



Australian Government  
Department of Industry,  
Innovation and Science

**Business**  
Cooperative Research  
Centres Programme



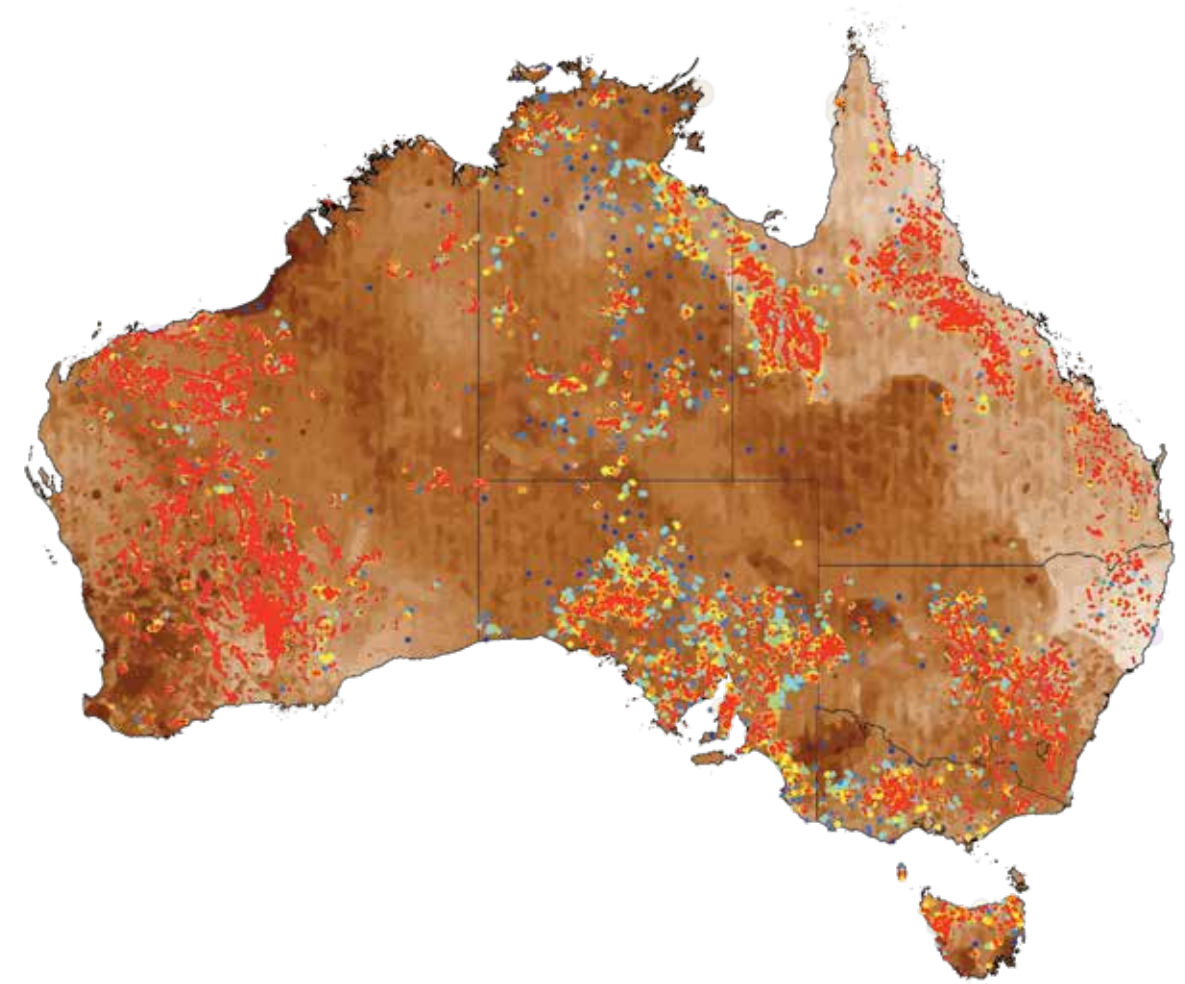
# **A NEW FRONTIER IN MINERAL EXPLORATION**

Mineral Exploration  
Cooperative Research Centre

# MINEX CRC

MINERAL EXPLORATION IN AUSTRALIA  
HAS BEEN FOCUSED ON AREAS  
WHERE THE PROSPECTIVE GEOLOGY  
IS EXPOSED OR NEAR THE SURFACE

THIS EXPLORATION HAS UNLOCKED  
INCREDIBLE MINERAL WEALTH.  
BUT WHAT LIES UNDISCOVERED  
BENEATH THE COVER?

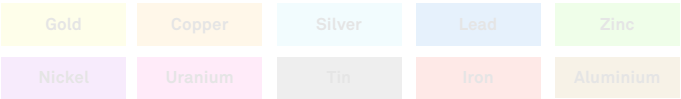


Historic exploration drill holes

Distance to nearest neighbour hole

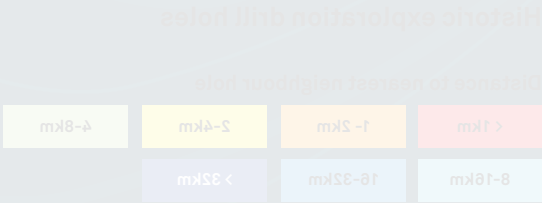
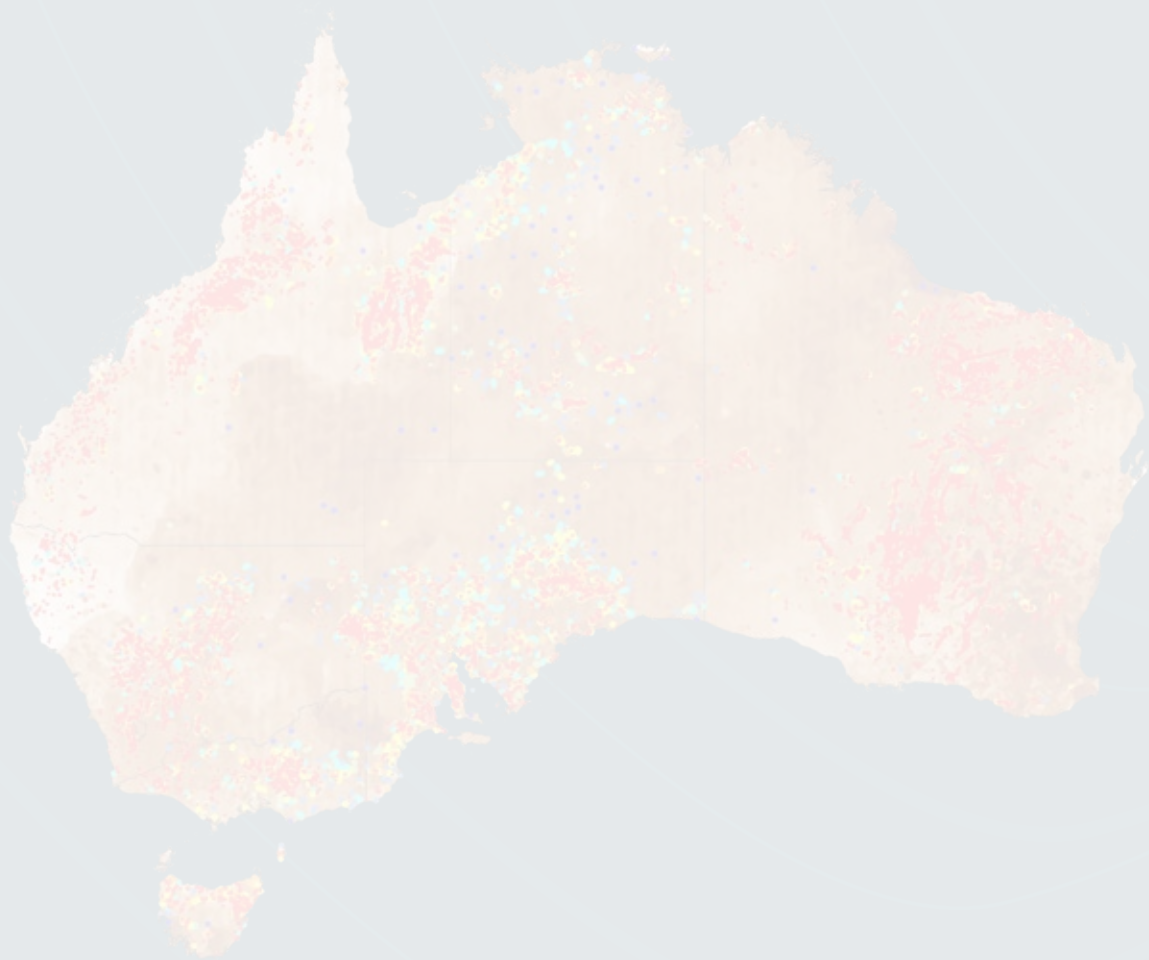


Deposits

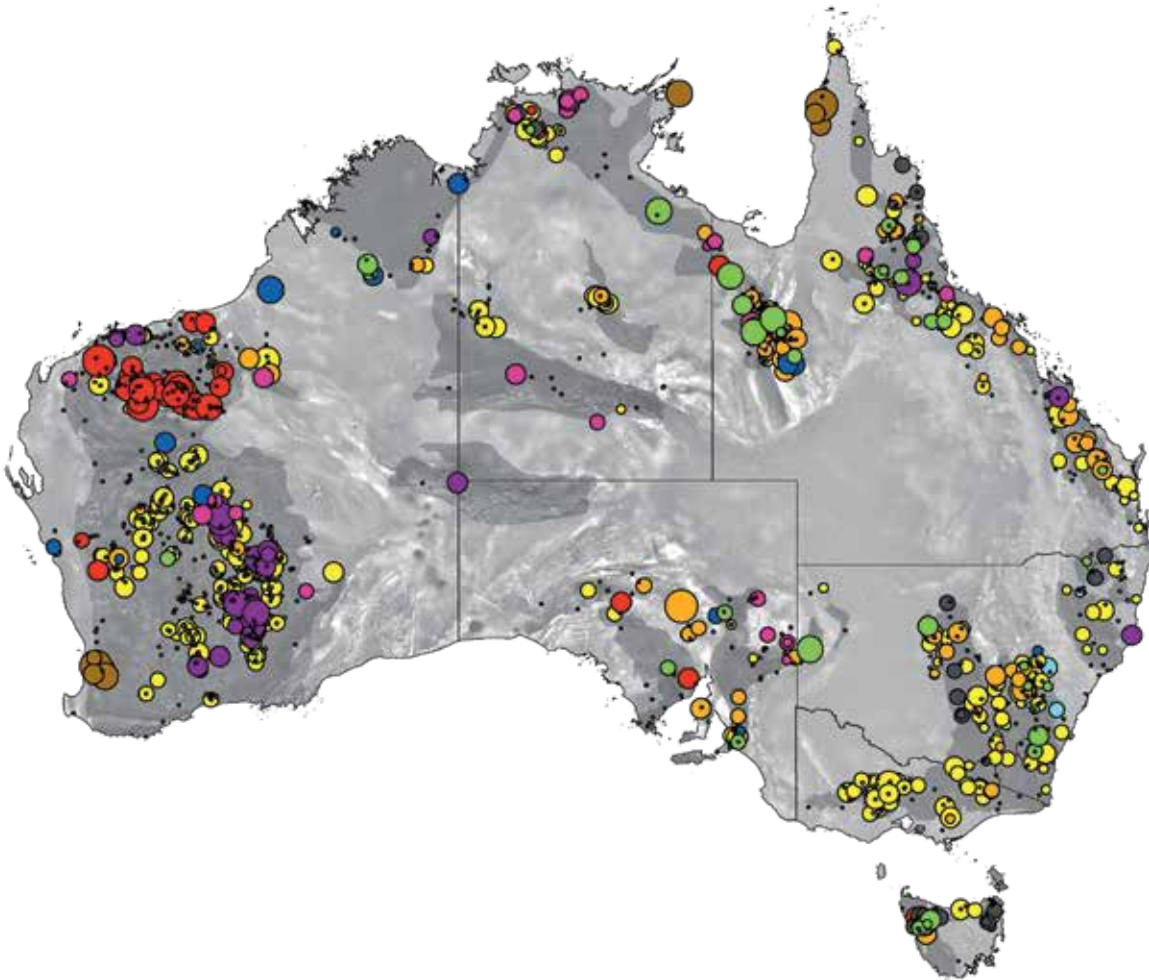


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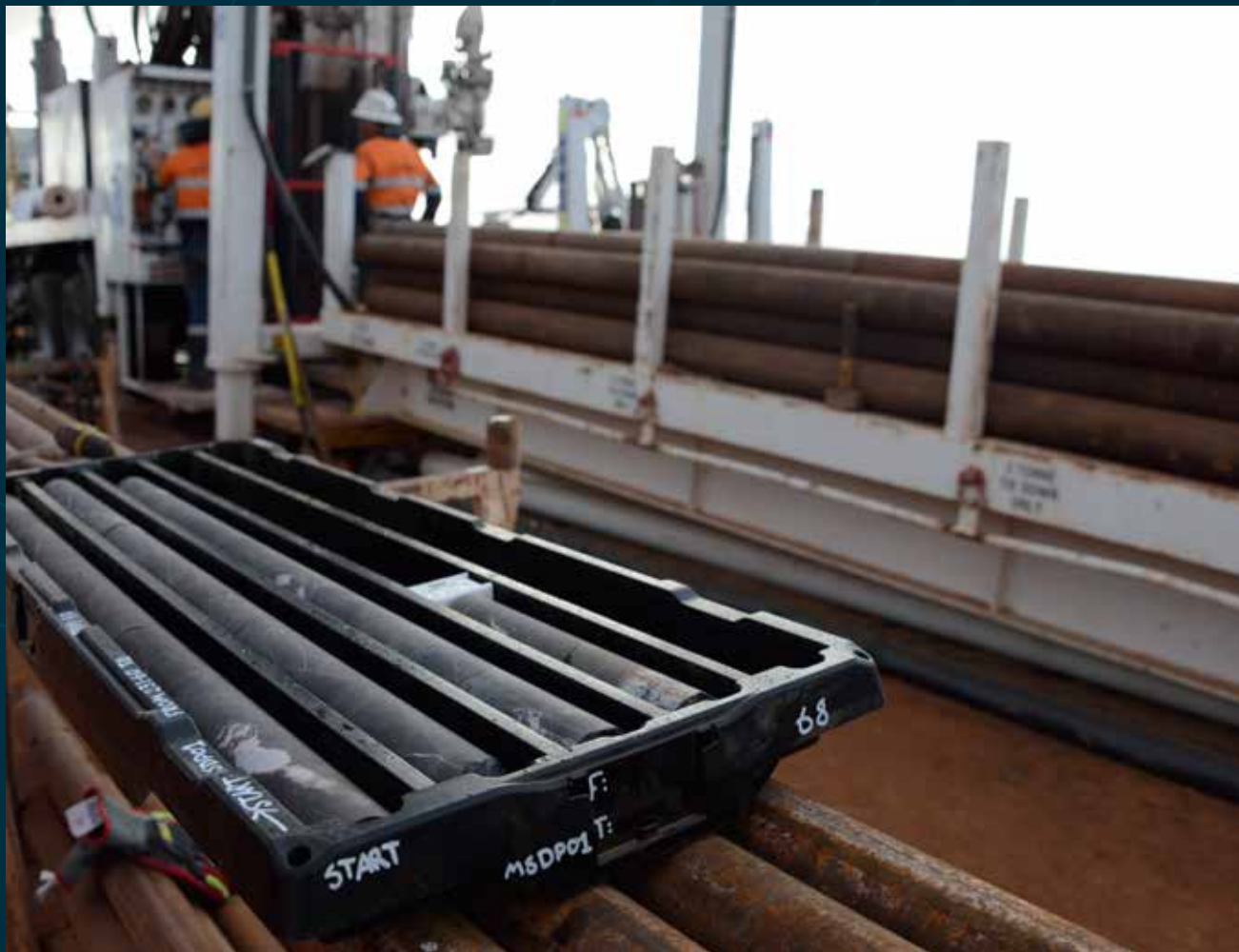
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# NEXT GENERATION MINERAL EXPLORATION



The Mineral Exploration Cooperative Research Centre (MinEx CRC) is the world's largest mineral exploration collaboration bringing together industry, government and research organisations.

MinEx CRC was established in 2018 under the Australian Government's CRC Programme. The CRC Programme provides funding to build critical mass in research ventures between end-users and researchers to deliver significant economic, environmental and social benefits to Australia. As of February 2019 there are 34 CRCs all of which address major challenges that require medium to long-term collaborative efforts. Find out more about CRCs at [business.gov.au/assistance/cooperative-research-centres-programme](https://business.gov.au/assistance/cooperative-research-centres-programme)

#### MinEx CRC's focus

There are few, if any, remaining major, new mineral deposits that are exposed at the earth's surface to be found in Australia. The technical challenge of finding major, new mineral deposits hidden beneath barren cover rocks has not yet been met. Consequently, mineral exploration is moving from Australia to less well explored countries with Australia's share of global mineral exploration reducing from approximately 25% in the 1990s to approximately 13% in 2017.

In order to reverse this trend, we require a new set of exploration tools and new ways to deploy those tools which recognise the fundamental importance of collecting quantity and quality data from the subsurface. Collecting these data requires drilling.

# OUR RESEARCH AGENDA



## MinEx CRC's research will address declining exploration success in three research programmes.

- Developing more productive, safer and environmentally friendly drilling methods, including coiled tubing drilling technology, to discover and drill-out deposits.
- Developing new technologies for collecting data while drilling.
- Delivering a National Drilling Initiative (NDI) – a world-first collaboration of Geological Surveys, researchers and industry that will undertake drilling and collect vital data in under-explored areas of potential mineral wealth in Australia.

### **Program 1: Drilling Technologies**

Innovative drilling technology that will deliver more discoveries and reduce the cost of developing these discoveries.

*Project 1* Drilling Optimisation

*Project 2* Coiled Tubing Drilling for Definition of Mineral Deposits

### **Program 2: Data from Drilling**

Tools for decision making and efficient targeting that will result in more productive drilling.

*Project 3* Real-time Downhole Assay

*Project 4* Petrophysical Logging While Drilling (LWD)

*Project 5* Seismic in the Drilling Workflow

*Project 6* Automated 3D Modelling (A3DM)

### **Program 3: National Drilling Initiative**

Collaborative drilling to explore untapped areas of potential mineral wealth in Australia.

*Project 7* Maximising the Value of Data and Drilling Through Cover

*Project 8* Geological Architecture and Evolution

*Project 9* Targeting Mineral Systems in Covered Terranes

# SUPPORTING MINEX CRC



MinEx CRC is backed by a total of A\$218M. This includes contributions of A\$50M cash from the CRC Programme, A\$41M cash from geological surveys and industry, \$A49M non-staff in-kind and A\$78M (311FTE) staff in-kind.

MinEx CRC launched in December 2018 with 34 Participants comprising industry Participants, research Participants and Affiliates.

**Participant categories include:**

- Major mining companies (market capitalisation >A\$5B) who contribute A\$200K per annum, supporting up to four projects of choice.
- Mid-tier mining companies (market capitalisation A\$0.5-5B) who contribute A\$100K per annum, supporting up to two projects of choice.
- Australian geological surveys each contributing >A\$2M toward the National Drilling Initiative.
- METS supplier companies contributing >A\$50K per annum cash and >A\$50K per annum in kind, to support at least one project (within which they will earn the first right to propose a plan for the commercialisation of Project IP).

**Affiliates, at the cost of A\$10K per annum, include:**

- METS Suppliers of any size, junior explorers/miners (market capitalisation < A\$500M).
- Geological surveys who are not Participants. Incentive Scheme.

New industry Participants, research Participants and Affiliates are welcome to join MinEx CRC. Contributions may qualify for a tax offset under the Australian Government's R&D Tax Incentive Scheme.



SUPPORTING MINEX CRC CONTINUED...

Industry Participants









Research Participants and Affiliates











# SUPPORTING MINEX CRC CONTINUED...

For major mining companies who choose to support our research programme, MinEx CRC delivers:

- A\$218 M of targeted, industry led research.
- R&D investment ratio of >1:100.
- Research projects that address industry defined challenges.
- Specific focus on increased exploration productivity through drilling and data from drilling technology with potential for tangible/ measurable productivity gains – more meters drilled and better quality data for the same spend.
- Participants choose up to four projects to deliver best value to their organisation.

- Ability to influence the direction of research projects via Industry Project Review Panels.
- Ability to influence strategic direction of MinEx CRC via seat on the Science Advisory Committee.
- 3x3 year project agreements + opportunity fund give flexibility and agility to the long-term research agenda.
- Ability to propose and co-supervise PhD/ MSc projects within MinEx CRC portfolio of approximately 60 higher degree by research students.



# EDUCATION AND TRAINING



MinEx CRC has an ambitious target of graduating 50 Postgraduate students from participating universities. MinEx will also assist in the training of 200 Vocational Education and Training (VET) students in specific aspects of drilling and mineral exploration technologies.

MinEx CRC utilises the unique position of CRCs at the nexus between industry and university research to add value for PGR students working on its projects. Specifically, MinEx CRC:

- Ensures all PGRs have a co-supervisor from a mining company, geological survey, CSIRO or METS company.
- Offers a voluntary mentoring scheme for PGR students with senior industry staff.
- Financially supports internships within mining companies, geological surveys or METS companies during PGR research.
- Provides networking opportunities with industry representatives, including at the MinEx CRC annual conference.

A copy of the MinEx CRC Postgraduate Booklet can be found on the education page of our website [minexcrc.com.au/education](http://minexcrc.com.au/education)

## VET sector

MinEx CRC has allocated A\$150K of its education and training budget to the VET sector with the goal of assisting in the training of 200 VET students. MinEx CRC will work in partnership with industry organisations to identify skills gaps related to the drilling and mineral exploration industries.

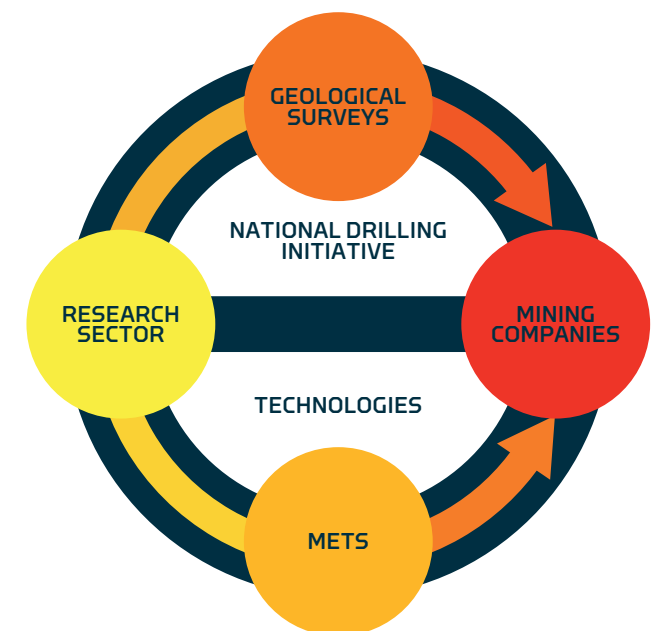
# COMMERCIALISATION



MinEx CRC has adopted an approach to commercialisation that utilises the strengths of its partner organisations across industry, Geological Surveys, Mining Equipment, Technology and Services (METS Sector) and the research sector in order to deliver outcomes to market.

METS companies will commercialise the IP developed by MinEx CRC and the ownership percentage and rights have been determined based on sponsorship proportions of Participants in each individual project.

Pre-competitive data and derived exploration criteria, collected during the National Drilling Initiative, will be delivered to the exploration community by the geological surveys.





# GOVERNANCE



MinEx CRC Ltd operates under the Corporations Act and is governed by an independent skills-based Board and Chair.

The Board is accountable to all MinEx CRC stakeholders, including the Australian Government through the Commonwealth Agreement, our Participants through the respective Participants Agreement and Affiliates Agreements, and our Members through the Constitution.

In addition to monitoring the performance of MinEx CRC, the Board plays an important role in the approval and regular review of MinEx CRC funded projects to ensure that research is aligned with its objectives.

**Board of Directors**

- Chris Pigram (Chairman)
- Andrew Bailey (CEO)
- John Emerson
- Lindsay Gilligan
- Kelly Keates
- Linda Kristjanson
- Peter Rossdeutscher
- Erica Smyth



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# KEY CONTACTS

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Australian Resources

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