Commercialising Australia’s Critical Minerals Resources

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Australian Embassy Tokyo

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CRITICAL MINERALS
RARE EARTHS

17 metals incl. 15 lanthanides, scandium and yttrium

Praseodymium (Pr) – magnets (wind & cars), alloys, aircraft, glass enamels, yellow glass

Dysprosium (Dy) – hybrid cars, wind turbines, medical instruments, metal alloys

Secure and reliable access to rare earths supply chains a key strategic consideration
AUSTRALIA’S RARE EARTHS PROJECTS

Rare-earth-element-bearing deposits and prospects (other than heavy mineral sands)

- Ultramafic/mafic associated
- Skarn
- Iron-oxide breccia complex
- Carbonatite
- Carbonatite-associated
- Apatite and/or fluorite vein
- (Per)alkaline rocks

Geological regions
ACCELERATING DEMAND FOR LITHIUM

Comparing projections of global annual battery production (GWh) to 2023
Chart @FSS_Au @ProfRayWills 30Jun2018

- Market data
- Future Smart Strategies
- Roskill
- Morgan Stanley
- BNEF
MAJOR LITHIUM PROJECTS IN WA

- Pilangoora
  - Pilbara Minerals
- Pilangoora
  - Altura Mining
- Wodinga
  - Mineral Resources
- Mt Holland
  - Kidman Resources
  - SQM
- Greenbushes
  - Albemarle
  - Tianqi
- Mt Marion
  - Neometals
  - Mineral Resources
  - GanfengLithium
- Mt Cattlin
  - Galaxy
A vision for Australia as a world leader in exploration, extraction, production and processing of critical minerals.

Develop trade and investment relations with our economic partners through cooperation on critical minerals and related industries.

**Investment:**
- Attracting new sources of capital and off-take agreements for current Australian projects
- Improving geoscience data and knowledge of Australia’s resource potential

**Innovation:**
- New technologies and innovation through collaboration in the critical minerals sector - Cooperative Research Centres program.

**Infrastructure:**
- Connecting critical minerals opportunities to infrastructure.

**State/Territory level initiatives:**
- **Queensland:**
  - Strategic Resources Exploration Program 2017-2021
- **New South Wales:**
  - New Frontiers Initiative
- **Victoria:**
  - Extractive Resources Strategy
- **South Australia:**
  - Plan for Accelerating Exploration
  - PACE copper
- **Western Australia:**
  - Exploration Incentive Scheme
- **Northern Territories:**
  - Resources the Territory 2018-2022
- **Tasmania:**
  - Mining for Tasmania’s Future policy
AUSTRALIAN CRITICAL MINERALS PROSPECTUS


Covers 24 critical minerals including 17 rare earth elements

Detailed analysis of companies and operations with investment potential

All projects across Australian states and territories
AUSTRALIA’S COMPETITIVE ADVANTAGES: SUPPLY CHAIN

All 10 Minerals
- Mineral Availability
- Refineries
- Railways
- Major Roads
- Ports
WORLD CLASS RESEARCH AND DEVELOPMENT

Public R&D facilities:

- ARC Centre of Excellence in Ore Deposits (CODES)
- Australian Centre for Geomechanics
- Australian Crustal Research Centre
- Australian Geophysical Observing System
- Australian Resources Research Centre
- Centre for Exploration Targeting
- Centre for High Definition Geophysics
- Minerals Research Institute of WA, Energy and Minerals Partnership

9 private R&D facilities focused on exploration, innovation & technologies and training

The Australian mining sector spends nearly A$3 billion on R&D annually

Expenditure on minerals exploration was A$1.7 billion in 2016-17

Cooperative Research Centres (CRCs)

Minerals Down Under Flagship

R&D Tax Incentive program

CSIRO RANKS IN THE TOP 1% OF THE WORLD'S SCIENTIFIC INSTITUTIONS IN 14 RESEARCH FIELDS\*
A WORLD LEADING RESOURCES INVESTMENT DESTINATION

• Skilled workforce, stable investment climate, supportive Government policies, incentives and high environmental standards.

• World-leading expertise in resource extraction and processing, high-tech engineering and renewables research.

• The 2030 Resources Taskforce has identified areas where Australia can further enhance its global competitiveness.

Australia is ranked #2 most attractive place for mining investment globally

Source: Annual Survey of Mining Companies (2017), Fraser Institute
The Australian Government has reiterated their critical minerals policy following their re-election in May 2019:

- Australia’s Minister for Resources signed a Memorandum of Understanding with United States’ Interior Minister in December 2018 to support develop minerals critical to the US economy.
- Northern Australian Instructure Fund (NAIF) has invested in two projects in Western Australian on rare earths and mineral sands.
- The Australian Government has provided $30 million for Cooperative Research Centre grants for minerals battery projects.
**Austral Trade** is the Australian Government’s trade and investment promotion agency.

In cooperation with State and Territory governments, Austral Trade provides free and confidential assistance.

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