



Policy Brief | 15 July 2025

Critical Minerals in Australia

Science, Technology, Environment and Resources section

Issue

Critical minerals are essential to modern and advanced technologies, including computers, heavy industry, defence, and renewable energy. However, these commodities are exposed to risks of supply chain disruption or bottlenecks, a feature which makes them ‘critical’.

Reducing these constraints is a focus for strategic international partnerships to support economic growth and national security.

Australia is a global leader in mining and exporting raw materials, including some critical minerals. Australia does not have a well-developed capability for processing or value-adding to these raw materials.

This paper presents an overview of critical minerals, and Australia’s resources, potential, and current policy settings.

Key points

- Many countries (including Australia) maintain sovereign critical minerals lists.
- Australia is richly endowed with mineral resources and is a major exporter of raw materials with well-established trading partners.
- It is also an attractive investment destination, with a range of funding and support mechanisms to foster critical minerals development.
- Australia currently lacks a well-developed value-adding capability for critical minerals and their products but is looking to increase this capability.

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Context

[Critical minerals](#) are defined as those that are essential for modern technologies, the economy, or national security and have supply chains exposed to risk or disruption. It is this significant exposure to supply chain risk that differentiates critical minerals from [strategic minerals](#).

Different countries use [different approaches](#) to define critical minerals or ‘criticality’ (p. 1,019). These generally include an assessment of economic importance weighted against a measure of vulnerability. Often, vulnerability relates not just to the source of a mineral’s primary ore or its global distribution but also factors related to the supply chain, such as processing locations. Other assessments may recognise vulnerability as it relates to specific uses, such as defence. Each country has its own needs and vulnerabilities, and therefore, their critical minerals lists may vary.

Australia’s trading partners, such as the [USA](#), [UK](#), [Canada](#), [India](#), [New Zealand](#), [South Korea](#) and the [EU](#) each have their own critical minerals lists. Additionally, in 2024, [NATO](#) published its own list of 12 defence-critical raw materials. It is important to note that these lists can [change over time](#) as supply, technological, industrial and geopolitical conditions vary (pp. 1,019–1,020). Importantly, supply chain vulnerabilities can be heightened in uncertain geopolitical or trade environments.

Australia’s approach to critical minerals

Australia’s [Critical Minerals Strategy 2023–2030](#) sets out how critical minerals are defined and examines how their development and supply can be supported and secured. The related [Critical Minerals List](#) identifies 31 critical minerals [see [Box 1](#)], which satisfy a [four-part test](#):

- are essential to our modern technologies, economies, and national security, specifically the priority technologies set out in the Critical Minerals Strategy (p. 16), linked to the [List of Critical Technologies in the National Interest](#)
- for which Australia has geological potential for resources
- are in demand from our strategic international partners
- are vulnerable to supply chain disruption.

The Critical Minerals list will be reviewed [at least every 3 years](#), as recommended by the Critical Minerals Strategy (p. 44). The Minister for Resources is also able to review and update the list to [reflect](#) ‘global strategic, technological, economic or policy changes’. The Critical Minerals List has been updated over time, with [nickel being added](#) to the list in February 2024, after additional [updates](#) in 2023. Mineral commodities listed as critical minerals are eligible for various government supports and funding, including projects seeking to mine, process, or value-add.

Some of the applications that use critical minerals are provided in Table 1. Note, this list of uses is not exhaustive, and is focused on minerals for which Australia has significant production or reserves.

Box 1: Australia’s Critical Minerals List

Australia’s [critical minerals](#) at the time of writing are: High-purity alumina, antimony, arsenic, beryllium, bismuth, chromium, cobalt, fluorine, gallium, germanium, graphite, hafnium, indium, lithium, magnesium, manganese, molybdenum, nickel, niobium, platinum group elements (including ruthenium, rhodium, palladium, osmium, iridium and platinum), rare earth elements (yttrium, lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), rhenium, scandium, selenium, silicon, tantalum, tellurium, titanium, tungsten, vanadium, and zirconium.

Some international lists separately identify platinum group and rare earth elements or only include certain of these elements.

The critical minerals list was updated on 20 February 2024 in line with the 16 February [Ministerial decision](#).

Table 1 Some of Australia’s critical minerals and their uses

Critical mineral	Traditional and defence uses	Clean energy applications
Antimony	Alloys	Solar PV panels
Cobalt	Superalloys Device batteries	EV batteries
Graphite	Foundry applications High-temp lubricants Composite materials	Lithium battery anodes
Lithium		EV batteries Battery energy storage systems
Magnesium	Lightweight alloys Steelmaking purposes	-
Manganese	Alloys	EV batteries
Nickel	Stainless steel	EV batteries
Rare earth elements	Glass, lights Magnets	Wind turbines EV motors
Silicon	Computing chips	Solar PV panels
Titanium and mineral sands	Specialised alloys Pigments	Specialised alloys Pigments

Critical mineral	Traditional and defence uses	Clean energy applications
Tungsten	Alloys Cutting tools	Permanent magnets in EVs/wind turbines
Vanadium	Steel alloys Sulphuric acid production	Vanadium flow batteries

Notes: Defence uses mainly include use in alloys.

Source: Compiled by the Library from Department of Industry, Science and Resources (DISR), [Resources and Energy Quarterly March 2025](#), (Canberra: DISR, 31 March 2025), 106 (nickel), 122 (lithium), and 128 (others).

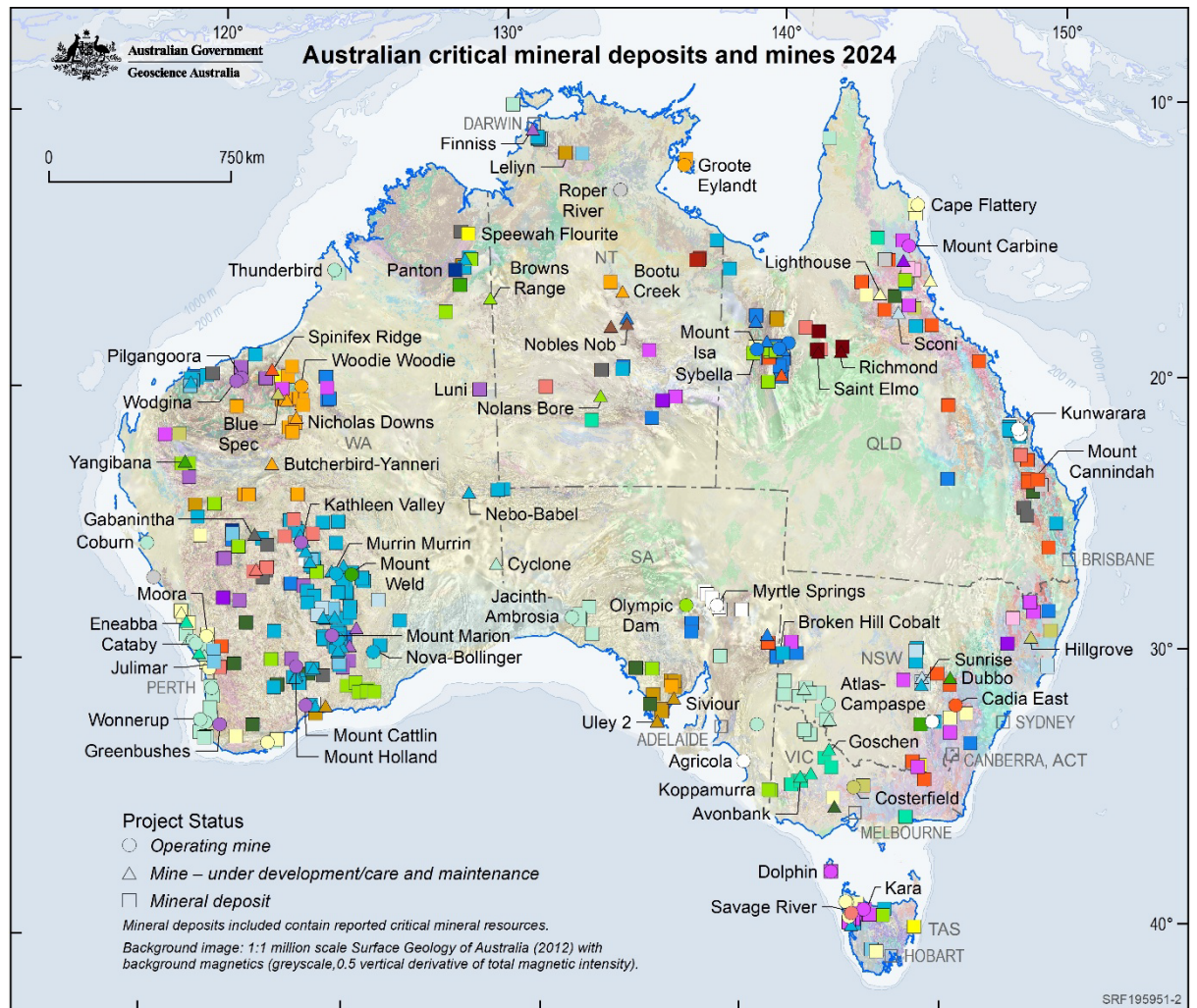
Australia’s role: quarry, factory, or end-user?

[Australia hosts globally significant deposits](#) of critical minerals [distributed across the country](#) (Figure 1). It is also a major global exporter of some critical minerals, having in 2023 [produced](#) 49% of the lithium, 9% of the manganese, 24% of the zircon, and significant proportions of cobalt, rare earths, and other critical minerals.

The Critical Minerals Strategy states that ‘[growing the \[critical minerals\] sector](#) and moving into downstream processing, where we can do so competitively, will capture more value, economic benefits and jobs in Australia while boosting our sovereign capability’ (p. 12). However, despite Australia’s established raw material export successes, moving into processing and manufacturing (and the broader economic impacts), is less certain.

A key aspect will likely require fostering investment in critical minerals, which can secure supply for both the domestic market and key trade partners. Placing a commodity on the Critical Mineral List is a key driver in fostering industry interest, which in turn drives growth in Australia’s identified resource base. The trade-off is that [industrial policy can introduce economic distortions and inefficiencies](#) and may ‘crowd-out’ other sectors in the economy.

Figure 1 Australia's critical mineral deposits and mines 2024



Source: [Australian Critical Minerals Map 2024 – A4 version](#) from J. Pheeney and C. Kucka, [Australian Critical Minerals Map 2024 \(6th Edition\)](#), Scale 1:5,000,000, (Canberra: Geoscience Australia, January 2025). A [higher resolution, more detailed large-format PDF](#) of this map is available.

Critical minerals funding, support, and research

Government research and development support allows agencies to carry out precompetitive activities such as data collection and modelling, and reassessing existing data. Current initiatives include:

- The \$4 billion [Critical Minerals Facility](#) provides [commercial financing](#) to critical minerals projects in Australia.
- The [2024–25 Budget](#) committed \$3.4 billion to the [Resourcing Australia's Prosperity](#) program (RAP) over 35 years (p. 66). More detail is provided in [Critical minerals and Geoscience Australia – resourcing Australia's prosperity](#).
- The Australian Critical Minerals Research and Development Hub is a collaboration between [Geoscience Australia](#), [CSIRO](#) and the [Australian Nuclear Safety and Technology Organisation](#), universities, industry, and the broader research community.
- Support through the [Northern Australia Investment Facility](#), [Clean Energy Finance Corporation](#), [Critical Minerals Production Tax Incentive](#), [National Reconstruction Fund](#), and the [Critical Minerals Office](#).
- Processing and refining of critical minerals is one of the priority economic sectors aligned with the government's [Future Made in Australia – National Interest Framework](#) (NIF), with support through the Future Made in Australia framework.

International partnerships

Australia has entered into agreements with the [USA](#), [Canada](#), [UK](#), [Japan](#), [India](#), [Germany](#), and the [EU](#) to streamline critical mineral resources development. This includes mining and ore production, mid-stream processing and export arrangements. The Department of Industry, Science and Resources also lists other [examples of bilateral and multilateral international arrangements](#) relating to the critical minerals sector.

Conclusion

A [comprehensive review](#) of the Critical Minerals Strategy is expected in 2026 (p. 12). Australia is in the early stages of growing its critical minerals sector. While exploration and mining continue to grow, mid-stream processing and down-stream manufacturing are not yet developed. Agreements with international partners may help ensure stable supply chains internationally. This may be bolstered by the Australian Labor Party's 2025 federal election [commitment](#) to create a critical minerals strategic reserve. However, it remains to be seen how government support will translate into economic activity, domestic growth and supply chain certainty for critical minerals.

Further Reading

- [Australian Critical Minerals Prospectus](#), Australian Trade and Investment Commission
 - Annual publication summarising advanced critical minerals projects.
- [Resources and Energy Quarterly](#) (REQ) series, Department of Industry, Science and Resources (DISR)
 - This series provides information and outlooks for a range of energy and mineral commodities and examines Australian production and trade in a global context.
- A. Hughes, A. Britt, J. Pheeney, A. Morfiadakis, C. Kucka, H. Colclough, C. Munns, A. Senior, A. Cross, A. Hitchman, Y. Chen, J. Walsh and A. Jayasekara, [Australia's Identified Mineral Resources 2024](#), (Canberra: Geoscience Australia, 27 February 2025).
 - Most recent annual assessment of Australia's mineral reserves and resources for all major and some minor commodities, including critical minerals.
- International Energy Agency (IEA), [The Role of Critical Minerals in Clean Energy Transitions](#), (Paris: IEA, 2021).
 - Analysis of links between critical minerals and the energy transition.
- IEA, [Global Critical Minerals Outlook 2025](#), (Paris: IEA, May 2025).
 - A snapshot of recent industry developments with medium- and long-term supply and demand outlooks. Assesses broad risks to critical minerals supply chains.
- Nedal T. Nassar and Steven M. Fortier, [Methodology and Technical Input for the 2021 Review and Revision of the U.S. Critical Minerals List](#), US Geological Survey (USGS) Open-File Report 2021-1045 (Reston, VA: USGS, 2021).
 - Detailed discussion of the US approach to assessing critical minerals, including a background on policy development.

Relevant Parliamentary Library Publications

- Dr Becky Bathgate, '[New industrial policy: a Future Made in Australia](#)', *Budget Review Article 2024–25*, (Canberra: Parliamentary Library, 25 June 2024).
- Dr Becky Bathgate and Ian Zhou, '[Future Made in Australia Bill 2024 \[and\] Future Made in Australia \(Omnibus Amendments No. 1\) Bill 2024](#)', *Bills Digest*, 6, 2024–25, (Canberra: Parliamentary Library, 9 August 2024).
- Scanlon Williams, '[Future Made in Australia \(Production Tax Credits and Other Measures\) Bill 2024](#)', *Bills Digest*, 46, 2024–25, (Canberra: Parliamentary Library, 30 January 2025).

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