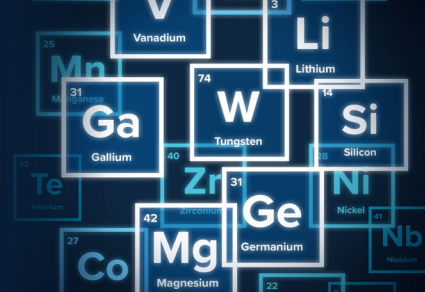


Current Research Projects Overview



Science, Research and Innovation

Accelerate the development of Australia's critical mineral resource endowment. Support energy, defence and technology industries. Build diverse, secure and sustainable supply chains with international partners.

VISION

MISSION

STRATEGY

Delivering Technical Breakthroughs

Build capabilities and downstream industries onshore. Help de-risk commercial projects and attract international investment and partnerships. Provide trusted information and advice to Government and leadership to Australia's R&D community.

The Australian Critical Minerals R&D Hub is hosted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and was established in October 2022. Under this initiative, Australia's leading science agencies, Australia's Nuclear Science and Technology Organisation (ANSTO), Geoscience Australia, and CSIRO, are working collaboratively to develop urgent technical solutions needed to achieve the vision of the Critical Minerals Strategy 2023-2030 and Future Made in Australia plan.

LEADING SCIENCE AGENCIES

**Commonwealth Scientific
and Industrial Research
Organisation (CSIRO)**

Geoscience Australia

**Australian Nuclear
Science and Technology
Organisation (ANSTO)**

CSIRO



ANSTO

AUSTRALIAN
**critical
minerals**
RESEARCH & DEVELOPMENT HUB



CAPABILITY



CONNECTION



COLLABORATION

Capability

Scaling-up and commercialising critical minerals research and development.

Connection

Connecting the critical minerals R&D ecosystem, linking industry to R&D solutions, informing policy.

Collaboration

Supporting strategic international critical minerals collaboration.

KEY STRATEGIC PILLARS

Working with the Critical Minerals Office at the Department of Industry, Science and Resources (DISR), the Hub projects were developed in response to Australia's policy objectives and strategic priorities.

Value-adding/creating new industries: Develop sovereign processing technologies and create Intellectual Property needed to develop Australia's critical minerals resource endowment and industrial base, de-risk projects and attract potential foreign investment/partners.

Fill priority R&D gaps that would not be solved by the market in the immediate future, which are critical to Australia's national interests and the energy transition.

Develop R&D needed to secure the most concentrated international supply chains for materials essential to modern technologies that are most vulnerable to disruption.

Develop innovative ESG solutions that meet expectations of trading partners.

Increase the knowledge base needed to support data-driven decision-making on mining and processing of critical minerals ore bodies in Australia.

OBJECTIVES

PROJECTS



Research projects are collaborative, with all three agencies contributing their expertise and scientific infrastructure to deliver technical breakthroughs.

The Hub is also building strategic international R&D partnerships that will accelerate the development of technical solutions and promote Australian innovation with international investors. Current projects are:

- Mineral Criticality Assessment
- High Purity Silica/Quartz (HPS/HPQ)
- High Purity Alumina (HPA)
- Accelerating the Development of Australia's Rare Earth Resources
- Extracting Mineral By-Products
- Producing High Tech Metals and Materials

Mineral Criticality Assessment



THE HUB



Establish a quantitative methodology to measure the vulnerability of minerals imported and exported from Australia that are at risk of supply chain disruption. Generate data and information needed to inform government decision-making.



- Like our strategic partners, Australia has a critical minerals list which is used to inform minerals policies and incentives.
- Australia is unique among developed nations in being a primarily minerals-export economy, with trade partnerships concentrated in a handful of countries.
- Australia requires more granular data to help understand our mineral potential and vulnerabilities and an objective set of criteria to inform decision making on changes to our Critical Minerals List, broader trade risks and minerals sovereignty.

The criticality assessment methodology must be robust and defensible but must also be flexible enough to manage changing economic, technological, and geopolitical factors.



- Geoscience Australia completed the first mineral criticality assessment in November 2023 and outputs were used to update the Critical Minerals List in December 2023.
- The value of these data has been promoted with Government stakeholders including Prime Minister and Cabinet, Treasury, DFAT, Department of Defence, and DISR.
- Geoscience Australia is using the data to generate specific reports and inform advice to the Government on mineral criticality.

EXPLORATION | DISCOVERY

EXTRACTION

MID-STREAM PROCESSING

MANUFACTURING