent shortages from lack of new projects
  - Reputational damage from unethical sourcing
- Emphasise the operational and brand consequences of supply chain vulnerabilities.
- Encourage investment in higher-cost but lower-risk jurisdictions with strong ESG and regulatory frameworks
- Promote a long-term view where stable supply outweighs initial cost advantages.

Establish B2B connectors for smaller companies

- Create intermediaries to connect smaller miners with major end-users, unlocking new supply opportunities
- Explore both government-backed and private-sector connector models with performance-based incentives.

Address key roadblocks to supply chain development

- Improve capital access for exploration and development projects
- Streamline permitting and regulatory approvals to reduce delays
- Strengthen mining's social licence to operate through public engagement
- Harmonise critical mineral classifications across jurisdictions
- Improve land access and security for new projects.

Unlock untapped opportunities

- Expand exploration and development in Australia, Europe, and North America
- Reclassify tin as a critical mineral in Australia to align with trading partners and strengthen supply chain resilience
- Boost government support for critical mineral projects via grants, tax incentives, and fast-track approvals.

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Collectively, these perspectives offer more than commentary, they form a practical blueprint for leveraging the India–Australia opportunity with focus, alignment, and execution.

REFERENCES

Looking Ahead: Australia–India Comprehensive Economic Cooperation Agreement (CECA)

- Government of India. (n.d.). Economic Survey of India. https://www.indiabudget.gov.in/economicsurvey/doc/echapter.pdf
- Government of Australia. (2024). Future Made in Australia – Budget 2024 Factsheet.https://budget.gov.au/content/factsheets/download/factsheet-fmia.pdf
- The Economist. (2024). Brainy Indians are piling into Western universities. https://www.economist.com/international/2024/06/20/brainy-indians-are-piling-into-western-universities
- CBRE. (n.d.). A Roadmap to the Future of Advanced Manufacturing in Asia-Pacific. https://www.cbre.com.au/insights/articles/a-roadmap-to-the-future-of-advanced-manufacturing-in-asia-pacific

Accelerating the Transition to Net Zero: Opportunities and Challenges Between Australia and India

- Solomon, M.B., Rabha, S.S., Fimbres-Weihs, G., Goyal, H., Taghikhah, F.R., Varghese, J.J., et al. (2024). Decarbonization in Australia and India: Bilateral Opportunities and Challenges for the Net Zero Transformation. ACS Engineering Au. https://doi.org/10.1021/acsengineeringau.3c00060
- Department of Climate Change, Energy, the Environment and Water (Australia). (n.d.). International Climate Action – International Partnerships. https://www.dcceew.gov.au/climate-change/international-climate-action/international-partnerships
- Dodd, T. & Harvey, W. (2023). The human factor: why Australia's net zero transition risks failing unless it is fair. The Conversation. https://theconversation.com/the-human-factor-why-australias-net-zero-transition-risks-failing-unless-it-is-fair-214064
- Institute for Energy Economics and Financial Analysis (IEEFA). (n.d.). Solar Rooftop in India: Shifting Gears from Laggard to Leader. https://ieefa.org/resources/solar-rooftop-india-shifting-gears-laggard-leader
- Australia National University & Sunrise CSP. (n.d.). Solar Steam System Collaboration at India's Cancer Hospital. https://ausindcasestudies.newlandglobal.com/

Australia–India: Bridging Workforce Gaps Through Mobility and Skilling

- Deloitte Access Economics & Settlement Services International. (2024). Billion Dollar Benefit: The Economic Impact of Unlocking the Skills Potential of Migrants in Australia. https://www.ssi.org.au/wp-content/uploads/2024/06/DAE_SSI_Skills_Mismatch_Report_19062024_WEB.pdf
- Barrett, B. (2024). Opportunities for Transnational VET in India: Insights for Australia. Australia India Institute. https://aii.unimelb.edu.au/opportunities-for-transnational-vet-in-india-insights-for-australia/
- Jansens, M. (2024). Engaging With India's Skill Development System: Australia VET Experiences. Australia India Institute. https://aii.unimelb.edu.au/engaging-with-indias-skill-development-system-australia-vocational-education-and-training-vet-experiences/
- Jansens, M. (2023). Mapping Higher Education Engagement Between Australia and India: A Compendium. Australia India Institute. https://aii.unimelb.edu.au/mapping-higher-education-engagement-between-australia-and-india-a-compendium/
- Australian Government. (2024). Joint Media Release: WA to Host First TAFE Clean Energy Skills National Centre of Excellence. https://www.dewr.gov.au/ministers-media-centre

Building Advanced Manufacturing Capabilities Between Australia and India

- Observer Research Foundation (ORF). (2023). Can Advanced Manufacturing Change the Game in India–Australia Relations? https://www.orfonline.org/expert-speak/can-advance-manufacturing-change-the-game-in-india-australia-relationship-65562
- Advanced Manufacturing Growth Centre (AMGC). (n.d.). https://www.amgc.org.au/
- CBRE. (n.d.). A Roadmap to the Future of Advanced Manufacturing in Asia-Pacific. https://www.cbre.com.au/insights/articles/a-roadmap-to-the-future-of-advanced-manufacturing-in-asia-pacific
- Pharmaceuticals Sector | Make in India. (n.d.).
- https://www.makeinindia.com/sector/pharmaceuticals
- Electric Vehicles Initiative (IEA). (n.d.). Global Electric Vehicle Policy Forum. https://www.iea.org/programmes/electric-vehicles-initiative
- Fortune Business Insights. (n.d.). Digital Transformation Market Size, Share, Growth Report(2028). https://www.fortunebusinessinsights.com/digital-transformation-market-104878

Australia–India Critical Minerals Partnership: Addressing Key Challenges, Shaping Practical Solutions

- Cohen, J. (2023). Resource Realism: The Geopolitics of Critical Mineral Supply Chains. Goldman Sachs.https://www.goldmansachs.com/insights/articles/resource-realism-the-geopolitics-of-critical-mineral-supply-chains
- Kumar, A. (2024). India's Critical Mineral Mission: Quo Vadis? ORF. https://www.orfonline.org/expert-speak/india-s-critical-mineral-mission-quo-vadis
- Ministry of Mines, Government of India. (2023). Committee Report on Identification of Critical Minerals. https://mines.gov.in/admin/download/649d4212cceb01688027666.pdf
- Austrade. (2025). Australian Critical Minerals Prospectus. https://international.austrade.gov.au/en/do-business-with-australia/sectors/energy-and-resources/critical-minerals/prospectus
- Institute of South Asian Studies (NUS). (2025). India–Australia Cooperation on Trade in Critical Minerals. https://www.isas.nus.edu.sg/papers/india-australia-cooperation-on-trade-in-critical-minerals/
- Bhaskar, N.J. (2023). Examining the Potential of India–Australia Partnerships in Mining. ORF. https://www.orfonline.org/research/examining-the-potential-of-india-australia-partnerships-in-mining
- Bhaskar, N.J. & Rughani, D. (2025). De-risk, Don't Decouple: Rethinking Australia–India Mineral Strategy. NDTV. https://www.ndtv.com/opinion/de-risk-dont-decouple-rethinking-australia-india-mineral-strategy-8195342

APPENDICES

Appendix 1: Participating institutions & company profiles

Newland Global Group (NGG) established in 2010, is Australia's leading corporate advisory firm with a focus on SIMPLIFYING and STRENGTHENING trade and investment ties between Australia and India. Building market literacy, creating connections and capabilities, and matching bilateral domestic priorities with competitive strengths led by tangible outcomes are integral to NGG's work. Their core focus is on assisting clients with advisory and action and deepening insights and intelligence with its focused advocacy work. With experience of advising 300+ public and private companies, NGG specialises in developing tailored solutions for its clients. Their expertise spans Corporate Advisory Services, Market Entry Strategies, Mergers and Acquisitions, and Joint Ventures all grounded in detailed market opportunity assessments and well-established government and industry networks. NGG also makes informed contributions on Australia-India economic ties, to national and international think tanks and media platforms. Through the depth of their engagement and initiatives, their aim to create the greatest value for their clients. One of NGG's most important achievements has been to cut through anecdotal assumptions with hard data.

Association of Mining and Exploration Companies (AMEC) is a national association representing approximately 600 member companies from all around Australia. Their members are explorers, emerging miners, producers, and a wide range of businesses and service providers working in and for the industry. AMEC works to reduce the cost of doing business, reduce regulatory obstacles, and to support an increase in exploration, discovery, and mining opportunities in Australia. AMEC has the largest and most diverse membership in the resource industry, with proven influence and the credibility to create positive change for the industry. The Australian government has implemented several initiatives to bolster this sector, aiming to position the country as a leading supplier of critical minerals. AMEC successfully campaigned for a Critical Minerals Production Tax Credit.

Cobalt Blue Holdings Limited (COB) is an ASX listed mining and mineral processing company focussed on the development of a Cobalt-Nickel Refinery in Western Australia, the Halls Creek Project in Western Australia, the Broken Hill Cobalt Project in New South Wales and ReMine+ globally (with a view to global opportunities contained in mine waste). COB is at the forefront of mineral processing innovation, with a vision to apply that innovation to non-traditional opportunities.

Godolphin Resources is an ASX listed resources company, with 100% controlled Australian-based projects in the Lachlan Fold Belt ("LFB") NSW, a world-class gold-copper and rare earth province. Godolphin Resources has a strategic focus on critical minerals and metals required for the energy transition through ongoing exploration and development across it's 3,500km2 tenement package in the central west NSW. Specifically, Godolphin Resources has recently been progressing the Narraburra Rare Earth Project near Temora and the Lewis Ponds Gold, Silver and base metals project northeast of Orange. Both projects have defined MRE's (Mineral Resource Estimates) and demonstrated extraction pathways, with favourable metallurgy.

Sunrise Energy Metals is developing the Sunrise Battery Materials Project in central-west NSW (400km west of Sydney). ASX listed, Sunrise ranks as one of the largest nickel-cobalt projects in the world. It is fully permitted, with a completed feasibility study and engineering completed. It is designed to run on renewable power and will have one of the lowest CO2 footprints of any nickel mine in the world. The Sunrise deposit also hosts the world's largest resources of scandium, a specialty alloy that transforms the properties of aluminium by making it stronger, corrosion resistant, more extrudable and weldable. It is also a key ingredient in semiconductors, enabling 5G/6G mobile communications technologies.

First Tin is an ethical, reliable and sustainable tin development company with advanced, low capex projects in Germany and Australia, led by a team of renowned tin specialists. The Company is focused on becoming a tin supplier in conflict-free, low political risk jurisdictions through the rapid development of high value, low capex tin assets in Germany and Australia.
First Tin's goal is to use best-in-class environmental standards to bring two tin mines into production in three years, providing provenance of supply to support the current global clean energy and technological revolutions, for which tin is critical.

The Australian Trade and Investment Commission (Austrade) promotes Australian trade, investment, tourism and education to the world. Austrade delivers services to grow Australia's economic prosperity. They connect Australian businesses to the world and the world to Australian business. Their global network turns local market connections and insights into valuable export and investment support. They contribute to Australia's prosperity by linking Australian businesses to global export opportunities, providing market and industry insights, making it easier for businesses to go global, attracting international investment to drive local jobs and develop skills, leading policy and programs for Australian tourism and the visitor economy, attracting international students to study with Australia.

The Australia India Institute (AII) is Australia's leading centre dedicated to enhancing Australia-India relations. AII aims to increase the policy and public importance of India as a crucial partner in Australia's future, and of Australia as a crucial partner in India's future. Their activities across the academic, political, business and community sectors have helped to shape engagement with India among Australian decision makers, change perceptions about Australia in India, promote trade and investment and activate bilateral networks.

Governance Institute of Australia (GIA) is the only independent professional association with a sole focus on whole-of-organisation governance. It advocates for a community of governance and risk management professionals, equipping over 7,500 members with the tools to drive better governance within their organisation. As the only Australian provider of chartered governance accreditation, GIA offers a range of short courses, certificates and postgraduate study to help further the knowledge and education of the fast-growing governance and risk management profession.

The Australian Institute of Company Directors (AICD) is home of the largest governance community in the world. Their mission is to strengthen society through world-class governance. With a national presence across all Australian states and territories, the AICD is positioned to support directors and organisations across the country.

Critical Minerals Office (CMO) provides national policy and strategic advice and facilitation services for industry to grow Australia's critical minerals industry. CMO is the Australian Government's central coordination point to:

- grow Australia's critical minerals sector
- promote Australia as a secure, reliable and ethical critical mineral's supplier
- provide national policy and strategic advice
- connect Australian critical minerals projects to:
  - investors
  - regulators
  - government financing facilities
  - Australia's strategic partners.

CSIRO, Australia's national science agency, has an established history in mineral resources research spanning the value chain from exploration and processing of critical minerals to manufacturing and integration of renewable energy technologies and energy storage. As part of the updated India Economic Strategy (IES) to 2035, CSIRO manages two Australian Government-funded research and development (R&D) partnerships currently funded until June 2026: The India Australia Green Steel Research Partnership focused on reducing greenhouse gas emissions in steelmaking and India Australia Critical Minerals Research Partnership (IACMRP) focused on sustainable and resilient supply chains for critical minerals and materials. A major aim of the partnerships is to develop networks which will endure and form the basis for collaboration to address issues of importance to both Australia and India, contributing to diversified, resilient and responsible critical mineral supply chains and green steel production. In turn, creating new jobs and industries for both nations.

NSW Resources is a group within the Department of Primary Industries and Regional Development, which supports the productive growth of primary industries, the sustainable management of natural resources, and the resilience, economic development and wellbeing of the regions. NSW Resources aims to support and grow safe and sustainable exploration and mining in NSW.

Investment NSW has a mandate to deliver on the NSW Government's priorities to build a strong economy, attract local and international investment and help NSW businesses find new export markets. Working across key industries, their aim is to reinforce NSW's global position as a safe and attractive place to do business and accelerate investment in priority sectors such as Net Zero, Technology, Advanced Manufacturing, International Education, Med Tech and Life Sciences, Agri-business and Defence and Aerospace. One of their main drivers is to act as a single point of entry for private sector proposals for working with the NSW Government and a concierge service that guides investors where they need to be.

Business NSW (BNSW) is the state's peak body for business. Founded in 1826, BNSW help facilitate growth and deliver government advocacy on behalf of 100,000 NSW businesses. Working closely with members, BNSW identifies the key issues impacting them and find practical policy solutions to ensure they prosper and grow.

FBICRC was established in 2019 through the Australian Government's Cooperative Research Centre Program. It has brought together 70 participants across 15 research projects and are the largest partnership of industry, government and researchers focused on battery industries in Australia. The projects are valued at $120million and span the value chain from mining through to processing, manufacture, services and recycling and reuse of batteries. Their aim is to capture the significant economic opportunities for Australia from the growing battery industry and address the challenges associated with the energy transition.

RSM Australia is a member of RSM, the world's sixth-largest network of assurance, tax, and consulting firms. With a presence in Australia spanning 32 offices and a team of over 1,900 professionals, the firm provides comprehensive expertise across a range of industries. As part of a leading global network, RSM Australia leverages shared skills, insights, and resources while maintaining a client-centric approach rooted in a deep understanding of each business.

Advanced Manufacturing Growth Centre (AMGC) is an industry-led, not-for-profit organisation established through the Australian Government's Industry Growth Centres Initiative. AMGC's vision is to transform Australian manufacturing to become an internationally competitive, dynamic and thriving industry with advanced capabilities and skills at its core. Through the delivery of its world-leading research, Manufacturing Academy, workshops, and ground-breaking projects, AMGC aims to develop a highly skilled and resilient local manufacturing industry that delivers high-value products – via the integration of innovative technology – to domestic and international markets.

Rinstrum excels in providing quality products and a range of smart weighing solutions from weighing indicators for industrial applications to customised solutions for automating weighing processes. Headquartered in Australia, with operations in the United States, Sri Lanka and Europe.

Callington Group of Companies is a family-operated business and has been since 1968, specialising in the development, manufacture, and marketing of innovative, speciality chemical solutions to the aviation, metalworking, welding metal treatment, industrial, fuel additive, and non-destructive testing industries. With operations in Australia, the USA, Europe, the Middle East, Africa, Asia, and South America. Callington is a 100% Australian-owned OEM company maintaining accreditation as an Australian Trusted Trader and ISO 9001 / ISO 14001 certified company whose products comply with international specifications and approvals, including Boeing, Airbus, McDonnell Douglas, and military specifications.

OmniTanker is an Australian company that designs and manufacture specialised tanks for transporting dangerous chemicals using composite materials technology. The company developed patented materials technology which combines thermoplastic materials and fibre reinforced polymers (such as fibreglass) to create a tank with high chemical resistance, safety and lightweight. These tanks replace traditional rubber lined steel or fibreglass tanks. Omni Tanks provide a compelling value proposition for companies transporting aggressively corrosive chemicals such as bleach and hydrochloric acid. The benefits to the end user are both qualitative (safety, durability) and quantitative (lighter, ability to washout, lower maintenance costs). The company has a dominant position in the Australian market as the main supplier and 80%+ market share in the corrosive chemicals segment. Omni Tanker is exporting to North America and Europe which includes road tankers and intermodal ISO and SWAP tanks. Omni Tanker has made initial investigations into the Indian chemical transport market and understands that India operates the same legacy equipment which Omni Tanker has displaced in Australia and is replacing in USA and Europe.

Harvest B is a food technology company based in Sydney, focused on creating sustainable protein foods. The company aims to accelerate the transition to a more sustainable food system through innovations that reduce the environmental footprint of food production while delivering high-quality nutrition. While the company is not yet active in the Indian market, they see significant potential for future partnerships, particularly in bringing its food technology to India. As the global demand for sustainable and affordable protein solutions grows, the company believes that Harvest B's expertise can support India's evolving food industry and manufacturing capabilities.

Romar Engineering is a multi-capability manufacturer that address the space, defence, transport, medical, materials and food sectors. It is able to do so through the application of advanced machinery, processes and skills. Romar is renowned in Australia for its expertise in manufacturing silicone, elastomers, plastics and all metal products. Their capabilities extend to advanced and additive manufacturing, clean room, precision moulding and micromolding. They design for manufacture that reduces waste and improves product efficiency.

ICT International is a science-led innovation company that designs and manufactures the world's best monitoring and evaluation solutions focused on plant water use, plant water potential, and soil moisture management. For over 40 years, ICT International has been applying scientific first principles to the design and development of advanced measurement instruments and solutions for soil, plant, and environmental parameters. As a result, ICT International boasts a global client base spanning over 50 countries, monitoring vegetation present in diverse ecosystems spanning frozen tundras to arid plains, and everything in between. With a commitment to sustainability, ICT International empowers global action towards a sustainable future by providing cutting-edge tools that enable informed decisions in agriculture and environmental management. Through its innovative approach, the company plays a crucial role in optimising resource use and enhancing productivity in various sectors.

Vaxxas is a privately held, Australian company developing a needle-free vaccine technology focused on enhancing the performance of existing and next-generation vaccines. The company was founded in 2011. Today, its team of more than 150 highly skilled scientists, engineers, regulatory, quality and support staff are based in the USA and Vaxxas global HQ and modern manufacturing facility in Hamilton Business Park in Brisbane. HD-MAP (High Density – Micro Array Patch) technology is designed for simple administration of vaccines by healthcare workers and potentially individuals through self-administration and represents a needle-free future for vaccines.

Kinaltek Pty Ltd is an innovation company specialising in novel technologies for materials synthesis, with a focus on low-cost and sustainable techniques for direct production of metal powders. Kinaltek has a world-first proprietary platform technology for low-temperature reduction of metal oxides and chlorides, capable of producing metallic systems based on 27 different elements. Nanovace is a joint venture between Kinaltek (Australia) and PCBL Ltd (India). At Nanovace, they enable the adoption of high-performance EV silicon batteries by leveraging their proprietary technology for superior performance at competitive costs. The patented process converts silica, Si-carbon, and Si-graphite precursors into battery-grade nano silicon and nano Si-carbon composites using less than one-fifth the energy of conventional methods.

Appendix 2: State of play

Mineral needs vary widely across clean energy technologies

Critical mineral needs for clean energy technologies

	Copper	Cobalt	Nickel	Lithium	REEs	Chromium	Zinc	PGMs	Aluminium*
Solar PV	●	○	○	○	○	○	○	○	●
Wind	●	○	◍	○	●	◍	●	○	◍
Hydro	◍	○	○	○	○	◍	◍	○	◍
CSP	◍	○	◍	○	○	●	◍	○	●
Bioenergy	●	○	○	○	○	○	◍	○	◍
Geothermal	○	○	●	○	○	●	○	○	○
Nuclear	◍	○	◍	○	○	◍	○	○	○
Electricity networks	●	○	○	○	○	○	○	○	●
EVs and battery storage	●	●	●	●	●	○	○	○	●
Hydrogen	○	○	●	○	◍	○	○	●	◍

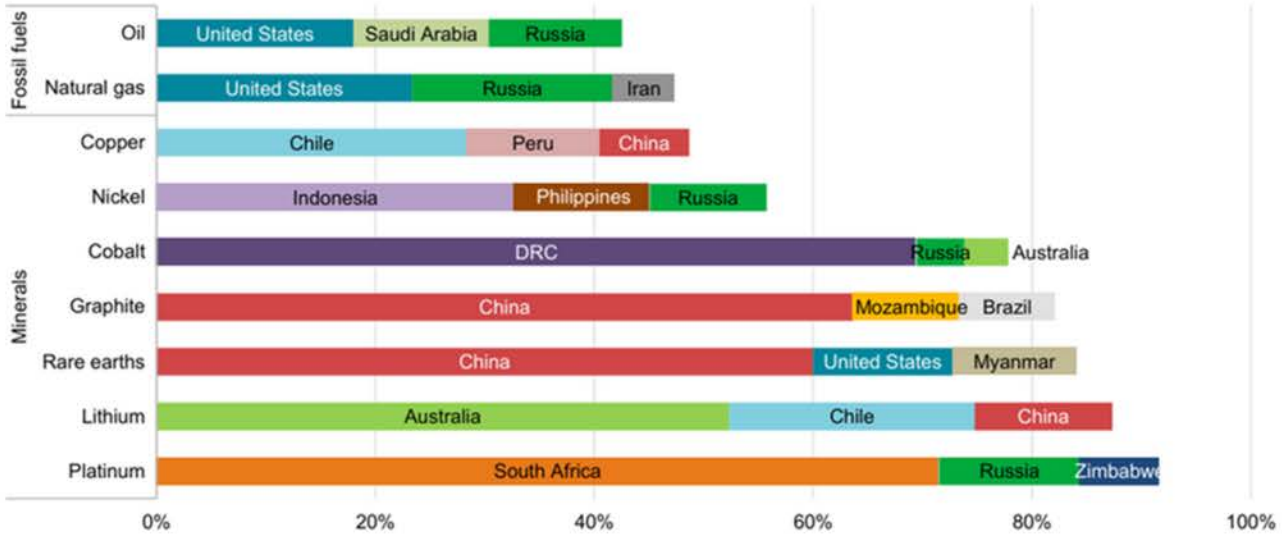
Notes: Shading indicates the relative importance of minerals for a particular clean energy technology (● = high; ◍ = moderate; ○ = low), which are discussed in their respective sections in this chapter. CSP = concentrating solar power; PGM = platinum group metals.

* In this report, aluminium demand is assessed for electricity networks only and is not included in the aggregate demand projections.

Appendix 3:

Current production of many energy transition minerals is more geographically concentrated than that of oil or natural gas

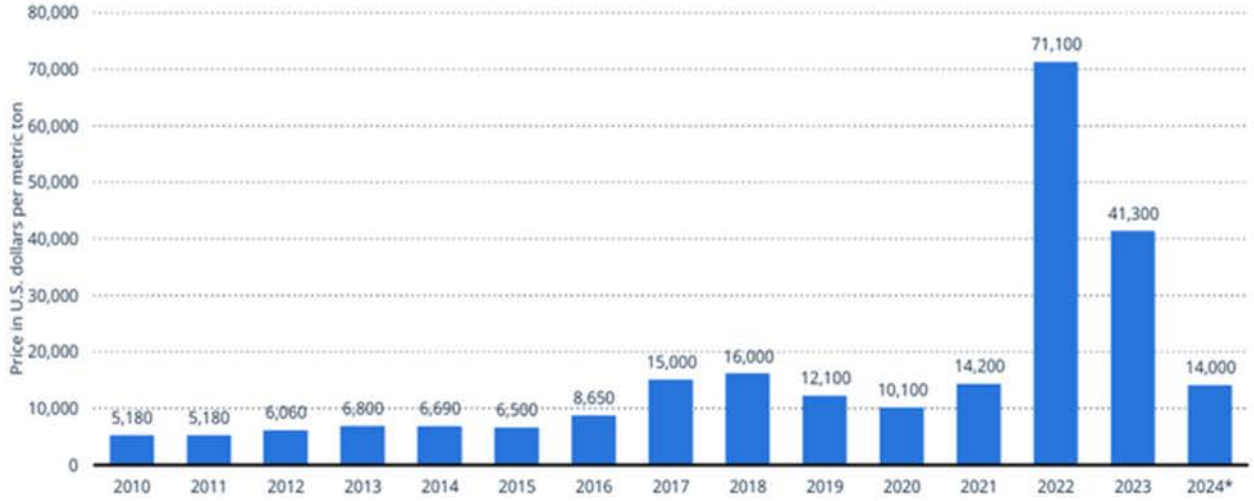
Share of top three producing countries in total production for selected minerals and fossil fuels, 2019



Appendix 4: Global prices

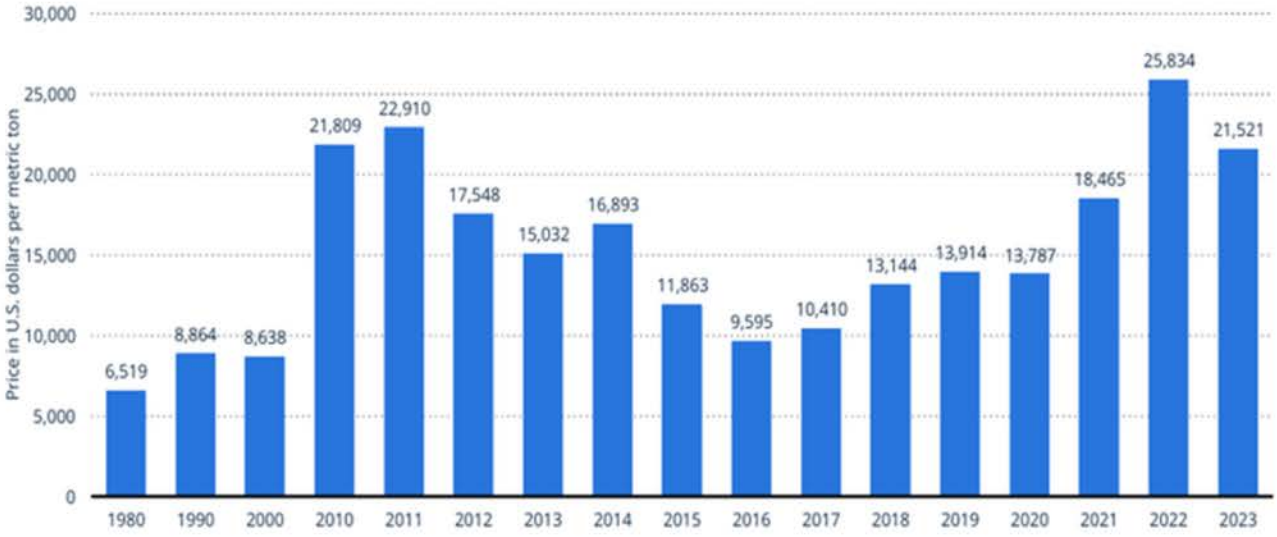
Average lithium carbonate price from 2010 to 2024 (in U.S. dollars per metric ton)

Lithium carbonate price 2010-2024



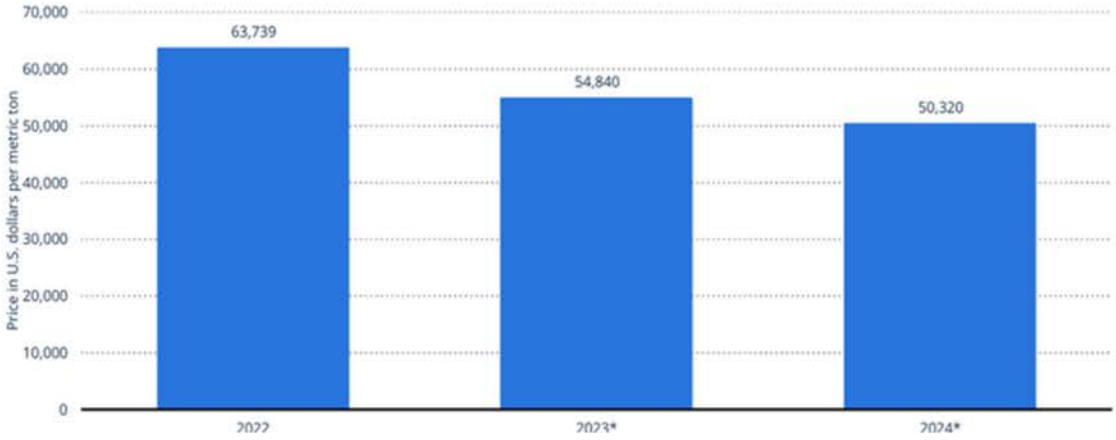
Average nickel prices from 1980 to 2023 (in U.S. dollars per metric ton)

Nickel prices 1980-2023



Price of cobalt worldwide in 2022, with a forecast for 2023 and 2024 (in U.S. dollars per metric ton)

Global cobalt price forecast 2022-2024



Average price of selected rare earth oxides from 2015 to 2024 (in U.S. dollars per kilogram)

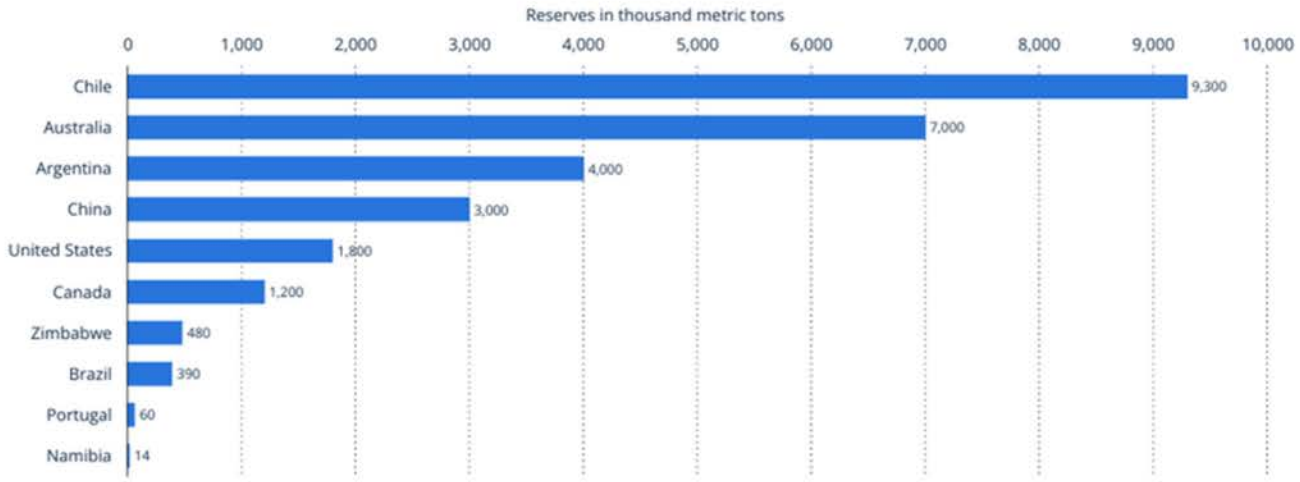
Rare earth oxides average price 2015-2024

Rare earth oxide	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
Terbium oxide, 99.99% minimum	564	415	501	455	507	670	1300	2051	1298	810
Dysprosium oxide, 99.5% minimum purity	279	198	187	179	239	261	400	382	330	260
Neodymium oxide, 99.5% minimum	48	40	50	50	45	49	49	134	78	56
Europium oxide, 99.9% minimum purity	344	74	77	53	35	31	31	30	27	27
Mischmetal, 65% cerium, 35% lanthanum	7	5	6	6	6	5	6	7	5	5
Lanthanum oxide, 99.5% minimum purity	3	2	2	2	2	2	2	1	1	1
Cerium oxide, 99.5% minimum purity	3	2	2	2	2	2	2	1	1	1

Appendix 5: Lithium

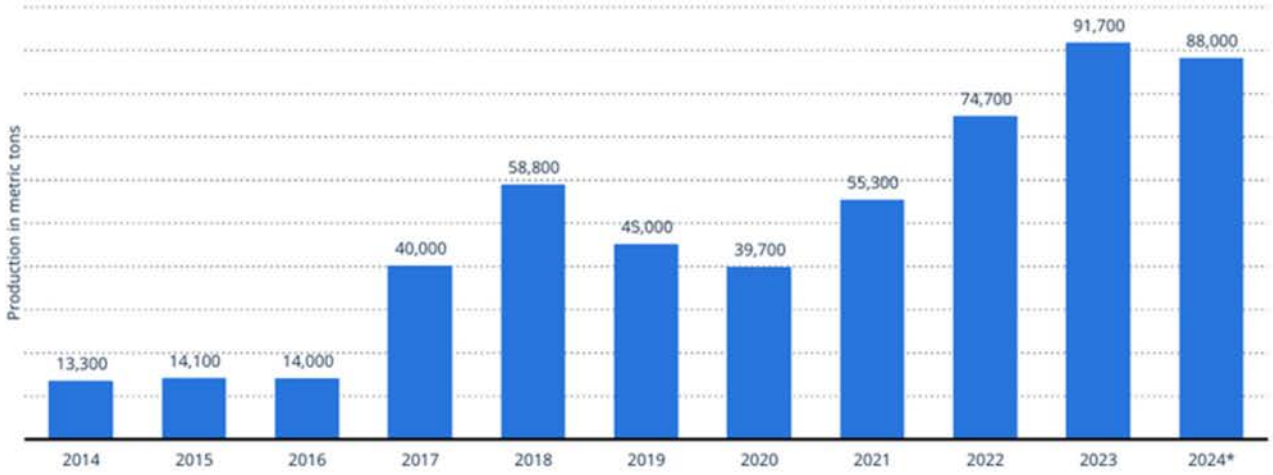
Reserves of lithium worldwide as of 2024, by country (in 1,000 metric tons)

World lithium reserves 2024, by country



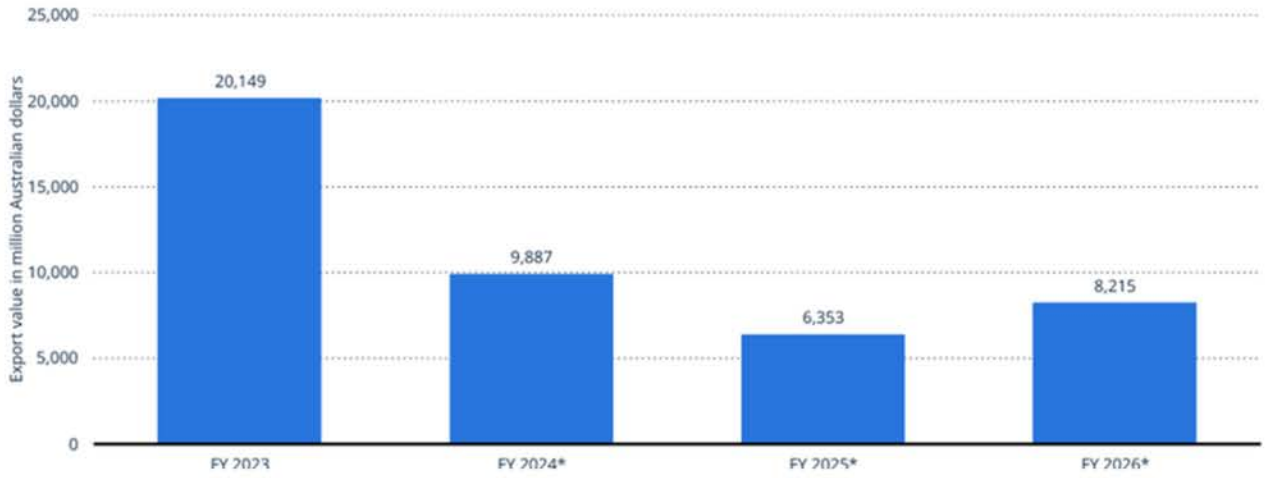
Mine production of lithium in Australia from 2014 to 2024 (in metric tons)

Lithium production volume in Australia 2014-2024



Export value of lithium in Australia from financial year 2023 to financial year 2024, with a forecast until 2026 (in million Australian dollars)

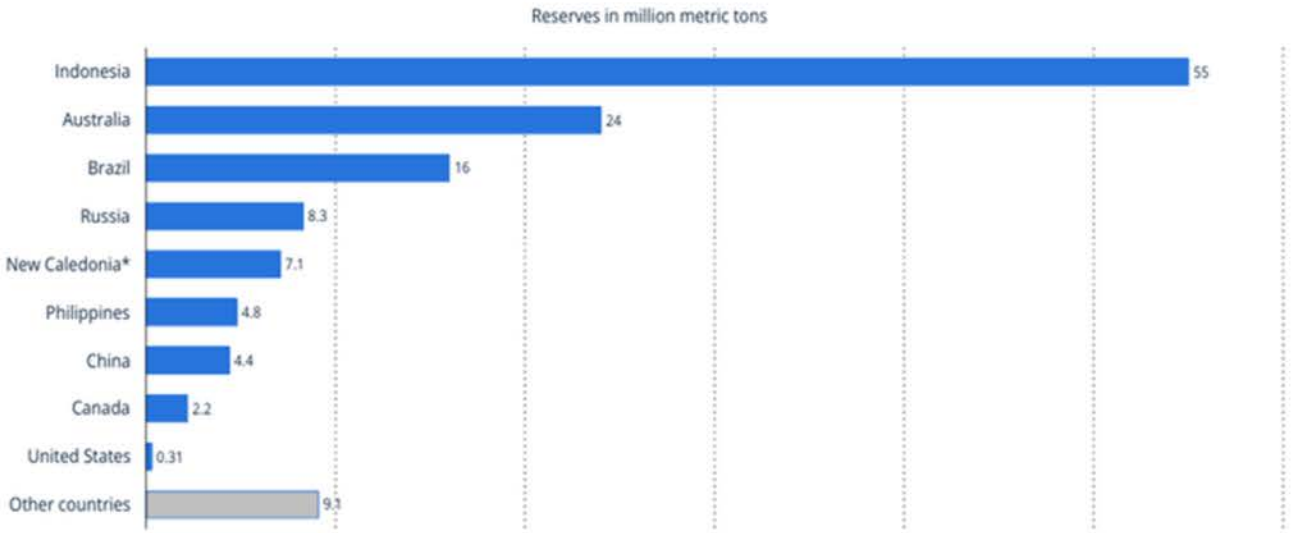
Export value of lithium in Australia FY 2023-2026



Appendix 6: Nickel

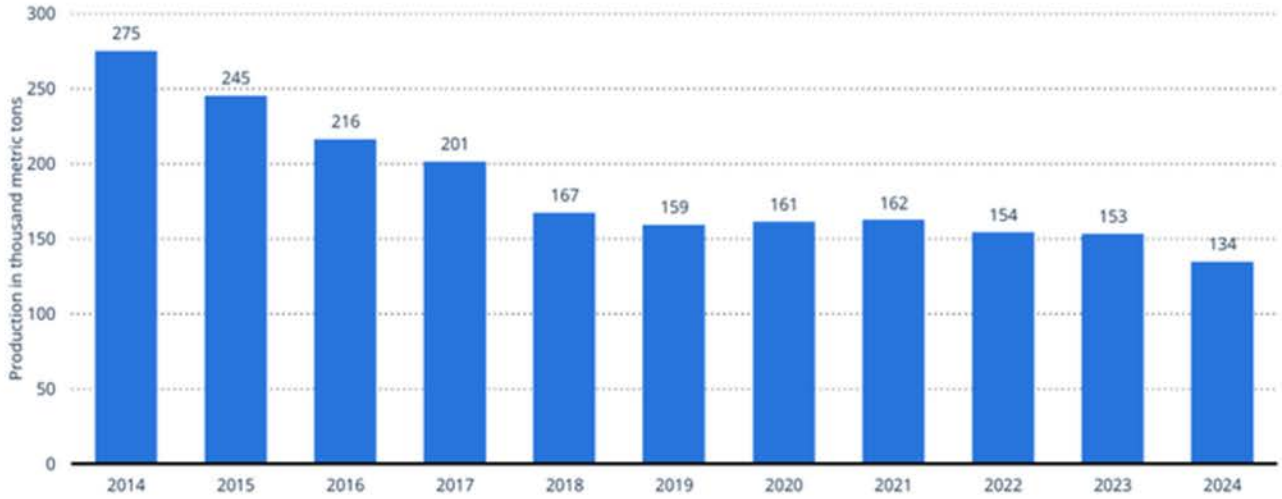
Leading countries based on nickel reserves worldwide as of 2024 (in million metric tons)

Global nickel reserves 2024, by country



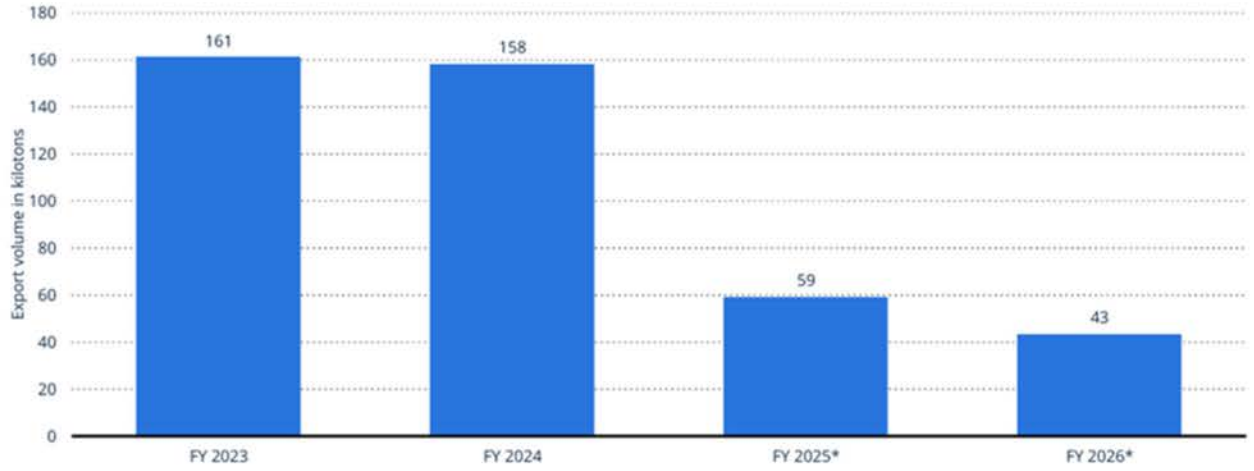
Production of nickel from mines in Australia from financial year 2014 to 2024 (in 1,000 metric tons)

Nickel production from mines Australia FY 2014-2024



Export volume of nickel from Australia from financial year 2023 to financial year 2024 with a forecast until 2026 (in kilotons)

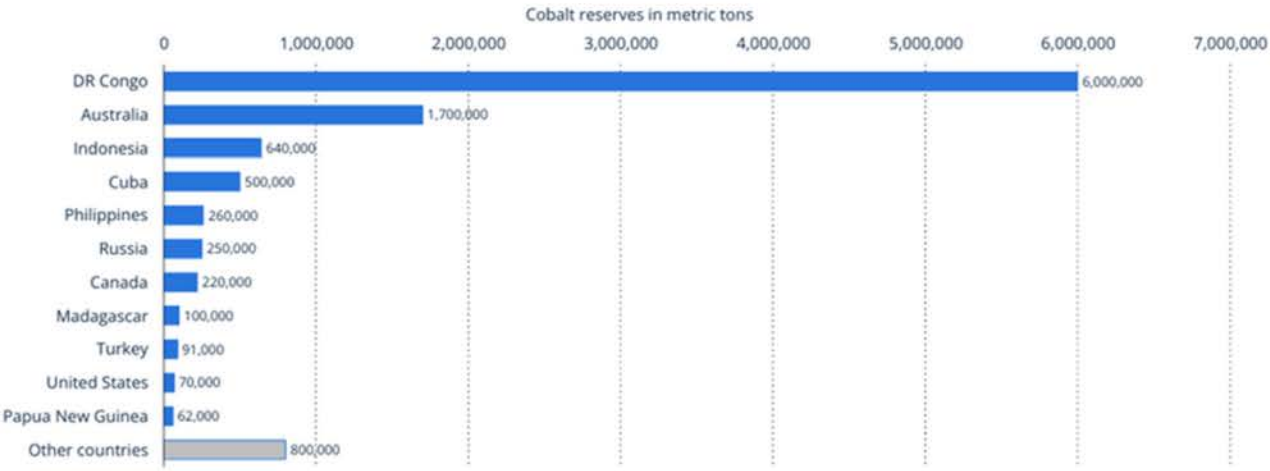
Export volume of nickel in Australia FY 2023-2026



Appendix 7: Cobalt

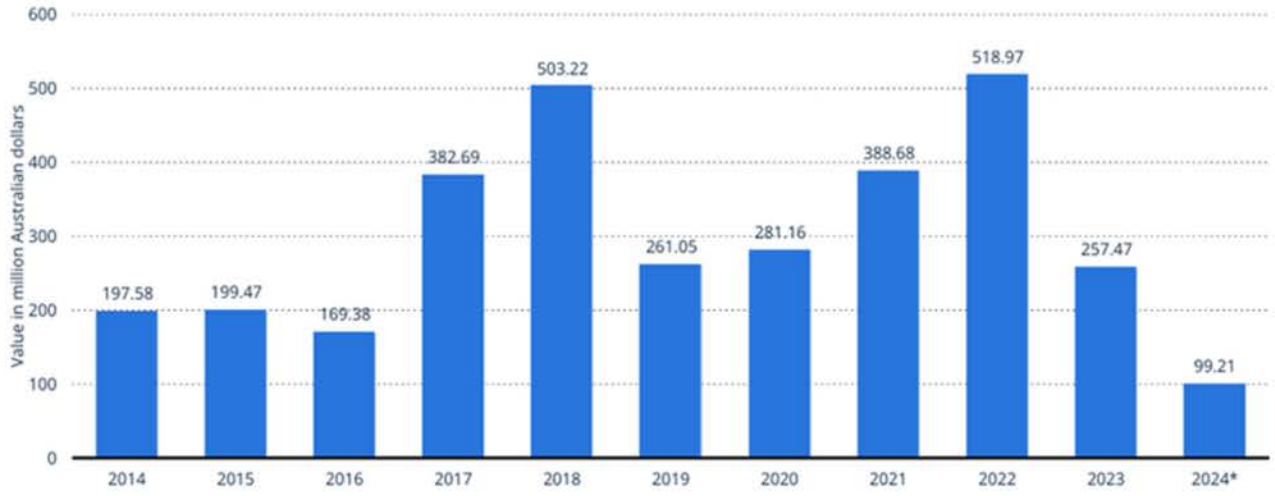
Leading countries based on reserves of cobalt worldwide in 2024 (in metric tons)

Global cobalt reserves 2024, by country



Value of cobalt mined in Western Australia from financial year 2014 to 2024 (in million Australian dollars)

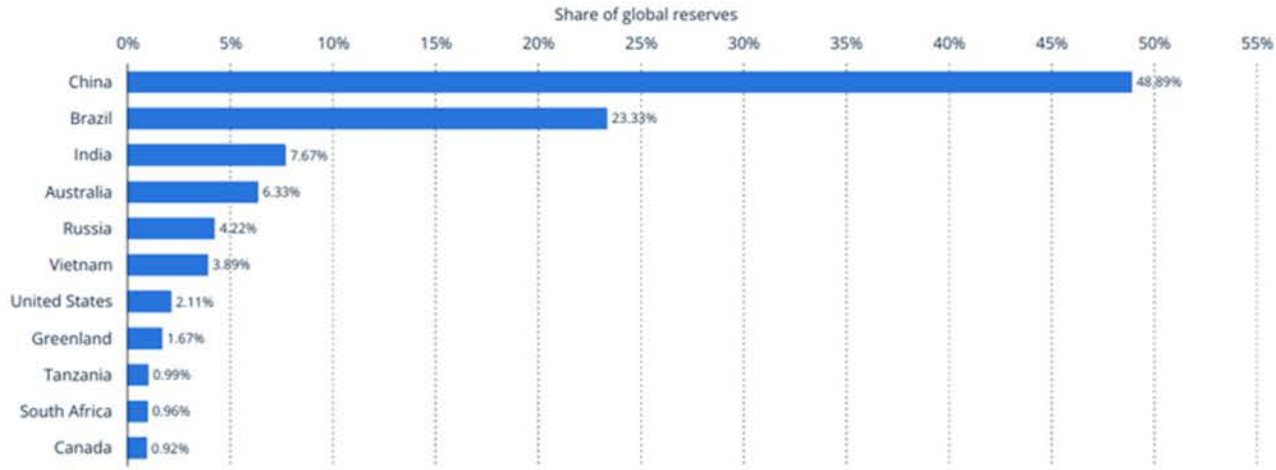
Value of cobalt mined in Western Australia FY 2014-2024

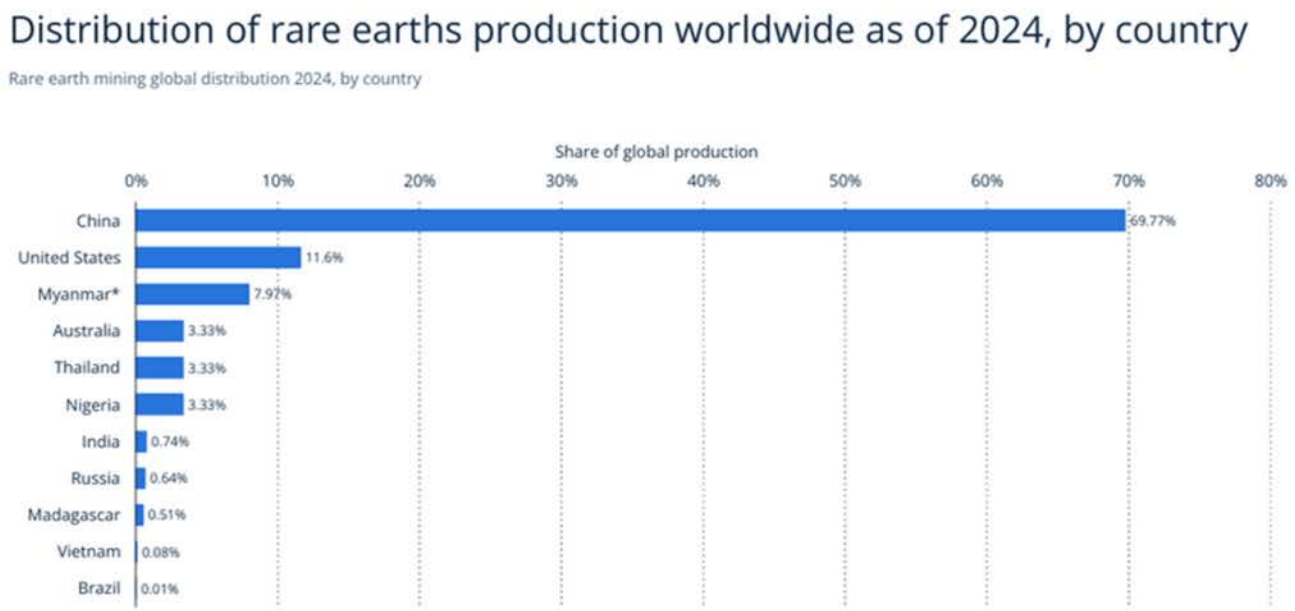


Appendix 8: Rare earth elements

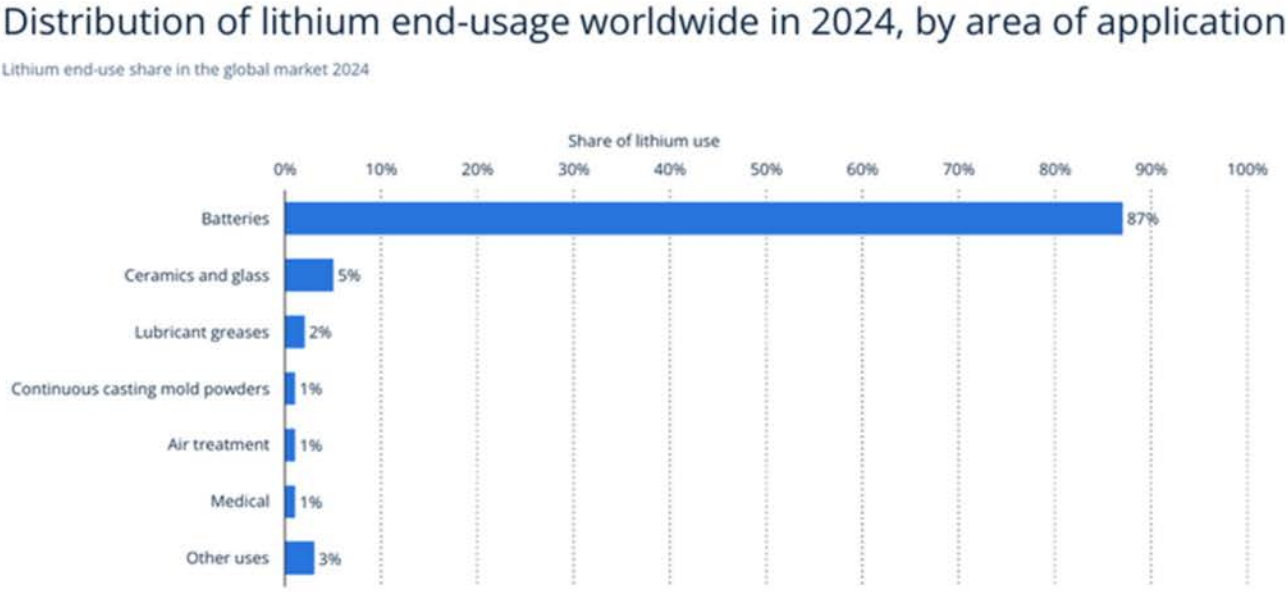
Distribution of rare earth oxide reserves worldwide in 2024, by country

Rare earths distribution of global reserves 2024, by country



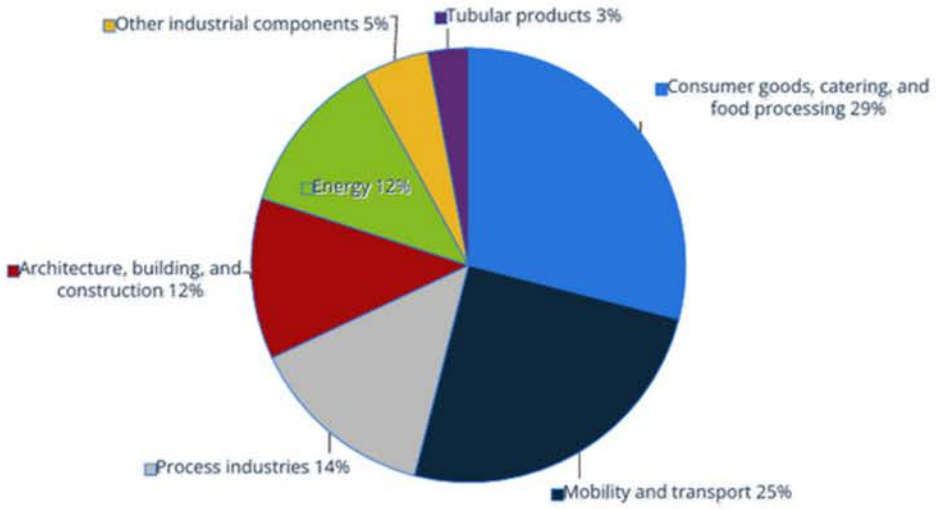


Appendix 9: End use applications



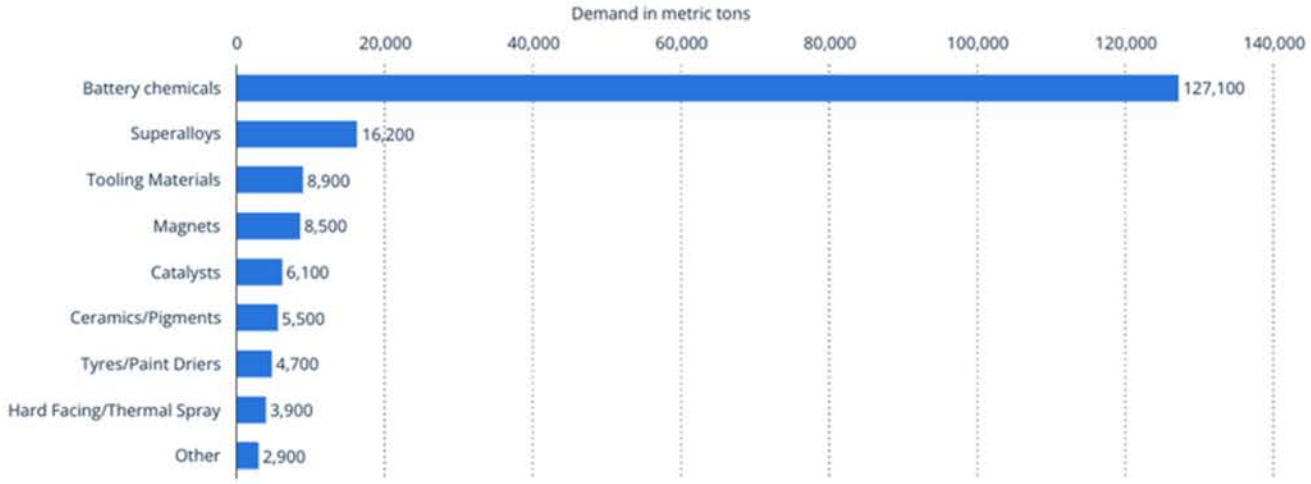
Distribution of nickel end use worldwide in 2023, by type

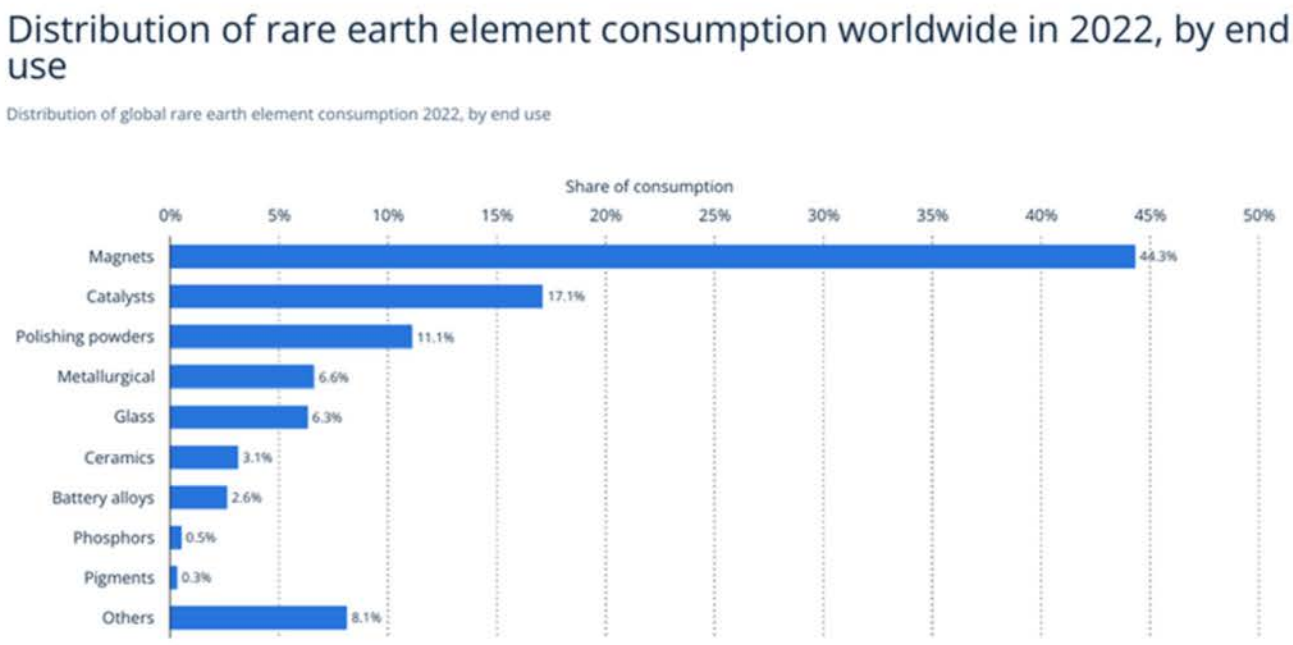
Global nickel end use share 2023, by industry



Demand for cobalt worldwide in 2023, by end use application (in metric tons)

Global cobalt demand in 2023, by end use application





Appendix 10:
SWOT analysis of India's critical minerals landscape

Factor	Details
Strengths	1. Government-backed National Critical Minerals Mission (2025) 2. Operational rare earth processing plants (IREL-managed) 3. Growing domestic demand (EVs, batteries, renewables, semiconductors) 4. Global collaborations with the US, Australia, and Argentina
Weaknesses	1. No large-scale lithium, cobalt, or nickel processing plants 2. High import dependence on China (85% of rare earths, 60% lithium refining) 3. Bureaucratic delays in domestic exploration and mining projects 4. Lack of R&D investment in advanced mineral refining technologies
Opportunities	1. Expanding domestic EV and semiconductor industries requiring critical minerals 2. Growing global demand for rare earths and battery materials - potential to become an alternative refining hub 3. Investment incentives and government-backed policies (PLI scheme, FDI in mining, public-private partnerships)
Threats	1. Heavy reliance on imports from China and Australia 2. Political risks in overseas acquisitions (Argentina's resource nationalism, unstable mining policies in Chile) 3. Environmental concerns - potential backlash against mining and refining projects 4. Lack of skilled workforce in advanced mineral refining technology

Roundtable Contributors

His Excellency Gopal Baglay
High Commissioner of India to Australia

His Excellency Gopal Baglay is India's High Commissioner to Australia, assuming office in January 2024. A career diplomat of the 1992 IFS batch, he previously served as High Commissioner to Sri Lanka (May 2020 to Dec 2023), Joint Secretary at the Prime Minister's Office, and Spokesperson for India's Ministry of External Affairs.

Dr. S Janakiraman
Consul General of India, Sydney

Dr. S. Janakiraman is a career diplomat, joined the Indian Foreign Service in 2002. He has served in Diplomatic Missions in Brasilia, Lisbon, Yangon and Pretoria. He has served as Deputy High Commissioner in Pretoria (South Africa) with concurrent accreditation to Kingdom of Lesotho, from 2016-2019. Before joining as Consul General of CGI, Sydney he served as Ambassador of India to the Republic of Cuba from July 2021 to November 2023.

Dipen Rughani, GAICD
Chief Executive Officer, Newland Global Group

Dipen Rughani is a senior executive with over 27 years of leadership, and a former National Chairman of the Australia India Business Council Ltd. His extensive board and advisory portfolio spans Director, Polycab Australia; Advisory Board Member, FICCI Australia; Multicultural Ambassador, Cricket Australia; and 20-20 Champion for the T20 Cricket World Cup; Former Independent Director, Wollongong Coal. He has served on key committees including the NSW Government's Indian Ministerial Consultative Committee, NSW International Education & Research Taskforce, and the Pravasi Bharatiya Divas National Organising Committee (Australia).

Natasha Jha Bhaskar
Executive Director, Newland Global Group

Natasha Jha Bhaskar is a globally recognised public policy leader. With over a decade of experience in the Indian Parliament and a distinguished track record in shaping trade, investment, and strategic policy, she is a trusted voice in international economic diplomacy. A Commonwealth Scholar, UN Women Australia Scholar, and Chief Executive Women (CEW) Scholar, Natasha has also been named among the Women to Watch in International Affairs for her impact on cross-border strategy and public policy.

Niravkumar B. Sutariya
Deputy Consul General of India, Sydney

Nirav Sutaria is the Deputy Consul General of India in Sydney, supporting Consul General Dr. S Janakiraman in representing India's interests in New South Wales. His role includes consular assistance, investor relations, and trade promotion across sectors involving Indian diaspora engagement. Nirav Sutaria has been actively involved in strengthening bilateral economic cooperation, particularly among business and community stakeholders.

Pradeep S. Mehta
Secretary General, CUTS International

Pradeep S. Mehta is an exceptional public policy advocate and founder Secretary General of the Jaipur-based CUTS International, a global public interest research and advocacy group established in 1983. He is currently a member of the WTO DG's NGO Advisory Board and G20/B20 Council on Africa's Economic Integration.

Amb. Amit Dasgupta AM, Strategic Advisor, UNSW Sydney; Distinguished Fellow, CUTS & AII

Ambassador Amit Dasgupta AM is a retired Indian diplomat with a distinguished career in foreign service, public diplomacy, and academia. A former Consul General in Sydney, he was appointed as the inaugural India Country Director for UNSW Sydney.

Tim Thomas
CEO, Centre for Australia–India Relations

Tim Thomas is the founding Chief Executive Officer of the Centre for Australia–India Relations, appointed in March 2023 to lead the Australian Government's new institutional effort to deepen bilateral ties. He brings over two decades of executive experience across the Indo-Pacific in leadership, strategy, and advisory roles spanning government and corporate sectors.

Dr. Maurice Newman AC, Former Chair, Australian Stock Exchange, Hon. DBus Macq, FSIA, FSAA, FAICD

Maurice Newman AC is the former Chairman of Deutsche Bank Australia & New Zealand, Australian Securities Exchange (ASX), and Australian Broadcasting Corporation, and Chancellor of Macquarie University. His career spans over 50 years in stockbroking and investment banking.

David Harding
Executive Director, Business NSW

David Harding is a seasoned business, investment, and policy leader with a distinguished track record across state, national, and international domains. He has led initiatives across transport, logistics, energy, ports, minerals, infrastructure, and commercial sectors. He currently chairs Engineering Aid Australia and actively mentors emerging leaders.

Dianne Tipping
Chair, Export Council of Australia

Dianne Tipping is the Chair of the Export Council of Australia, bringing over 35 years of experience in international trade, logistics, and global market development. As a passionate advocate for Australian exporters, she has led initiatives to enhance export capability, simplify trade procedures, and align Australian businesses with evolving global standards.

Prof. Veena Sahajwalla
Director, SMART@UNSW; NSW Australian of the Year 2022

Professor Veena Sahajwalla is a world-renowned materials scientist and inventor, leading sustainable innovation in recycling and manufacturing. She is the Founding Director of the Sustainable Materials Research & Technology (SMaRT) Centre at UNSW Sydney, where she pioneered “green steel” technology.

Charishma Kaliyanda MP
Member, NSW Legislative Assembly

Charishma Kaliyanda MP is a Member of the New South Wales Legislative Assembly representing the seat of Liverpool for the Labor Party, elected in 2023. An occupational therapist by profession, she previously served as a Liverpool City Councillor for nearly eight years, actively working on youth engagement, workforce development, and multicultural inclusion.

Grame Barty,
Former Executive Director, International Operations, Austrade

Grame Barty served as Executive Director of International Operations at Austrade around 2015 to 2017, leading the agency’s global trade promotion and investment strategies, especially across Asia and the Americas. He previously held the role of Regional Director in Los Angeles, where he supported Australian exporters and investors entering international markets.

Prof. Tony Travaglione
Pro Vice-Chancellor, Global Strategy, University of Wollongong

Professor Tony Travaglione was appointed Pro Vice-Chancellor for Global Strategy at the University of Wollongong in 2023. He leads the university's international strategy, including partnerships, student mobility and research collaborations. With prior senior leadership roles at the University of Newcastle and Curtin University business schools, Tony brings deep experience in executive education and institutional strategy.

Associate Professor Shailendra Sawleshwarkar
MBBS, MD, PhD

Associate Professor Shailendra Sawleshwarkar is the Director of Academic Education and Postgraduate Coursework Programs at the Sydney Medical School, Faculty of Medicine and Health, University of Sydney. With nearly 30 years of experience in curriculum development in global health partnership settings, Shailendra has been recognised for his international contribution to health professional education leadership through the award of several honorary titles and awards.

Sriraman ("Sri") Annaswamy
Founder-Director, Swamy & Associates

Sriraman Annaswamy is the Founder-Director of Swamy and Associates, a leading Australian advisory firm specialising in Advanced Analytics, Artificial Intelligence, Machine Learning, and Business Process Management (BPM). An alumnus of the Indian Institutes of Technology (IIT) and Management (IIM), India's premier institutions. Sri has over three decades of experience across Chennai, Mumbai, London, Silicon Valley, and Sydney.

Peter Truswell
Director, India Section, DFAT

Peter Truswell is a senior career diplomat with the Department of Foreign Affairs and Trade, and the Director of the India Economic Section in DFAT's India Branch. He has held overseas assignments including Consul-General in Mumbai, Deputy Head of Mission in Kabul, and postings in Seoul, Geneva, and at the United Nations. Currently serving as Australia's Ambassador to Serbia, accredited to Montenegro and North Macedonia since January 2025.

Sudhir Basavaraju
Head, India & Middle East, Global Markets, Investment NSW

Sudhir Basavaraju leads the India & Middle East portfolio within Global Markets at Investment NSW, headquartered in the Sydney Startup Hub. With over fourteen years of experience in international trade, investment facilitation, and economic development, he promotes NSW as a destination for foreign investment and international business partnerships.

Hemang Shah
Partner, Jones Day

Hemang Shah is a Partner at global law firm Jones Day in Sydney, where he advises on mergers and acquisitions, equity capital markets, IPOs, and complex corporate transactions. Since joining the firm in 2018, he has acted on deals cumulatively exceeding A$100 billion, with clients in infrastructure, financial services, technology, mining, and energy sectors.

Dr. Jocelyne Basseal, Associate Director
Sydney Infectious Diseases Institute, University of Sydney

Dr. Jocelyne Basseal serves as the Associate Director (Strategy, Operations & Partnerships) at the Sydney Infectious Diseases Institute, Faculty of Medicine and Health, University of Sydney. She oversaw institute strategy, external relations, and partnerships, including the WHO Collaborating Centre for Tuberculosis.

Sudip Bhattacharya,
Trade & Investment, Consulate General of India, Sydney

Sudip Bhattacharya is Trade & Investment Officer at the Consulate General of India in Sydney, where he facilitates bilateral commerce and investment partnerships between India and Australia. With over 20 years of experience in international business development, Sudip has worked across sectors including ICT, education, infrastructure, and advanced manufacturing.

Ramanpreet Wadhwa
Business NSW

Ramanpreet Wadhwa served as the Strategic Partnership and Industry Alliances Manager at Business NSW, where she led international engagement and trade facilitation across priority markets.

John Lydon, Board Member, Net Zero Emissions & Clean Economy Board, NSW; Co-Chair, Australian Climate Leaders Coalition

John Lydon is a Board Member of the NSW Government's Net Zero Emissions and Clean Economy Board and Co-Chair of the Australian Climate Leaders Coalition. He is also a Board Director at Generation Australia and the former Managing Partner of McKinsey & Company Australia and New Zealand. John advises corporates, governments, and institutions on sustainability transitions, emissions reduction strategies, and clean economy policy implementation.

Jonathan Muir
Chief of Protocol, Department of Foreign Affairs and Trade (DFAT)

Australian Department of Foreign Affairs and Trade (DFAT), where he oversees the official engagement of foreign diplomatic missions and dignitaries in Australia. He leads DFAT's Protocol and Events Branch, ensuring international protocols are observed in state visits, high-level ceremonies, and the accreditation of foreign representatives.

Tim Nelson, Former Executive General Manager Energy Markets, Iberdrola Australia

Dr. Tim Nelson served as Executive General Manager for Energy Markets at Iberdrola Australia from 2020 to 2024, overseeing market strategy, regulatory affairs, and decarbonisation initiatives. A recognised energy economist, he is now Adjunct Associate Professor at Griffith University and Director of Policy and International Relations at the Clean Energy Investor Group.

Sean Duffy
Partner (Energy & Infrastructure), Baker McKenzie

Sean Duffy is a senior partner at Baker McKenzie in Sydney, where he leads the Energy & Infrastructure practice. With over 25 years of experience, he specialises in advising major energy developers, government agencies, and financiers on large-scale renewables, gas, and infrastructure projects across Australia and the Asia-Pacific.

Arnab Pal, General Manager, Commercial Banking and Head of the India Desk, Commonwealth Bank

Arnab Pal is General Manager of Commercial Banking and Head of the India Desk at Commonwealth Bank of Australia (CBA). With over 18 years of banking experience across international and domestic markets, he leads CBA's strategic initiatives in cross-border financing and India–Australia trade facilitation.

Dani Alexander
CEO, UNSW Energy Institute

Dani Alexander is the Chief Executive Officer of the UNSW Energy Institute, where she leads strategic partnerships, industry collaboration, and translational energy research. She joined UNSW in 2023 after serving as Chair of the Australian Energy Research Alliance and Executive Director at the Clean Energy Council.

Scott Hamilton
Senior Advisor, Smart Energy Council

Scott Hamilton is a Senior Advisor at the Smart Energy Council and Adjunct Associate Professor at Monash University. A long-time advocate of renewable energy and just transitions, Scott brings over 25 years of experience in clean energy policy, climate strategy, and public-private collaboration. He has advised Australian federal and state governments on energy reform and was instrumental in programs promoting solar, grid modernisation, and hydrogen.

Jacqui O'Dea
Chief Risk Officer, The GPT Group

Jacqui O'Dea served as Chief Risk Officer at The GPT Group for nearly 20 years, where she led enterprise risk, compliance, and governance frameworks across one of Australia's largest property groups. In early 2025, she was appointed to the executive leadership team at Airservices Australia, where she now oversees enterprise risk and corporate strategy.

Dr. Tracey Dodd, Board Member, Green Industries SA; Director, Research Development, University of Adelaide

Dr. Tracey Dodd is Director of Research Development at the University of Adelaide and a Board Member of Green Industries South Australia. A policy expert and sustainability strategist, she supports innovation-led environmental reforms across government, academia, and industry. Tracey's research focuses on circular economy models, emissions reduction, and behaviour-led policy design.

Clare Larkin-Sykes, Managing Director, Forelight Advisory; Cluster Manager, NewH2

Clare Larkin-Sykes is Managing Director of Forelight Advisory and Cluster Manager for the NewH2 - Hunter Hydrogen Technology Cluster. She specialises in place-based energy transition, hydrogen development, and regional industrial strategy. Clare works closely with stakeholders across industry, government, and research to foster innovation ecosystems aligned with net-zero targets.

Geetanjali Kurian
National Manager, Programming, Governance Institute of Australia

Geethanjali Kurian is the National Manager Programming, for the Australian national peak body Governance Institute of Australia, which advocates for over 40,000 governance and risk management professionals, including 7,500 members. Geethanjali is also a documentary producer, she started her career in broadcasting as a reporter, interviewer and production coordinator for documentaries for networks including BBC, and Channel 4 UK.

Veronica Piatkov, Assistant Director, International Climate and Energy Division, Department of Climate Change, Energy, the Environment and Water

Veronica Piatkov serves as Assistant Director within the International Climate and Energy Division at Australia's Department of Climate Change, Energy, the Environment and Water. She assumed the role in August 2023 and leads the department's global climate diplomacy efforts focused on energy transitions, emissions reduction, and international collaboration.

Dhruv Sabharwal, Executive Manager, Group Audit and Assurance, Commonwealth Bank of Australia

Dhruv Sabharwal is Executive Manager in Group Audit & Assurance at the Commonwealth Bank of Australia (CBA). With more than a decade of experience in financial auditing, risk and compliance oversight, he leads internal controls across retail, corporate and institutional banking operations. Dhruv supervises audit teams that manage regulatory alignment, governance assurance, and operational risk mitigation across multiple business divisions.

Divyang Bhartia, Strategy, Partnerships & Program Officer, Australia India Institute

Divyang Bhartia serves as Strategy, Partnerships & Program Officer at the Australia India Institute (AII) based at the University of Melbourne. He leads project coordination and stakeholder engagement for cross-sector partnerships, driving program delivery that strengthens India–Australia collaboration in research, education, and diplomacy

Ujjwal Krishna, Research Fellow, Australia India Institute

Ujjwal Krishna is a Research Fellow at the Australia India Institute at the University of Melbourne. His research focuses on diplomatic relations, trade policy, and strategic engagement between Australia and India. Ujjwal contributes to policy analysis, briefs, and commissioned studies, informing bilateral dialogue in areas such as security cooperation, economic integration, and higher education exchange.

Professor Barney Glover AO, Commissioner, Jobs & Skills Australia

Professor Barney Glover AO was appointed Commissioner of Jobs & Skills Australia on 15 April 2024 for a five-year term. A former Vice-Chancellor and President of Western Sydney University, and Vice-Chancellor of Charles Darwin University, he brings deep experience in tertiary leadership and education reform. As Commissioner, Professor Glover leads the national body advising government on skills, workforce development, VET, and education priorities closely aligned to Australia's economic needs.

Kylie Cooper, Director, Study Queensland, Trade and Investment Queensland

Kylie Cooper is Director of Study Queensland at Trade and Investment Queensland, where she leads the state's international education strategy. With more than 20 years of experience in education, research, and international partnerships, she develops initiatives that position Queensland as a top-tier global education destination. Kylie previously worked at The University of Queensland and within Queensland Government, where she contributed to innovation policy and student experience programs.

James Flannagan Director, International, TAFE NSW

James Flannagan is Director of International at TAFE NSW, where he leads global student engagement, partnerships, and international business development. With more than two decades of experience in education management, he oversees TAFE NSW's strategy to attract international students and expand transnational education offerings. James has spearheaded initiatives across Asia, the Middle East, and South America, forming partnerships with government bodies, training providers, and industry.

Ravi Lochan Singh, Managing Director, Global Reach; Past President, AAERI

Ravi Lochan Singh is Managing Director of Global Reach, a leading international education consultancy operating across South Asia. With over 30 years of experience, he is widely regarded as a pioneer in overseas education and student mobility. He has served as President of the Association of Australian Education Representatives in India (AAERI), a body established with support from the Australian Government to ensure quality and ethics in education recruitment.

Darryl Mohr, Senior Strategy, Partnerships & Policy Advisor, Australia India Institute

Darryl Mohr is Senior Strategy, Partnerships & Policy Advisor at the Australia India Institute, where he advances bilateral engagement through programs, events, and cross-sector collaboration. He brings over 30 years of executive leadership experience, having worked with ASX-listed firms, public sector agencies, and policy think tanks.

Siobhan O'Sullivan
Chief Operating Officer, Australian Computer Society

Siobhan O'Sullivan is Chief Operating Officer at the Australian Computer Society, where she oversees operational strategy, member engagement, and national digital workforce programs. With more than 25 years of cross-sector leadership in fintech, edtech, and innovation, she brings deep commercial and governance expertise.

David Evans, Managing Partner, Watermark Search International

David Evans is Managing Partner at Watermark Search International, where he leads the firm's executive search and interim leadership practice across Australia. With over 20 years of experience, David specialises in C-suite recruitment, board advisory, and public sector executive placement. He works with ASX-listed companies, government departments, universities, and not-for-profits to source senior talent aligned with transformational goals.

Deep Mukherjee
Co-Convenor, Education & Skills, AICC; Co-Founder, TeamLease

Deep Mukherjee is Co-Convenor for Education & Skills at the Australia India Chamber of Commerce and co-founder of TeamLease, India's largest HR services firm. With more than two decades of leadership in workforce development and international education, he has driven large-scale projects across India, Australia, and the Asia-Pacific. Deep has worked with public institutions, multilateral agencies, and private enterprises to design skilling and employability frameworks aligned to national policy.

Dr. Nigel Palmer
Senior Policy Manager, Skills & Education, Business NSW

Dr. Nigel Palmer is Senior Policy Manager for Skills and Education at Business NSW, where he leads policy development that connects workforce capability with industry demand. With over 20 years of experience in tertiary education policy, quality assurance, and postgraduate training, he brings deep insight into how education systems evolve to meet economic challenges.

Kumar Srinivasan, Chair, Risk Engineering Society (NSW); CRO, UTS; Former CRO, Sydney Metro

Kumar Srinivasan is Chair of the Risk Engineering Society (NSW) within Engineers Australia and Chief Risk Officer at the University of Technology Sydney. Previously, he served as Chief Risk Officer at Sydney Metro, where he oversaw risk and governance frameworks for one of Australia's largest infrastructure undertakings. Kumar brings over 30 years of experience in engineering, enterprise risk, and systems management.

Kala Philip
Chief Executive Officer, BSI Learning

Kala has over 25 years' experience in education management and has been in several senior management and executive director roles across Dubai and Australia. She commenced her vocational education journey in 2004 and has worked with key external stakeholders nationally and internationally and lead the company's strategy in response to national and state education reforms.

Maj. Ashish Trivedi, Principal Consultant, Confederation of Indian Industry (CII)

Ashish Trivedi is a Principal Consultant at the Confederation of Indian Industry (CII), formerly serving as an Indian Army officer before transitioning to public policy and skills development leadership. He has over sixteen years of experience bridging defence, education, and industry policy domains. Ashish advises CII's leadership on workforce skilling, vocational training frameworks, and international partnerships, especially between India and Australia.

Vishal Gupta, Regional Director, IELTS Operations & Shared Services (South Asia), IDP Education

Vishal Gupta is Regional Director for IELTS Operations & Shared Services, South Asia, at IDP Education, overseeing service delivery, test quality and partner engagement across the region. He has over 26 years of experience in operations, supply chain, and business development.

Brett Galt-Smith, Manager, Stakeholder & Government Relations, VETASSESS (office of CEO, Bendigo Kangan Institute)

Brett Galt-Smith serves as Manager for Stakeholder & Government Relations within the VETASSESS division of Bendigo Kangan Institute. He joined the organisation in early 2023 after posting as Australia's Counsellor for Education and Research at the High Commission in New Delhi.

Dr. Jens Goennemann, Managing Director, Advanced Manufacturing Growth Centre (AMGC)

Dr. Jens Goennemann has served as Managing Director of the Advanced Manufacturing Growth Centre (AMGC) since its inception in 2016. He leads Australia's national advanced manufacturing strategy to bolster sector competitiveness and Industry 4.0 adoption. Before joining AMGC, Jens held leadership posts at Airbus Group Australia Pacific and Airbus Helicopters, and prior roles within EADS in Germany and Greece developing Eurofighter programs.

IND-AUS ROUNDTABLES

Paul Cooper
Director, Rinstrum; Chair, AMGC

Paul Cooper is Chair of the Board of the Advanced Manufacturing Growth Centre (AMGC) and Director of Rinstrum, a Brisbane-based electronics manufacturer and global exporter of industrial weighing solutions. With over 30 years of experience in advanced manufacturing, technology commercialisation, and SME leadership, Paul brings deep insight into industry-led innovation and digital adoption.

David Timms
Group CEO, Callington Group of Companies

Currently the CEO of Callington based in Sydney with over 35 years' experience in the specialty chemicals industry in various roles of Manufacturing, Sales and Executive Management roles within some of the largest global organisations, including Bayer, Lanxess and BASF.

Tyson Bowen
State Director (NSW), AMGC

Tyson Bowen serves as State Director for New South Wales at the Advanced Manufacturing Growth Centre, as well as Director of Media and Government Relations. He has been with AMGC since December 2019, progressing through roles in public relations, stakeholder engagement, and communications.

Kristi Riordan
CEO and Co-Founder, Harvest B

Kristi Riordan is the CEO and Co-Founder of Harvest B, a pioneering Australian food tech company producing locally manufactured plant-based protein ingredients. With a background in commercial innovation and operations, Kristi co-founded Harvest B in 2020 to address sustainability and food security through technology.

Daniel Rodgers
Founder and CEO, Omni Tanker

Daniel Rodgers is Founder and CEO of Omni Tanker, a Sydney-based advanced manufacturing firm producing world-first composite road tankers for transporting corrosive and high-purity liquids. With a background in materials engineering and design innovation, Daniel founded the company in 2006 to revolutionise tanker safety and performance.

Alan Lipman
CEO, Romar Engineering

Alan Lipman is CEO of Romar Engineering, a Sydney-based advanced manufacturer specialising in high-precision micro-moulding and additive manufacturing for aerospace, defence, and medical sectors. With over two decades of experience in commercial leadership, Alan has steered Romar's evolution from a precision tooling company into an industry leader in space-certified component manufacturing.

Dr. Peter Cull
Founder and Director, ICT International

Dr. Peter Cull is the Founder and Director of ICT International, a global leader in environmental monitoring technologies based in Armidale, New South Wales. With a PhD in irrigation science, Peter has spent over 40 years developing and commercialising high-precision plant and soil sensors used in research, forestry, and agriculture across 55 countries.

Michael Junger
Director, Industry & Government Relations, Vaxxas

Michael Junger is Director of Industry and Government Relations at Vaxxas, a biotechnology company pioneering next-generation vaccine delivery using high-density micro-array patch (HD-MAP) technology. In this role, Michael leads policy advocacy, strategic partnerships, and stakeholder engagement across health, research, and innovation ecosystems.

Lindsay Cohen, Associate Director, Investment and Industry, Premier's Department (NSW)

Lindsay Cohen has built a career driving strategic policy, investment attraction, and industry development across New South Wales. As Associate Director in the NSW Premier's Department, he led initiatives that shaped the state's approach to advanced manufacturing, regional economic resilience, and priority sector growth.

Ram Iyer
General Manager, Operations, Arna Pharma

Ram Iyer is the General Manager of Operations at Arna Pharma, where he leads the company's strategic and operational delivery across Australia's pharmaceutical manufacturing landscape. With more than 17 years of industry experience, he has held senior roles at Aspen Pharmacare, Sigma Healthcare, and Laurus Labs, bringing deep expertise in regulatory compliance, manufacturing strategy, and supply chain optimisation.

Shannon O'Rourke, CEO, Future Battery Industries Cooperative Research Centre (FBICRC)

Shannon O'Rourke is Chief Executive Officer of the Future Battery Industries Cooperative Research Centre (FBICRC), where he leads Australia's largest research consortium dedicated to battery technology innovation and critical minerals strategy. With a background in energy policy, strategic partnerships, and executive leadership, he guides multi-sector collaboration between industry, government, and research institutions. Shannon previously worked at Woodside Energy and BHP, gaining experience in upstream resources and clean energy investment.

Joe Kaderavek
CEO, Cobalt Blue Holdings

Joe Kaderavek is Chief Executive Officer of Cobalt Blue Holdings, an ASX-listed mining and technology company focused on developing sustainable cobalt extraction processes and supply chains. With a career that spans mining finance, exploration strategy, and project development, Joe has led Cobalt Blue's efforts to establish Australia as a secure supplier of critical minerals for the electric vehicle and battery industries.

Michael Helleman
Head of Asia (Investment), Austrade

Michael Helleman is Head of Asia (Investment) at Austrade, where he leads the agency's investment attraction strategy across Asian markets. His portfolio focuses on mobilising capital into Australian industries including infrastructure, advanced manufacturing, critical minerals, and clean energy. Michael previously served as Trade Commissioner in Jakarta and Bangkok and led Austrade's infrastructure and energy investment teams. He has also worked in the NSW Premier's Office, advising on trade and economic policy.

Meg Fletcher
India–Australia Partnerships Coordinator, CSIRO

Meg Fletcher is the India–Australia Partnerships Coordinator within CSIRO's Mineral Resources business unit, where she leads bilateral engagement across critical minerals, research commercialisation, and scientific collaboration. With a background in program delivery and cross-sectoral partnerships, Meg manages initiatives that strengthen innovation linkages between Indian and Australian institutions. She coordinates flagship collaborations in green steel, rare earths, and decarbonisation.

Kerry Atkins, NSW Director, AMEC (Association of Mining and Exploration Companies)

Kerry Atkins serves as Director – New South Wales for the Association of Mining and Exploration Companies (AMEC), leading regional advocacy and member engagement across the state. She represents AMEC at forums alongside industry, government, and exploration stakeholders, including technical roundtables hosted in Orange and meetings with regional resource operators.

Antony (Tony) Truelove, Chief Operating Officer, First Tin Plc; Director, Taronga Mines Pty Ltd

Tony Truelove has over 40 years of experience in the resource industry covering project acquisition, mineral exploration, feasibility studies and mine geology. He has been involved with the discovery and definition of over 15 million ounces of gold and 300,000 tonnes of tin and has experience exploring for a wide variety of metals worldwide. Tony is currently COO of LSE (Standard Board) listed First Tin Plc and Director of its 100% owned Australia subsidiary Taronga Mines Pty Ltd.

Alison Airey
Assistant Secretary, FTA Services, DFAT

Alison Airey is Assistant Secretary, Free Trade Agreement (FTA) Services at the Department of Foreign Affairs and Trade (DFAT), where she leads stakeholder engagement and services trade policy across Australia's major bilateral and multilateral trade negotiations. Her portfolio includes oversight of trade in professional services, education, finance, and digital economy frameworks within FTAs such as CECA, CPTPP, and IPEF.

Sam Riggall
Managing Director & CEO, Sunrise Energy Metals

Sam Riggall is Managing Director and CEO of Sunrise Energy Metals, where he leads the development of the Sunrise Project in New South Wales, one of the largest undeveloped sources of cobalt, nickel, and scandium globally. A seasoned mining executive, Sam previously held senior roles at Rio Tinto and Ivanhoe Mines, where he was instrumental in shaping large-scale resource projects including Oyu Tolgoi in Mongolia.

Jeneta Owens
Managing Director, Godolphin Resources

Jeneta Owens is Managing Director of Godolphin Resources, a publicly listed company exploring for gold, copper, and rare earth elements across Central West New South Wales. With over 15 years of experience in the mining sector, she has held senior geology roles at Rio Tinto and Sandfire Resources, managing exploration and project evaluation.

Rob Blayney,
Manager, Investment Attraction, Resources, NSW Government

Rob Blayney is Manager of Investment Attraction (Resources) at the NSW Department of Regional NSW, where he leads strategy to position New South Wales as a preferred destination for global mining and critical minerals investment. With a background in public sector strategy and regional development, Rob facilitates investor engagement, streamlines approvals, and helps promote the state's mineral potential through global outreach and trade events.

Tony Fraser, State Manager, ACT Engagement, Australian Institute of Company Directors

Tony Fraser is an accomplished leader with a distinguished career across business, law, sport, education, international engagement and the NFP sector. He is the ACT State Manager of the Australian Institute of Company Directors, President of the Australia India Business Council (ACT), and Director of the Canberra Business Chamber.

Abhishek Kaushik, Senior Manager, International Tax and Transfer Pricing, RSM Australia

Abhishek Kaushik is Senior Manager in International Tax and Transfer Pricing at RSM Australia, where he advises multinational clients on cross-border structuring, BEPS compliance, and OECD-aligned transfer pricing strategies. With over a decade of experience in global tax advisory, he specialises in managing intercompany transactions, IP structuring, and tax audits for clients across sectors including manufacturing, tech, and resources.

Contact Information

Consulate General of India – Sydney

Jurisdiction: New South Wales & South Australia
Location: 265 Castlereagh Street, Sydney NSW 2000, Australia

Mandate & Mission

The Consulate General of India in Sydney is the Government of India's diplomatic and consular representation for New South Wales and South Australia. Its mission focuses on:

- Consular Services: Delivering timely, efficient, and citizen-focused support for Indian nationals and persons of Indian origin.
- Trade and Business: Facilitating economic engagement, investment flows, and trade partnerships between India and Australia.
- Cultural Diplomacy: Showcasing India's heritage, arts, and contemporary culture to strengthen people-to-people ties.
- Thought Leadership: Creating informed and evidence-based narratives about India in Australia through outreach, dialogue, and strategic engagement.

Business Lounge & Concierge Services

A Strategic Platform for Trade & Investment Facilitation

Launched as a flagship initiative, the Business Lounge & Concierge Services provides a dedicated space for Indian and Australian business leaders, investors, and trade stakeholders to connect, collaborate, and access market intelligence.

Key Features:

- **Direct Engagement:** Meet with the Consulate's Trade & Commerce team for guidance, market insights, and feedback.
- **Market Intelligence Access:** Exclusive databases of importers, exporters, company profiles, and sectoral reports.
- **Prime Location:** Centrally situated in Sydney's CBD, with excellent connectivity via train, bus, and light rail; ~30 minutes from the airport.
- **Fully Equipped Workspace:** Workstations with computers, printers, and high-speed internet to enable productive meetings.
- **Hybrid Meeting Facilities:** Support for both physical and virtual conferences in a focused, private environment.
- **Business-Friendly Access:** Open Monday–Friday, 10:00 AM to 5:00 PM (by prior appointment); no cost for business visitors.

Website: www.cgisydney.gov.in
Email: trade.sydney@mea.gov.in

Newland Global Group (NGG)

Strategic advisory and advocacy for success across India and Australia.

Newland Global Group is a specialist advisory and advocacy firm that enables businesses to navigate complexity, influence outcomes, and lead with confidence across the India–Australia corridor.

With deep expertise at the intersection of public policy, market strategy, and institutional engagement, NGG partners with government, industry and institutions to unlock cross-border growth and shape their long-term positioning in two of the world's most dynamic and complementary economies. With the experience of advising over 300 public, and private companies/organisations since 2010, NGG specialises in creating the greatest value for its partners and clients by developing tailored solutions.

Core services:

Policy Intelligence & Advocacy

NGG team delivers forward-looking intelligence on policy shifts, stakeholder dynamics, and regulatory risks, paired with advocacy strategies that shape decisions, protect commercial interests, and build credibility.

Corporate Strategy & Advisory

Supporting boards, leadership teams, and investors, NGG bridges business strategy with institutional engagement. NGG helps clients navigate risk, enhance reputation, and build enduring influence with government, industry, and civil society.

Market Access & Strategic Alignment

From market assessment and regulatory alignment to stakeholder mapping and partnership strategies, NGG guides businesses through every stage of entry and expansion. It ensures alignment between commercial goals and local operating realities.

Website: www.newlandglobal.com
Email: info@newlandglobal.com

Resilience, Reimagination and Reform will drive our journey ahead. The Australia India Roundtables are organised to bring together some of the best minds to share their views across diverse sectors that impact bilateral economic ties. The aim is to foster learning, and engagement, build tangible outcomes, inform and contribute to the ongoing CECA negotiations. Our objective is to create a framework for evidence-based learning to inform policy development and implementation. Insights and analysis on bilateral economic ties are an integral component of building business literacy and acumen.

1st Edition of the Australia-India Business Case Studies Compendium

The 2nd Edition of the Australia-India Business Case Studies Compendium launches this November 2025 with expanded insights, sectors, and success stories.

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