

Minerals Geoscience Fact Sheet



OBJECTIVE

Provide new geoscientific knowledge and research on the mineral potential of Australia in order to attract mineral exploration investment.

SIGNIFICANCE FOR AUSTRALIA

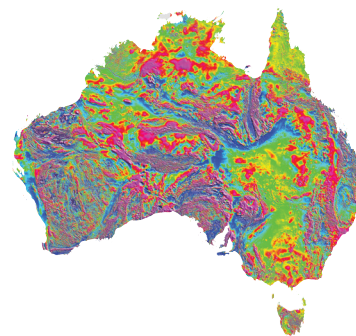
Australia's mineral and energy exports for 2006-07 were \$106.5 billion. Investment in mineral exploration and new mineral discoveries is needed to secure a long-term continuing contribution to the Australian economy of this magnitude.

DEPARTMENTAL ROLE AND CURRENT ACHIEVEMENTS

Geoscience Australia (GA) undertakes geoscientific surveys and research of Australia's mineral provinces to identify areas of new mineral potential that may be of exploration interest. Geoscience Australia markets these opportunities domestically and internationally.

The Onshore Energy Security Program (OESP), implemented by the Commonwealth Government as part of a broader package of energy initiatives in 2006, is a five-year program designed to deliver reliable, precompetitive geoscience data and scientifically based assessments of the potential for onshore energy resources, including oil, gas, hot rocks (geothermal energy), uranium and thorium. The OESP is being implemented by GA's Onshore Energy and Minerals Division in consultation with state and Northern Territory geological surveys and peak minerals and petroleum industry bodies, including the Australian Petroleum Production and Exploration Association Limited and the Association of Mining and Exploration Companies.

Specialised studies are undertaken by GA to facilitate understanding of the controls on the distribution of mineral deposits and mineral systems in Australia, particularly in regions beneath the present land surface where Australia's future mineral wealth will most likely be found. Information and advice is provided to Government and industry on Australia's mineral prospects, reserves and potential. Pre-competitive geoscience data is delivered to industry clients via the Internet through advanced systems that enable searching and download of selected geological, geophysical, resource and other data from national databases. Much of GA's pre-competitive geoscience data are delivered through a new online Geophysical Archive Data Delivery (GADDS) system that enables industry clients to examine and access data via the web.



TARGETS FOR 2007-08

- Continue acquisition and delivery of new geophysical (including seismic, airborne gamma-ray spectrometric, airborne electromagnetic [AEM]) and other datasets to better define Australia's onshore energy and mineral potential under the OESP.
- Flying of the Australia-wide airborne geophysical tie-line survey (AWAGS2) was completed in December 2007. The survey across the entire Australian continental landmass and Tasmania ranks as one of the world's largest airborne geophysical surveys. The results from AWAGS2 are scheduled to be released in late 2008.
- New gravity data, acquired over parts of the Cooper Basin in south west Queensland, were released through the Geophysical Archive Data



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Delivery System in October 2007. The data are an important product from the OESP and will assist with the assessment of hydrocarbon potential in the region as well as with the identification of granites beneath the basin which have the potential for geothermal energy.

- The first AEM survey to be conducted under the OESP began in the Paterson Province of Western Australia in September 2007. Because flying is not possible during summer, the survey is scheduled to be completed in mid 2008 with results released early in 2008-09. The results of this work will help to assess the region's potential for uranium resources.
- A major program of deep seismic data acquisition in Queensland was completed in September 2007 along lines transecting northeast from the Mt Isa/Cloncurry region towards Georgetown and southeast to approximately 100 kilometres south of Charters Towers. The results of the survey will be released progressively from early 2008, contributing significantly to the assessment of uranium, geothermal energy and hydrocarbon resource potential in north west Queensland.
- Planning and initial activities under the national-scale OESP projects (petroleum, geothermal energy and uranium) started in mid-2007.
- The Petroleum Project is a staged program of data acquisition involving the collection of airborne magnetics and radiometrics, magneto-tellurics and, where appropriate, gravity followed by high-quality deep seismic reflection data. The Petroleum Project is focussing on selected areas in the Warburton and Pedirka Basins (South Australia, Northern Territory), Lander Trough (Northern Territory) and Kidson Sub-basin (Western Australia).
- The Geothermal Energy Project aims to increase the understanding of the type and location of geothermal energy resources on a national scale and to encourage exploration for, and investment in, this renewable energy sector. The project's multi-faceted work program is broadly aimed at compiling a single dataset using existing diverse data to identify high heat producing granites and acquiring new data to better understand the distribution of temperature in the continent's upper crust. Results from the project are scheduled to be released towards the end of the Onshore Energy Security Program in 2011.
- The Uranium Systems Project aims to map the distribution of known uranium enrichment and related rocks in Australia; develop new understanding of the processes that control where and how uranium mineral systems develop; and assess potential for undiscovered uranium mineralisation at regional to national scales.
- National Geochemistry Survey of Australia (NGSA) Project – National Geoscience Agreements under the National Geochemical Survey of Australia Project are now in place with all states and the Northern Territory. The training of field teams has been completed in most jurisdictions and sample collection is under way with more than 130 (10%) catchments sampled so far.
- Undertake a geodynamic synthesis of the Phanerozoic (650-0 Ma) interval for eastern Australia, and analyse the potential for both known and new mineralisation styles.
- Commence new assessments in collaboration with state geological surveys of the uranium and geothermal potential of the Mt Isa-Georgetown area of Queensland, and parts of the Gawler and Curnamona cratons in South Australia
- Provide technical advice to government on mineral resources, mining and related issues.
- Continue improvements to the online delivery of pre-competitive geoscience information.
- In partnership with the state/Northern Territory geological surveys promote mineral exploration opportunities to the minerals industry.