



Ministry of Foreign Affairs

Critical Minerals Opportunities in Australia | 2023

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Source: [The Australian](#)

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Introduction

In December 2022, the Netherlands released its National Raw Materials Strategy. This strategy discusses the importance of prioritizing and increasing the security of supply for critical raw materials, due to their complex and high-risk value chain impacted by geopolitical tensions, human rights violations, and environmental stress, to name a few factors. The Consulate General of the Netherlands in Sydney considers Australia a valuable partner in achieving this goal given its critical mineral deposits, mining history, and high-standard Environmental, Social and Corporate Governance (ESG) practices.

The Australian federal, state, and territory governments are working to further develop their critical minerals mining and processing industry. Australia is interested in collaborating with international partners through offtake agreements and supply contracts. In 2022, the Australian government released its own Critical Minerals Strategy, with an updated version coming in 2023. This strategy includes the objective of building international partnerships with key countries,

such as members of the European Union.¹ It is looking for government-to-government and industry-to-industry links in particular.²

This report discusses the trade and investment opportunities in Australia primarily for Dutch businesses in the critical minerals sector. There are also opportunities for the Dutch government and universities.

The geographical focus is on three Australian states in particular: Western Australia, Queensland, and South Australia, due to their vast experience in mining and exploration and significant mineral deposits. The report also discusses what type of investment Australian mining companies are interested in, where Dutch stakeholders can invest in Australia, and what current actions Australia, the European Union (EU) and the Netherlands are taking regarding critical minerals.

For more information, please contact the Economics Affairs team via syd-ez@minbuza.nl.

¹ [Critical Minerals Strategy 2022 | Department of Industry, Science and Resources](#) pg. 14

² [Critical Minerals Strategy 2022 | Department of Industry, Science and Resources](#) pg. 21

Critical Minerals

There are different terms used to refer to minerals essential for modern technology (e.g. solar panels, batteries, electric vehicles).

Terms used regularly are: critical raw materials, critical minerals and rare-earth elements (REE). How these terms are employed depends on the type of material discussed (see 'Definitions' for an explanation). For the purposes of this paper, the term *critical minerals* is used.

Setting the scene

The global demand for metals and raw materials is projected to continue growing in the next decades due to the increasing demand for modern technology. Especially since critical minerals play a crucial role in

accelerating the clean energy transition and reducing greenhouse gas emissions. The Netherlands and EU are developing strategies for this transition; therefore, it is important to acknowledge the critical minerals' complex value chain and consider Europe's dependence on other countries.

The role and expertise of the Netherlands falls at the end of the value chain as an importer of (semi-)finished goods (a.k.a. downstream). Academic institutions like TU Delft, for example, focus on researching ways to either reuse or reduce the usage of critical minerals. Australia, which has an abundance of mining companies, mining knowledge, and mineral deposits, focuses on the first stages of the value chain, exploration and mining (a.k.a. upstream). At the University of Adelaide, for example, the Australian Critical Minerals

DEFINITIONS

In the critical minerals sector, a variety of terms are used to refer to critical minerals, some being specific and others all-inclusive. In the section below, three frequently used terms are described to give a better understanding of each of their meanings: critical raw materials, critical minerals and rare-earth elements.

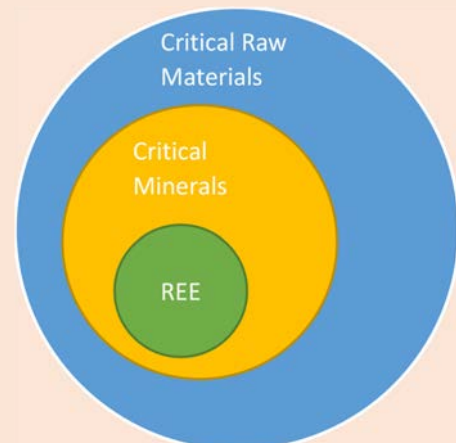
The label *critical* is used due to the raw materials' significant role in the production of modern technology and high-risk supply chain. The exploration, mining, processing, manufacturing, and end-use products are spread widely around the world and affected by geopolitical tensions, human rights violations, and environmental stress, resulting in a complex value chain.

"Critical raw materials" encompasses critical natural resources that are used to manufacture goods. An example of critical raw materials are critical minerals.

"Critical minerals" can either reference metallic or non-metallic elements. Many critical minerals are metal, such as lithium or copper.

"Rare-earth elements (REE)" are another example of critical minerals. They are a group of metallic elements essential for many high-tech devices.

See the illustration on the right of how the terms relate to one another.



Research Centre predominately researches exploration.

The intermediate steps in the value chain, refining and processing (a.k.a. midstream), occur in Malaysia and the United States. However, most critical mineral refining processes occurs in China. Currently, China covers circa 90% of the REE processing sector.³ This is illustrated in Figure 1, which demonstrates China’s role in the electric vehicle battery supply chain. Europe and the Republic of Korea also process materials and contribute to the production of batteries and electric vehicles, but not at the same level as China.

Like many countries, the Netherlands is looking to diversify its current value chain and secure future supplies required for the clean energy transition.⁴ Although there is currently no direct link in the value chain between the Netherlands and Australia, the latter remains a promising partner. The International Energy

Agency (IEA) published a list of critical minerals for 2022⁵ and Australia holds deposits for a majority of them, which include, but are not limited to⁶:

- **Lithium** (49% share of world production) making Australia #1 in the world
- **Rare-earth elements** (9% share of world production), making Australia #4 in the world
- **Cobalt** (4% share of world production), making Australia #2 in the world

Australia recognizes its potential role in the global energy transition and is looking to leverage its existing resource endowments and capabilities, namely exploration and mining. Simultaneously, Australia is committed to building a sovereign industrial base of its own to add value to its raw materials and develop critical minerals through processing and refining as well as

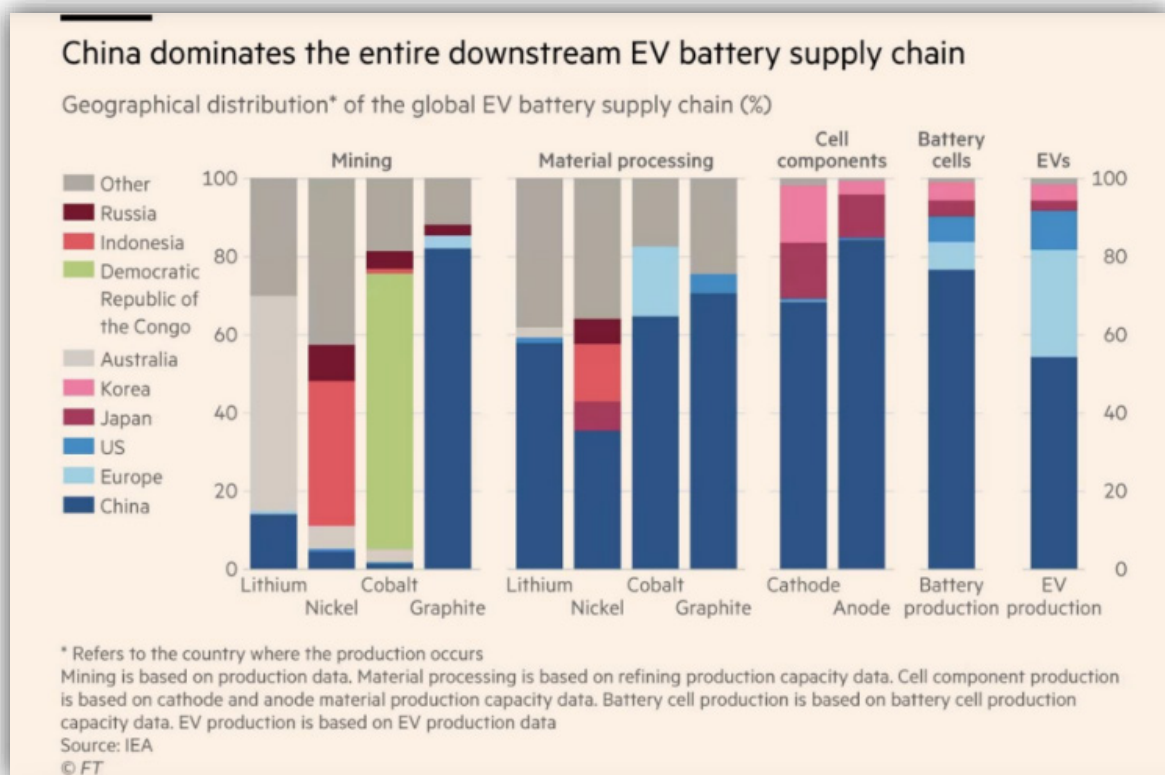


Figure 1: Geographical distribution of the global electric vehicle battery supply chain Source: IEA

³ [Minerals confirms China rare earths merger, creating new giant | Reuters](#)

⁴ Nationale grondstoffenstrategie pg. 10

⁵ [Final List of Critical Minerals 2022 – Policies - IEA](#)

⁶ [2022 Critical Minerals Strategy | Australia Government](#) pg. 8-11

manufacturing, selling and end of life recycling and reuse. It is looking to attract foreign investment through offtake agreements and supply contracts to create a commercially viable scale.

The Australian Government

Australia is a federation of six states and two self-governing territories. The Federal government is known as the Australian government.

The Australian government is co-funding and investing in opportunities in its various states

and territories, as well as setting targets and regulating the critical minerals industry. For instance, it has stated it will invest up to \$100 million AUD (approx. \$64 million EUR) for a battery manufacturing precinct (part of the Australia Made Battery Plan) to increase onshore battery manufacturing.⁷

Each state and territory has a significant level of autonomy. As the Australian critical minerals industry grows, each state and territory plays a role in its development. The focus and level of investment differs per state and territory. What remains the same



Figure 2: Critical Minerals in Australia per state/territory. Source: [Geoscience Australia](https://www.ga.gov.au/geoscience-australia)

⁷ [Australia's Critical Minerals Strategy: Discussion Paper \(storage.googleapis.com\)](https://www.ga.gov.au/geoscience-australia)

throughout Australia is the commitment to a high-standard of ESG practice for the mining sector. In December 2022, Australia launched the Sustainable Critical Minerals Alliance together with Canada, France, Germany, Japan, the United Kingdom and the United States to promote sustainable, environmentally and socially responsible mining practices for the mining and processing of critical minerals.⁸

The next section discusses the trade and investment opportunities Dutch businesses can find in Australia. This report particularly focuses on Western Australia, Queensland, and South Australia given their mining history and expertise, and briefly delves into what other states and territories are working towards.

Western Australia (WA)

WA is a major supplier of critical minerals; it accounts for half of the global lithium production and is a major exporter of cobalt, manganese, and REE.

In 2021, WA produced:⁹

- 55,000 tons of lithium, first globally (\$2.6 billion AUD; approx. \$1.6 billion EUR);
- 5,300 tons of cobalt, third globally (\$380 million AUD; approx. \$243.4 million EUR);

- 28,000 tons of REE, fourth globally (\$569 million AUD; approx. \$364 million EUR).

The Australian government has invested \$1.6 billion AUD (approx. \$1 billion EUR) to WA battery and critical minerals projects in 2021-22.

WA aims to encourage downstream manufacturing opportunities, including the manufacturing of battery cells, battery packs and equipment, and the establishment of reuse and recycling facilities for battery and critical mineral products. WA has a large land mass that provides plenty of space for off-grid energy storage. Furthermore, the WA government is investing \$75 million AUD (approx. \$48 million EUR) in research and innovation projects, including in exploration, mineral processing, and establishing new products and markets through the Minerals Research Institute of Western Australia (MRIWA).¹⁰ (See 'Current Project 1' for more details about an ongoing project in WA).¹¹

WA is looking for additional investments in their battery and critical minerals industries. Furthermore, the state is seeking to attract new investment opportunities and establish strategic partnerships with key international partners.¹²

For more information on incentives, grants and support in Western Australia, please see

CURRENT PROJECT 1: ILUKA RESOURCES | ENEABBA PROJECT

Minerals producer Iluka Resources will build an integrated REE refinery in Eneabba, Western Australia. The Australian Federal Government will provide a non-recourse loan of \$1.25 billion AUD (approx. 791 million EUR).

The refinery will produce separated rare earth oxides, including neodymium, praseodymium, terbium and dysprosium. This will be for applications, such as: electric vehicles and advanced electronics. The start of construction was scheduled in September 2022 and the goal is to have the first commercial production in 2025.

⁸ [Australia joins global commitment to ESG for critical minerals | Ministers for the Department of Industry, Science and Resources](#)

⁹ Western Australia: A Global Battery and Critical Minerals Hub, 2022, pg. 6

¹⁰ Western Australia: A Global Battery and Critical Minerals Hub, 2022, pg. 15

¹¹ [Iluka Website - Eneabba Rare Earths Refinery](#)

¹² Western Australia: A Global Battery and Critical Minerals Hub, 2022, pg. 2

the [AUSTRADE Australian Government website](#).

Queensland

Critical minerals are found in Queensland's North West and North East Minerals Provinces including: cobalt, copper, magnesite, nickel, REE, titanium, tungsten and zinc. The state also has a highly skilled workforce and an established mineral supply chain.¹³

The Queensland government committed to investing \$110 million AUD (approx. \$70.4 million EUR) to improve the minerals supply chain in the North West province.¹⁴ This project will take over 4 years. The Queensland government is also developing a new Queensland Battery Industry Strategy to grow the state's role in the battery supply chain.¹⁵

Many small, experienced companies in Queensland are seeking partnership and investment connections. High purity alumina projects in Queensland are growing and companies are ready for new partners. Queensland is also looking for investment in the development of a processing infrastructure for REE.¹⁶

For more information on incentives, grants and support in Queensland, please see the [AUSTRADE Australian Government website](#).

South Australia

South Australia contains 65% of the nation's copper, graphite, and zircon. It also has cobalt, halloysite, magnesite, REE and it has the world's largest zircon mine and Australia's largest graphite deposit.¹⁷

In 2021, the Department for Energy and Mining in partnership with Unearthed Solutions organized a global online crowdsourcing challenge where they

encouraged entrepreneurs and companies in the critical minerals value chain from around the world to bring their business to South Australia.¹⁸

South Australian universities are researching geoscience and resources processing, such as the Australian Critical Minerals Research Centre of the University of Adelaide. There are also multiple critical minerals projects in South Australia that provide investment opportunities, such as: [Coda Minerals' Elizabeth Creek Project – Copper](#) and [Havilah Resources' Mutooroo Project - Copper, Cobalt & Gold](#).

For more information on incentives, grants and support in South Australia, please see the [AUSTRADE Australian Government website](#)

The rest of Australia

Other states and territories in Australia are also developing their critical minerals sector. However, they are not as far in the process as Western Australia, Queensland, and South Australia.

New South Wales (NSW)

In 2021, the NSW government released the Critical Minerals and High-Tech Metals Strategy. NSW has numerous advanced projects and opportunities for minerals such as: cobalt, REEs, scandium, tungsten, and zinc.¹⁹

NSW aims to attract investment for critical minerals resources, downstream processing, and recycling.

In 2022, the NSW government announced the \$130 million AUD (approx. \$84.3 million EUR) Critical Minerals and High-Teach Metals Activation Fund to support mining and

¹³ New economy minerals investment opportunities in Queensland's minerals provinces, 2020, pg. 11

¹⁴ New economy minerals investment opportunities in Queensland's minerals provinces, 2020, pg. 17

¹⁵ [Powering Queensland's battery industry | State Development, Infrastructure, Local Government and Planning](#)

¹⁶ [Critical minerals: Invest in Queensland \(resources.qld.gov.au\)](#)

¹⁷ [Critical minerals project in | Department for Trade and Investment](#)

¹⁸ [New critical minerals opportunities | Energy & Mining \(energymining.sa.gov.au\)](#)

¹⁹ [Critical minerals and high-tech metals strategy | New South Wales Government](#)

processing projects by bringing investment to the state.

NSW is also looking to establish Australia's first Critical Minerals Hub in the Central West, where the focal points are mining and value-added processing. The Hub would also support the development of downstream industries, including circular economy and reprocessing.

Tasmania (TAS)

In Tasmania, there are various opportunities for exploring critical minerals such as cobalt, fluorite, nickel, and silica. The Tasmanian government is funding geoscientific studies and research with \$2 million AUD (approx. \$1.2 million EUR). The Australian government has invested an extra \$3 million AUD (approx. \$1.9 million EUR).

Moreover, the Australian Research Council Centre for Ore Deposits and Earth Sciences (CODES), based at the University of Tasmania in Hobart, works in partnership with industry members to transform the mining value chain.²⁰

For more information on incentives, grants and support in Tasmania, please see [the AUSTRADE Australian Government website](#).

Victoria (Vic)

In the Victoria 2022 Budget, it states that the Victorian government will invest \$7.5 million AUD (approx. \$4.8 million EUR) in new funding to grow its critical minerals industry. The funding will focus on minerals development grants program, government investment in geoscience data, and investment facilitation. The Minerals Council of Australia (MCA) Victoria aspires to develop funding grants to match those of the Victoria government to promote the discovery and development of critical minerals.²¹

The Territories

The Northern Territory (NT) has a few critical minerals projects. Critical minerals found here include: REE, vanadium, titanium, cobalt, and nickel. The NT Government published a plan in 2019 that discusses possible international investments in the area and how the territory can play a role in the critical minerals value chain.²² In addition, Arafura Resources is running the Nolans Project, which will include a mine and process plant. (See 'Current Project 2' for more details about an ongoing project in NT).²³

For more information on incentives, grants and support in the Northern Territory, please see the [AUSTRADE Australian Government website](#).

CURRENT PROJECT 2: THE NOLANS PROJECT

Located in Australia's Northern Territory, the Nolans Project comprises of a mine and process plant, including beneficiation, extraction and separation plants. This project is run by Arafura Resources, an Australian mineral exploration company. The Nolans Project is expected to supply up to 10% of the world's demand for REE used in magnets.

The Nolans Bore REE-phosphate-uranium-thorium deposit is a great asset to the project. The most abundant REE-bearing minerals are apatite, monazite and allanite.

The Mining Inventory is expected to support mining and processing operations for 38 years and produce 340,000 tons per year.

At the moment, Arafura is gathering funds in order to construct and operate.

²⁰ [Critical minerals in Tasmania | Global Australia](#)

²¹ [Victorian Budget makes positive signals to mining and exploration | Minerals Council of Australia](#)

²² [The Territory critical minerals plan | Department of Industry, Tourism and Trade](#)

²³ [Arafura - Nolans \(arultd.com\)](#)

The Australian Capital Territory does not take on any critical mineral projects.

Offtake agreements and supply contracts

There are various trade and investment opportunities for the Netherlands in Australia, particularly in the battery supply chain as seen in Western Australia and Queensland. Investments from foreign companies and governments are deemed essential in Australia to achieve their planned scale-up. Australian mining companies are looking for a specific type of investment. To avoid bearing the majority of the risk, Australian mining companies are interested in co-investments before the start of the project through offtake agreements and supply contracts. This guarantees participation and shared risk for both parties at the very beginning.

An example of co-investment is Tesla, who stated in 2021 that it would invest \$1 billion AUD (approx. 642 million EUR) a year on battery raw materials from Australia. One of the attractions in Australia, besides its mineral deposits, is its expertise in mining and domestic ESG requirements. For this reason, Tesla sees great potential in Australia. Ford and Toyota are also co-investing in critical mineral processing in Australia.²⁴

The Netherlands and the EU

The Netherlands holds a strong position in the traditional raw materials supply chains due to the location of its ports. This makes it one of the biggest importers and exporters of raw materials, like fossil and biological.²⁵

When it comes to critical minerals, the Netherlands is situated at the end of the value chain, namely assembling and manufacturing products that contain critical minerals, such as solar panels. There are also many experts in the Netherlands, working at academic institutions like TU Delft for example, focused on smart design of products and the recovery

of critical minerals from existing products. However, investing solely in the end of the value chain does not ensure security of supply, which is why the Dutch cabinet released a strategy discussing the importance of prioritizing different aspects of the critical minerals value chain.

In December 2022, Minister Adriaansens (Economic Affairs and Climate Policy), Minister Schreinemacher (Foreign Trade and Development Cooperation) and State Secretary Heijnen (Infrastructure and Water Management) sent the House of Representatives of the Netherlands (*Tweede Kamer*) the [National Raw Materials Strategy](#) (in Dutch). The goal of this strategy is increasingly secure the supply of critical raw materials, including critical minerals. The cabinet is determined to work on five action perspectives: 1. Circularity and innovation, 2. Sustainable European mining and processing, 3. Diversification, 4. Sustainable international supply chains and 5. Building expertise and monitoring.²⁶

The National Raw Materials Strategy emphasizes using the EU internal market's stronger bargaining power to address critical mineral supply chain challenges.²⁷ That is why the strategy includes multiple aspects that benefit from negotiations on an EU-level, such as taking part in (processed) raw material partnerships.

By investing in research and development, critical mineral projects and mining companies, the Netherlands and the EU can strengthen their security of supply, diversify the value chain, and contribute to high-standard ESG practices. That is why an experienced mining country like Australia, which has similar goals and high-standard ESG practices, is an interesting partner to invest in.

²⁴ [Tesla, Ford, Toyota jockey for Australia's critical minerals \(afr.com\)](#)

²⁵ Grondstoffenstrategie pg. 7

²⁶ Grondstoffen voor de grote transitie. 2022.

<https://www.rijksoverheid.nl/documenten/kamerstukken/2022/12/09/bijlage-nationale-grondstoffenstrategie>

²⁷ Nationale Grondstoffenstrategie pg. 10

The EU is currently negotiating a Free Trade Agreement (FTA) with Australia, which includes discussions on collaboration on critical minerals.

Currently, Australia, the EU and the Netherlands are taking additional actions:

- In November 2022, the EU and Australia agreed to discuss the establishment of a bilateral partnership on sustainable critical and strategic minerals;²⁸
- The Dutch cabinet is expected to release a new National Raw Materials Strategy around Q2/Q3 of 2023, which will elaborate on the goals and action points discussed in the strategy released in December 2022;
- Australia is updating its Critical Minerals Strategy and publishing it in 2023. A discussion paper has already been under consultation at the start of 2023;
- The Dutch cabinet wants to investigate which Dutch businesses are internationally active in the mining sector as well as in the trade and processing of critical raw materials, such as critical minerals;
- The EU is releasing its Critical Raw Materials Act in March 2023.

International partnerships

Australia aims to work with international partners to build diversified critical mineral supply chains. This is done through international standard setting, advancing research and development, supporting new investment opportunities, as well as by exploring strategic (bilateral) collaborations. The latter has led to a number of partnerships to date:

- The **Australia-UK** Joint Working Group on Critical Minerals
- The **Australia-France** Critical Minerals Dialogue

- The **Australia-Germany** Working Group on Raw Materials
- **India-Australia** Critical Minerals Investment Partnership which aims to support Indian investment in Australian critical minerals projects and grow the sector.
- The **Australia-Republic of Korea** Memorandum of Understanding on Cooperation in Critical Mineral Supply Chains
- The **Australia-Japan** Partnership between Australia's Department of Industry, Science and Resources and Department of Foreign Affairs and Trade and Japan's Ministry of Economy, Trade and Industry Concerning Critical Minerals
- The **Australia-US** Joint Net Zero Technology Acceleration Partnership
- **Scientific partnerships** such as the Critical Minerals Mapping Initiative between Geoscience Australia, the US Geological Survey and the Geological Survey of Canada

Australian strategy and prospectus - documents

The Australian government has published a variety of relevant reports and strategies about critical minerals. These documents further highlight developments in Australian states/territories and potential opportunities for investment. Below are a selection of these documents:

[Critical Minerals Strategy 2022 | Department of Industry, Science and Resources](#)

In 2022, the Australian government updated its critical mineral strategy. The focus of the strategy is to put Australia at the center of the growing demand for critical minerals. It states that improving access to reliable, secure, and resilient supplies of critical minerals will benefit Australian prosperity and security.

²⁸ [Australia-EU Leaders' meeting 2022: joint press release by Australian Prime Minister Anthony Albanese, European Council](#)

[President Charles Michel and European Commission President Ursula von der Leyen - Consilium \(europa.eu\)](#)

[Critical minerals and their potential economic opportunities: a quick guide – Parliament of Australia \(aph.gov.au\)](#)

This guide provides general information about economic opportunities in Australia's critical minerals sector and the Australian government's \$2 billion AUD (approx. \$1.2 billion EUR) loan facility.

[Australian Critical Minerals Prospectus 2022](#)

This annual prospectus published by AUSTRADE breaks down the quantity and type of minerals Australia has. It also showcases investment-ready projects across Australia.

[Western Australia's Future Battery and Critical Minerals Industries \(www.wa.gov.au\)](#)

WA is committed to the development of its battery and critical minerals industries. This report outlines its strategy.

Conclusion

This report aimed to demonstrate what trade and investment opportunities there are for Dutch businesses, but also the Dutch government and universities in the critical mineral sector in Australia, particularly in Western Australia, Queensland and South Australia. It also delved into what type of investment Australian mining companies are looking for, where Dutch stakeholders should invest in Australia and what current actions Australia, the EU, and the Netherlands are taking regarding critical minerals.

As mentioned, governments around the world are focusing on investing in the critical minerals sector, considering its growing importance for modern technology and the clean energy transition. For instance, the Netherlands released its first National Raw Materials Strategy late last year. The goal of this strategy is to improve the security of supply of critical raw materials since there are many factors influencing the security of supply, such as: geopolitical tensions, human rights violations and environmental stress.

Australia's rich mining history, mineral deposits and high-standard ESG practices make it a valuable partner. Furthermore, in Australia, the critical mineral mining and processing industry is gaining more attention and therefore more investments. One of the emphases in the Australian Critical Minerals Strategy 2022 is the need for collaborating with international partners, such as members of the European Union.

There is significant potential in investing in small to medium sized Australian mining companies that are seeking investments themselves, especially in the battery industry. These companies are mainly interested in co-investment at the beginning phases of the project through offtake agreements and supply contracts, with a particular focus on industry-to-industry and government-to-government links.

The Consulate General of the Kingdom of the Netherlands in Sydney supports businesses, government initiatives and individuals looking at Australia as a potential partner. If you would like to contact the embassy network, please send an email via syd-ez@minbuza.nl.

This report was written by Nanda Elenbaas Westerhof. The last update was made on 08/03/23.

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