UNCOVER

Background and future funding requirements
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A step-change in exploration performance is critical to sustaining Australia's wealth in minerals and energy

Australia's economic prosperity is highly dependent on the continent's remarkable endowment of quality mineral and energy resources. Minerals (excluding oil and gas) accounted for nearly half of Australia's total exports of goods and services in 2014-15, contributing to the national income by an estimated $143 billion and supporting approximately 200,000 highly skilled jobs.[1] Of these minerals exports, 70% are from bulk commodities and 30% from non-bulk minerals.

Australia's official energy forecaster expects the production phase of the current mining cycle to last a lot longer, if not across a number the next price and investment phases. While current market conditions are difficult, demand for Australia's minerals and energy commodities will increase over the medium to long-term, owing to the rising trends in consumption of these commodities in developing economies, particularly in Asia.[2]

A key challenge for the industry is that discovery of new economically extractable, non-bulk commodity deposits has not kept pace with depletion from mining. Importantly 80% of Australia's current mineral production is derived from mines discovered more than 30 years ago. Further, Australia's exploration performance (measured by discovery of world-class, Tier 1, economically significant mineral deposits) has been in steady decline over the corresponding 30 year period.

Quality discoveries are critical to maintaining Australia's economically viable resource inventory. It is expected that accelerated reduction in the known economic mineral reserve and resources inventory combined with the declining trend of recent mineral exploration success, will result in the decline in production and revenue from mined non-bulk mineral resources in the medium to long term (the next 15–20 years). This excludes bulk commodities (iron ore, bauxite and coal) that although have similarly increased production rates in the past 5 years through expansion, reserve depletion has been matched by brownfield resource and reserve replacement.

UNCOVER: an exemplar of collaboration between industry, government and academia

The trend in declining exploration performance coupled with the declining quality of available exploitable resources in non-bulk minerals was collectively identified and highlighted in the midst of the investment phase of the last mining cycle by the broader geoscience community from academia, government and the mining industry. In 2010 the Australian Academy of Science convened a Theo Murphy High Flyers Think Tank for minerals exploration stakeholders to address the challenge of discovering new mineral resources for Australia. This culminated in the formation of the UNCOVER initiative.

The ultimate goal of the UNCOVER initiative is to achieve a step-change in geoscientific related knowledge, targeting methodologies and exploration technologies relevant to improving mineral exploration performance beneath the cover. The required collaboration to deliver on this vison is unprecedented. It includes Geoscience Australia, CSIRO, broad industry representation, cooperative research centres, universities, AMIRA International, all state and territory geological surveys, and geophysical survey, software development and drilling service companies of the METS sector.

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[1] Department of Industry, Innovation and Science, *Resources and Energy Quarterly publication series*.
[2] Department of Industry, Innovation and Science, *Resources and Energy Quarterly – September Quarter 2015*, released on 30 September 2015, Canberra, p. 3.

Through the release and distribution of the Think Tank's report '*Searching the Deep Earth: A vision for exploration geoscience in Australia'* UNCOVER engaged with the broader geoscience and non-geoscience communities. The resulting vision resulted in a federally endorsed document that identified high level challenges and barriers to exploration under cover, and the highest impact activities which would improve discovery rates for non-bulk minerals in these areas. Activities under the UNCOVER banner have progressed these objectives over the last 5 years as an unfunded and voluntary membership initiative.

The challenge of funding new knowledge and toolkit to support future exploration and exports

The strategy developed by UNCOVER and the geoscience community ensures that Australia has a magnificent opportunity to lead the world in under cover exploration. At the same time, the UNCOVER Executive and Geoscience Committees recognise that long-term, sustainable funding for geoscience research and technology development, together with government data generation related to priorities identified by UNCOVER, are essential. This issue was raised by industry representatives at the 2015 AMIRA Exploration Managers Conference in response to an industry led roadmap (undertaken and delivered by AMIRA International in 2015), 'Unlocking Australia's hidden potential. An Industry Roadmap – Stage 1'

It is envisaged that three types of funding will be necessary to progress and accelerate the UNCOVER initiative and drive an expanded integrated research, technology and data program:

1. Modest but sustained operational and administrative funding to the UNCOVER initiative to support this strategic leadership group and elevate its operational capability. Such funding will ensure adequate media visibility and a presence at national industry and academic fora to maintain broad awareness, community consultation and ongoing support for the initiative;

2. Maintenance and alignment of existing State and Federal funding for current and planned data acquisition and compilation, geoscience research and technology development activities. The state and federal geoscience agencies already plan and execute such activities according to the UNCOVER vision; and

3. Significant new and increased funding to fill the gaps in current geoscience research, exploration technology development together with expanding new data acquisition and compilation activities that are unlikely to be covered by existing geoscience funding or existing funding vehicles (current state and federal geoscience agency funding, CRCs, ARC Centres of Excellence, etc). Filling these gaps, which have already been identified by UNCOVER and the Australian geoscientific community, is urgently required to initiate activities targeted at improving exploration performance.

The last of these funding types will be the most critical for long-term success but also presents the greatest challenge. The magnitude of the funding required together with identifying potential sources of new funding will be a key focus of Stage 2 of the AMIRA managed and industry led (industry and government sponsored) road mapping process, planned to commence in early 2016 once minimum funding for the project is secured. A wide range of options will be considered in close consultation with industry, government and academia. The aim will be to establish viable mechanisms to generate sustained, scaleable and long-term resourcing for the geoscience research and data acquisition that will be critical to increasing mineral exploration success but that would not otherwise be undertaken in the required timeframe without this additional funding.

The UNCOVER Executive will await the recommendations, based on thorough and ongoing consultation, throughout the Stage 2 road mapping project (delivery expected February 2017). During that roadmapping process all options and concepts to fund future activities to deliver new mines through improved exploration performance can and will be considered. Suggestions from all stakeholders are welcomed either as part of the road mapping process or directly to UNCOVER.