

**LEVERS TO IMPROVE AUSTRALIA'S GLOBAL POSITION FOR
ATTRACTING RESOURCE EXPLORATION INVESTMENT**

April 2012

**Prepared for Exploration Investment and Geoscience working group of the
Standing Council on Energy and Resources**

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Executive Summary

The Standing Council on Energy and Resources (SCER) has tasked the Exploration Investment and Geoscience working group with developing an options paper for Ministers on levers that may be used to improve Australia's global position for attracting resource exploration investment.

Although Australia's resource exploration expenditure in 2010-11 was a record this was in lockstep with the rest of the world. Our mineral exploration spend, for example, has fallen from 20% in 1996 to 13% in 2011, whereas South America (16%) and Africa (14%) have increased expenditure. Australia is now in competition with every jurisdiction globally that permits/encourages exploration. The increased reliance on the junior exploration sector and reduced exploration in greenfields areas are of major concerns for Australia's resources future. Australia now needs world-class discoveries in both new greenfields areas and under cover. The challenge is now to make our greenfields areas the most attractive investment destination in the world.

The value of pre-competitive geoscience as an exploration investment attractant has been well documented and both industry and our global competitors regard this as a given. The recent strategic Review of Geoscience Australia has recognised the value of pre-competitive geoscience which grows prospectivity, uncovers opportunities, and reduces risk and cost. It is Australia's geological surveys that both acquire this pre-competitive geoscience and talk the language of the industry. They are, arguably, our strongest advocates for exploration investment. Governments' continuing commitment to geological surveys and pre-competitive geoscience sends a loud message to industry that it is welcome to invest in this intrinsically high-risk industry.

Leverage to improve our competitiveness need to be both strategic and tactical. There are those that GA, the surveys, and other groups might pursue collectively for a sustainable exploration future. This includes "big" exploration science, national marketing, and commitment to pre-competitive geoscience. Then there are those levers that surveys might pursue "now" to attract interest to specific regions. In the latter case, these should be highly visible programs including co-funding of drilling, geophysics and targeting research which are of immediate

value to exploration, especially the junior sector. Such programs will require close collaboration between the states/NT and the Commonwealth.

Industry satisfaction (or dissatisfaction) with resources exploration policy across Australia is not uniform. Policies that are ignorant of the realities of exploration risk will cripple the industry and drive away investment. Land access, for example, is still a big issue and is becoming even more serious in some jurisdictions.

To restore Australia's exploration competitiveness in both energy and mineral resources a package of strategic and tactical levers is required to effect the following outcomes:

- Australia's long term resources pipeline assured
- A prospectus for Australia's greenfields areas that contain undiscovered world-class deposits
- A harmonised national approach to pre-competitive geoscience information building upon previous government investments in earth science infrastructure
- A modern scientific framework for minerals and energy resources exploration

Levers

1. Develop a National Exploration Strategy to address Australia's Greenfields Exploration Challenge. This strategy should include:
 1. A Marketing Plan that takes into account the four pillars of exploration – the exploration industry, the surveys, the services industry, and research
 2. Support a National Geoscience Research Initiative along the lines of "Searching the Deep Earth"
 3. A renewed commitment to government-funded pre-competitive geoscience from all jurisdictions
 4. Harmonised government policies affecting the exploration industry to ensure that Australia is uniformly friendly to high-risk exploration investment
2. Develop a renewed focus on promoting exploration in greenfields and under cover. Including:
 1. Regional basement validation drilling programs
 2. Pre-competitive geophysical and geochemical programs
 3. Mapping, interpreting and publishing undercover potential as an ongoing work in progress
 4. Direct support for explorers through co-funded drilling, geophysics, targeting studies, and isotopic programs.

3. Develop a national geoscience information initiative which includes:
 1. A national seamless multi-theme Geomap
 2. National 3D geology
 3. A new exploration information portal
 4. Harmonised geoscience datasets across Australia.

Initial work plan

The EIGWG work plan for the coming year includes a number of deliverables related to these levers including:

1. Deliver a plan for the National Mineral Exploration Strategy at the December 2012 SCER meeting – addressing Lever 1
2. Marketing plan for Australia’s resource potential – addressing Lever 1.1 (November 2012 SCER meeting)
3. A roadmap for redevelopment of the Australian Governments Geoscience Portal – addressing Lever 3.3 (November 2012 SCER meeting)
4. Initial new generation national digital maps of undercover geology – addressing Levers 1.2, 2.3, 3.1 and 3.2 (2013)

Introduction

The Exploration Investment and Geoscience (EIG) working group of the Standing Council on Energy and Resources (SCER) has been tasked with developing a paper for Ministers on levers that may be used to improve Australia's global position for attracting resource exploration investment. Although Australia is currently experiencing a mineral exploration boom, its share of global exploration expenditure is not increasing. Australia was the world leader in exploration investment in the mid 1990s (20 per cent) but its share has substantially declined to 13 per cent in 2011.

SCER has noted that issues that may impact on Australia's share of international exploration include international perceptions of sovereign risk in Australia regarding government policies for the resources industry, high exploration costs due to wages, skills shortages and the high Australian dollar, as well as international perceptions of Australia's prospectivity and exploration maturity relative to emerging regions such as Africa.

This paper briefly reviews Australia's current competitive position in attracting resource exploration investment, and discusses potential levers to improve Australia's competitive position. Consideration has been given to the quality, relevance and accessibility of geoscience data for exploration, marketing of exploration investment, and financial incentives as well as Australia's global competitors' incentives and strategies. The paper has been prepared with input from representatives of all jurisdictions in the EIG working group.

This report has been prepared to complement, and not duplicate, the Productivity Commission Review (PCR) on 'Non-Financial Barriers to Exploration'. The PCR will focus on legislative and regulatory barriers, particularly regarding the length, complexity and cost of approvals processes. Taxation issues are also out of the scope of this report.

The Terms of Reference are detailed in Appendix 1.

Australia's Competitive Position

Exploration Expenditure

Australian Bureau of Statistics (ABS) figures show that Australia's exploration expenditure in 2010-11 was a record \$2951 million, 32 per cent above 2009-10 (Figure 1 and Appendix 2). The figures for the first six months of 2011-2012 show a very strong growth (almost 45%) in exploration expenditure over the same period in 2010-2011.

Such raw figures, however, conceal a more cautionary message for the future of Australia's mining industry. In the mid 1990s Australia had a 20 per cent share of global non-ferrous exploration spend. In 2011 that share was 13 per cent. Although we were second only to Canada (18%) in national spend, we were fourth in regional spend behind South America (16%) and Africa (14%).

Further analysis of the ABS figures also shows that much of the increase in exploration expenditure in Australia is on brownfields bulk commodities exploration, particularly for coal and iron ore. In the past twenty years exploration expenditure for coal and iron ore has increased from five to 40 per cent of total spend.

Clearly Australia needs to do better in attracting exploration investment, particularly for base and precious metals, to ensure that we have the inventory of producing mines for the longer term. We are, however, in a global exploration boom of a scale never seen before. Australia's competitors for exploration investment are not just Canada and the USA. They include every jurisdiction that permits/encourages exploration. The Fraser Institute identifies 93 such jurisdictions around the globe.

International perceptions of Australia as an exploration destination

There are many issues that may impact on Australia's share of international exploration. These include international perceptions of sovereign risk regarding government policies for the resources industry, high exploration costs due to wages, skills shortages and the high Australian dollar, as well as international perceptions of Australia's remaining potential and exploration maturity relative to emerging regions such as Africa.

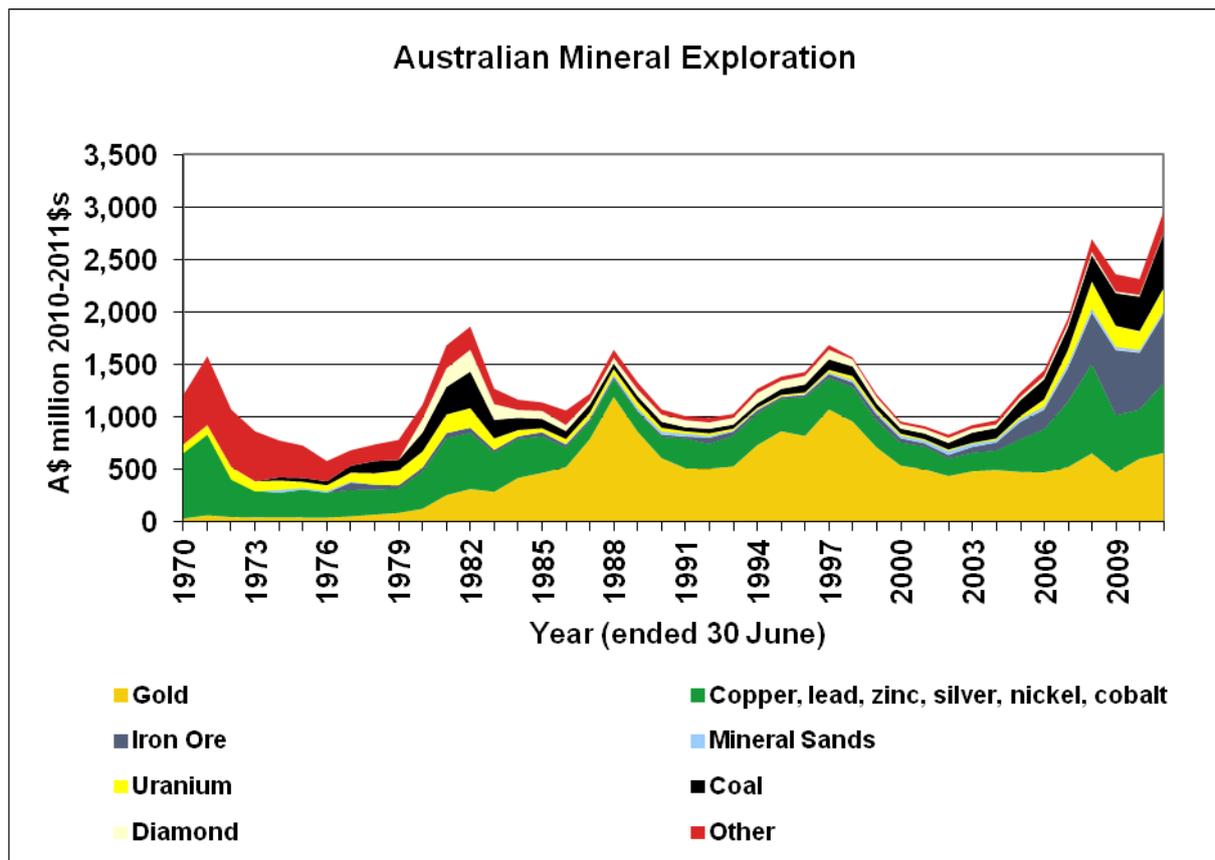


Figure 1

Despite Australia losing exploration share it is still regarded as the most attractive destination for mining investment in Behr Dolbear's 2012 rankings. 25 countries are rated on their economic and political systems, social issues, permitting delays, corruption, currency stability and tax regime.

The Fraser Institute Annual Survey of Mining Companies, the international benchmark of exploration attractiveness, rates each Australian state and the Northern Territory separately. A broad range of factors is measured but there are two that are particularly relevant to this paper. The Quality of Geological Databases arguably is a measure of how successful geological surveys are currently perceived in generating and delivering pre-competitive geoscience to the industry. In the 2011-2012 survey, all jurisdictions in Australia scored very highly in the Geological Database category. However, the 2011-2012 survey reveals an interesting story of an east-west divide in Australia when it comes to the Policy Potential Index. This is a composite index that measures the effects on exploration of government policies. Western Australia, South Australia and the Northern Territory scored highly. Scores for the other states were far more modest. The message from the Fraser Institute survey is

clear. Australia is seen as doing consistently well with its geosciences but not so with its minerals policies.

Factors impacting on exploration attractiveness

Australia has experienced a poor discovery rate over the past twenty years. Discovery is becoming harder and more costly. In their submission to the Policy Transition Group Issues Paper in 2010, the peak industry groups pointed to the recent lack of exploration success in Australia. Between 2000 and 2010, on average, there have only been 43 significant deposits found, whereas, in the 1980s and 1990s over 10 significant deposits were found each year on average. Despite increased exploration expenditures, Australia's discovery rate has roughly halved since the start of the decade. These figures exclude consideration of bulk commodities. There is a view that Australia is a mature exploration environment where all the Tier 1 deposits have been found. This is further compounded by the extensive deep cover concealing favourable rocks. Exploration here is both technically difficult and costly.

ABS figures continue to show the strong trend to exploration on and around existing deposits (brownfields). For every two dollars spent on brownfields exploration only one dollar is spent on greenfields exploration. Other figures show that the junior exploration sector is shouldering most exploration effort, including in greenfields area.

Furthermore, Australian exploration companies are increasingly active overseas. Junior explorers, for example, have a perception that they have more stockmarket appeal if they are seen as active in Africa or South America.

We have traditionally regarded Canada as our principal competitor. Unfortunately for Australia, Canada has serious financing advantages. The Toronto Stock Exchange is the global centre of exploration capital raising and the United States is a major source of risk capital for Canadian juniors. Furthermore, both the Federal and Provincial governments provide tax incentives for explorers. For the cash-strapped junior exploration sector the advantages of this alone cannot be overstated.

In reality, every jurisdiction that permits/encourages mineral exploration is our competitor. A very effective competitor may be a country with raw and unrealised mineral potential that does nothing but open up to foreign investment in exploration. Since the barriers to entry and

the barriers to exit are very low for exploration investment, such jurisdictions are very tempting if a company feels it may have a first-mover advantage.

Discovery and the Greenfields Challenge

The challenge of undercover exploration

The notion that all the major deposits have been found in Australia is totally flawed and not based on science. Much of Australia's mineral wealth has been produced from the 20 per cent of the land area that has been historically accessible for prospecting and mineral exploration. The remaining 80 per cent is covered by sedimentary cover and regolith that have challenged traditional exploration. Australia's highly productive rock packages, however, extend under this cover. The Super-Giant Olympic Dam deposit is an example of what can be found under deep cover, in this case 400 metres.

In reality, the extensive cover in Australia presents an immense exploration opportunity. Most of Australia's mineral production has come from the top 1500 m of the crust in that 20 per cent of our landmass. There is no scientific reason why our mineral endowment will not be replicated in the section from 1500 to 3000 metres depth. The cover and depth issues together constitute Australia's greenfields challenge which will be addressed by high quality pre-competitive geoscience and the emerging exploration science and technologies.

Exploration needs to be more effective and attractive in that remaining 80% of Australia where prospective rocks are under significant cover. The jurisdictions need to "roll back" this cover for the explorers.

The new Deep Exploration Technologies Cooperative Research Centre has a dominant focus on exploration technologies, particularly drilling. The mainland geological surveys elected to support this important CRC as Affiliates and together constitute the Surveys College in the structure of the CRC. One example of new technology emerging from this CRC is enhanced coiled-tube drilling for use in mineral exploration programs. This involves light weight drill strings using carbon-fibre rods and very high-speed drill bits. This form of drilling offers to revolutionise the practice of drilling through thick cover sequences. The technology, once operational, offers the potential for rapid, low-cost drilling that could be deployed as a systematic tool by geological surveys as an undercover mapping tool.

Financial incentives for greenfields exploration

Two thirds of the mineral resource-related companies listed on the Australian Securities Exchange (ASX) are classified as junior explorers. This sector plays a key role in the industry, particularly in relation to precious-metal and base-metal exploration. Junior companies dominate the early stages of mineral exploration, shoulder the greatest burden in greenfields exploration, and are chronically underfunded. The Metals Economics Group (MEG) reports that junior base metals financings decreased 32 per cent from 2010 to 2011. MEG figures also show total juniors financing by major project location show Oceania (including Australia) runs a poor fourth behind North America, Latin America and Africa. Juniors live and die by the market's perceptions. They are victims of this skittish and volatile market. Accordingly, these companies seek out exploration opportunities in areas that the market values. In recent times we have seen juniors moving offshore to Africa or South America.

Given the increasing shift of exploration burden to the home-grown junior sector and its increasing and dominant role in greenfields exploration there is a strong argument for governments to foster this sector for they are critical to the discoveries of the future. Juniors are the risk takers that need government support.

Drilling co-funding with industry has been a popular initiative with junior companies, particularly since it was introduced in South Australia under the PACE program in 2004. The outcomes of this program are well documented and demonstrate its success in fostering exploration in greenfields areas. A notable success was the discovery by RMG Services of the large Carrapateena copper-gold deposit in the Gawler Craton. Subsequently, similar initiatives continue in South Australia, Queensland, Northern Territory and Western Australia. The program in Victoria ran for a limited time but was deemed to be highly successful.

Other financial incentives have been used by some jurisdictions under their initiative programs. Under Queensland's Industry Network Initiative (INI) junior companies can be funded for target generation research. The INI has proven to be particularly successful and GSQ is seeking a renewal. Northern Territory and South Australia also provide financial assistance for geophysical programs.

The advantage of drilling co-funding, particularly, is that it can be applied to effect near-immediate policy outcomes, i.e. fostering both junior explorers and greenfields exploration. The broader application of co-funded drilling initiatives across Australia has much to recommend it, as does co-funding of geophysics, targeting studies, geochronology etc, to support high-quality and innovative exploration.

Some focus on the junior sector is needed because of their important entrepreneurial role in marketing exploration opportunities. They tend to be quick to move on new exploration opportunities and rapidly take up governments' pre-competitive geoscience. It could be argued that they are that essential next step in the exploration process following acquisition of pre-competitive geoscience data. Juniors are lean, mean and innovative and market new exploration opportunities to the larger exploration and mining companies and the investment community. The mid tier and large companies, however, would be ignored at our peril.

Proposed programs to promote greenfields and undercover exploration

Programs that might be deployed to create a renewed focus on promoting exploration in greenfields areas and under cover include:

1. Regional basement validation drilling programs to elucidate prospectivity of concealed basement and inform the map of the geology of economic basement.
2. Pre-competitive geophysical and geochemical programs including application of regional AEM surveys and completion of national airborne magnetics and gravity coverages.
3. Mapping, interpreting and publishing undercover potential as an ongoing work in progress. These national maps of depth to economic basement and geology of economic basement would need to be rigorous and detailed and based on high-quality geophysical input and incorporate all drilling data.
4. Direct support for explorers through co-funded drilling, geophysics, targeting studies, and isotopic programs.

Australia's greenfields' opportunities are in many ways no different from underexplored places elsewhere in the world in that they lack the key pre-competitive data in a form that reveals their prospectivity in a way that is enticing to industry. The good news is Australia is well positioned to take the next steps by extending our traditional pre-competitive work, and

integrating this with potential outcomes from the DET CRC and the developments in high performance computing to deliver against the vision that is contained in the ‘Searching the Deep Earth’ Academy of Science Report. The challenge is now to make our greenfields areas the most attractive investment destination in the world.

Geoscience information

The various geoscience information and delivery systems developed by Australian jurisdictions are an essential adjunct to the acquisition of pre-competitive geosciences. Australia has derived considerable competitive advantage from investing in the capture, storage, processing and delivery of high quality geoscience data (including all historical exploration data). All jurisdictions provide such information through online systems. Geoscience Australia has also provided a ready gateway to all state/NT sites to the uninitiated through its innovative geoscience portal.

The wealth of geoscience information potentially available to the exploration community must be stored, maintained and processed as digital systems, and be readily accessible by industry. Many of the state/NT systems have been developed through funding from exploration initiatives. The issue here is that such systems need regular investment in maintaining and enhancing the datasets, information processing technology, and information delivery systems. Such investment may well go beyond the capacity of individual agencies (geological surveys) to sustain such systems through recurrent funding. It is critical that these systems continue to be funded as a part of the pre-competitive geoscience programs because such capacity is intrinsic to attracting and retaining exploration activity.

Given on going support for the fundamental systems above the following programs under a new digital geoscience initiative will take the digital information framework to a new competitive level. Australia needs to retain its competitive edge here in a global competitive environment where we are constantly being copied and emulated.

1. National seamless multi-theme Geomap with multiple datasets, cookie cut for specific needs
2. National 3D geology - Geoscience Australia, Victoria and Tasmania are commencing a SE Australia 3D geology project which could be a first step towards a national model
3. New exploration information portal – that reflects the Team Australia message provides access to exploration relevant information

4. Harmonised geoscience information datasets across Australia

A National Exploration Investment Strategy

Australia rates very well on many counts as a mining investment destination.

Notwithstanding the recent MRRT issues, Australia stands out internationally as having very low sovereign risk. Furthermore, we have excellent mineral potential and high quality geoscience coverages. Despite our strengths, Australia has slipped in its share of global exploration spend. Clearly there is need for a “game changer”. We clearly need to more effectively play to our strengths. To this end it is proposed that SCER supports the development of a National Exploration Investment Strategy to address **Australia’s Greenfields Exploration Challenge**. The challenge is to make Australian greenfields the number one destination in the world for exploration investment. The indicator would be to shift exploration investment in Australia from its current ratio of 2:1 brownfields to greenfields to say, 1:1 brownfields to greenfields exploration expenditure. The elements of that strategy might include the following.

Marketing of the Four Pillars of Mineral Exploration – Industry, Surveys, Services, Research: Australia is particularly fortunate when it comes to its mineral exploration knowledge infrastructure. This infrastructure comprises four pillars - our exploration industry, our geological surveys, our exploration and mining support services, and our major centres of exploration research.

Our exploration industry is highly effective with a wealth of experience derived from exploration in all corners of the globe. Our explorationists have proven to be very successful in many national jurisdictions.

The Australian geological surveys have been world leaders in developing and applying pre-competitive geoscience to the Australian exploration challenge. They have also actively engaged the global mining investment industry through initiatives such as Team Australia and are well versed in the needs and wants of mineral explorers. The pre-competitive geoscience coverages across Australia and the excellent geoscience databases and digital delivery systems have provided this country with a substantial competitive advantage.

The exploration and mining support services industry is very substantial in its own right and includes geological and geophysical contract services, analytical services, drilling, and exploration and mining computer software.

Australia is well served with eminent research organisations with briefs to address the challenges of exploration. They include CSIRO, various university centres of excellence, and the Deep Exploration Technologies Cooperative Research Centre.

Together, these represent a potent force that offer Australia potential to enhance its exploration competitive advantage. These four pillars offer to global investors a highly sophisticated and knowledge-rich exploration investment destination. A marketing strategy that covers the virtues of these four pillars would add substantial value to what is currently done through Team Australia and the various investment attraction activities of the jurisdictions. Such a strategy would necessitate professional marketing and science writing disciplines.

The original Team Australia concept has been immensely successful in bringing all jurisdictions together for a single purpose and it is the envy of other national jurisdictions. The immense value of Team Australia must not be lost but it should be broadened in scope to cover the non-technical issues of concern to potential explorers and investors (e.g. FIRB, taxation, regulatory environment, etc). The original Team Australia idea was about attracting exploration investment, particularly from the exploration-sophisticated North American market. With the emergence of the Asian minerals investment markets there is a need to match the investment message to the market.

Geoscience Australia hosts the Australian geoscience portal but there is an identified need for an explorers web portal that goes beyond the scope of the current portal, and pushes the Team Australia messages (e.g. the Australian Greenfield Challenge) and provides relevant information on commodities and opportunities to potential explorers.

These are all issues for a national marketing plan.

“*Searching the Deep Earth*”: This is a proposed initiative for Australian earth scientists to join in a nationally-coordinated strategy to bring competitive advantage to Australian mineral exploration. The strategy requires research groups, geological surveys and the exploration

industry forming a “joint venture” to foster collaborative links and promote rapid uptake of new knowledge.

The “Uncover” group of science leaders joined under the Australian Academy of Science to promote and implement this vision and follows on from recommendations from the 2010 Theo Murphy High Flyers Think Tank. The group seeks to address the decline in Australia’s discovery rate. The group proposes four Australian continental initiatives: National Cover Map, National Map of Deep Crust & Mantle, National 4-D Metallogenic Map, and National Distal Footprints Map.

The Commonwealth Minister for Resources Energy and Tourism, The Hon. Martin Ferguson, introduced this initiative by saying: “It is by no means an overstatement to say that ‘Searching the Deep Earth’...is at the heart of our nation’s continued prosperity”. If supported by government, this initiative would be a strategic science investment to set this nation up with a long-term, sustainable mining industry.

A Renewed commitment to government-funded pre-competitive geoscience from all jurisdictions: Australia has benefited immensely from the pre-competitive geoscience generated by all jurisdictions. There is no doubt that this stimulates exploration. This is now well documented and Australia’s geoscience coverages are rated highly internationally by the global exploration community. The nature and extent of our coverages, however, is of variable standard and coverage. Many areas of greenfield potential, particularly where there is significant cover, require the application of geophysical and geochemical techniques, plus drilling. A strong commitment to pre-competitive geoscience programs is arguably the most effective way for a jurisdiction to tell the world that it is open for exploration business.

Harmonised government policies affecting the exploration industry to ensure that Australia is uniformly friendly to high-risk exploration investment: The focus in this report has been mainly on those areas where geoscience will make a difference. Given that, it cannot be ignored that there continue to be matters of minerals policy that cripple the exploration industry and must continue to be pursued, particularly land access and the application of exploration policies in some state jurisdictions.

Recommended Levers

Levers to improve Australia's competitiveness in attracting and retaining exploration investment are both policy-related and geoscience-related. It is clear that there is much that can be done by way of ameliorating government policies and some of this is being addressed by the Productivity Commission Review (PCR) on 'Non-Financial Barriers to Exploration' which is focusing on legislative and regulatory barriers

To restore Australia's exploration competitiveness in both energy and mineral resources a package of strategic and tactical levers is required to effect the following outcomes:

- Australia's long term resources pipeline assured
- A prospectus for Australia's greenfields areas that contain undiscovered world-class deposits
- A harmonised national approach to pre-competitive geoscience information building upon previous government investments in earth science infrastructure
- A modern scientific framework for minerals and energy resources exploration

Big exploration science is essential to ensure that we have a long term and sustainable competitive advantage. The global exploration industry seeks to make the most of this big science in area selection and choice of exploration strategy. But there need to be both strategic levers and tactical levers. In other words, there are those that Geoscience Australia, the surveys and others might pursue collectively for a sustainable exploration future, and there are those that surveys (including GA) might pursue "now" to attract interest to specific regions. In the latter case, these should be highly visible programs pushing the right buttons with short term outputs. The latter case also accommodates the competitive model adopted by the states and the Northern Territory.

A summary of the recommended levers and more immediate deliverables is presented in the Executive Summary.

Appendix 1

Terms of reference

Report on options to improve Australia's global position to attract resource exploration investment

Overall objective

To provide a report for consideration by SCER Ministers on options that may be used to improve Australia's global position for attracting resource exploration investment.

Background

It was noted at the SCER Meeting of 9 December 2011 that while Australia is currently experiencing a mineral exploration boom, our share of global exploration expenditure is not increasing. Although direct comparative figures for the rest of the world are not currently available for 2010-11 financial year, Canada's Metals Economics Group (MEG) calculated that in the 2010 calendar year, global non-ferrous exploration budgets increased 44 per cent over the previous year, with Australia's proportion of global non-ferrous mineral exploration expenditure dropping from 13 per cent to 12 per cent. This continues a long-term declining trend in Australia's share of global mineral exploration expenditure since the mid-1990s.

It was noted by SCER that issues that may impact on Australia's share of international exploration include international perceptions of sovereign risk in Australia regarding government policies for the resources industry, high exploration costs due to wages, skills shortages and the high Australian dollar, as well as international perceptions of Australia's prospectivity and exploration maturity relative to emerging regions such as Africa.

The recommendation from the December SCER meeting was that the Exploration Investment and Geoscience (EIG) working group report to Ministers on options that may be used to improve Australia's global position for attracting resource exploration investment.

Scope of paper

The report should briefly review Australia's current competitive position in attracting resource exploration investment, along with trends over the past decade, and discuss issues that may have impacted on this situation.

The report should then discuss potential levers to improve Australia's competitive position. The issues covered by the report must not duplicate work being undertaken by the Productivity Commission Review (PCR) on 'Non-Financial Barriers to Exploration'. The PCR will focus on legislative and regulatory barriers, particularly regarding the length, complexity and cost of approvals processes. Taxation issues are also out of the scope of the report.

Issues to be considered as part of the scope of the report include:

- the quality, relevance and accessibility of geoscientific data for exploration;
- support for the application of new or under-utilised exploration technologies and techniques, including in brownfields areas;
- promotion and marketing of Australia's strengths as an exploration destination (including Australia's prospectivity and low sovereign risk); and
- financial incentives to attract and support exploration, such as drilling subsidies.

The report should also include benchmarking of Australia against its global competitors in terms of exploration attraction incentives and strategies.

In discussion of options, consideration should be given to both attraction of exploration investment from outside Australia, and also to encouraging Australian companies to explore within Australia rather than overseas. The report should also consider both greenfields and brownfields exploration.

In preparing the paper, substantial input should be sought from representatives of all jurisdictions in the EIG working group. Input and feedback may also be sought from industry, including peak representative bodies.

Timeframe and deliverables

The review is scheduled to commence on X February 2012 [date to be determined].

A draft report is to be provided by **3 April 2012**, in order to be considered by SCO at their meeting on 20 April. Following feedback from EIG working group and SCO, a final report is to be delivered on **11 May 2012**, for consideration by SCER Ministers at their 1 June meeting.

The body of the report should be concise and high-level, containing no more than 10 pages of text, with Appendices if required. The report should include an Executive Summary clearly summarising options and recommendations.

Appendix 2

Australia's competitive status

How this country fares globally in competition for mineral exploration investment can be collectively gauged using sources such as the ABS Exploration Expenditure, Metals Economics Group (MEG), the Fraser Institute Annual Survey of Mining Companies, the Behr Dolbear report, and MinEx Consulting studies.

The ABS figures show our mineral exploration expenditure in 2010-11 was a record \$2951 million, 32 per cent above 2009-10 (Figures 1 & 2). The states and the Northern Territory experienced significant increases in expenditure, with the exception of Victoria, which fell by 31 per cent. Iron ore now attracts the most exploration dollars and expenditure on coal exploration increased by 62 per cent. The December quarter figures for 2011-2012 show a very strong growth (almost 45%) in exploration expenditure over the same period in 2010-2011. These figures also show a near doubling of expenditure in Queensland and New South Wales as a result of booming coal exploration. The latest figures continue to show the strong trend to exploration on and around existing deposits (brownfields). For every two dollars spent on brownfields only one dollar is spent on greenfields exploration.

In the Metals Economics Group (MEG) figures (see table below) for 2011 global non-ferrous exploration expenditure, Australia (13%) retained its position as second only to Canada (18%) for exploration spend on a jurisdiction basis. However, South America (16%) and Africa (14%) are major regional competitors to Australia. Estimated global non-ferrous exploration is \$US18.2 billion.

The Fraser Institute report rates factors that influence exploration executives in favouring particular exploration investment destinations. Some 93 nations, states and provinces are included in the survey. For Australia, the Fraser Institute now rates each state and the Northern Territory separately. A broad range of factors is measured but there are two that are particularly relevant to this paper. The Quality of Geological Databases arguably is a measure of how successful geological surveys are currently perceived in generating and delivering pre-competitive geoscience to the industry. All jurisdictions in Australia scored

very highly here with scores of between 87% and 98% for the sum of the first two of the four categories. The categories summed were “1. Encourages investment” and “2. Not a deterrent to investment”.

Region	Share %
Australia	13
Canada	18
South America	16
Africa	14
US	8
Mexico	6
Pacific	5
Europe	4
China	4
Russia	3
FSU/Mongolia	3

Global share of non-ferrous exploration
(Metals Economics Group 2011)

The 2011-2012 report, however, reveals an interesting story of an east-west divide in Australia when it comes to the Policy Potential Index. This is a composite index that measures the effects on exploration of government policies. Out of a possible 100, Western Australia, South Australia and the Northern Territory scored highly, viz. 81.5, 75.3 and 81.5, respectively. Scores for the other jurisdictions were more modest viz. New South Wales - 62.4, Queensland - 65.5, Victoria - 52.1 and Tasmania - 64.8. New Brunswick topped the list with a score of 95 and Honduras bottomed at a score of 1.7. The message from the Fraser Institute is clear. Australia is seen as doing much better with its geoscience than its minerals policies.

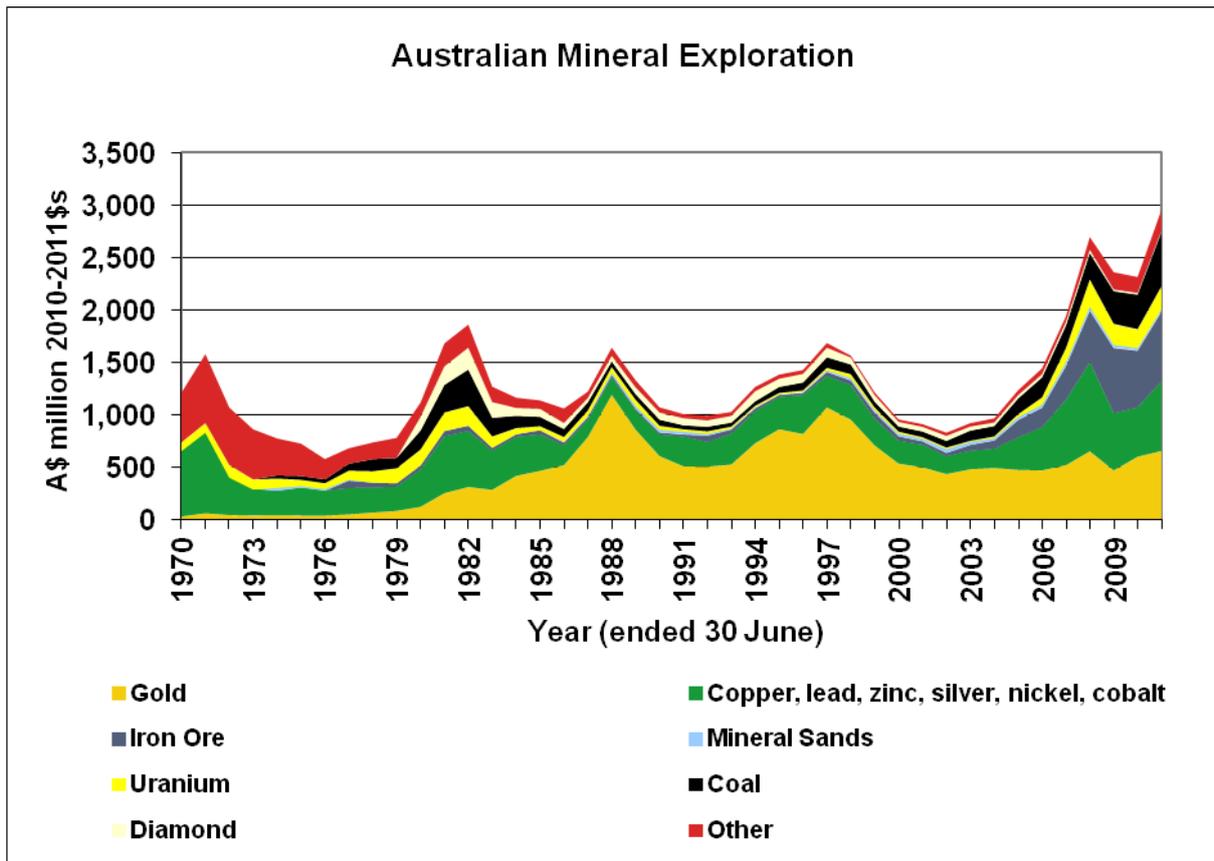


Figure 1

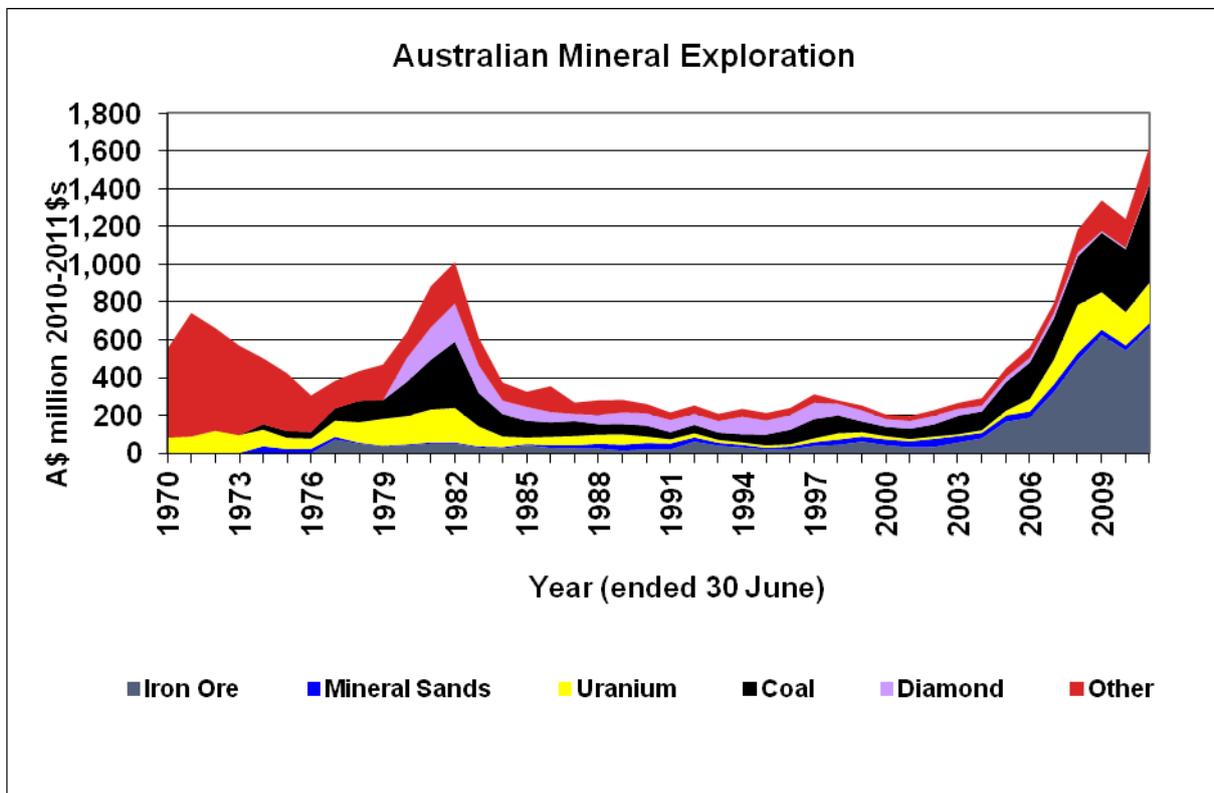


Figure 2

Since 1999, the Behre Dolbear Group has produced an annual political risk assessment of the key nations in the global mining industry. Behre Dolbear's 2012 ranking again scored Australia at the top of twenty five countries with a score of 57 out of a maximum possible 70. Behre Dolbear rates countries on their economic and political systems, social issues, permitting delays, corruption, currency stability and tax regime.

Richard Schodde (MinEx Consulting) regularly reports on the state of the Australian exploration industry and his 2011 review (AMEC Conference presentation) is an excellent distillation of some of the key issues. He reports a view that Australia is a mature exploration environment. This is a view reinforced by Australia's lower discovery rate. A lower discovery rate ultimately flows through to increased discovery cost and a reduced capacity to attract investment.

Schodde also notes that half of locally exploration sourced funds are now spent offshore (Figure 3). His comments in relation to the junior exploration sector are very telling. He reports that juniors now account for over half of the Australian exploration spend. Furthermore, over the past ten years juniors have come to dominate greenfields exploration increasing from 56 per cent to 66 per cent of total spend in these terrains.

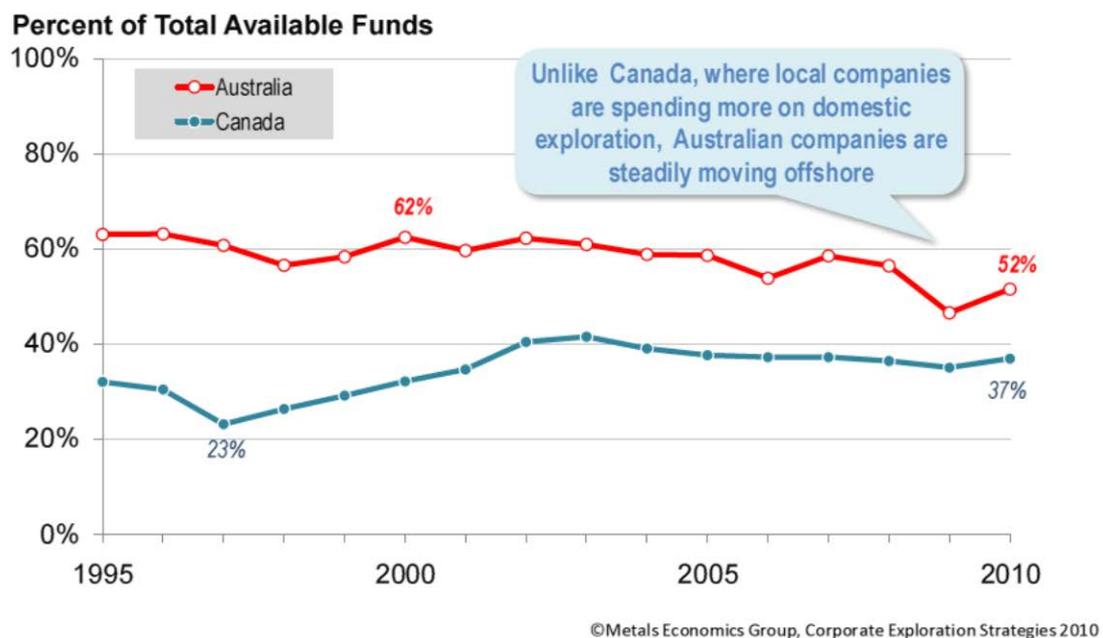


Figure 3 (after MinEx consulting)

Clearly Australia has a booming exploration industry but this is in lock-step with a global boom. The latest figures to the end of the September quarter 2011 show the previous 12 months Australian exploration spend at \$3265 billion of which 43 per cent is spent on the bulk commodities iron ore and coal. Yes, Australia has dropped from its position of 20 per cent of global spend in the early 2000s and since then Canada has maintained its lead as the prime exploration investment destination. The latest MEG figures, however, show Canada taking a smaller share of the global spend. MEG has observed that global exploration has an increased appetite for risk with diversification into many countries that once were off the agenda. This will obviously have an impact on how much is spent in Australia, and Canada.

Australia's competitive position can be described as a little like the "curate's egg", good in parts. We have a great mineral endowment and excellent potential. We are deemed low risk politically. We do well in pre-competitive geoscience.

On the down side, Australia's discovery rate has substantially declined. Australia has experienced a poor discovery rate over the past twenty years. Discovery is becoming harder and more costly. In their submission to the Policy Transition Group Issues Paper in 2010, the peak industry groups pointed to the recent lack of exploration success in Australia. Between 2000 and 2010, on average, there have only been 43 significant deposits found, whereas, in the 1980s and 1990s over 10 significant deposits were found each year on average. Despite increased exploration expenditures, Australia's discovery rate has roughly halved since the start of the decade. These figures exclude consideration of bulk commodities.

There is a view that Australia is a mature exploration environment where all the Tier 1 deposits have been found. This is further compounded by the extensive deep cover concealing potentially fecund rocks but exploration here is technically difficult and costly.

Furthermore, Australian exploration companies are increasingly active overseas. Junior explorers, for example, have a perception that they have more stockmarket appeal if they are seen as active in Africa or South America.

The bulk of exploration is being conducted in brownfields areas but the future lies in renewing the inventory of deposits through major new discoveries in greenfields terranes (Figure 4).

Industry satisfaction (or dissatisfaction) with minerals policy across Australia is not uniform. There appears to be greater satisfaction with the western states (WA, SA and NT). Exploration has few barriers to entry or exit and industry unfriendly policies in half of Australia will affect Australia's overall capacity to attract and retain investment.

We have traditionally regarded Canada as our principal competitor. As nations, we have traditionally shared for many years about one third of global exploration expenditure. We share similar legal systems, mining and exploration legislation and, for that matter, values. We understand what drives exploration investment in Canada and why it dominates in the global expenditure stakes. Unfortunately for Australia, Canada has serious financing advantages. The Toronto Stock Exchange is the global centre of exploration capital raising and the United States is a major source of risk capital for Canadian juniors. Furthermore, both the Federal and Provincial governments provide tax incentives for explorers. For the cash-strapped junior exploration sector the advantages of this alone cannot be overstated. Canada, like Australia, has immense mineral wealth.

In reality, however, every jurisdiction that permits/encourages mineral exploration is our competitor. A very effective competitor may be a country with raw and unrealised mineral potential that does nothing but open up to foreign investment in exploration. Since the barriers to entry and the barriers to exit are very low for exploration investment, such jurisdictions are very tempting if a company feels it may have a first-mover advantage.

Factors influencing global exploration investment that impact Australia

1. Fewer world-class discoveries are being made in Australia which means that the cost of exploration has substantially increased
2. ASX-listed juniors believe they will get a better market response for activities in places such as Africa and South America
3. Home-grown mid-tier exploration and mining companies hollowed out by M&As.
4. More international jurisdictions are actively pursuing exploration investment and developing nations.
5. Consolidation of the mining industry resulting in fewer larger companies with large exploration budgets
6. Sole focus on Tier 1 exploration opportunities by large multinational companies.
7. Reduction in in-house exploration spending by larger companies

8. Diversification of the exploration industry with many new junior companies, particularly in Canada
9. Toronto Stock Exchange is the global centre of exploration capital raising
10. The United States is a major source of risk capital for Canadian juniors
11. Tax incentives for explorers available in other national jurisdictions e.g. Canada
12. Australia has been increasingly viewed as a mature exploration environment with a sophisticated and effective local exploration industry

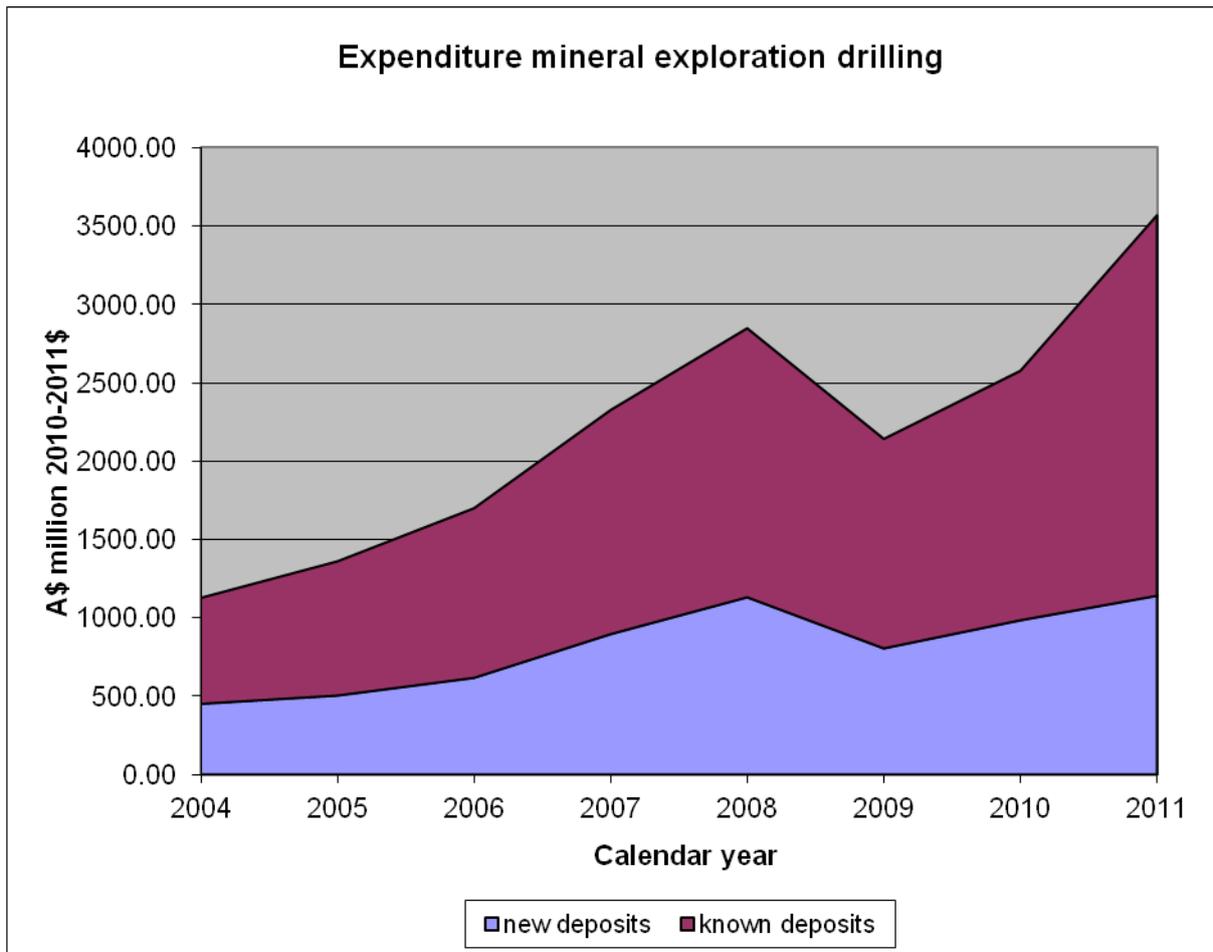


Figure 4