Australian Government
Productivity Commission

# Mineral and Energy Resource Exploration

## Productivity Commission Draft Report

May 2013



This is a draft report prepared for further public consultation and input. The Commission will finalise its report after these processes have taken place.

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**Publications Inquiries:**
Media and Publications
Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Tel: (03) 9653 2244
Fax: (03) 9653 2303
Email: maps@pc.gov.au

**General Inquiries:**
Tel: (03) 9653 2100 or (02) 6240 3200

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***The Productivity Commission***

The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. Its role, expressed most simply, is to help governments make better policies, in the long term interest of the Australian community.

The Commission's independence is underpinned by an Act of Parliament. Its processes and outputs are open to public scrutiny and are driven by concern for the wellbeing of the community as a whole.

Further information on the Productivity Commission can be obtained from the Commission's website (www.pc.gov.au) or by contacting Media and Publications on (03) 9653 2244 or email: maps@pc.gov.au

# Opportunity for further comment

You are invited to examine this draft report and comment on it by written submission to the Productivity Commission by **Monday 15 July 2013** or by attending a public hearing. If you intend to appear at a public hearing, and have not already made a written submission, a summary of the points you wish to discuss should be lodged with the Commission at least two days prior to your appearance.

The final report will be prepared after submission have been received and will be forwarded to the Australian Government in September 2013.

## Public hearing date and venues

| Location | Date | Venue |
|---|---|---|
| Adelaide | Wednesday 26 June 2013 | Stamford Plaza Adelaide<br>Terrace 2 Room<br>150 North Terrace |
| Perth | Thursday 27 June 2013 | Rendezvous Studio Hotel Perth Central<br>Grevillea Room<br>24 Mount Street |
| Brisbane | Wednesday 3 July 2013 | Novotel Brisbane<br>Kendall Room<br>200 Creek Street |
| Canberra | Thursday 4 July 2013 | Productivity Commission<br>Level 2<br>15 Moore Street, Civic |

If you wish to appear at a public hearing, please contact Melissa Edwards on (02) 6240 3206, email resourceexploration@pc.gov.au or register online at http://www.pc.gov.au/projects/inquiry/resource-exploration.

## Commissioners

For the purposes of this inquiry and draft report, in accordance with section 40 of the *Productivity Commission Act 1998* the powers of the Productivity Commission have been exercised by:

| | |
|---|---|
| Mike Woods | Presiding Commissioner |
| Jonathan Coppel | Commissioner |

# Terms of reference

## Inquiry into Non-financial barriers to mineral and energy resource exploration

I, David Bradbury, Assistant Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby request that the Productivity Commission undertake an inquiry into the *Non-financial barriers to mineral and energy resource exploration*.

### *BACKGROUND*

The Policy Transition Group (PTG) was established to advise on the implementation and technical design elements of the new resource taxation reforms, and minerals and petroleum exploration. In its report to the Australian Government in December 2010, the PTG recommended that the Productivity Commission be tasked with undertaking an examination of the regulatory barriers faced by exploration companies. The report noted that 'a range of approvals are required before exploration can begin, including land access, native title, indigenous and non-indigenous heritage, environmental, conservation estate, and planning and infrastructure approvals'.

### *PURPOSE*

This review will examine exploration approvals systems and processes, within and across jurisdictions, to assess their effectiveness and efficiency. The Commission will also assess areas of duplication between State, Territory and Commonwealth regulation for potential streamlining and further review. The Commission will also assess costs associated with government processes and broader economic costs such as that associated with regulatory duplication but not related to taxation, financial incentives, fees, charges and royalties.

### *SCOPE OF THE INQUIRY*

The Commission is requested to outline high priority reform options to address non-financial barriers to exploration for mineral and energy resources in Australia. In order to achieve this, the Commission should:

- determine if there is evidence of unnecessary regulatory burden and if there is, make recommendations on how to reduce or eliminate these burdens;

- examine the complexity and time frames of government approvals processes for exploration, and potential for delay due to appeals both within and across jurisdictions;
- examine areas of duplication between and within Local, State, Territory and Commonwealth regulation that can be triggered throughout an exploration project;
- examine costs of non-financial barriers (including regulatory and related costs);
- consider options to improve the regulatory environment for exploration activities, having regard to regulatory objectives; and
- assess the impact of non-financial barriers on international competitiveness and economic performance of Australia's exploration sector.

Local, state, territory and Commonwealth taxation and fiscal policy is not to be examined.

The inquiry is not to re-examine the Government's response to the Report of the Independent Review of the *Environment Protection and Biodiversity Conservation Act 1999*.

The inquiry is not to examine processes under the Commonwealth's *Native Title Act 1993*, the *Aboriginal Land Rights (Northern Territory) Act 1976* or state Indigenous land rights regimes.

In undertaking this inquiry, the Commission should take into account current or recent reviews commissioned by state, territory and the Commonwealth Governments regarding regulatory approval processes for exploration.

There is a continued need for government involvement in pre-competitive geoscience to attract exploration investment. As such, the Exploration Investment and Geoscience (EIG) working group's report to the Standing Council on Energy and Resources on options that may be used to improve Australia's global position for attracting resource exploration investment should inform this inquiry. This inquiry will also consider the work the EIG working group is undertaking on resource reserve disclosure by non-Australian Stock Exchange (ASX) companies.

The Commission should consult with all relevant state, territory and Commonwealth government agencies and other key stakeholders. The Commission will report within 12 months of receipt of this reference and will hold public hearings for the purpose of this inquiry. The Commission is to provide a draft and final report to the Australian Government, both of which will be published.

The Government will consider the Commission's recommendations, and its response will be announced as soon as possible after the receipt of the Commission's final report.

The Australian Government will refer the final report to the Council of Australian Governments for action by Australian jurisdictions after the inquiry report has been tabled in Parliament.

DAVID BRADBURY

[Received 27 September 2012]

# Contents

# Abbreviations and explanations

## Abbreviations

| | |
|---|---|
| AAPA | Aboriginal Areas Protection Authority |
| ABS | Australian Bureau of Statistics |
| AMEC | Association of Mining and Exploration Companies |
| AMMA | Australian Mines and Metals Association |
| APPEA | Australian Petroleum Production and Exploration Association |
| ATSIHP | Aboriginal and Torres Strait Islander Heritage Protection Act |
| AUA | Australian Uranium Association |
| AusIMM | Australian Institute of Mining and Metallurgy |
| COAG | Council of Australian Governments |
| CSG | Coal seam gas |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| EPBC | Environmental Protection and Biodiversity Conservation Act |
| GA | Geoscience Australia |
| IAC | Industries Assistance Commission |
| IC | Industry Commission |
| MCA | Minerals Council of Australia |
| NOPSEMA | National Offshore Petroleum Safety and Environmental Management Authority |
| NTA | Native Title Act |
| PC | Productivity Commission |
| PTG | Policy Transition Group |
| QEC | Queensland Exploration Council |
| QRC | Queensland Resources Council |

| | |
|---|---|
| SACOME | South Australian Chamber of Mines and Energy |
| SCER | Standing Council on Energy and Resources |
| SEWPaC | Department of Sustainability, Environment, Water, Population and Communities |
| SLO | Social licence to operate |

## Explanations

| | |
|---|---|
| Billion | The convention used for a billion is a thousand million ($10^9$). |
| Findings | *Findings in the body of the report are paragraphs highlighted using italics, as this is.* |
| Draft recommendations | ***Draft recommendations in the body of the report are highlighted using bold italics, as this is.*** |
| Requests for further information | *Information requests are paragraphs highlighted using italics, as this is.* |
| Base metals | Are non-ferrous (ie not containing iron) metals used in industrial products. they include copper, lead, nickel and zinc. |
| Brownfield | Locations close to existing or historical mines or wells or known resource locations. |
| Energy resources | Includes petroleum, coal and coal seam gas. |
| Exploration | Activities that relate to the gathering of knowledge as to the location, quantity and quality of mineral and energy resource deposits. |
| Extraction | The process of removing mineral and energy resources. This includes mining and oil and gas wells. |
| Geoscience | The study of the structure and evolution of geology and mineral and energy resources. |
| Greenfield | Locations remote from existing or historical mines or wells or known resource locations. |
| Junior explorer | A company whose principal activities are exploring for mineral or energy reserves and whose main income is derived from selling the rights to any such discoveries. They have little or no involvement in operating mines or wells. |

| | |
|---|---|
| Mineral resources | Naturally occurring materials that cannot be renewed. |
| Petroleum | Naturally occurring hydrocarbons including crude oil, natural gas, oil shale and similar products. |
| Pre-competitive geoscience | Government provided information about the broad geology of a region which is then used by private explorers to select areas for more intensive exploration. |
| Prospectivity | The relative geological potential of different possible exploration locations. The probability that a given area will contain mineral or energy deposits. |
| Senior explorer/miner | A company that is involved in operating mines or wells. While they may undertake exploration activities, exploration would be a small component of their expenditure. |
| Social Licence to Operate | Achieved when an organisation has ongoing acceptance from the local community or other relevant stakeholders. |

# OVERVIEW

## Key points

- Mineral and energy resource exploration in Australia is a small part of the economy, equivalent to 0.5 per cent of GDP in 2011-12. The sector's significance is in discovering commercially valuable resources that sustain the operations of mineral and energy extraction industries — which represented 9 per cent of GDP in 2011-12.
- The number, size and quality of resource discoveries in Australia is declining, and the exploration sector is experiencing rising costs and lower productivity.
- Government regulates resource exploration for three broad reasons:
  - the mineral and energy resources are owned by the Crown
  - exploration may impact on existing and future land uses such as agriculture, or damage sites of environmental and heritage significance
  - exploration may have effects beyond the area being explored, such as on the regional environment and community.
- Many stakeholders are dissatisfied with the current regulatory arrangements:
  - some explorers claim that governments are discouraging exploration by increasing compliance costs, extending approval times and increasing regulatory uncertainty
  - some community groups claim that regulations are insufficient to protect environmental, heritage and community values and agricultural uses of the land, and that regulators are not being sufficiently diligent in protecting those values and land uses.
- Regulatory processes that impose *unnecessary* burdens on resource explorers or inhibit exploration can be reformed by:
  - adopting tenement allocation and renewal procedures that ensure efficiently sized tenements
  - ensuring stronger and simpler coordination, transparency and accountability of exploration licence approval processes
  - making land access decisions that take into account the benefits to the wider community from exploration, and are appropriate to the level of risk posed by exploration as informed by sound evidence
  - addressing state and territory and Commonwealth environmental approvals processes that are duplicative and are not commensurate with the risk and significance of the environmental impacts of exploration
  - improving access to the existing knowledge of Indigenous heritage and accrediting state and territory government processes which meet Australian Government standards of Indigenous heritage protection.
- Explorers highly regard the accessibility and provision of pre-competitive data by Australia's geological survey organisations

# Overview

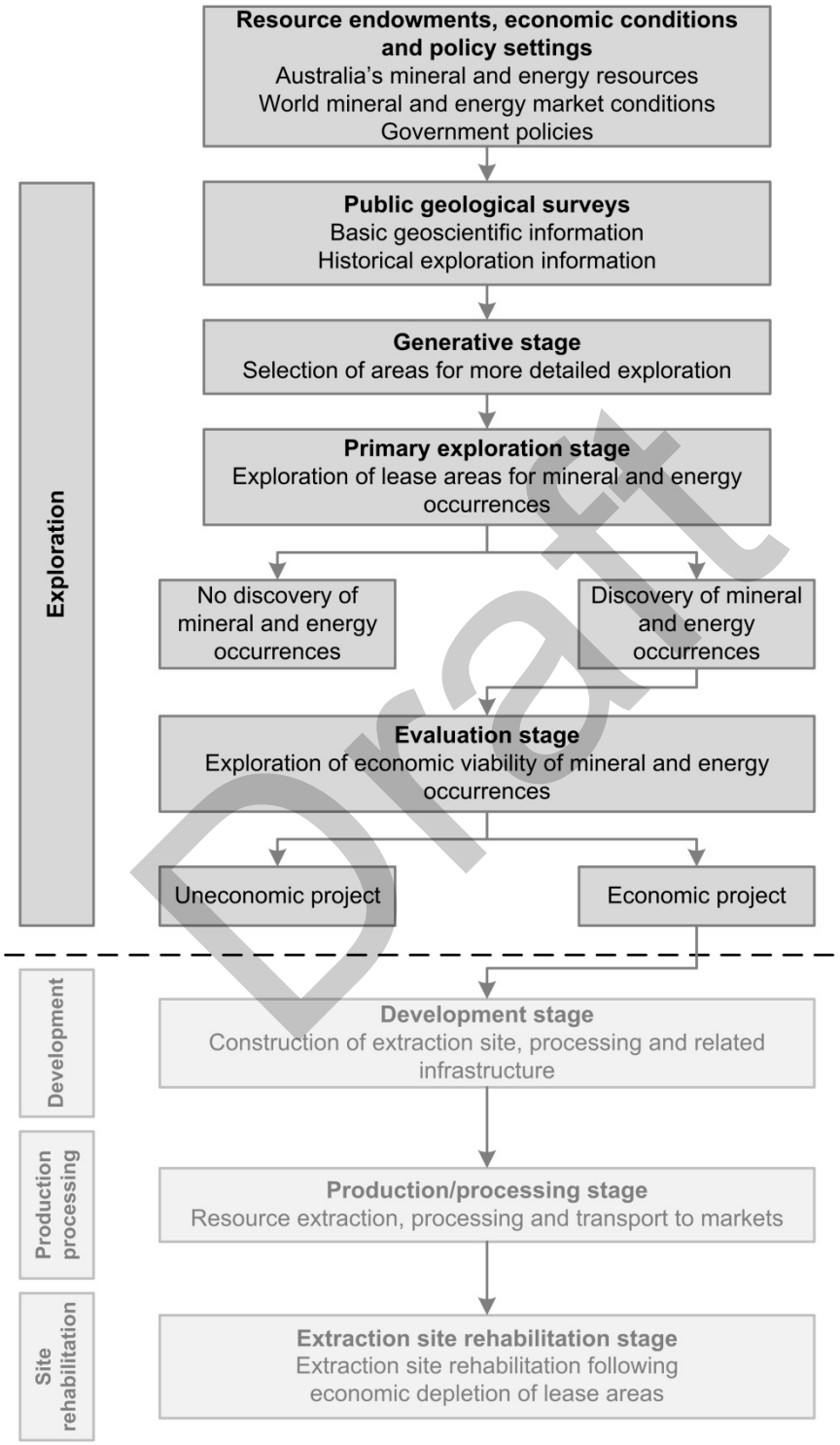
## About the inquiry

The Productivity Commission has been asked to examine the non-financial barriers to mineral and energy resource exploration in Australia. The inquiry is to examine the exploration approval systems and processes within and across jurisdictions, their effectiveness and efficiency, and the costs associated with the regulation of exploration activities. The inquiry is to consider options to improve the regulatory environment for exploration activities and assess the impact of all non-financial barriers on the international competitiveness and economic performance of the sector. The terms of reference exclude consideration of financial barriers to exploration and certain matters relating to environmental and native title legislation. The full terms of reference are set out on pages V-VII.

In assessing the non-financial barriers to mineral and energy exploration, the Commission has adopted a communitywide framework, as required by the *Productivity Commission Act 1998*. That is, the Commission will be assessing the effectiveness and efficiency of government interventions and the net benefits of these policies, programs and regulations to the wider community.

Exploration, for the purposes of this inquiry, is defined as those activities that relate to the gathering of knowledge on the location, quantity and quality of mineral and energy resources. A distinction has been drawn between mineral and energy resource exploration and the downstream activities of developing mines and drilling production wells (that is, mineral and energy resource extraction). However, all of these activities are interdependent (figure 1) and the distinction between them can be blurred.

Figure 1 **Key stages in mineral and energy resource exploration, and mining production/processing**



## Background

Mineral and energy resource exploration represents a small share of the economy but successful exploration is an essential prerequisite for mineral and energy resource extraction. Exploration expenditure was just over $7 billion in 2011-12, equivalent to about half of one per cent of GDP, whereas resource extraction accounts for 9.0 per cent of GDP. Employment in resource exploration accounts for 0.2 per cent of national employment.

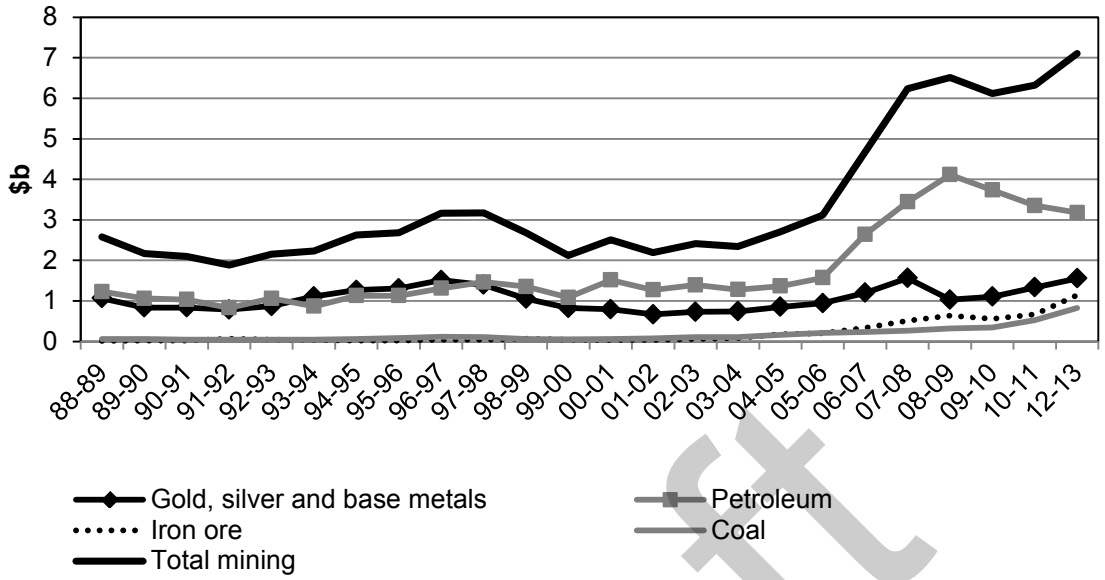
Mineral and energy exploration is conducted by businesses which range from 'senior explorers' with established resource extraction operations, and billions of dollars in assets and multinational operations, to 'junior explorers' with millions of dollars of capitalisation. The largest share of expenditure is targeted at petroleum exploration, and it has been the main driver of the substantial increase in exploration expenditure since 2006 (figure 2).

Exploration can be broadly classified as greenfield or brownfield. Greenfield exploration is the exploration of unexplored or incompletely explored areas and is directed at discovering new resources. This exploration is a high-risk, high-reward venture with potentially large returns to those successfully discovering commercially viable resources. Brownfield exploration occurs in areas near established resources and is mainly focused on proving up areas for extending mining and energy drilling operations.

The level of greenfield exploration expenditure has remained relatively stable in real terms over recent years, but its share of total exploration has fallen over the last decade from 40 to 30 per cent. The growth of brownfield exploration has been driven in part by favourable commodity prices, which have provided an incentive for miners to expand existing mines.

The shift to brownfield exploration has raised concerns about the sustainability of Australian resource extraction in the medium term. While existing reserves may last many years, they may be of lower grade, in more remote locations, deeper in the ground, mixed with greater impurities and require more difficult and costly exploration and extraction techniques. As more 'effort' is needed to produce each unit of output, downward pressure will be placed on productivity, thereby reducing the international competitiveness of Australian resource exploration and extraction.

Figure 2 **Exploration expenditures have increased substantially[a]**
Quarterly real expenditures — 2011-12 prices




[a] Coal includes coal seam gas

## The performance of the industry

The performance of resource exploration in Australia has been deteriorating according to several measures:

- the average cost per metre drilled has doubled in real terms since the late 1990s (figure 3). Cost rises are attributed to the need to drill to greater depths and comply with an increased regulatory burden
- the rate of discovery of significant new resources has declined despite increased exploration expenditure (figure 4)
- Australia has the second highest share of global exploration expenditure, behind Canada, but this has declined from just under 20 per cent in the early 1990s to 9 per cent in 2011 (figure 5).

Figure 3 **Cost-effectiveness of drilling expenditures**
$ per metre drilled (2012 prices)

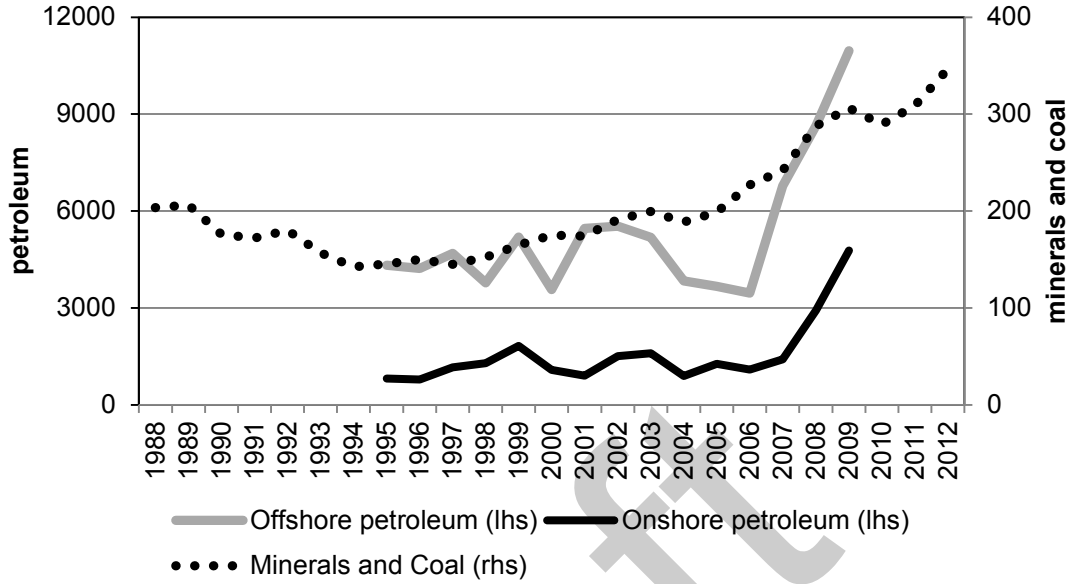
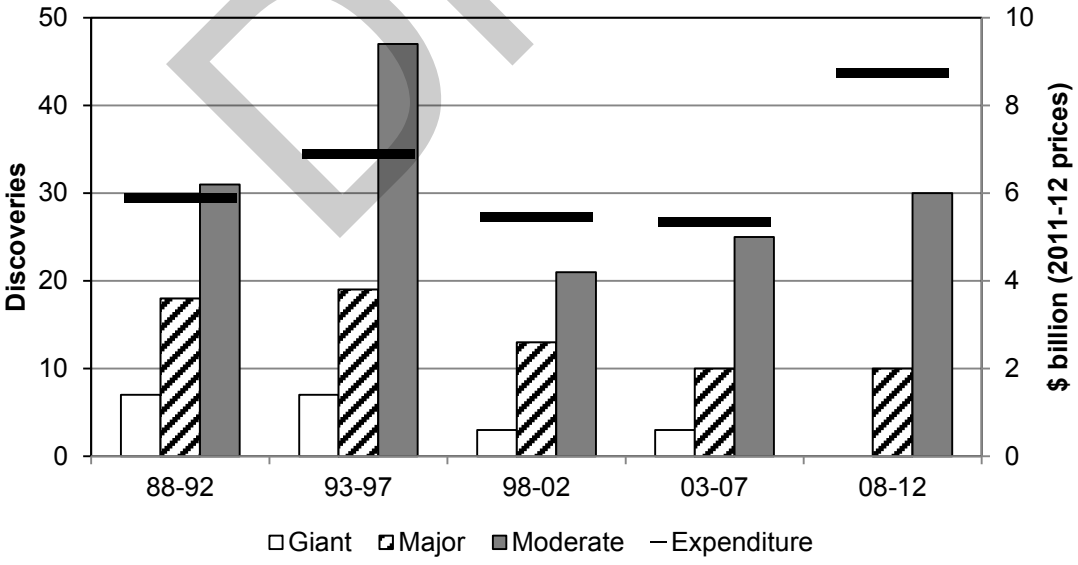
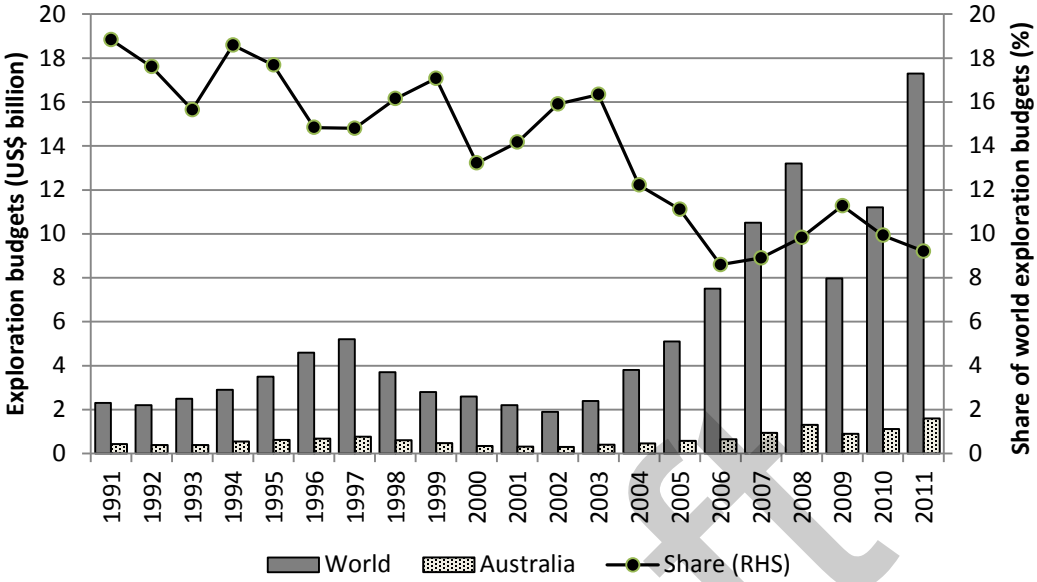



Figure 4 **The number of giant and major discoveries is falling as exploration expenditure has risen**[a]




[a] Mineral discoveries and exploration expenditures (excluding iron ore, coal and petroleum).

Figure 5 **Australia's share of global non bulk mineral exploration**
Excludes iron ore and uranium




## Rationale for government intervention

There are three key reasons why mineral and energy resource exploration in Australia is regulated:

- the mineral and energy resources are owned by the Crown
- exploration could directly impact on existing and future agricultural and other economic land uses, or damage sites of environmental and heritage significance
- exploration may have effects beyond the tenement, for example, on the surrounding region's environment and community.

### *Resources are owned by the Crown*

Governments need to know the mineral and energy resource base in their jurisdictions in order to manage it in the community's interest. Accordingly, governments have established legal frameworks which outline how competing exploration proposals are assessed (for example, tendered programs of works, and cash bidding), when and where exploration can occur, and on what basis (for example, reporting obligations).

*Impacts on existing and future land uses*

Much of the area covered by, or potentially available for, exploration licences has alternative economic uses. While some exploration activities are minimally invasive (most notably satellite or aerial analysis), more intensive exploration activities can impinge on the activities of other land holders. For example, drilling activities and associated machinery access routes can directly disturb and impair farming activities.

While all jurisdictions have procedures in place for resolving competing land use requirements, the frequency and intensity of conflicts has recently increased. This has predominantly arisen because of the impact of exploration on prime agricultural areas. Exploration in other areas, such as on low intensity grazing land, is considerably less contentious — and some landholders view it as a source of additional income. Exploration activities can similarly impact on items or areas of heritage significance (most notably Indigenous heritage) or have environmental impacts by disturbing or destroying flora or fauna of significance.

*Effects beyond the exploration site*

The effects of exploration activities have the potential to extend across areas that are beyond the specific exploration site (such as through noise, air and surface water contamination), and impact on the levels and quality of regional fresh water aquifers.



## Scope of government intervention

State and territory governments own all mineral and energy resources onshore and offshore within the first three nautical miles of the territorial sea. Beyond three nautical miles, the resources are owned by the Australian Government. The scope of intervention by governments in resource exploration extends to:

- the availability of, and access to, land
- exploration licence allocation and approvals processes
- environmental management
- heritage protection
- pre-competitive geoscientific information
- the availability of skilled labour and worker safety
- the taxation treatment of exploration activities
- subsidies/support for exploration activity.

One of the consequences of this broad scope of policy and regulatory interventions is a complex framework of legislation — generally separated into onshore and offshore legislation, and mineral and petroleum resource legislation. Most jurisdictions, therefore, have at least four key Acts and associated regulations. Further complexity arises from the interface between the Commonwealth and the states and territories and the differential treatment of specific mineral resources, such as uranium and coal, and more recently, the treatment of coal seam gas (CSG).

However, it is uncertain whether consolidation or harmonisation of state and territory resource legislation would be more efficient than the current arrangements. Most resource explorers are not exposed to the full force of this legislative complexity as they do not operate across multiple jurisdictions or explore for a combination of mineral and energy resources.

The design of regulation, the governance of regulatory agencies and non-regulatory policies all play important roles in shaping the structure of incentives faced by explorers. The Fraser Institute, a Canadian research group, surveys companies to measure the attractiveness of different jurisdictions for exploration. The Institute's survey results suggest that the regulatory regimes of Australian jurisdictions that govern exploration activity are contributing to the decline in their international competitiveness as destinations for exploration.



## Concerns with the regulatory framework

Common concerns raised in this inquiry, across all regulatory domains, have been the lack of transparent and consultative processes undertaken when adding or changing regulation, the poor communication of some regulators and the scant use of evidence based decision making and proportionate risk management.

There can be strong opposition to mineral and energy resource exploration from some in the community, particularly those who are directly impacted and for whom the potential costs are concentrated. But policy processes have sometimes failed to assess the more widely dispersed benefits for the broader community. Mitigation of the concerns of the immediate community appears to be driving some of the recent legislative responses.

There will invariably be some parties who are disaffected by land use decisions. This places added emphasis on the need to ensure transparent and consultative regulatory frameworks. In the Commission's view, those frameworks, and any changes to them, should be based on extensive community consultation informed by the best available environmental, social and economic understanding of the local

and communitywide risks of impacts, and benefits, from specific exploration activities.

## Exploration licencing

Licensing and approval processes for resource exploration are primarily the responsibility of state and territory governments. The Australian Government has a role in relation to access to Commonwealth land, most offshore approvals and when the *Environment Protection and Biodiversity Conversation Act 1999* (EPBC Act) is triggered.

How governments allocate exploration licences and their strategies for land release play an important role in shaping exploration incentives.

### *The allocation of exploration licences*

There are three main ways of allocating exploration licences in Australia — first-come first-served, work bidding and cash bidding.

Most exploration licence allocations are on a first-come first-served basis if there is likely to be only one party interested in exploring a tenement. Where multiple parties may be interested, governments often request bids of work programs — basing the allocation decision on the nature and extent of each explorer's planned program of exploration. Under both of these arrangements, the rights are allocated free (apart from administration fees).

Work bidding can distort decisions on the nature and timing of exploration activities. Explorers will tend to adopt techniques, plan drilling activity or assign exploration expenditures to those activities that match the criteria used by governments to allocate a tenement, even though these choices may not be the most cost effective for the explorer. Where work bidding leads to exploration activity that is not cost effective, this creates an opportunity cost as at least some of the funds could have been used for other purposes.

The third approach, cash bidding has been used in the past for offshore energy exploration licences — with the Commonwealth and some states recently re-introducing cash bidding, predominantly for the allocation of selected oil, coal and CSG exploration licences. Cash bidding enables governments to receive an upfront payment — effectively a share of any rents that may be created by the exploration activities.

Exploration firms are generally opposed to cash bidding, arguing that any funds expended on cash bidding are funds that cannot be used for exploration, thus lowering the chance of discovery and the generation of public information. Explorers further argue that despite the introduction of cash bidding arrangements, some governments still require the licence application to outline a work program.

The Commission considers that no single method of allocating exploration permits is likely to suit all situations in Australia. Cash bidding has greatest merit for highly prospective exploration tenements. These will usually be in areas where pre-competitive geoscience and other evidence indicates that an exploration tenement will almost certainly contain sizable mineral or energy resources and there is likely to be greater interest from multiple bidders.

Regardless of the allocation mechanism employed, exploration licences are rights to the potential discovery of valuable resources. Administrative decisions on the allocation of those licences are therefore at risk from undue influence from vested interests. The use of transparent processes when allocating exploration licences is good regulatory practice and reduces the risk of corruption in the allocation of exploration licences.

### *Land release strategies*

A challenge faced by governments is to develop an optimal tenement release strategy that maximises the benefits to the community while providing tenement options that are of interest to explorers. The small sizes and odd shapes of some tenements have become suboptimal — with any consequent resource discovery unlikely to be of a scale that supports efficient extraction. A contributing factor has been the requirement for parts of exploration tenements to be relinquished, especially where there have been repeated rounds of exploration.

The Commission considers that, where possible and appropriate, tenements should be of sufficient size to allow an efficient mine or production wells to be operated. This can be achieved by adopting a more strategic approach to the release of tenements by deferral until blocks can be combined into optimally sized and shaped tenements.

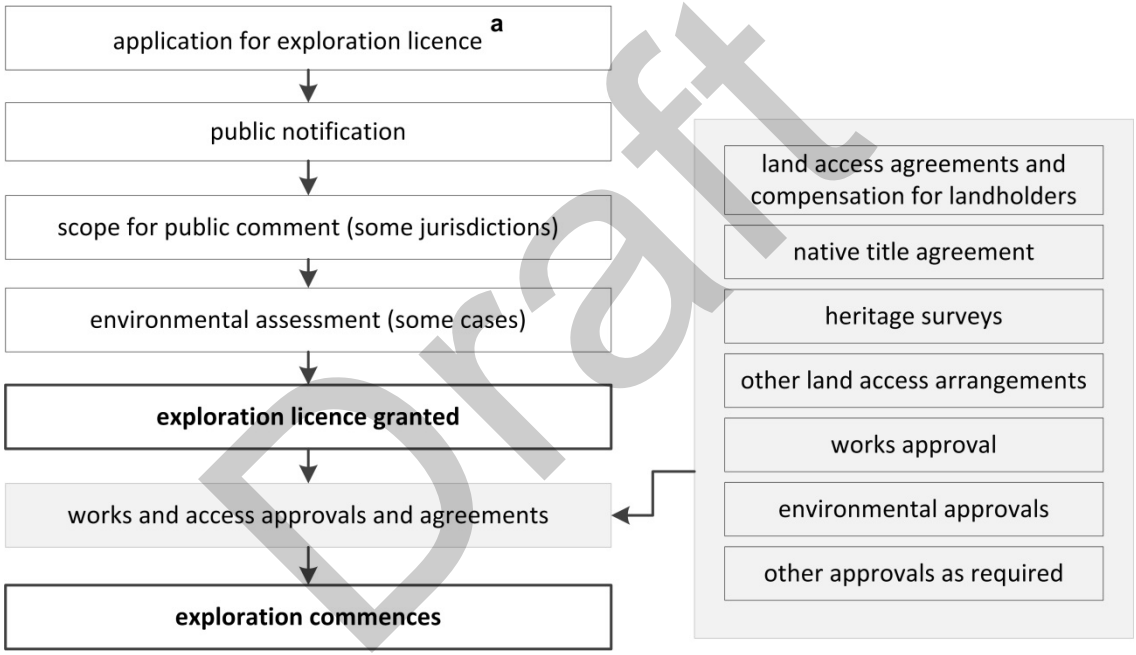
## Approval processes

Once land is made available for exploration and licences have been allocated, there is a lengthy process for explorers to acquire the necessary approvals to begin exploration. There is a great deal of variation between jurisdictions in the paths that

need to be taken from applying for a licence to actually exploring. A high degree of variation also exists within jurisdictions, depending on the location of the exploration and the mineral or energy resources being sought.

This complexity makes it difficult to compare or even broadly describe exploration approval processes. Whereas figure 6 shows in a stylised way the key elements of the exploration licence approval process, the sheer number of paths through the systems means that definitive statements about seemingly obvious aspects, such as whether consultation is required, are not possible.

Figure 6 **General process for exploration approvals in Australian jurisdictions**




**a** A work program must be submitted with the application, but may not be part of the decision-making process.

*Main types of licences*

There are three main licence types: exploration; retention; and production.

Exploration licences are time-limited (for example, generally five years for mineral resource exploration). After that time the licence will expire unless a renewal is granted. Grounds for renewal include a justifiable reason for lack of exploration activity, such as poor weather preventing access to land. In most cases a substantial proportion of the licence area must be 'relinquished' as part of the licence renewal. This enables explorers to focus on the most prospective areas and frees up the remaining areas for other companies to apply for exploration licences.

Explorers can apply for a retention licence to enable them to maintain an interest in land that is not yet commercially viable for resource extraction.

Production licences are, by convention, granted to holders of exploration or retention licences when commercially viable resources have been discovered — however, they are subject to more stringent conditions that reflect the greater impact of resource extraction. These issues are covered in the Commission's concurrent benchmarking study of Australia's major project development assessment processes.

### *Post-licence approval requirements*

Following the granting of an exploration licence, explorers may be required to gain a number of regulatory approvals on a range of issues as set out in figure 6. The manner in which approval applications are assessed, and the way in which any conditions are administered, can affect the time which elapses between the issuing of the licence and the commencement of exploration. In this respect, regulatory delays (even of a few months) can mean that explorers may lose an entire exploration season, or lose the availability of costly equipment (such as drilling rigs or sonar equipped vessels). In many instances, the first year of a licence period can be exhausted by the need to gain the necessary regulatory approvals. This truncates the time left for actual exploration activity.

All jurisdictions have a 'lead agency' model for coordinating approvals for resource exploration. The various agencies have markedly different roles, ranging from a central point for the lodgement of required material, to proactively guiding the approvals through the entire process, or to having authority to assess and approve proposals on behalf of other agencies.

The Commission's view is that, at a minimum, a lead agency should coordinate exploration proposals across the agencies responsible for regulatory assessments and approvals (such as environment and heritage agencies). It should provide guidance on the rationale for the approvals process and how to navigate that process, track the status of applications and monitor and publish reports on how timely the regulatory agencies are in discharging their responsibilities.

If the time taken for holders of exploration licences to gain approval to commence exploration cannot be reduced, various solutions have been proposed. These include: extending the licence period by one year; extending the licence by a period of time that reflects the average increase in the time taken for regulatory compliance; or starting the licence period after all approvals have been granted and exploration can commence.

Each of these options raise implementation issues. A one year increase is unlikely to be appropriate for all exploration types and all jurisdictions; calculating the average delay is fraught with methodological issues; and fixing the licence duration from the time approvals and agreements are in place could allow proponents to delay their responses to approving authorities, thus facilitating 'land banking' and deferral of community benefit from the discovery of potential resources.

### *Regulatory processes*

The regulatory framework aims to balance the competing demands of exploring for resources, using the land for other purposes such as agriculture, and the preservation of heritage and environmental values. This can create a wide and diverse stakeholder interest in the exploration approvals process. A transparent regulatory system is needed to demonstrate to all stakeholders that their interests are being considered in a fair and objective manner. The following three processes raise issues of concern.

#### *Ministerial discretion*

State and territory mineral and energy resource legislation provides ministers with significant discretion over decisions that restrict, facilitate or transfer ownership of exploration activities. For example, coal is not treated differently from other mineral or energy resources in New South Wales legislation but, by using legislative powers, the Minister declared a 'mineral allocation area' for coal over the whole of the state. This had the effect of triggering a tender process for all coal exploration applications.

Some ministerial decision making powers require reasons to be given. Transparency could be improved if this requirement was applied more broadly. Legislation should also specify what reasons are to be relied on in the event of an appeal, if the minister failed to make a decision (such as the reasons set out by the recommending authority in their ministerial brief).

#### *Consultation*

Various stakeholders, as noted above, are affected by decisions to allow or prevent exploration. Some jurisdictions allow stakeholders an opportunity to respond to proposals, but even among these jurisdictions, consultation takes different forms. For example, there are differences in who can comment and how those comments are taken into account. The Commission notes that both proponents and opponents of exploration in New South Wales have called attention to a lack of transparency

with assessment processes and decisions taken regarding mineral allocation areas. This suggests that consultation practices, at least in some jurisdictions, require improvements.

### *Appeals*

Some states have specific appeal processes relating to exploration that are established in legislation, while others rely on generic tribunals or courts. There are also different levels of review available, from a review of the merits of a decision to the restriction of judicial appeal to questions of law or procedural fairness. Appeal processes ensure that redress is available if regulatory powers are not exercised in accordance with the law; thus they promote confidence and transparency in the regulatory system.

Appeal processes can be, on occasion, 'gamed' to delay exploration projects and, thereby, cause explorers to give up, down-scale or lose investor support. Courts have various powers to deal with this, such as dismissing vexatious litigation or awarding costs against unsuccessful litigants. Formal review can be slow and costly for all parties, therefore the use of mediation and other alternative dispute resolution mechanisms is encouraged to promote access to justice and prevent projects being unnecessarily blocked.

### *Regulators*

A leading practice adopted by some jurisdictions is to set administrative targets for their agencies and publish their performance against those targets. An example is the Western Australian Department of Mines and Petroleum, which publishes performance reports that include the number of applications processed and the percentage that meet target timeframes.

Another practice that promotes regulatory transparency and administrative efficiency is the use of online lodgement and tracking of applications. This facilitates the monitoring and reporting of the average time taken for approvals and can assist regulatory agencies to identify any areas of administrative weakness. Currently only Western Australia and Queensland have implemented such systems for the approval of applications. The Commission recommends the adoption of these leading practices by other jurisdictions.

## Land access

The underlying objective of governments when regulating land access is to balance the property rights of both the land owners and explorers and to address externalities, including any communitywide costs and benefits, arising from exploration activities. The regulatory instruments used include placing land off-limits to exploration or putting conditions on land access. In the main, state and territory governments are responsible for regulating most onshore and coastal land access, while the Commonwealth regulates access to Commonwealth owned land and to offshore areas.

### *Crown land*

A rising proportion of Crown land has been declared as reserves and parks. Some jurisdictions proclaim parks without first assessing the value of the underlying resources. Knowledge of the potential value of mineral and energy resources under reserves and parks can inform the community of one of the opportunity costs of decisions to establish them.

While exploration activities can produce environmental damage, or damage to areas of heritage significance, the extent of damage will vary greatly depending on the nature of exploration activity and the fragility of the areas being explored. In certain instances, it may be necessary to prohibit invasive exploration to protect the environmental and heritage values of an area. In other circumstances, many exploration activities, particularly in the early stages when they may only involve aerial mapping or soil sampling, are able to be carried out with little or no disturbance to the land.

In the Commission's view, government decisions to declare a new national park or conservation area should draw on the guiding principles of the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources, including to analyse the costs and benefits of other forms of land uses.

### *Private freehold land*

There can be a need to resolve competing land use requirements when the holder of the mineral and energy resource property rights impacts on the property rights of a land owner (the holder of the surface rights) or land lessee (the user of the land). Such conflicts are more likely to arise in high value agricultural areas, but can occur in or around urban or other high intensity land use areas.

In general, across jurisdictions, negotiations are conducted between the parties on the conditions of access and the compensation payable to the land owner and/or lessee. The requirement to provide compensation for any damage or loss of earnings gives the explorer a financial incentive to minimise the impact of their activities.

Although this is a business-to-business transaction, most rural land owners can be at some disadvantage due to their limited experience in undertaking such negotiations compared to the explorers, who may have negotiated hundreds of such agreements. There is both an asymmetry of information regarding the potential impact of the exploration activity, and an imbalance of power, as in most cases, rural land owners are required to allow explorers to access their land.

Some state and territory legislation explicitly provides for the legal costs incurred by land owners in negotiating an agreement to be compensable and paid by the explorer. In other jurisdictions, such costs are not explicitly 'ruled out'. All jurisdictions should ensure that land owners are explicitly aware that such support is available and is compensable by explorers.

The regulatory frameworks governing CSG exploration in particular have been changing quickly. These changes stem from the pressures generated from the rapid expansion of the industry, uncertainty as to the impacts of CSG activities and concerns and opposition from some landholders and others in the community. Faced with these pressures, governments have searched for appropriate regulatory responses.

Further changes, to improve the regulation of CSG, should be based on the best available evidence of the impacts and be appropriate to the level of risk. Regulation of CSG exploration activities should be directed towards maximising the economic, social and environmental benefit of the use of the land for the whole community.

Changes to regulations, however, are not the only way that management of land access issues can be improved. While explorers have an incentive to build good relations with land owners and the wider community, the practices of some resource explorers (and some subcontract drilling operators and others) have tainted the reputation of the industry. Many explorers are now working to restore and build community support by exceeding the minimum legislative requirements and by engaging and supporting local communities. This is often referred to as earning a 'social licence' to explore.

## Heritage protection

All state and territory governments and the Australian Government have legislation to protect, preserve or mitigate damage to heritage sites. While all forms of heritage — historical, natural and Indigenous — can be impacted by exploration activities, policy challenges are most pronounced in relation to Indigenous heritage.

### *Indigenous heritage*

All states and territories protect Indigenous heritage sites and objects which meet specified standards of 'significance'. However, there is substantial variation in what those standards are, and accordingly in what heritage is protected, how it is protected and who decides whether an activity can go ahead when harm to an Indigenous heritage site cannot be avoided if an exploration activity were to be approved.

#### *The relative merits of duty of care, permit systems and cultural heritage agreements*

There are various actions an explorer must take to manage a heritage site, depending on the nature of the activity and the legislation of the jurisdiction. Some jurisdictions provide exemptions for activities that are considered to have a low impact. In most instances, Indigenous heritage is managed during exploration through duty of care processes, permit systems and agreements embodying cultural management plans.

Several leading practices in managing the potential heritage impacts arising from exploration can be identified from these varying approaches. The heritage management approach (choice of duty of care, permit systems or agreements) is most cost-effective when it is appropriate to the activity's level of risk and the likely heritage significance of a site. Where there is a low likelihood of heritage significance and the exploration activity is low risk, a streamlined process and 'duty of care' will prevent unnecessary regulatory burden for explorers. Conversely, in areas where Indigenous heritage is highly significant, expediency in heritage approvals is not the primary aim. Rather, the objective is to appropriately balance the protection of Indigenous heritage with the benefits of exploration activity.

Heritage management agreements place the onus on resource explorers and traditional owners, rather than a government agency, to decide how to best protect heritage from being damaged or destroyed. Management agreements have the potential to produce better outcomes for heritage protection than permit systems in those cases where heritage values are significant. However, in most jurisdictions,

explorers can apply for a permit or certificate (from a minister or other body) to proceed with exploration even when it is likely to harm Indigenous heritage. Decisions to permit exploration should be based on consultation with all parties that have a relevant interest and expertise, and a weighing up of the relative costs and benefits.

### *Cost and delay in preparing cultural heritage surveys and the development of heritage registers*

The cost and time involved in undertaking cultural heritage surveys are frequently raised by explorers. Some potential sources of delay and unnecessary burden include overlap between Commonwealth and state and territory Indigenous heritage legislation and a lack of binding approval times.

Many participants consider that the requirement to undertake heritage surveys in some jurisdictions has created an industry for archaeologists, anthropologists and lawyers. A related concern is that inconsistent and inadequate listing of heritage sites can lead to the re-examination of the same site by successive explorers. Generally, information from previous surveys cannot be accessed because of Indigenous privacy concerns and copyright restrictions on the survey report. Improved access to existing information would reduce the time taken for heritage decisions and avoid the unnecessary cost of re-surveying of the same site.

The Commission supports the development and updating of Indigenous heritage registers to enable resource explorers to gain access to information about the location and nature of Indigenous heritage sites. A requirement that resource explorers or other parties lodge all heritage surveys with the relevant heritage authority should be adopted in all jurisdictions. A risk management approach should be adopted to ensure that sensitive information, collected as part of the survey, is protected.

### *'Unnecessary' overlap in Commonwealth and state/territory heritage legislation*

Overlap between the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) and state and territory Indigenous heritage legislation may result in duplication of processes and delays for explorers. The ATSIHP Act allows the responsible Commonwealth Minister to make a declaration to preserve or protect an area from injury or desecration if the Minister is satisfied that 'the area is a significant Aboriginal area' and there is a 'serious and immediate threat'. The Act allows for intervention if state and territory laws do not provide effective protection.

The ATSIHP Act was introduced as a temporary measure to encourage the states to protect sacred sites as part of a plan to introduce national land rights legislation. When the plan failed, the Act was made permanent, largely in its original form. It was not repealed or amended following the recognition of native title in Australian law.

There are several concerns, including that the ATSIHP Act:

- is considered ineffective and costly to administer
- is seen by some as being redundant, on the basis that all jurisdictions now have legislation protecting Indigenous heritage. Others, however, question whether some state legislation effectively protects Indigenous heritage
- could result in 'jurisdiction shopping', causing delays and duplication for explorers.

The Commission proposes that, until concerns with state and territory legislation have been fully addressed, the ATSIHP Act should be retained and amended to allow states and territories to be accredited if Commonwealth standards are met. Once all jurisdictional regimes are operating satisfactorily, the ATSIHP Act should be repealed. State and territory legislation would then be the sole source of regulation of heritage matters in their respective jurisdictions.

## Environmental management

The environmental impacts of exploration range from those that are minor and temporary to those that are potentially large and longer-term. The policy challenge for governments is to achieve an appropriate balance between the benefits afforded by mineral and energy resource exploration and the potential for any associated environmental costs.

State and territory governments are the main authorities responsible for environmental management. The Australian Government has authority over exploration in Commonwealth waters and defined matters of national environmental significance. Some key themes have been identified that unnecessarily delay approvals processes or increase compliance costs, over and above those which are necessary to meet the underlying environmental objectives.

### *Streamlining state/territory and Commonwealth regulatory arrangements*

Considerable duplication exists within and between the Commonwealth and state and territory governments' environmental regulatory frameworks.

Within the Commonwealth regulatory framework, the main duplication occurs in the regulation of offshore environmental matters between the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). The Commission is proposing that the Australian Government should accredit NOPSEMA to undertake environmental assessments and approvals under the EPBC Act for petroleum activities in Commonwealth waters. NOPSEMA currently undertakes assessments and approvals of environment plans associated with all petroleum activities in Commonwealth waters. Accordingly, it has the capacity and expertise to undertake such assessments and approvals under the EPBC Act.

The EPBC Act allows for agreements between the Australian and state and territory governments that would reduce the duplication of Commonwealth and state and territory environmental regulatory processes. In 2012, COAG agreed to expedite the accreditation of state and territory environmental approval processes for matters of national environmental significance under the Act. Progress towards achieving this reform has halted. The reform should be properly scoped to identify the necessary steps, reviewed by jurisdictions and a timetable for implementation set.

The regulatory powers exercised by state and territory governments in their territorial waters seaward from the low tide mark do not represent a streamlined approach to managing offshore petroleum exploration. State and territory governments should reconsider conferring their offshore petroleum exploration related regulatory powers to NOPSEMA.

### *Regulatory requirements that are not commensurate with the likely level of impact and are not performance based*

Most environmental impact assessment processes comprise levels of assessment that are of increasing rigour according to the environmental significance of the proposed exploration activity. However, participants in this inquiry reported numerous instances where regulatory requirements are not commensurate with the likely environmental impacts. Such regulatory measures increase the compliance burden on explorers without improving environmental outcomes. Regulatory requirements should be commensurate with the risk and significance of the environmental impacts of the proposed exploration activity and, where possible, the requirements should be performance based outcome measures in order to efficiently manage these risks.

*Use of the internet to improve transparency of requirements and access to publicly available information*

An area of improved administrative efficiency in recent years has been the use of the internet to publicise regulatory requirements. As noted above, Western Australia's Department of Mines and Petroleum has implemented an online Environmental Assessment Regulatory System that allows the lodgment, submission and tracking of applications on-line — the system is accompanied by guidelines to assist applicants.

There is room for other jurisdictions to improve transparency and administrative efficiency, particularly regarding how regulatory requirements are interpreted and enforced by agencies. Such changes would enhance understanding of regulatory requirements and may improve the quality of applications. In turn, this could facilitate a more efficient and timely flow of applications through the assessment process.

Compliance costs for explorers can also be reduced and potentially duplicative environmental surveys avoided or mitigated by placing on the internet publicly available environmental plans and environmental impact statements.

*Subjective decision making, especially when environmental impacts are uncertain*

Where there is scientific uncertainty about the impacts of exploration, there tends to be greater risk of policy change being driven by subjective judgements. For example, environmental policies for CSG have been in a state of flux. In some cases, policy responses have been influenced by the uncertainty surrounding the possible environmental impacts of CSG exploration.

Scientific uncertainty should not lead to poor regulatory processes or decisions. A precautionary approach should be adopted where there is concern of substantial or permanent damage. A lack of certainty should not be used to justify a lack of action to mitigate or prevent such damage. Nor does scientific uncertainty reduce the need to identify the benefits and costs of exploration activities. Rather the presence of scientific uncertainty is one factor that should be considered when deciding whether resource exploration can be reasonably expected to increase the community's wellbeing. Decision makers should weigh up the risks and impacts (both positive and negative) of an exploration proposal. This process can evolve and be revisited as scientific uncertainty is reduced.

# Non-regulatory issues

A number of non-regulatory issues that are within the Commission's terms of reference impact on exploration. One of the more important is the provision of pre-competitive geoscience information. Other issues which are considered in the body of the report, but not canvassed in the overview, include the supply of skilled labour, and workplace relations.

## Pre-competitive geoscience

Pre-competitive geoscience information includes data on the physical properties of the earth, obtained through survey techniques, mapping, data compilation and interpretation of geophysical data. The collection of pre-competitive geoscience information by Australia's geological survey organisations enables explorers to better target potential mineral and energy resources.

The case for public funding of pre-competitive geoscience information is widely accepted on the grounds of its partial public good characteristics — that is, the use of the information does not reduce its availability to others (it is non-rivalrous). The information can also enhance the management of a public resource, that is, the Crown's ownership of mineral and energy resources. Pre-competitive geoscience information, however, is excludable — meaning there is scope for governments to fund the collection of pre-competitive data and then charge users for that information. Indeed, this is currently the practice in New South Wales. The outcomes of this cost recovery approach in New South Wales should be monitored by all governments and assessed for broader applicability.

Australia's geological survey organisations and databases are highly regarded. The quality of, and accessibility to, pre-competitive data is a source of attractiveness for investment, both domestic and foreign, in exploration. However, the coverage and timeliness of the data could be improved through better disclosure of resource reserves by non-ASX companies. A working group within the Department of Resources, Energy and Tourism is currently examining this matter and considering options to improve disclosure and will deliver its report shortly after the release of this draft. The Commission proposes to finalise its view after the release of the working group's report.

Funding for the range of activities undertaken by some of Australia's geological survey organisations has historically been provided through short-term, fixed duration and outcome-specific program funding. This approach has a number of drawbacks compared to ongoing appropriation funding — lesser certainty and

flexibility, and poorer longer-term planning capability. The Commission is giving consideration to whether it should recommend a more stable and certain funding base.

# Draft recommendations

## EXPLORATION LICENSING AND APPROVALS

DRAFT RECOMMENDATION 3.1

***Governments should ensure that their authorities responsible for exploration licensing:***

- ***prepare and publish information on the government's exploration licensing objectives and the criteria by which applications for exploration licences will be assessed***
- ***publish the outcome of exploration licence allocation assessments, including the name of the successful bidder and the reasons why their bid was successful.***

DRAFT RECOMMENDATION 3.2

***Where possible, governments should not allocate exploration licences for tenements that would be too small or too irregular a shape for an efficient mine or production wells to be established. The release of exploration tenements should be deferred until tenements of appropriate size and shape can be issued.***

DRAFT RECOMMENDATION 3.3

***If an Act requires the Minister to notify a person of a decision regarding an exploration licence, the Act should require that the notice include the reasons for the decision.***

DRAFT RECOMMENDATION 3.4

***Where not already implemented, governments should ensure that at a minimum their lead agencies responsible for exploration, coordinate exploration licensing and related approvals (such as environment and heritage approvals). This should include the provision of guidance on the range of approvals that may be required, and on how to navigate the approvals processes.***

DRAFT RECOMMENDATION 3.5

***Governments should ensure that their regulators publish target timeframes for approval processes, including exploration licensing and related approvals (for example environmental and heritage approvals). The lead agency for exploration should publish whole-of-government performance reports against these timeframes on their website.***

## LAND ACCESS

DRAFT RECOMMENDATION 4.1

***Drawing on the guiding principles of the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources, Governments should, when deciding to declare a new national park or conservation reserve in recognition of its environmental and heritage value, use evidence-based analyses of the economic and social costs and benefits of alternative or shared land use, including exploration.***

***Governments should, where they allow for consideration of exploration activity, assess applications by explorers to access a national park or conservation reserve according to the risk and the potential impact of the specific proposed activity on the environmental and heritage values and on other users of that park or reserve.***

DRAFT RECOMMENDATION 4.2

***State and territory governments should ensure that land holders are informed that reasonable legal costs incurred by them in negotiating a land access agreement are compensable by explorers.***

DRAFT RECOMMENDATION 4.3

***Governments should ensure that the development of coal seam gas exploration regulation is evidence-based and is appropriate to the level of risk. The regulation should draw on the guiding principles of the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources to weigh the economic, social and environmental costs and benefits for those directly affected as well as for the whole community, and should evolve in step with the evidence.***

## HERITAGE PROTECTION

DRAFT RECOMMENDATION 5.1

***Until concerns with state and territory legislation have been fully addressed, the Commonwealth should retain the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act) and amend it to allow state and territory regimes to be accredited if Commonwealth standards are met. Once all jurisdictional regimes are operating satisfactorily to Commonwealth standards, the Commonwealth should repeal the ATSIHP Act.***

DRAFT RECOMMENDATION 5.2

***Governments should ensure that their heritage authorities:***

- ***require that resource explorers or other parties lodge all heritage surveys with that authority***
- ***maintain registers which map and list all known Indigenous heritage***
- ***adopt measures to ensure that sensitive information collected by a survey is only provided to approved parties (and only as necessary for the purposes of their activities), on the basis of agreed protocols.***

DRAFT RECOMMENDATION 5.3

***State and territory governments should manage Indigenous heritage on a risk assessment basis.***

- ***Where there is a low likelihood of heritage significance in a tenement and the exploration activity is low risk, a streamlined 'duty of care' or 'due diligence' process should be adopted.***
- ***Where there is a high likelihood of heritage significance and the exploration activity is higher risk, models of agreement making should be adopted rather than a government authorisation system.***
- ***When negotiated agreements cannot be reached, governments should make decisions about heritage protection based on clear criteria, transparency and consultation with all parties that have a direct interest.***

## ENVIRONMENTAL MANAGEMENT

DRAFT RECOMMENDATION 6.1

***The Commonwealth should accredit the National Offshore Petroleum Safety and Environmental Management Authority to undertake environmental assessments and approvals under the Environment Protection and Biodiversity Conservation Act for petroleum activities in Commonwealth waters.***

DRAFT RECOMMENDATION 6.2

***The Commonwealth should improve the efficiency of environmental assessment and approval processes under the Environment Protection and Biodiversity Conservation Act by strengthening bilateral arrangements with the states and territories for assessments and establishing bilateral agreements for the accreditation of approval processes where the state and territory processes meet appropriate standards. The necessary steps to implement this reform should be properly scoped, identified and reviewed by jurisdictions and a timetable for implementation should be agreed.***

DRAFT RECOMMENDATION 6.3

***State and territory governments should reconsider the option of conferring their existing petroleum-related regulatory powers in state and territory waters seaward of the low tide mark, including islands within those waters, to the National Offshore Petroleum Safety and Environmental Management Authority.***

DRAFT RECOMMENDATION 6.4

***Governments should ensure that their environment-related regulatory requirements relating to exploration:***

- ***are the minimum necessary to meet their policy objectives***
- ***proportionate to the impacts and risks associated with the nature, scale and location of the proposed exploration activity.***

DRAFT RECOMMENDATION 6.5

***Governments should ensure that their environment-related regulation of exploration activities should be focused towards performance-based environmental outcome measures and away from prescriptive conditions, in order to better manage risk and achieve environmentally sound outcomes.***

DRAFT RECOMMENDATION 6.6

***Governments should ensure that when there is scientific uncertainty surrounding the environmental impacts of exploration activities, regulatory settings should evolve with the best-available science (adaptive management) and decisions on environmental approvals should be evidence-based.***

DRAFT RECOMMENDATION 6.7

***Governments should clearly set out in a single location on the internet environment-related guidance on the range of approvals that may be required.***

DRAFT RECOMMENDATION 6.8

***Governments should ensure that their authorities responsible for assessing environmental plans and environmental impact statements (and equivalent documents) should make archived industry data publicly available on the internet.***

## GEOSCIENCE

DRAFT RECOMMENDATION 7.1

***Governments should monitor the outcomes of the cost recovery funding approach to the provision of pre-competitive geoscience information being adopted by the New South Wales Government, with a view to its possible broader application in those jurisdictions.***

# 1 About the inquiry

On 27 September 2012, the Assistant Treasurer asked the Productivity Commission to undertake an inquiry into the non-financial barriers to mineral and energy resource exploration. The Commission was given 12 months to undertake this inquiry and submit a report.

## 1.1 Background to the inquiry

The origin of the inquiry stems from the findings of the Policy Transition Group's (2010) *Report to the Australian Government — Minerals and Petroleum Exploration*. The report acknowledged the regulatory barriers faced by resource exploration businesses:

> A range of approvals are required before exploration can begin, including land access, native title, indigenous and non-indigenous heritage, environmental, conservation estate and planning and infrastructure approvals. Approvals processes can be costly and time-consuming. Governments at all levels can unintentionally put in place conflicting policies that simultaneously promote and inhibit exploration. (PTG 2010, p. 17)

As part of the effort by the Council of Australian Governments to improve the regulatory environment faced by explorers, the Policy Transition Group recommended:

> … the Australian Government should commission the Productivity Commission to undertake an examination of the regulatory barriers faced by exploration companies and present its report to COAG for action by Australian jurisdictions. (PTG 2010, p. 17)

## 1.2 What the Commission has been asked to do

The Commission has been requested to outline high priority reforms to address *non-financial barriers* to exploration for mineral and energy resources in Australia. As part of this process, the Commission has been asked to:

- determine if there is evidence of unnecessary regulatory burden and, if so, make recommendations on how to reduce or eliminate these burdens

- examine the complexity and time frames of government approvals processes for exploration, and potential for delay due to appeals both within and across jurisdictions
- examine areas of duplication between and within local, state, territory and Commonwealth regulation that can be triggered throughout an exploration project
- examine costs of non-financial barriers (including regulatory and related costs)
- consider options to improve the regulatory environment for exploration activities, having regard to regulatory objectives
- assess the impact of non-financial barriers on international competitiveness and economic performance of Australia's exploration sector.

The full terms of reference of this inquiry can be found on pages iv-v.

The terms of reference define the scope of this inquiry and the coverage of its recommendations. Within the scope of this inquiry, the Commission has examined the issues from a community–wide perspective, as required by the *Productivity Commission Act 1998* (Cwlth). That is, the Commission has assessed the effectiveness and efficiency of government policies, programs and regulations, as well as the Commission's proposed reforms, and assessed their net benefits for the wider community.

To scope the inquiry, the Commission has:

- defined which activities comprise exploration
- determined which issues were in and out of scope for the study
- clarified what could constitute an unnecessary burden.

## 1.3 Scope of the inquiry

### Defining resource exploration

The focus of this inquiry is on those activities that relate to the gathering of knowledge as to the location, quantity and quality of mineral and energy resource deposits. This includes the exploration activities of all organisations, encompassing both the large mining companies engaged in resource exploration and extraction and the smaller (junior) organisations engaged primarily in exploration activities.

Resource exploration uses a wide range of techniques. At one end of the spectrum, aerial photography and soil sampling, which generally have negligible environmental impact can be used, particularly at early stage exploration where the target resources are being identified. At the other end of the spectrum, intensive pattern drilling can be used at the final stages of exploration where the explorer is attempting to develop a comprehensive assessment of any resources discovered during earlier exploration activities. The nature of activities during this latter stage of exploration for some resources, such as coal seam gas, may differ little from extraction activities.

A guide to the stages involved in the resource exploration process is presented in figure 1.1. For the purposes of this inquiry, the Commission has determined that exploration activity effectively commences with the provision of public geological surveys, which are then utilised by private explorers to select areas for more intensive exploration. The process concludes after this exploration takes place and a decision is made about the economic viability of extracting any resources that may have been found.

### *The relationship between resource exploration and extraction*

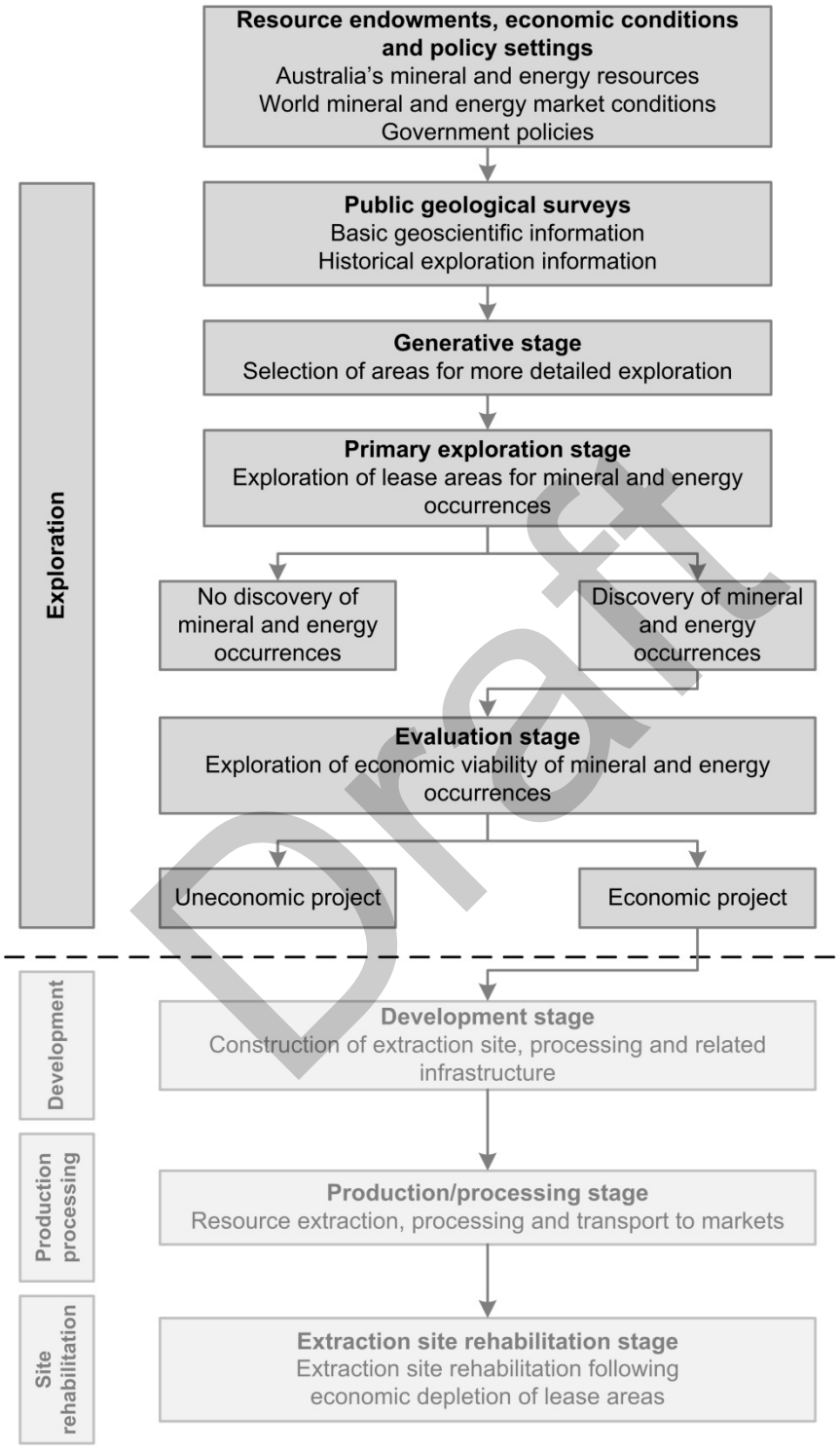
In practice, the distinction between resource exploration and extraction activities is more complex. Resource exploration is a precursor to resource extraction, and substantive barriers 'downstream' in the extraction and sale of resources may deter exploration. A concurrent study being undertaken by the Commission — benchmarking Australia's major project development assessment and approval processes against international and domestic best practice — has scope to investigate major resource project issues.

While many in the community see exploration as leading inevitably to extraction activities, this is rarely the case for most mineral resources. It has been said that:

> … it takes 500-1000 grassroots exploration projects to identify 100 targets for advanced exploration, which in turn lead to 10 development projects, 1 of which becomes a profitable mine. (Eggert 2010, p. 4)

The discovery rate for resources such as oil is generally higher, but it is still a high risk activity. For example, the Australian Petroleum Production and Exploration Association indicates that in Australia over the last six decades, around 14 per cent of conventional exploration oil wells have led to production (sub. 22 p. 5). On the other hand, exploration for coal and coal seam gas often consists of determining the extent of the resources that are known to exist in a given area, with resource extraction highly likely to follow.

Figure 1.1 **Key stages in resource exploration, production and processing**




*Source*: adapted from Hogan et. al (2002).

## What issues are in and out of scope?

The terms of reference for this inquiry require the Commission to examine non-financial barriers to resource exploration. This includes an examination of the regulatory framework governing the operations of resource explorers — exploration approvals systems and processes across Commonwealth, state and territory jurisdictions — focusing on environmental and heritage approval systems and processes.

The presence of other non-financial, non-regulatory barriers can further affect the performance of the exploration industry. For example, if the provision of public geoscience information is inadequate, it may discourage explorers from undertaking more intensive geological surveys on their own accord. Similarly, skills shortages may restrict the ability of the industry to undertake exploration activities in a timely and efficient manner. The Commission has examined the range of possible non-financial, non-regulatory barriers.

The terms of reference exclude examination of the Government's response to the Report of the Independent Review of the *Environment Protection and Biodiversity Conservation Act 1999*. The inquiry is also not to examine processes under the Commonwealth's *Native Title Act 1993*, the *Aboriginal Land Rights (Northern Territory) Act 1976* or state Indigenous land rights regimes. This report does, however, describe the operation of these regulations so as to provide a necessary context within which other regulation can be examined.

The Commission's terms of reference also preclude examination of issues related to taxation, financial incentives, charges and royalties.

## What constitutes unnecessary regulatory burdens

Regulation is an instrument that governments use to achieve economic, social and environmental objectives. For example, land access regulations reflect and enforce the community's values with respect to the rights of explorers and existing land holders regarding the use of land for exploration purposes. Environmental regulation is used to prevent or limit damage to the natural environment that may arise from some exploration activities. Regulation is also part of the institutional architecture of markets, enabling, for instance, the establishment of property rights and the enforcement of contracts (such as through exploration tenement allocation mechanisms).

Regulation, however, imposes compliance costs on those who are regulated — in this case resource explorers. Compliance costs include the costs of meeting the

information and reporting requirements of regulators. Some of the largest compliance costs are the delays incurred by explorers when seeking approvals (for example, environmental and heritage approvals) from regulators. Regulations may also direct the way explorers operate and reduce their flexibility to respond to challenges and opportunities. The increased costs arising from the regulation may reduce the attractiveness of resource exploration as an investment destination.

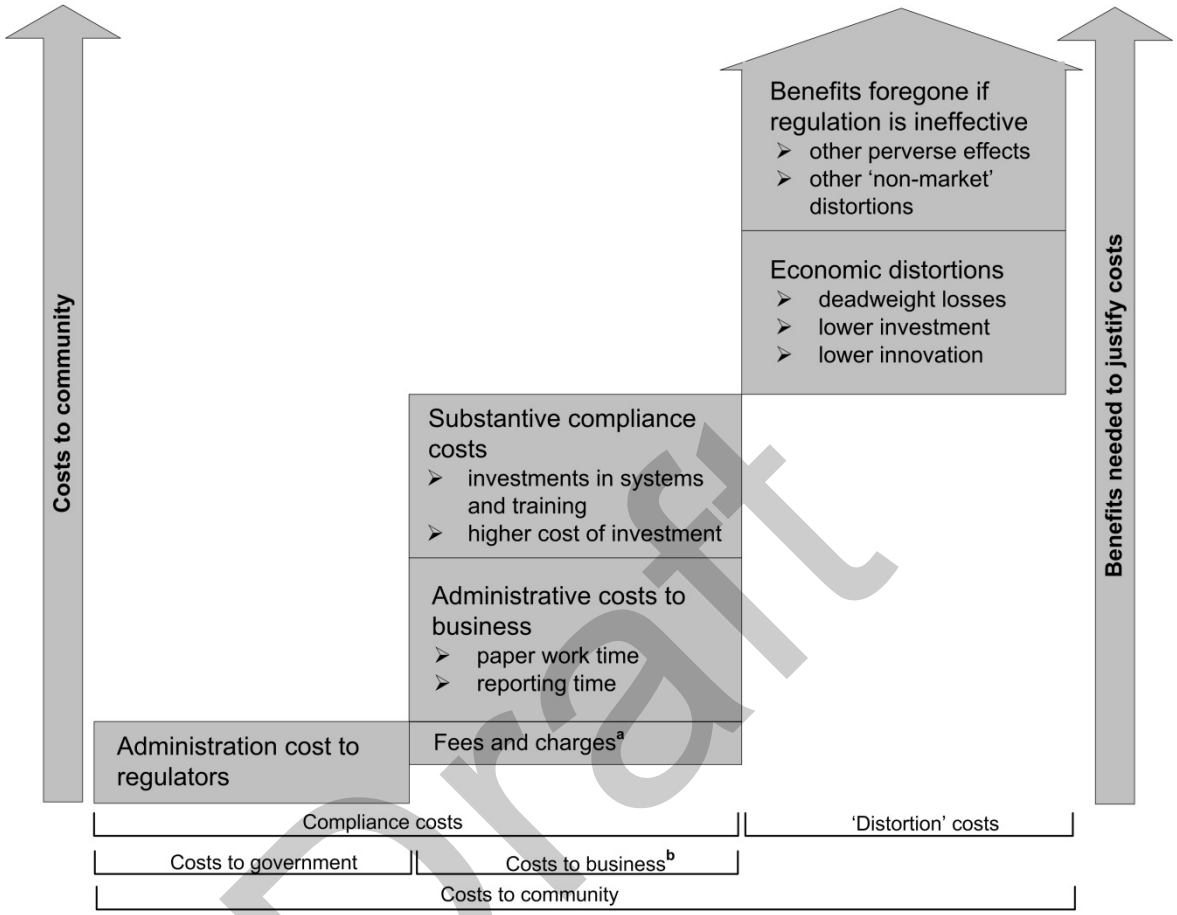
The administration of regulations also imposes costs on the regulators by requiring appropriate systems to be established to process applications for licences, assessment of material provided by explorers for approval purposes and enforcement activities. These costs are met either by explorers through user pay arrangements or funded by government appropriations.

The range of potential compliance costs and distortionary effects of regulations (often referred to as regulatory burden) and their incidence and cumulative impact are illustrated in figure 1.2.

The terms of reference for the inquiry specify that the Commission is to have regard to regulatory objectives. Therefore, the Commission, when examining the regulatory frameworks governing resource exploration, had regard to whether the regulation is an effective and efficient means of achieving the policy objectives of that regulation, and whether good regulatory principles and practices are adopted.

An unnecessary regulatory burden arises where the policy objectives of the regulation could be achieved at lower cost to the affected parties. It is important, therefore, to differentiate those parts of regulatory costs that while burdensome, are necessary, from those that are unnecessary to the achievement of regulatory objectives.

Figure 1.2 **Multiple potential burdens of regulation**
Costs to business and the community




[a] Cost to business depends on fees and charges passed on to business through cost recovery. [b] Some costs are passed through in prices, lower wages or lower returns on capital.

*Source*: PC (2011a).

The sources of unnecessary regulatory burdens include problems with the regulations themselves, regulatory duplication and problems caused by regulator behaviour:

*Problems with regulations themselves*

- unclear or questionable objectives
- conflicting objectives
- overly complex regulation or prescriptive requirements
- poor risk management through regulatory creep
- redundant regulation.

*Duplication of regulations*

- overlap and inconsistency of regulations
- variation in reporting requirements.

*Regulator behaviour*

- excessive reporting or recording requirements
- inadequate resourcing of regulators and inadequate skill levels
- overzealous regulation
- unwieldy approval and licensing processes
- lack of transparency in regulatory processes.

## 1.4 Conduct of the inquiry

To ensure broad community feedback and transparency, the Commission has invited feedback in the following manner:

- the inquiry was advertised on the Commission's website and in *The Australian Financial Review* on 3 October 2012 and a circular was issued to advise interested parties of the inquiry
- in December 2012, the Commission released an issues paper to assist interested parties in making a submission
- the Commission has met with a range of stakeholders including resource explorers and their peak bodies, farmers, conservation groups, Indigenous heritage organisations and government departments at both the state and federal level

Prior to the release of this draft report, the Commission received 34 formal submissions from stakeholders. The Commission thanks those who have provided input into this inquiry to date.

## 1.5 Structure of the report

This report is structured as follows:

- chapter 2 provides a description of resource exploration and the role of governments.

- chapter 3 summarises the regulatory approval processes that explorers are required to meet in order to undertake mineral and energy resource exploration.
- chapters 4–6 examine specific components of the approvals process:
  - chapter 4 considers issues relevant to land access
  - chapter 5 reviews Indigenous and non-Indigenous heritage issues
  - chapter 6 analyses issues around the granting of environmental approvals.
- chapter 7 examines the provision of public geoscience information.
- chapter 8 looks at non-financial barriers related to workforce issues — labour skills, workplace relations and workplace health and safety.
- appendix A documents the organisations and individuals that the Commission consulted with in undertaking this review, including those who provided submissions.

# 2 The nature of resource exploration and the role of government

**Key points**

- Minerals and energy resources exploration represents a small share of the economy (0.5 per cent of GDP in 2011-12), but is an essential prerequisite for mining and energy resource extraction (9 per cent of GDP in 2011-12).
- Expenditure on exploration has increased substantially over the last half decade, to reach $7 billion in 2011-12.
  - Much of this increase has been driven by brownfield exploration (exploration in established reserves).
  - Greenfield exploration (exploration in unexplored and incompletely explored areas) has remained stable.
- The economic performance of resource explorers has been falling due to higher costs and lower rates of discoveries. One indication of the decline in exploration productivity is that the cost per metre drilled (in real terms) has increased. Moreover, exploration expenditures have not led to as many discoveries over the last decade as in previous periods. This is particularly the case for the discovery of 'giant' deposits.
- If the downward trend in significant discoveries continues, resource extraction will increasingly rely on deposits which may be of lower grade, deeper in the ground and require more 'effort' to extract. This will impact adversely on Australia's competitiveness in resource extraction.
- The exploration sector is increasingly globalised, with 'frontier' countries gaining a rising share of global exploration expenditures. While Australia's share of exploration expenditures ranks second, behind Canada, Australia is seen increasingly as a 'mature environment' with less prospectivity.
- The rationale for government involvement in resource exploration stems from:
  - its ownership of the mineral and energy resources
  - the need to balance competing land uses
  - the requirement to manage spill-overs from exploration
- There is a growing belief within the resource exploration industry that regulatory changes are contributing to the decline in attractiveness of many Australian jurisdictions as destinations for exploration.

This chapter describes the role of mineral and energy resource exploration in Australia and overviews the industry's size, structure and recent performance. It

also discusses the rationale for government involvement in resource exploration, and provides an overview of the regulatory environment in which exploration operates.

## 2.1 Role and structure of resource exploration

### The importance of exploration

The Australian and New Zealand Standard Industrial Classification (ANZSIC) relating to resource exploration activities and firms engaged in those activities are set out in box 2.1[1]. On this basis, mineral and energy resource exploration in Australia is a small part of the economy, equivalent to 0.5 per cent of GDP in 2011-12 and accounting for just 0.2 per cent of employment since the mid-1980s (ABS 2012c).

**Box 2.1 ANZSIC classifications surrounding exploration**

Mining activities are identified in Division B of the Australian Bureau of Statistics (ABS) Australian and New Zealand Standard Industrial Classification (ANZSIC). The ANZSIC divides mining into two basic activities — mining operations and exploration and other mining support services.

Firms engaged primarily in exploration — or providing services to other resources or other exploration companies — are in subdivision 10 of Division B. Exploration activities (group 101) are further divided into petroleum exploration and mineral exploration.

Petroleum exploration (class 1011) includes units engaged in:

- natural gas exploration
- petroleum exploration

Minerals exploration (class 1012) consists of units mainly engaged in exploring for minerals (except for crude petroleum or natural gas).

There are also companies primarily engaged in resource production who undertake exploration activities. These companies will be found under the following ANZSIC subdivisions:

- subdivision 06 coal mining
- subdivision 07 oil and gas extraction
- subdivision 08 metal ore mining

*Source*: ABS (2008).

[1] For the purposes of this inquiry, extractive and quarrying industries (ANZSIC subdivision 09) are out of scope and have been excluded from the statistical analysis.

However, these statistics fail to fully capture the importance of exploration. Exploration is a prerequisite for the extraction of commercially valuable mineral and energy resources. Resource extraction is a major contributor to Australia's overall economic activity, accounting for 9 per cent of GDP in 2011-12. As current reserves are depleted, the long term viability of resource extraction and its contribution to Australia's economic growth will be underpinned by the ongoing discovery of high quality deposits.

The Minerals Council of Australia highlighted the importance of exploration by referring to comments by the chief of Geoscience Australia's Energy and Mineral Division:

> While Australia's resource stocks are healthy overall, the country's position as a premier minerals producer is dependent on continuing investment in exploration to locate high quality resources and upgrade known deposits to make them competitive on the world market. (sub. 27 p. 17)

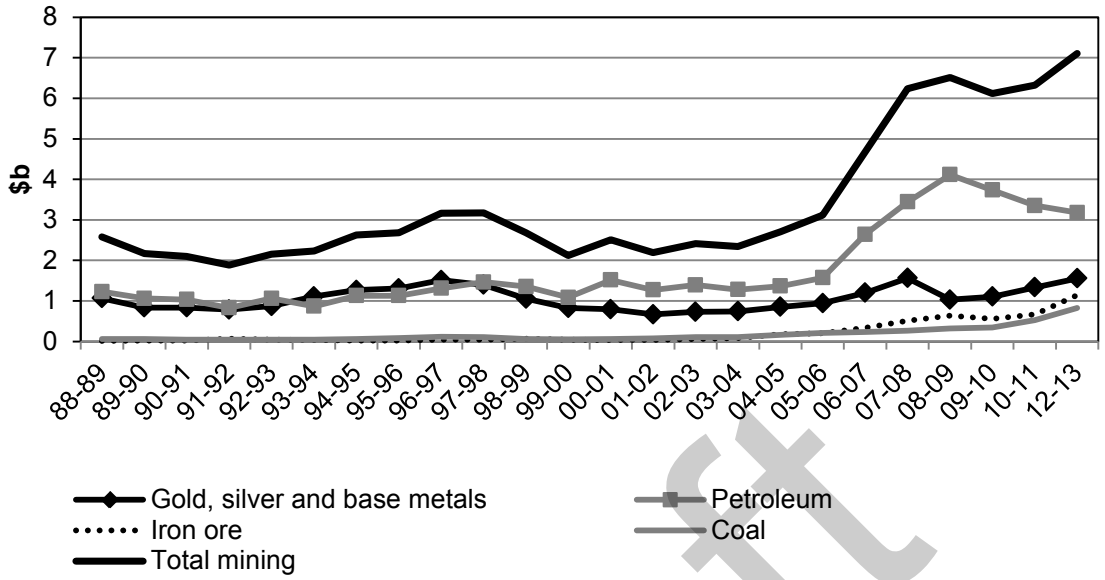
## The scope of exploration activity

### *Resource type*

Australia is endowed with a wide range of mineral and energy resources, with active exploration occurring across the spectrum of resources. Expenditure on mineral and petroleum exploration has tripled over the past decade to reach $7 billion in 2011-12 (figure 2.1). Petroleum exploration is the largest component and, until 2008, was the main driver for the substantial increase in overall exploration expenditure.

Expenditure on exploration for gold, silver and base metals has recently returned to the peak level experienced prior to the global financial crisis. Exploration spending on iron ore and coal has also substantially increased in recent years, albeit from a low base.

Figure 2.1 **Exploration expenditures have increased substantially**[a]
1988-89 to 2010–12, $billion (2011-12 prices)




[a] Exploration expenditure for coal seam gas is included within coal exploration expenditures.

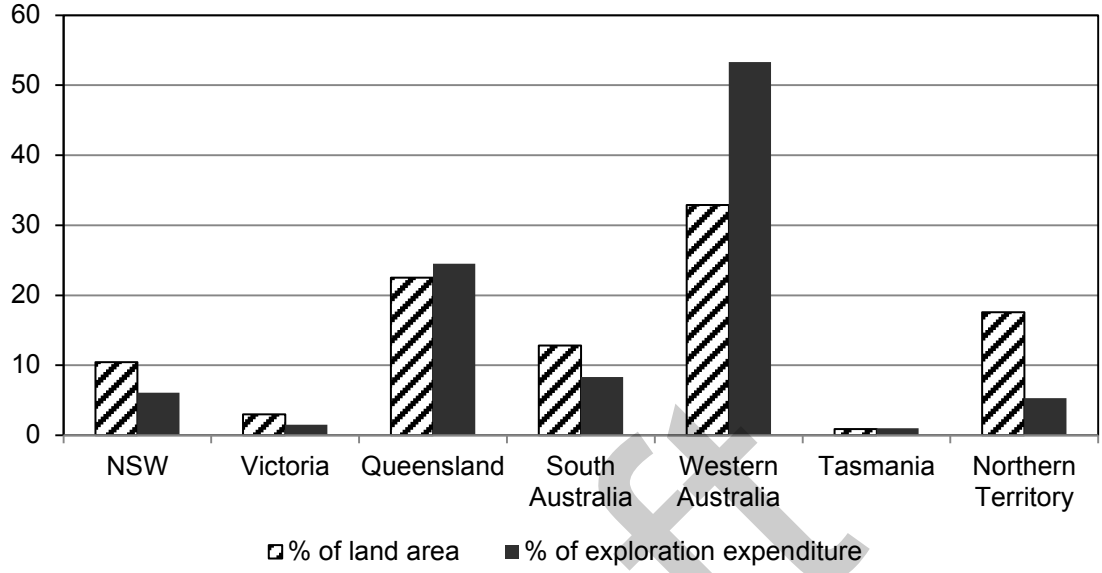
*Data source*: ABS (2012a) (Time Series Workbooks for tables 5 and 6).

### *Location*

Exploration activity is unevenly distributed across Australia (figure 2.2). Western Australia and Queensland dominate, accounting respectively for around a half and a quarter of total spending. Tasmania is at the other extreme, with the smallest share, at around 1 per cent. While the disproportionate shares of exploration expenditure across states primarily reflects disparities in mineral endowments, differences in policies and regulatory practices may also play a part.

Figure 2.2 **Exploration expenditure across Australia**[a]

Per cent of total Australian exploration expenditure and land area in 2012




[a] Sales and service income.

*Data sources*: ABS (2012a, 2012b).



### *The structure of exploration firms*

Mineral and energy resource explorers are businesses of all sizes. At one end of the spectrum are companies with established production operations, billions of dollars in assets and multinational operations. At the other end are small exploration firms with only a few million dollars of capital. It is common practice to divide these companies into those which primarily source their exploration funding from income derived from established mines or wells (the 'senior' miners[2]) and those which raise their exploration funding more directly through the stock market (the 'junior' explorers).

A recent review of resources companies listed on the stock exchange (table 2.1) highlights that even though junior explorers far outnumber the senior miners, the latter account for the vast majority of resource company market capitalisation.

[2] While senior miners also obtain funding through the stock market, this is typically for developing new mines or acquiring other companies rather than to fund an exploration program.

Table 2.1 **Junior explorers are numerous, but have limited capitalisation**
Resource explorers listed on the Australian Stock Exchange in June 2012

| *Sector* | *Junior[a] explorers* | *Senior explorers* | *Junior explorers' share of all listed resource companies* | *Junior explorers' share of total resource company market capitalisation* |
|---|---|---|---|---|
| | number | number | per cent | per cent |
| Oil and gas | 110 | 17 | 87 | 8 |
| Coal and consumable fuels | 63 | 21 | 75 | 22 |
| Aluminium, steel and diversified miners[b] | 275 | 78 | 78 | 5 |
| Gold and other precious metals | 189 | 64 | 75 | 19 |
| **Total** | **637** | **180** | **78** | **7** |

[a] The cut-off between junior and senior companies is based upon a market valuation of $200 million. [b] Description used by source material.

*Source*: Williams (2012).

While the market capitalisation of junior explorers is only seven per cent of all explorers listed on the Australian Stock Exchange, they make important contributions to exploration. The Australian Petroleum Production and Exploration Association (APPEA) state:

> A number of Australia's major oil and gas discoveries have resulted from the innovative and pioneering work undertaken by junior exploration companies, while the prospectivity of some basins has been established by the work undertaken by small independent companies at the frontier stage of the exploration cycle. Of more recent times, junior explorers have underpinned the emergence of coal seam gas as an important energy source and the growth of shale gas activities. (sub. 22 pp. 5–6)

Further, junior explorers accounted for just over half of all exploration expenditure for non-ferrous metals over the last half decade (Schodde 2011).

## 2.2 How the resource explorers operate

Mineral and energy resources need to be located and assessed in order to identify their extent and quality. This requires geological expertise, capital to fund exploration and a measure of luck.

Explorers rely on geological theories, together with evidence of the physical, geological, electromagnetic and chemical characteristics of locations (including data from previous exploration and extraction activities), to identify likely sites for

investigation. These theories and data provide the basis for preliminary assessments of the relative geological potential (or prospectivity) of different possible exploration locations. Geological theories are re-evaluated and adapted in light of the success or otherwise from exploration activity.

There are several interrelated, and usually sequential, stages in the mineral exploration process. Exploration usually begins with a review of existing geoscientific data to identify appropriate locations to explore (generative stage). Once broad areas have been identified, techniques such as aerial surveys, surface level chemical testing and geological mapping are used to identify the most prospective areas for drilling.

The next stage is usually target drilling — which is an attempt to intersect with a mineral or energy resource. Even though the location for target drilling is based on the results of initial testing, the probability of successfully identifying resources is low. As such, target drilling usually involves lower cost drilling activities (such as drilling to limited depths and/or dispersed drilling).

If target drilling identifies the existence of a resource, explorers may move on to the evaluation stage. This would involve more concentrated drilling (known as pattern drilling) and/or to deeper drilling along with drilling techniques that enable better estimates about the depth, grade and consistency of the deposit. If the results of drilling during the evaluation stage are positive, explorers will then begin feasibility studies to determine if a profitable mine or well can be established.

At each stage, explorers use the information they have gathered to make judgements about the risk-weighted costs and benefits of continuing to the next exploration stage and about whether they should hold or relinquish tenements or delay their exploration and development activities. A particular site may be explored multiple times using different techniques and approaches before a discovery is made.

Most exploration activities can be categorised into greenfield or brownfield exploration:

- *Greenfield exploration* occurs in unexplored or incompletely explored areas and is directed at discovering new resource deposits. This exploration is a high risk, and potentially high reward venture with large returns possible for those which successfully discover substantial viable deposits. This approach appeals to junior mining companies which often on-sell significant commercial discoveries, or form joint ventures to exploit the resources.
- *Brownfield exploration* relates to activity in areas with established reserves. This is often undertaken by major companies adjacent to their existing mines to better define the quantity or quality of known resources. This may enable them to

extend the operating life of an existing mine and better utilise their infrastructure or use it for longer.

## 2.3 Performance of resource explorers

Industry group submissions have raised a number of concerns about the economic performance of resource explorers in Australia (QRC-QEC, sub. 13; APPEA, sub. 22; AMEC, sub. 24; AMMA, sub. 32) including:

- that the cost of undertaking exploration is rising too rapidly (subs. 13, 22, 24, 32)
- the rate of discovery of significant new resources is declining (subs. 22, 24) resulting in doubts over the long term sustainability of resource extraction (subs. 13, 22)
- a decrease in greenfield exploration as a share of the total (subs. 22, 27)
- that exploration activity in Australia is not keeping pace with overseas activity (subs. 22, 32).

Each of these concerns are examined below.

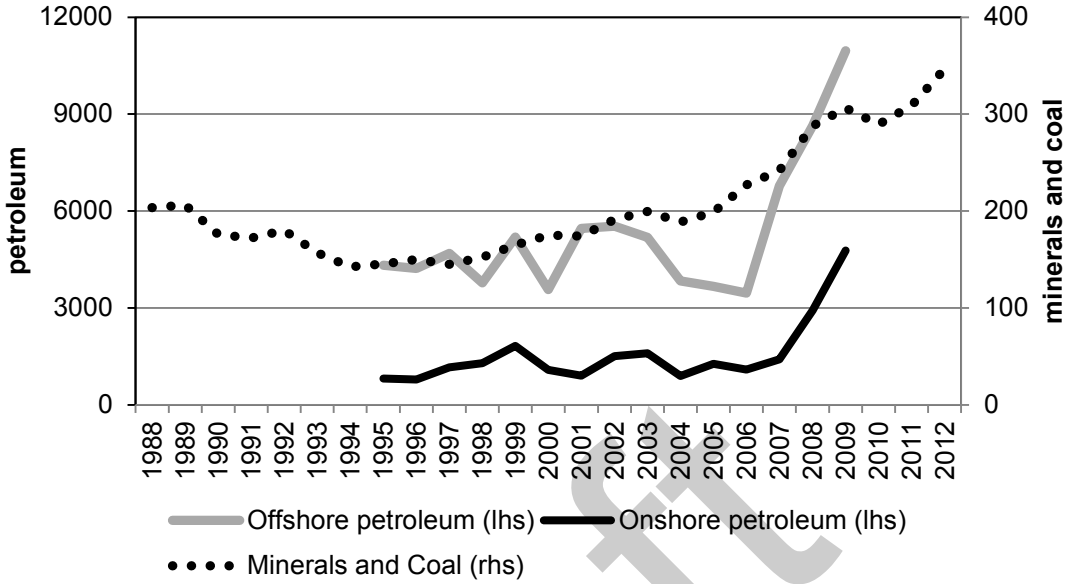
*Exploration has become increasingly costly*

The competitiveness of resource exploration is a key factor in attracting investment and improving the potential for discovering resources. Australia has always been a costly location to explore due to high transport costs, a harsh and limited exploration season in many places and a very weathered terrain which can result in deposits being covered by a large overburden. Offshore petroleum exploration also suffers from Australia's distance from the world's major petroleum centres which inflates the costs of mobilising drilling rigs and equipment.

A simple partial measure of the cost competitiveness of exploration activity is the cost per metre drilled. In this regard, as noted earlier, exploration expenditure in real terms has increased significantly over the past decade, but the actual metres drilled have not increased at the same rate. The cost per metre drilled for minerals and coal has risen since 1997, and for petroleum exploration it has been rising since the mid 2000s (figure 2.3). This points to a decline in exploration sector productivity. AMEC also refers to the declining cost competitiveness of exploration against international counterparts (sub. 24 p. 5).

Figure 2.3 **The cost of drilling is increasing**

1988 – 2012 $ per metre drilled (2012 prices), year ending June




*Data sources*: ABS (2012a); Geoscience Australia (2011a).

### *The rate of significant new resource discoveries is declining*

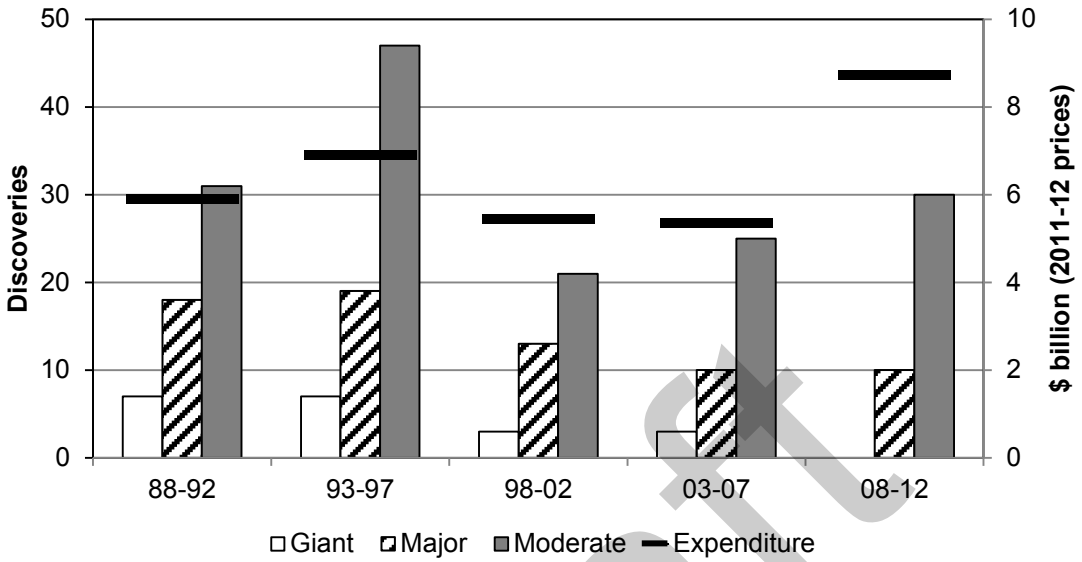
An indicator of successful exploration activity is the number and size of discoveries that result from exploration expenditure. In this regard the performance of the sector has been declining. The Minerals Council of Australia state:

> Whereas in the 1980s and 1990s more than 10 significant deposits were found each year on average, only 43 significant deposits were found over the decade between 2000 and 2010. Excluding bulk commodities, Australia's discovery rate has roughly halved over the decade despite increased exploration expenditures. (sub. 27 p. 17)

The decline in giant and major mineral discoveries has been particularly marked over the most recent decade (figure 2.4). This decline in discoveries has occurred despite a sharp increase in exploration expenditure.

Figure 2.4 **The number of giant and major discoveries is falling as exploration expenditure has risen**

Number of giant, major and moderate mineral discoveries[a] and exploration[b] expenditure: 1988–2012




[a] Moderate — Greater than: 100koz Au; 10kt Ni; 100kt Cu equivalent or 5kt U3O8.; Major — Greater than: 1 million oz Au; 100kt Ni; 1 million tonnes Cu equivalent or 25kt U3O8; Giant — Greater than: 6 million oz Au; 1 million tonnes Ni; 5 million tonnes Cu equivalent or 125kt U3O8. [b] Excludes iron ore, coal and petroleum.

*Sources*: ABS (2012a); Schodde and Guj (2012).

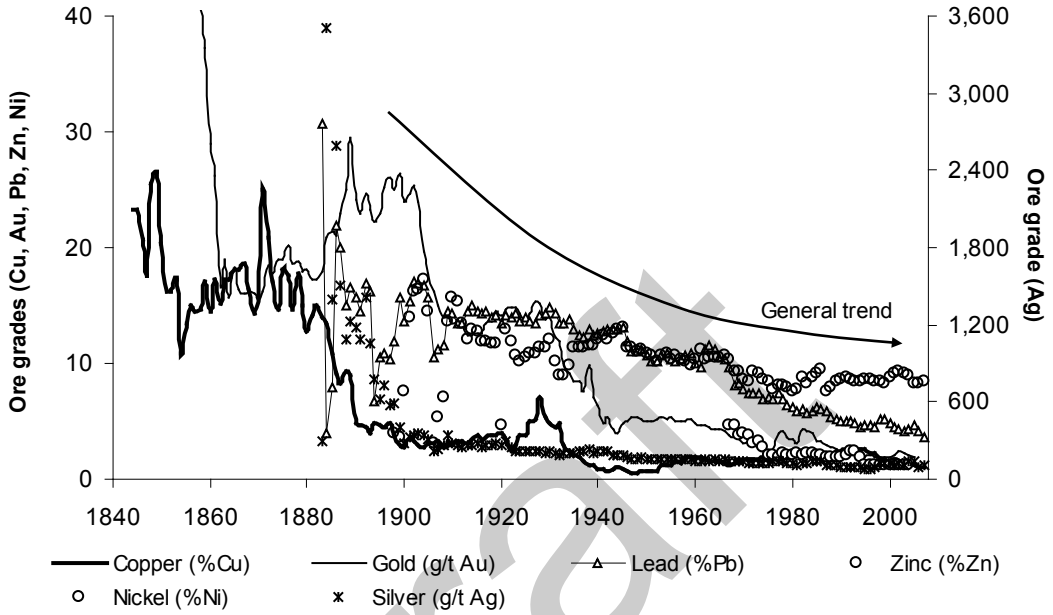
The Minerals Council submission presents evidence that the decline in discoveries is not a global trend. According to the MinEx analysis (quoted in the Minerals Council of Australia submission: sub. 27), Australia's share of the Western World's giant discoveries has fallen from around 17 per cent in the 1980s to around 6 per cent in the 1990s. Given the increasing emphasis in recent decades on exploration in such regions as Africa and central Asia, it is likely that the MinEx analysis understates the relative decline in discoveries in Australia.

This decline in the rate of discovery has implications for future resource extraction. Based on current extraction levels, nearly half of the larger operating mineral mines — those mines with extraction levels of over one million tonnes per year (18 of 41 mines) — would exhaust their resource deposits by 2025 (Schodde 2011). This pattern is more pronounced in sectors such as gold and less in sectors such as coal or bauxite. The significant new gas discoveries would not be exhausted by that date.

The life of reserves does not represent an absolute limit to economic viability. While reserves may last many years, remaining deposits may be of lower grade, in more remote locations, deeper in the ground, mixed with greater impurities and

require more difficult extraction techniques. This trend in falling ore grades across several metals is demonstrated in figure 2.5.

Figure 2.5 **Combined average ore grades over time for base and precious metals**




*Data source*: Adapted from Mudd (2007, p. 119).

More input 'effort' is needed to produce a unit of output from lower grade reserves. This has been identified as one reason for the fall in productivity growth in Australian mining over the last decade (Topp et al. 2008).

The main factor put forward to explain the decline in the rate of discoveries is Australia's mature exploration environment. The Policy Transition Group (PTG 2010) observed:

> In Australia there has been a decline in the success rates and average size and quality of deposits discovered. This could reflect Australia's 'mature' environment, with very few major near-surface mineral deposits remaining, and new 'buried' deposits involving a lower chance of discovery and a higher cost of extraction. (p. 10)

Cory (2012) explained the decline in exploration success in similar terms:

> The decline in exploration success is in large part due to the difficulty in exploring what lies beneath the regions of highly weathered rock (known as regolith) and sedimentary basins that cover approximately 80 per cent of Australia. (p. i).

AMEC support this view of Australia's declining prospectivity:

> The industry is also facing an environment where discoveries are reducing, getting deeper and harder to find … (sub. 24 p. 5)

As does APPEA in relation to petroleum:

> Australia is generally perceived to offer low prospectivity for oil, with relatively low discovery rates and small average field sizes. Gas prospectivity is good, but Australia has many large undeveloped gas fields and resources, and new gas discoveries are often remote from markets and infrastructure, and are becoming increasingly difficult to commercialise. (sub. 22 pp. 4-5)

### *A decreasing share of greenfield exploration*

Concerns have been raised about the relative shift to brownfield exploration (figure 2.6). Some participants consider that this will reduce the likelihood of making major resource discoveries. APPEA state:

> By not exploring or drilling wells in more remote and frontier areas, companies are much less likely to find the larger and material discoveries. Overall, this will lead to a longer term decline in field development and production through the discovery of smaller and smaller fields. (sub. 22 p .9)

The Minerals Council of Australia refers to 'a profound decrease' in the ratio of exploration dollars committed to greenfield compared to brownfield programs' (sub. 27 p. 18). The Council goes on to quote Schodde and Guj (2012) stating:

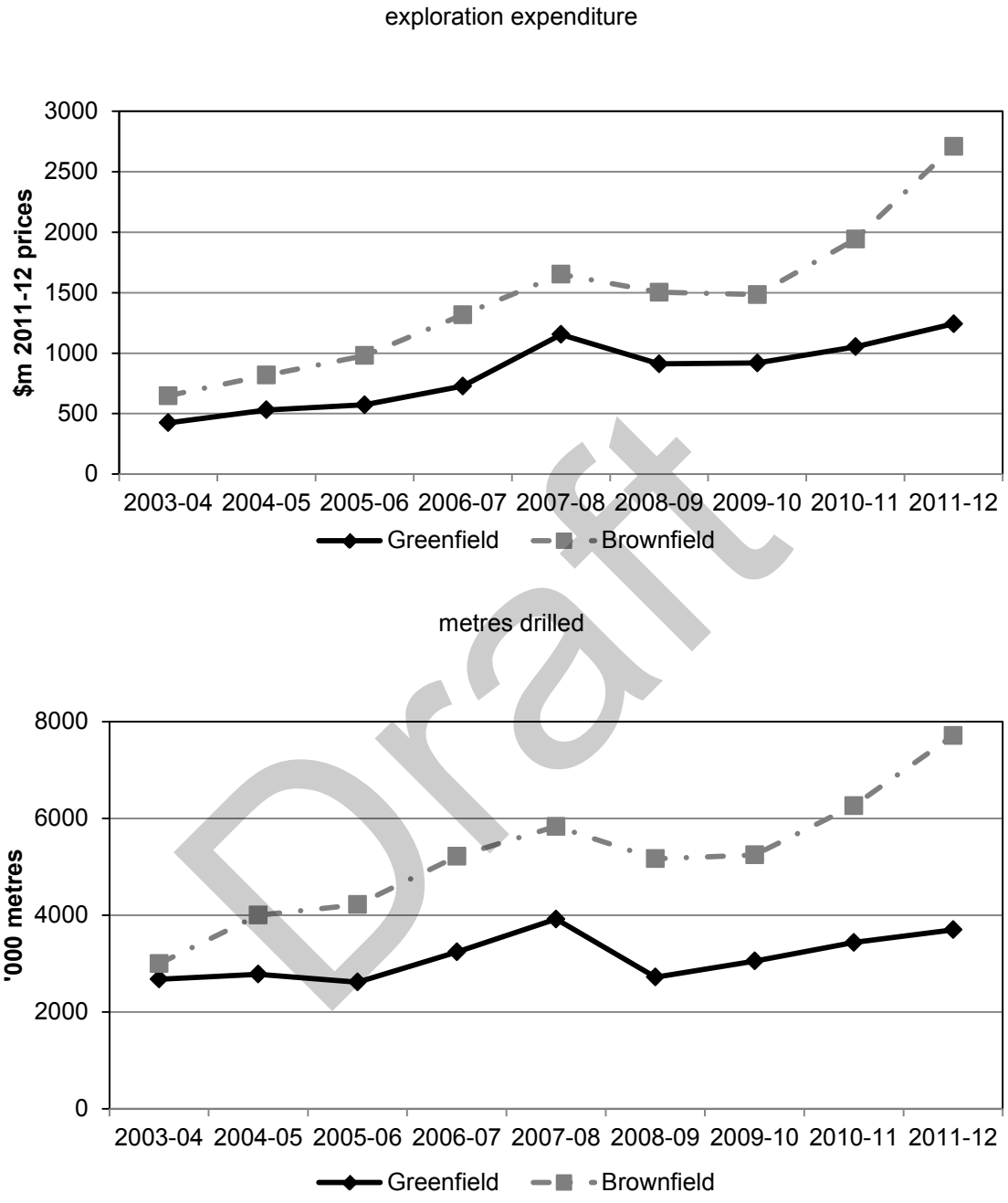
> The gradual shift of funding from greenfield to brownfield exploration, while understandable in terms of short-term profitability, is worrying as in the long-run it will affect the metal contribution to the national resource inventory and with it the sustainability of the Australian mining industry. (p. 23)

While the share of greenfield exploration expenditures has been declining, there has been no appreciable fall in expenditure or activity in greenfield exploration in recent years (figure 2.7). Indeed, greenfield exploration expenditure is higher in real terms than a decade ago.

Moreover, the recent increase in brownfield exploration may have been primarily driven by higher commodity prices during the last decade, and may be short lived. As Whiting and Schodde (2006) have hypothesised, given the long lead times for developing a new mine, it is difficult for miners to exploit booms in commodity prices by making new greenfield discoveries:

> Given that the average business cycle is of the order of five to seven years, it is very difficult to confidently schedule the start of a grassroots exploration program to deliver metal into the market at the top of the business cycle. (p. 48)

Figure 2.6 **Mineral exploration[a] — greenfield and brownfield[b]**






**a** ABS data on metres drilled is not available for petroleum exploration. **b** Exploration in existing areas includes evaluation drilling on production leases.

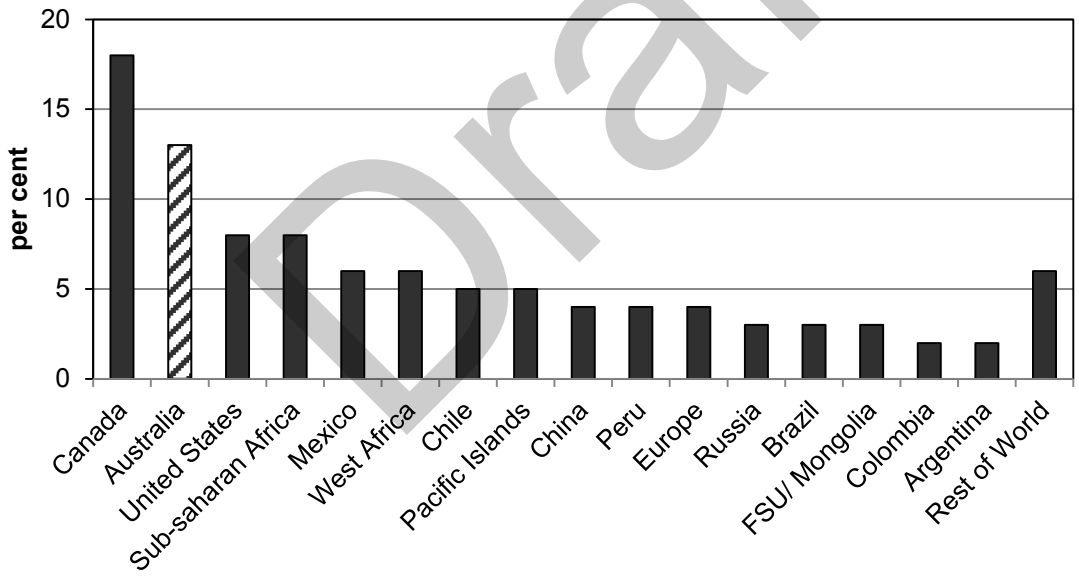
*Data sources*: ABS (2012a); Geoscience Australia (2011a).

*International competition for exploration expenditure and activity*

Australia accounted for the second largest share of exploration expenditure for non-ferrous minerals in 2012 (figure 2.7). Despite this high ranking, there is evidence that Australia has become a relatively less attractive region to explore over the last decade. For example, Australia's share of world non-ferrous mineral exploration expenditure has fallen from around 20 per cent in the mid-1990s to 13 per cent in 2011 in non-ferrous mineral exploration (figure 2.8).

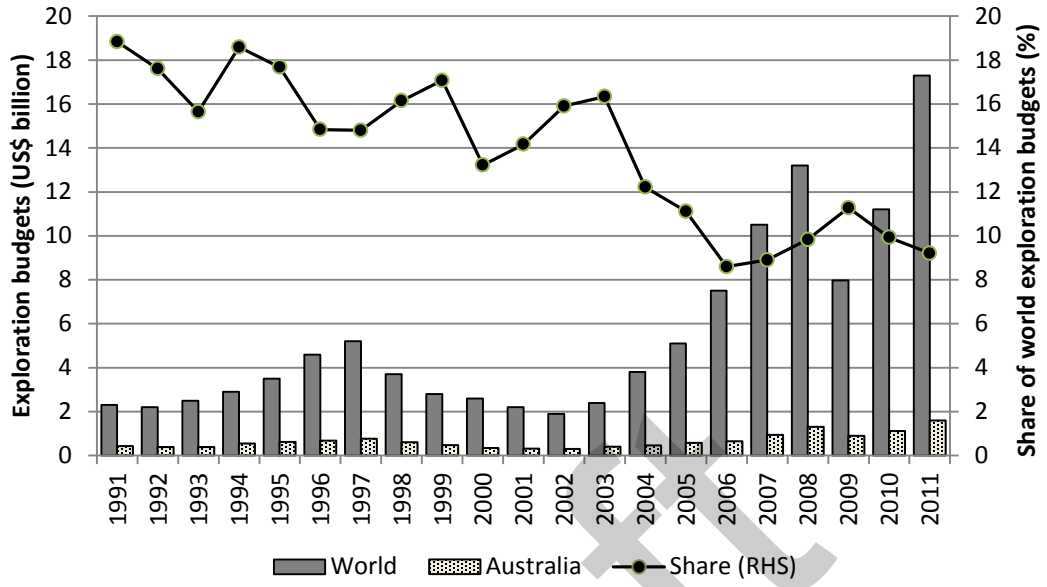
The Policy Transition Group (2010) also noted a trend towards overseas exploration rather than exploration in Australia. They refer to perceptions that Australia was becoming less prospective relative to 'frontier' countries and that the higher cost of doing business in Australia was due in part to higher operating costs and to an increasing regulatory burden (PTG 2010).

Figure 2.7 **Canada and Australia are global leaders in mineral exploration**
Share of world non-ferrous mineral exploration budgets, 2012




*Data source*: Marshall (2012).

Figure 2.8 **Australia's share of global non-ferrous mineral exploration**
1991–2011, excludes iron-ore and uranium[a]




[a] 2011 world expenditure estimated as 50 per cent higher than in 2010 (figure from World Exploration Trends 2012).

*Data sources*: ABS (2012a) (Time Series Workbooks for tables 5 and 6); Huleatt and Jaques (2009); MEG (various years).

Australian exploration companies have themselves become more involved in overseas locations, as junior explorers consider they have increased 'stock market appeal' if they are seen to be active in Africa or South America (EIGWG 2012). The Minerals Council of Australia estimates that half of the locally raised exploration funds are now spent overseas, particularly in developing countries that have stable governments and attractive mining and taxation policies (sub. 27, p 19).

## 2.4 Government involvement in the exploration sector

### Rationale for government regulation of exploration

*Resources are owned by the Crown*

Governments in Australia have a fundamental reason to be involved in exploration — they are the representatives of the owners of mineral and energy resources — the Australian people. As such, the Australian, state and territory governments have a responsibility to ensure that the nation's mineral and energy resources are managed in a manner that promotes the community's wellbeing.

Governments require information about the location and nature of these resources in order to make informed decisions about their best use. Consequently, governments have established legal frameworks outlining when and where exploration can occur, and on what basis.

### *Competing land uses*

Exploration licences provide explorers with exclusive rights to search an area for the presence of (typically sub-surface) mineral or energy deposits. Exploration often occurs on land that is currently being used for other purposes, such as farming, or has heritage and environmental importance.

While some exploration activities are minimally invasive (most notably satellite or aerial analysis), more intensive exploration activities can impinge on local communities and on the activities of other land users. For example, exploration activities can temporarily disturb agricultural soil in their immediate vicinity or can increase the level of dust that is lodged in grain and fibre, which could lower the grade and price of the produce.

Governments have established regulations and procedures to resolve or arbitrate on issues arising from competing land uses.

### *Negative spill over effects*

Exploration for mineral and energy products can have undesirable unintended consequences, or spill over effects, beyond the immediate area of exploration, including:

- environmental damage
- reduced amenity value for nearby residents
- damage to items of heritage value
- adverse impacts on the operation of other commercial enterprises.

The likelihood and extent of unintended outcomes from exploration are likely to vary according to the flora, fauna and geological characteristics of each potential exploration site. The proximity to human habitation or businesses will alter the likely impact on amenity values (such as noise and dust emissions) and/or the risk of interrupting other business activities. Much of the regulatory framework under which exploration activity occurs is designed to address, avoid and rectify such unintended consequences.

## Policy levers available to governments

Governments have a number of policy levers to influence the overall level and nature of exploration. These levers can act to either increase or lower the 'reward to risk ratio' for exploration activities. The levers include:

- *Availability of, and access to, land*. Governments, in controlling large tracts of Crown land and in regulating the use of private land, can influence what land is available for exploration activity and what conditions apply where exploration is allowed. There are also legislative requirements set by governments relating to access to land where native title exists.
- *Regulation of exploration*. This involves providing licences to undertake exploration and establishing the terms and conditions of these licences. Increasingly, the regulation of exploration activities focusses on environmental impacts, native title and heritage protection.
- *Geoscience*. Government provision of pre-competitive geological information such as geoscience maps, databases and information systems can facilitate exploration by identifying potentially prospective locations.
- *Skilled labour*. Governments can influence the provision of skilled labour through the tertiary education system and migration programs.
- *The taxation treatment of exploration activities*. Tax deductions and incentives relating to exploration activities reduce the cost and raise expected returns, whereas taxation of extraction may have an upstream dampening effect on exploration.
- *Subsidies to exploration activities*. Governments can provide direct subsidies to exploration activities, for example, through government funded drilling programs and co-drilling programs in partnership with exploration companies.
- *Support for innovation*. Governments can provide support for innovation in exploration activities, such as through the funding of Cooperative Research Centres associated with developing exploration technologies.

## Explorers views of regulation

The nature of the regulatory framework and regulator behaviour can play an important role in shaping the structure of incentives faced by explorers. Equally, other stakeholders have views on the adequacy of regulation to deliver on a range of other social, economic and environmental objectives. These views are canvassed in the relevant chapters in this report.

A Canadian research group — the Fraser Institute — has been undertaking annual surveys of mining companies to examine the relative attractiveness of different jurisdictions and has developed a Policy Potential Index (PPI)[3] (Wilson et. al 2013).

The Fraser Institute surveys suggest that regulatory change and governance in Australia are impinging on the attractiveness of many Australian jurisdictions as destinations for exploration. Compared to the 60 jurisdictions that have been included in every Fraser Institute survey, New South Wales (ranked 33/60 in 2012-13), South Australia (18/60) and Tasmania (38/60) have failed to maintain their relative attractiveness for mining companies over recent years. Only Western Australia (13/60) has unambiguously improved its ranking. The rankings of the Northern Territory (20/60 in 2012-13) and Queensland (27/60) show no trend over recent time.

The Fraser Institute highlights the following quote about resource exploration in Australia:

> Across Australia, political and regulatory panic is seriously impacting the quality and timeliness of decisions, and certainty about access to land is very concerning. The 'Twitter' factor is determining political attitudes and actions, and regulators are reacting to minimize the perceived 'risk exposure' of their ministers.
>
> — An exploration company, Company president. (Wilson et al. 2013 p. 39)

Industry concerns with the regulatory framework are echoed in several submissions from explorer peak bodies:

> The underlying theme in AMEC's submission is that regulatory barriers through time and cost reduce the quantity of minerals exploration in Australia. If governments can reduce these barriers Australia would be able to increase efficiency and productivity and ultimately the amount of exploration. (AMEC 2013 sub. 24 p. 7).
>
> Recent years have brought NSW explorers a significant increase in legislative and policy requirements, as well as administrative expense. There is evidence that these issues have already deterred exploration in NSW, with explorers moving to other states and more favourable international jurisdictions. (NSW Minerals Council sub. 3 p. 3)
>
> There is considerable opportunity to update Australian regulatory practice to reflect the significant advances in industry performance and capability that have occurred in recent decades. (AusIMM sub. 12, p. 5)

[3] The PPI is a composite index that captures the opinions of managers and executives of mining companies on issues such as uncertainty concerning the administration, interpretation, and enforcement of existing regulations, environmental regulations, regulatory duplication and inconsistencies, taxation, uncertainty concerning disputed land claims and protected areas, infrastructure, socio economic agreements, political stability, labour issues, the geological data base, and security.

The Minerals Council of Australia referred to a number of other business surveys of the mining sector reiterating the view that regulatory burdens have increased:

> Grant Thornton's *Mining Business Outlook Report 2013* … concluded that increased regulation has 'dampened the enthusiasm' of international investors in the Australian mining sector. (sub. 27 p. 21)
>
> Baker & McKenzie's report, *Mining investment: local challenges - global implications*, similarly reported 'a growing perception amongst the industry of a complex maze of green and red tape' in Australia. (sub. 27 p. 21)

Explorers have identified a range of regulatory barriers that they see as impinging on the efficiency and effectiveness of the exploration industry. This report examines the impact of these non-financial regulations on exploration to determine if existing regulations are consistent with the principles of best practice regulation or, if they are inconsistent, to examine the scope for beneficial reforms.

# 3 Exploration licensing and approvals

**Key points**

- Mineral and energy resources are owned by the Crown. Governments control access to, and extraction of, those resources through regulation. Governments also regulate exploration given that it may impact on other land users and uses, the environment, and heritage; including beyond the area being explored.
- Explorers have voiced concerns that the regulatory environment in Australia is discouraging exploration by unnecessarily increasing compliance costs, approval times and regulatory uncertainty.
- Reforms that would reduce unnecessary burdens on resource explorers include:
  - appropriate levels of consultation prior to making regulatory changes, in order to promote certainty and confidence in the rules being applied
  - transparent exercise of ministerial discretion
  - improved transparency and accountability around approval timelines and decision making
  - a lead agency in each jurisdiction that, at a minimum, coordinates exploration licensing and related approvals (such as water, environment and heritage approvals), and provides proponents with guidance on the range of approvals that may be required and on how to navigate the approvals processes
  - mandatory (or at least target) timelines for approvals processes; an electronic approvals tracking system; and public reporting on performance.
- A wide range of stakeholders interact with the exploration licensing and approvals system, and these interactions are managed differently across the jurisdictions. Some jurisdictions do not provide for public consultation or even public notification of an exploration licence being considered or granted; others allow submissions to be considered by the decision maker or arbitrated by a tribunal or mining warden.
- Judicial review, which considers the legality of a decision, is necessary to protect rights established under law, but vexatious claims can be used by opponents of exploration and industry competitors to delay or frustrate projects.
  - Courts have powers to dismiss vexatious litigation, or award costs against unsuccessful claimants.
  - Applicants and others who wish to contest the merits of a decision may in some circumstances do so through mediation or by escalating the decision to another officer within the regulator. These informal dispute resolution mechanisms tend to be preferred because they are faster, cheaper and more accessible than court appeals.

This chapter outlines the exploration licensing and approvals regulatory system and its governance. It starts with an overview of the tenement allocation process, the approvals processes that are required before exploration can commence and the conditions attached to exploration licences. The chapter then considers issues related to tenement allocation, the transparency and accountability of decision making, and regulator performance.

## 3.1 The regulatory framework

The sheer volume of legislation governing mineral and energy resource exploration makes the system difficult to describe and synthesise. Legislation is generally delineated according to whether exploration activity is conducted onshore or offshore, and whether the resource category is minerals or petroleum. Accordingly, most jurisdictions have at least four key Acts (listed in table 3.1) and associated regulations.

Further complexity arises from the differential treatment of specific resources. Some resources, for example coal and uranium, have separate legislative regimes in most jurisdictions. Uranium is treated separately because international treaties regulate its sale and use. In the case of coal, the separate legislation reflects the fact that existing knowledge on the location of coal seams dramatically reduces the uncertainty of exploration and allows different requirements to be applied.

The legislation that may apply to a particular exploration venture may, depending on the location and the nature of the proposed exploration activities, also include environmental, Indigenous heritage, natural heritage, health and safety, planning, water, and land clearing regulation. In this regard, the Minerals Council of Australia estimated that industry operators face 144 pieces of primary legislation and 119 pieces of subordinate legislation or guidelines across Australia (sub. 27, p. 39).

Table 3.1 **Key legislation governing mineral and energy exploration**

| | *Onshore mineral* | *Onshore petroleum* | *Offshore mineral* | *Offshore petroleum* |
|---|---|---|---|---|
| NSW | Mining Act 1992 | Petroleum (Onshore) Act 1991 | Offshore Minerals Act 1999 | Petroleum (Offshore) Act 1982 |
| Vic | Mineral Resources (Sustainable Development) Act 1990 | Petroleum Act 1998 | Underseas Mineral Resources Act 1963 | Offshore Petroleum and Greenhouse Gas Storage Act 2010 |
| Qld | Mineral Resources Act 1989 | Petroleum Act 1923 | Offshore Minerals Act 1998 | Petroleum (Submerged Lands) Act 1982 |
| WA | Mining Act 1978 | Petroleum and Geothermal Energy Resources Act 1967 | Offshore Minerals Act 2003 | Petroleum Submerged Lands Act 1982 |
| SA | Mining Act 1971 | Petroleum and Geothermal Energy Act 2000 | Offshore Minerals Act 2000 | Petroleum (Submerged Lands) Act 1982 |
| Tas | Mineral Resources Development Act 1995 | Mineral Resources Development Act 1995 | Mineral Resources Development Act 1995 | Petroleum (Submerged Lands) Act 1982 |
| NT | Mineral Titles Act 2011 | Petroleum Act 1984 | Mineral Titles Act 2011 | Petroleum (Submerged Lands) Act 1982 |
| Cth | N/A | N/A | Offshore Minerals Act 1994 | Offshore Petroleum and Greenhouse Gas Storage Act 2006 |

## Types of exploration licence allocation mechanisms

The rights to mineral or energy discoveries are potentially valuable assets. As such, governments have processes for allocating exploration licences so that there is a clear basis for determining who owns the rights to any such discoveries. In Australia, the three main ways of allocating exploration licences are: first come first served, work bidding and cash bidding (box 3.1). There are also fossicking and prospecting licences, but since these are small scale and low impact, they are not considered in this inquiry.

Box 3.1 **Three main approaches used to allocate exploration licences**

**First come first served**

First come first served is the most common approach and operates in one of two ways. For areas where exploration is permitted, but there are no active exploration licences, interested parties can apply for an exploration licence. This is most common for the search for minerals in underexplored (or frontier) areas. Alternatively, areas may be released for exploration (either for the first time, or after previous tenements have been surrendered). In such instances, first come first served is typically used if little competition for the tenements is anticipated. The first explorer to apply for an exploration permit will be awarded the licence, so long as they can satisfy the necessary conditions, such as demonstrating the financial and technical capability to undertake the exploration.

**Work program bidding**

Work program bidding is an allocation mechanism where companies outline what exploration activity they propose to undertake on a tenement. The allocation decision is then based on how well each company's work program meets policy and regulatory objectives. Work program bids can be complex to assess, given that they can cover many exploration activities including drilling, electrical and chemical testing, and geo physical and remote sensing surveys.

**Cash bidding**

Under cash bidding — the least used allocation mechanism — explorers are invited to bid an amount for an exploration licence. Cash bidding has typically involved the simultaneous release of multiple exploration blocks. Under a pure cash bidding mechanism, the explorer with the winning bid is able to formulate and develop what it considers to be its optimal exploration program. On some occasions, the conditions for the licence include minimum exploration requirements. Cash bidding has been used intermittently by jurisdictions and has almost exclusively been used for energy exploration licences (table 3.2).

Regardless of the tenement allocation mechanism, every jurisdiction requires applicants to submit a work program as part of a licence application, even when it is not used as a deciding factor in allocating licences. Work programs allow regulators to monitor what exploration will be undertaken and where it will be done, which facilitates the administration of environmental, heritage and other regulatory control over exploration activity.

Table 3.2 **Use of cash bidding in Australia**

| *Jurisdiction* | *Cash bidding commenced* | *Cash bidding ceased* |
|---|---|---|
| Commonwealth (offshore petroleum) | 1985 | 1992 |
| South Australia (petroleum) | 2001 | 2001 |
| New South Wales (coal only) | 2006 | 2010 |
| Queensland (both mineral and energy) | 2012 | continuing |
| Commonwealth (offshore petroleum) | 2014[a] | |

[a] Announced policy change.

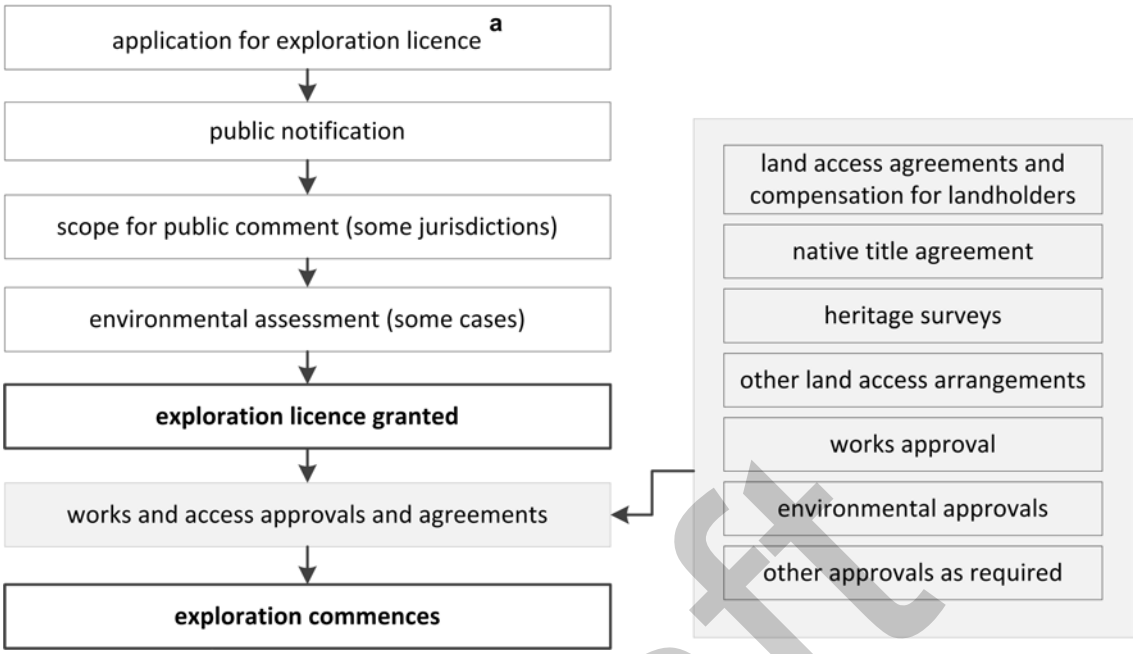
*Sources*: Alexander and Morton (2002); Cripps (2012); DRET (nd b); Hughes, W., NSW Trade and Investment, pers. comm. 29 April 2013.

## Key stages in the exploration approvals process

After explorers have been allocated their exploration licence or permit, they may also have to consider a range of regulations — such as those on environmental management, the protection of Indigenous and natural heritage, national parks, health and safety, planning, water and land clearing — and apply for any necessary approvals, before exploration can commence. Separate provisions apply to non-invasive exploration, such as walking an area and taking soil samples, such that impact assessment is not required. Other arrangements, including land access agreements with existing land holders and users, may still be needed even for non-invasive exploration.

In each jurisdiction there is a multitude of processes for gaining approval to explore. There are, however, broad similarities and figure 3.1 outlines a stylised description of the key stages in the exploration licence approval process.

Figure 3.1 **Exploration licensing and approvals**




a A work program must be submitted with the application, but may not be part of the decision-making process.

*Public notification*

Public notification of the application for an exploration licence is required in all jurisdictions except Queensland, usually by notification in the government gazette or in a local newspaper (table 3.3). In Queensland, public notification for mineral titles is only required under native title procedures.

Legislation establishes when, how and to whom notification should be given. This may be:

- at the application stage or when a licence is granted
- by the applicant or the Minister
- by government gazette, newspaper or directly
- to the public at large or to those with a special interest in the land subject to the exploration licence, for example landowners, occupants or native title holders.

Table 3.3 **Notification requirements for exploration licences**
Onshore minerals

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *NT* |
|---|---|---|---|---|---|---|---|
| Notice of application for licence in state and local newspaper | ✓ | ✓ | | ✓ | | | ✓[b] |
| Notice of intended grant of licence in state and local newspaper | | | | | ✓[b] | ✓[b] | |
| Notice to landowner and occupier of the application for licence [a] | | | | ✓ | | | ✓ |

[a] Notice of intention to access private land is addressed in chapter 4. [b] The government (for example the Minister) publishes the notification, paid for by the applicant.

*Sources*: LexisNexis 2013.

### *Public comment*

In relation to onshore minerals, all jurisdictions other than New South Wales and Queensland provide for public comment on the granting of an exploration licence or permit. However, there is a variety of arrangements as to when comment is permitted and how the comments are taken into account (table 3.4).

Table 3.4 **Scope for public comment on exploration licensing decisions**
Onshore minerals

| | |
|---|---|
| NSW | No provision for public comment |
| Vic | Comments are taken into account by the Minister when considering the application |
| Qld | No provision for public comment |
| WA | Public hearing of objections made by any party |
| SA | Comments are taken into account by the Minister when considering the application |
| Tas | Public hearing of objections; objector must have an estate or interest in the land concerned. Pre-hearing mediation is encouraged |
| NT | Comments are taken into account by the Minister when considering the application |

*Sources*: LexisNexis 2013.

### *Environmental assessment*

The nature of any required environmental assessment will depend on the specific regulations that apply and the environmental sensitivities present at the exploration site. This is discussed in detail in chapter 6. In seeking environmental approval, the proponent is required to outline: the proposal, the potential environmental impacts and their significance, and how they will be managed.

### *Land access arrangements and agreements*

Land access arrangements and agreements may also be required before exploration can begin. These agreements may be entered into with owners of farmland, lessees of pastoral land, government bodies responsible for various types of Crown land, traditional owners or others.

Land access is discussed in detail in chapter 4. Land access agreements with traditional owners for the protection of heritage or cultural values may be reached via the Commonwealth *Native Title Act* or various State and Territory heritage or Indigenous land access legislation. These arrangements are discussed in chapter 5.

Once all the necessary approvals and agreements are in place, exploration for mineral or energy resources may commence. Exploration must be conducted in accordance with the legislation and any conditions placed on approvals.

## Licences and licence conditions

Legislation contains different licences for mineral and resource exploration and extraction. Additional to the various conditions imposed through approval processes, licences must comply with basic legislative conditions, for example relating to the land area that can be covered, the duration of the licence and the terms for renewal. These basic conditions are discussed below.

### *Size and duration of exploration tenement*

The area which an exploration licence may cover (minimum and maximum size) varies by jurisdiction, by location (onshore or offshore), by resource type (mineral or petroleum) and by other factors such as prospectivity. Most Acts give the Minister power to grant licences outside the stated maxima.

The setting of the duration of licences (and rules for licence renewal) aim to balance the time needed by the explorer to assess an area against the opportunity for new explorers to have access to the land for exploration. Licences are usually granted for three to six years, depending on jurisdiction, location and resource type (table 3.5). The statutory maximum licence period is not always granted (for example, NSW typically allows two or three years for onshore mineral exploration, rather than the maximum of five).

Table 3.5 **Maximum duration of an exploration licence** [a]

| | *Onshore mineral* | *Onshore petroleum* | *Offshore mineral* | *Offshore petroleum* |
|---|---|---|---|---|
| NSW | 5 years (s 27) | 6 years (s 31) | 4 years (s 88) | 6 years (s 30) |
| Vic | 5 years (s 13) | 6 years (s 84) | 5 years (s 13) | 6 years (s 84) |
| Qld | 5 years (s 146) | Minister determines (s 18) | 4 years (s 88) | 6 years (s 29) |
| WA | 5 years (s 61) | 6 years (s 39) | 4 years (s 88) | 6 years (s 29) |
| SA | 5 years (s 30A) | 5 years (s 26) | 4 years (s 88) | 6 years (s 28) |
| Tas | 5 years (s 24) | Minister determines (s 24) | 5 years (s 24) | 6 years (s 28) |
| NT | 6 years (s 27) | 5 years (s 22) | 6 years (s 27) | 6 years (s 29) |
| Cth | N/A | N/A | 4 years (s 88) | 6 years (s 102) |

[a] Reference to legislation in brackets: refer to Acts in table 3.1.

*Source*: Legislation.

### *Relinquishment of land upon renewal of exploration licence*

All jurisdictions have different rules around renewal, including the duration of a renewed exploration licence, the number of times a licence can be renewed and the 'relinquishment' requirements, which entail the surrender of a certain percentage of the original tenement area (table 3.6). These rules are in place to promote turnover of the tenement and provide opportunities for exploration by other explorers.

Table 3.6 **Exploration licence renewal conditions** [a]
Onshore minerals

| | *Maximum duration* | *relinquishment* |
|---|---|---|
| NSW | **five years** (s 114); the Act does not specify how many renewals are permitted | half the area, unless the decision maker decides otherwise (s 114) |
| Vic | **five years** (s 32); maximum of two renewals, the second only in exceptional circumstances (s 31) | 25% after two years, a further 35% after four years, a further 20% after seven years and a further 10% after ten years (s 38A) adding to a total of 90% of the original allocation. |
| Qld | **five years** (s 147A) | no relinquishment requirements in legislation (s 147A) |
| WA | **five years** and then for 2 further years (s 61) | 40%, for tenements over 10 blocks (s 65). |
| SA | **five years** (s 30A), and 5 years for a subsequent renewal (s 30AB) | the Minister may reduce the licence area (s 30A) |
| Tas | the Minister may determine the length and conditions of renewal (s 25) | the Minister may determine the length and conditions of renewal (s 25) |
| NT | **two years** (s 30); no stated maximum number of renewals | the licence area is reduced by half every two years of operational exploration (s 29) |

[a] Reference to legislation in brackets: refer to onshore mineral legislation in table 3.1.

*Source*: Legislation.

Relinquishment policies reflect the nature of exploration activities, which can start across the whole area of a tenement, but after initial survey and drilling activity, tend to focus on the area of the tenement most likely to yield commercial resource

deposits. They also aim to reduce 'land banking', that is, holding on to tenements without undertaking exploration. It can be difficult for a regulator to separate genuine exploration from land banking, as there are many reasons why exploration might stall, such as drawn-out land access negotiations, poor weather or delayed availability of exploration equipment.

It is desirable, therefore, to retain flexibility in granting licence extensions and renewals, both in the law and how it is applied, so that explorers can maintain their good standing and not be penalised for events beyond their control. For example, the Association of Mining and Exploration Companies (AMEC) favours a substantial compliance approach to assess whether the proponent has met the work program requirements:

> … the application may state that … the proponent's goal is to spend $4 million and drill 25 holes. However, due to unforeseen circumstances the proponent spends $4 million and only drills 10 holes. While in strict breach of the conditions, AMEC argues they have substantially met them. In this case there would be no penalty. (sub. 24, p. 11)
>
> AMEC recognises that the timeframes are a compromise between the need for turnover by the government and the need for certainty for the explorer. However, there needs to be flexibility in the system to allow extensions of tenements under extenuating circumstances and unforeseen events. (sub. 24, p. 9)

Flexibility in the law is generally maintained by listing considerations for renewal and including a 'catch-all' factor such as 'unforseen circumstances' (an example is in box 3.2).



**Box 3.2 Grounds for licence renewal in Western Australia**

The requirements for renewal of exploration licences are set out under the WA *Mining Act* and associated regulations:

> … the Minister may, if satisfied that a prescribed ground for extension exists, extend the term of an exploration licence … (*Mining Act 1978* (WA), s 61).

The following are grounds for extension:

- difficulties or delays — caused by regulations, heritage surveys, weather, etc.
- the work already carried out under the licence justifies further exploration
- the Minister considers the tenement has been unworkable for a significant duration of time, for any reason. (*Mining Regulations 1981* (WA) s 23AB)

### *Retention licences*

Retention licences (sometimes called assessment leases or mineral development licences) allow an explorer to maintain an interest in land that is not yet commercially viable for resource extraction. For example, the New South Wales legislation dealing with onshore petroleum states:

> An assessment lease is designed to allow retention of rights over an area in which a significant petroleum deposit has been identified, if mining the deposit is not commercially viable in the short term but there is a reasonable prospect that it will be in the longer term. The holder is allowed to continue prospecting operations and to recover petroleum in the course of assessing the viability of commercial mining. (*Petroleum (Onshore) Act 1991* (NSW) s 33)

Rules concerning the length of tenure and other requirements vary across jurisdictions. Policy makers face the same tradeoff in making retention licences short enough to discourage land banking and long enough to enable companies to make commercial decisions to maximise the value of their asset.

### *Transition from an exploration licence to a production licence*

An exploration or retention licence does not permit commercial scale extraction of resources. Production licences (or mining licences) require further impact assessment and controls that are appropriate to the generally more invasive nature of resource extraction activities. An exploration licence does not guarantee that the conditions will be met for a production licence to be granted. Nonetheless, there is still an expectation that an explorer can apply for a production licence or sell the right to do so to another company.

Only Western Australia provides legal certainty for an explorer wanting to convert an exploration licence into a production licence. In other jurisdictions this happens by convention, to the point that it is generally treated as an effective property right. For example, when uranium exploration and mining was banned in Arkaroola, South Australia, the company with exploration tenements in the area received $5 million compensation from the government (Kelton 2012).

Another example occurred at Adamsfield in Tasmania, where an exploration licence was granted in an area classed as a Conservation Area under State law. The area was subsequently listed as World Heritage by the Commonwealth, which then declared that there would be no mining or mineral exploration allowed (pers. comm. Mineral Resources Tasmania 24 April 2013). The Commonwealth compensated the company for its exploration expenditures and exploration was abandoned.

Both the Western Australian formalised model of linking exploration rights to production rights, and the informal model used elsewhere, appear to be working effectively. The Commission received no information to suggest the contrary.

*Transferability of title*

Junior explorers generally do not have production income; rather in most cases they sell the rights to discovered resources or enter into a joint venture to develop those resources. The ability to transfer ownership of exploration licences is central to this business model.

In all jurisdictions, approval is needed from the Minister or a delegate (or the National Offshore Petroleum Titles Administrator, in the case of the Commonwealth offshore jurisdiction) before title can be legally transferred. In deciding whether to approve the transfer, the same requirements are applied to any entity purchasing minerals or petroleum titles as were applied to the original title holder. The approval requirement allows the regulator to assess the suitability of the prospective title holder (such as their financial and technical resources and track record in exploration).

## 3.2 Issues with the allocation of licences

Industry groups have raised concerns that the rules governing the allocation of, and property rights attached to, exploration licences may be unnecessarily impeding exploration.

These concerns have been raised through submissions and industry consultations with the Commission, and relate to:

- uranium exploration licences (sub. 4)
- the transparency of licence allocation decisions (sub. 13)
- the choice of tenement allocation mechanism (subs. 12, 13 and 24)
- sub-optimal sized and configured exploration tenements
- competing resource uses (sub. 11)

Each of these concerns is examined below.

## Uranium

The approach to issuing exploration licences for uranium differs from the approach used for other resources. The unique approach to regulation of uranium exploration is in part due to the specific upstream regulation of uranium extraction and export.

Concerns have been raised that in some instances, the procedures and approaches that are used for regulating uranium exploration are not transparent or are based on policies that appear to diverge from good regulatory practices. In particular, inquiry participants have commented on uranium exploration licensing in Victoria and New South Wales.

### *Evolving policy positions since 1983*

The authority to regulate uranium exploration and extraction is a state government responsibility. In the Northern Territory, the Australian and Territory Governments share that responsibility — with the Territory Government responsible for all areas outside the *Ranger Project Area*.[1] In regulating uranium exploration and extraction, State and Territory Governments have been guided by the Australian Government's policies on uranium exports. The importance of federal export policies arises because almost all uranium extracted in Australia is exported.

Between 1983 and 1996, the Australian Government only permitted exports of uranium from three designated mines in South Australia and the Northern Territory (Harris 2011). The first new uranium mine to be approved since the end of the 'three mines' policy in 1996 was the Four Mile mine in South Australia, which was approved in 2009.

While the South Australian and Northern Territory governments have permitted uranium exploration and extraction throughout the period since 1983, the approach in other jurisdictions has varied.

- Victoria prohibits uranium exploration and extraction.
- Western Australia permitted uranium exploration, but uranium extraction was banned until 2008.
- Queensland has no legislative restrictions on uranium exploration or extraction. As a matter of policy, uranium exploration has been allowed, but no uranium extraction has been approved since 1982. In 2012, the Queensland government announced they would permit uranium extraction.

[1] Uranium exploration and mining within the Ranger Project Area is regulated under the *Atomic Energy Act 1953*.

- Uranium extraction and exploration in New South Wales was prohibited in 1986. The ban on uranium exploration was overturned in 2012.
- Tasmania does not prohibit uranium exploration and extraction, but there has been no extraction and little exploration undertaken in the state.
- The Australian Government has restricted which mines are licensed to export uranium and the countries to which uranium can be exported:
  - Since 1997, the Australian Government has removed the restriction on the number of uranium mines that can be licensed for export.
  - Between 1977 and 2011, the Australian government allowed uranium exports only to those countries that are parties to the Treaty on the Non-Proliferation of Nuclear Weapons. Since 2011, the policy also permits exports to countries that possess nuclear weapons if they 'provide an assurance that AONM[2] will not be diverted to non-peaceful or explosive uses and accept coverage of AONM by IAEA safeguards' (DFAT 2012).

### *Uranium exploration in Victoria*

Exploration licences are not allocated for uranium in Victoria because uranium exploration is not permitted in that state. The Australian Uranium Association (AUA) has questioned the appropriateness of this ban on uranium exploration and whether the relevant Act meets best practice regulation principles (sub. 4).

In particular, the AUA has raised doubts as to whether the *Nuclear Activities (Prohibition) Act 1983 (Vic)* (NAPA) is consistent with some of the principles of best practice regulation. The Victorian Government (2011) has developed a guide to regulation that covers issues that are similar to the COAG principles of best practice regulation. As such, the Commission has assessed the concerns raised by the AUA against the Victorian guide.

One of the concerns raised by the AUA (sub. 4) is that a key rationale for the Act relates to an Australian Government responsibility (the non-proliferation objectives). The stated objectives of the Act are:

> … to protect the health, welfare and safety of the people of Victoria and to limit deterioration of the environment in which they dwell by prohibiting the establishment of nuclear activities and by regulating the possession of certain nuclear materials, in a manner consistent with and conducive to assisting the Commonwealth of Australia in meeting its international nuclear non-proliferation objectives. (*NAPA s. 3.)*

[2] Australian obligated nuclear material

The operation of the *Customs (Prohibited Exports) Regulations 1958* Act appears sufficient to implement the Australian Government's non-proliferation objectives without the assistance of any state or territory legislation.

The AUA (sub. 4) highlights that there is overlap between NAPA and other pieces of legislation, specifically:

- The Commonwealth *Environmental Protection and Biodiversity Conservation Act* (EPBC Act)
- The Commonwealth *Australian Radiation Protection and Nuclear Safety Act* (ARPANS Act)
- The Commonwealth *Safeguards Act*
- The Commonwealth *Customs Act*
- The Victorian *Radiation Act*
- The Victorian *Mineral Resources (Sustainable Development) Act.* (p. 2)

Having multiple Acts cover the same issues does not necessarily indicate poor regulation. The Victorian Government (2011) guide to regulation indicates that the preferred outcome is to avoid duplication of regulation, but when it cannot be avoided, to ensure that the regulations are consistent. However, the existence of overlapping regulation highlights the possibility of unnecessary regulatory burden and/or inconsistent regulation — strengthening the case for a review of the legislation.

The AUA note that the *Nuclear Activities (Prohibitions) Act 1983* has not been reviewed since it was enacted (sub. 4, p. 1). The Victorian Government (2011) guide to regulation highlights the need for regular reviews of regulation.

> Government departments and agencies are encouraged to pursue a culture of continuous improvement, and regularly review legislative and regulatory restrictions. (p. 18)

That the NAPA has not been reviewed for over 30 years appears to be inconsistent with the good regulatory practices outlined in the Victorian Government guide.

## Uranium exploration policies in New South Wales

The NSW Government overturned a ban on uranium exploration in 2012 (NSW DTI 2012b). The NSW Mineral Council has raised concerns over the lack of policy guidance and transparency relating to the new policy — including a lack of information on how exploration licences will be allocated. It has called on the NSW Government to:

> Clarify the implementation of uranium exploration and ensure it is fair and workable. Limited information has been made available following the legislative change to allow uranium exploration in September 2012. Industry was invited to submit expressions of interest in exploration licences by November 2012, but there has been no information on the progress of the applications. (sub. 11, p. 10)

Administrative difficulties can occur with new regulatory responsibilities. However, many of the concerns raised above relate to poor communication by regulators. These concerns are consistent with those raised more generally in the chapter regarding regulatory practices. Particular concerns about uranium regulations should be addressed by the recommendations proposed by the Commission to address the general deficiencies. Consistent with good regulatory practice, regular reviews of policies are an effective means of identifying unexpected difficulties, and post-implementation reviews can be especially valuable.

## The transparency of licence allocation decisions

The allocation of mineral and energy exploration permits is vulnerable to influence from vested interests. Australia is generally considered to be a low risk country for exploration and extraction. In the 2012-13 edition of the Fraser Institute survey of mining companies, Australia was ranked the seventh least problematic country in relation to corruption — behind Finland, New Zealand, Sweden, Norway, Greenland and Canada. However, while concerns over the transparency of allocation decisions in Australia are uncommon, isolated instances of poor regulatory practices can adversely impact the perception of allocation systems more generally — and can discourage exploration in that jurisdiction or across the country.

A lack of transparency does not necessarily result in bad policy, but it increases the risks of poorly designed and implemented policies, and in the extreme, increases the risk of corrupt practices. Corruption is most likely to occur when individuals have the means and the motive to obtain gains from misusing their authority. While not directly raising the risk of corruption, the associated concerns the public may have over the integrity of the cash bidding system appears to be one of the issues that the Queensland Resource Council and Queensland Exploration Council have with such an allocation mechanism.

> QRC does not support a cash bidding process for exploration tenures. Accepting payments for tenure generates moral hazard, compromising the Government's ability to be seen to impartially regulate these projects. (sub. 13, p. 5)

A recent statement by the Queensland Resource Council chief executive, Michael Roche provides insight into the reasons for moral hazard concerns.

> Nowhere has QRC spoken about corruption in connection to this policy but we do have grave concerns about the implications for community confidence. We have spoken of the implied 'moral hazard' of governments accepting large payments from a proponent at the exploration stage and then being expected to adjudicate objectively on a subsequent application from that same proponent for production tenure. (Roche 2013)

The Commission considers that procedures to minimise the risk of corruption should explicitly underpin the allocation of mineral and energy exploration rights. The most effective approach to minimise corruption risks is to utilise transparent systems and to base decisions on objective criteria. Transparency would instil greater confidence in the integrity of the allocation system and provide unsuccessful tenderers with information to identify deficiencies in their own proposals.

The three main approaches used to allocate exploration licences in Australia — first come first served, work program bidding and cash bidding — are based on objective criteria. However, there have been isolated examples of exploration licences being allocated on subjective criteria, most notably opaque administrative assessments of the suitability of different applicants.

DRAFT RECOMMENDATION 3.1

***Governments should ensure that their authorities responsible for exploration licensing:***

- ***prepare and publish information on the government's exploration licensing objectives and the criteria by which applications for exploration licences will be assessed***
- ***publish the outcome of exploration licence allocation assessments, including the name of the successful bidder and the reasons why their bid was successful.***

## The choice of tenement allocation mechanism

The choice of tenement allocation mechanism may influence the efficiency of exploration. The main concern relates to work program bidding and cash bidding. These allocation mechanisms are most commonly used in Australia when regulators anticipate competition for exploration rights. In such situations, the tenement is granted to the highest bidder. This may be the amount an explorer is willing to pay (cash bidding) or the amount of exploration activity it is willing to undertake on the tenement (work program bidding).

### *Opposing views on work program bidding and cash bidding*

The efficiency of the two allocation mechanisms revolves around the amount and nature of exploration that will be undertaken on a tenement. Economists (IC 1992, Henry et. al. 2010 and ACIL Tasman 2012) argue that too much exploration will take place under work program bidding, as explorers inflate their work bids in order to secure access to the exploration tenement.

Economists believe that cash bidding should not lead to an excessive level of exploration. Under a cash bidding system, explorers are free to initially determine and subsequently vary what is an appropriate level of exploration. Under those circumstances, explorers would be unlikely to commit to further exploration of a tenement unless the expected results of such activity were favourable. Cash bidding also enables governments to appropriate in advance some of the rent that would be expected to flow from exploration activities.

In contrast, industry observers are concerned that too little exploration will occur under cash bidding. Both the Australasian Institute of Mining and Metallurgy (sub. 12) and the Queensland Resource Council and Queensland Exploration Council (sub. 13) have highlighted that cash bidding limits the funds that explorers (particularly junior explorers) can spend on undertaking exploration. In particular, AMEC has raised concerns that small and medium explorers will not be able to compete on financial terms with larger players.

> [cash bidding]… simply allows the companies with the access to the largest amount of cash to warehouse tenements. In AMEC's view the proposed cash-bidding tenure process enshrines a system where those companies with the largest cash reserves win the most prospective tenure, not the company most likely to develop any discovery (sub. 24, p. 10)

### *Evidence of cash bidding and work program bidding in action*

To date, Australia has had limited experience with cash bidding. Public data is available on the outcomes of cash bidding on petroleum licences in Commonwealth waters and in South Australia. Very few (if any) bids were received.

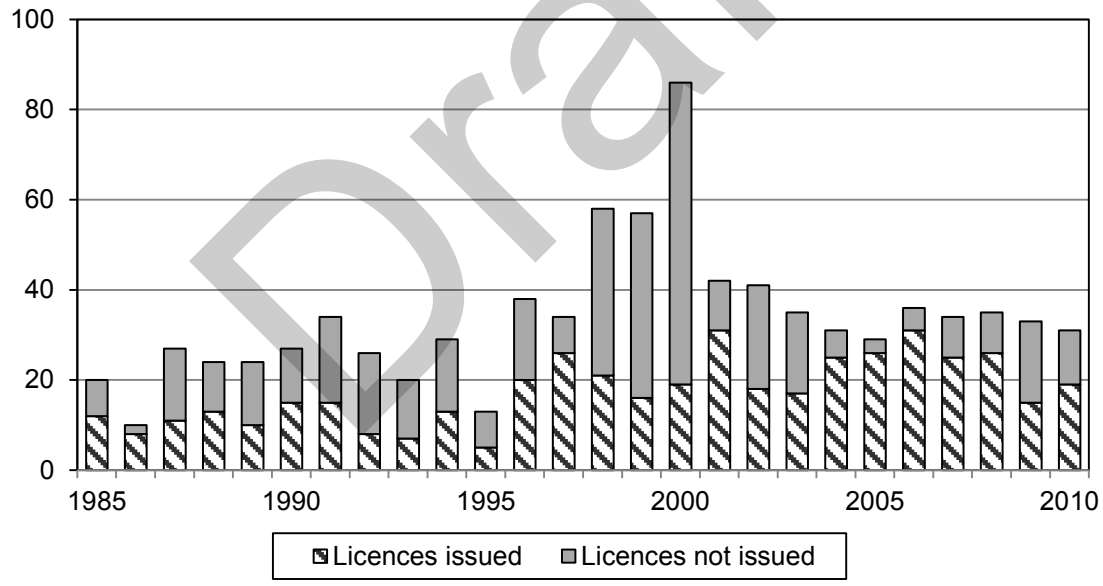
- Australia utilised cash bidding for offshore oil exploration tenements between 1985 and 1992, but only eight areas were offered for cash bidding (Maritz 2003)
- South Australia offered some single well blocks in 2001 under cash bidding, but did not receive any bids (Alexander and Morton 2002)
- Between 2006 and 2010, cash bidding was used for coal exploration licences in New South Wales. While detail on the number of bids is not available, it appears

that bids were received, with budget documents indicating revenue was generated from exploration licences (New South Wales Government 2010).

This evidence appears to support industry concerns that cash bidding may discourage explorers from bidding for exploration licences. However, similar outcomes have been observed for work program bidding.

The main information available on the outcome of work program bidding is for Commonwealth offshore waters. Over the period between 1985 and 1999, 48 per cent of exploration areas offered for work program bidding were not taken up (figure 3.2) and, even for tenements that did attract bids, single bids were a common occurrence. In the period between 2007 and 2012, over 40 per cent of allocated licences received only a single bid, and older evidence suggests similar trends have occurred in the past (figure 3.3)[3].

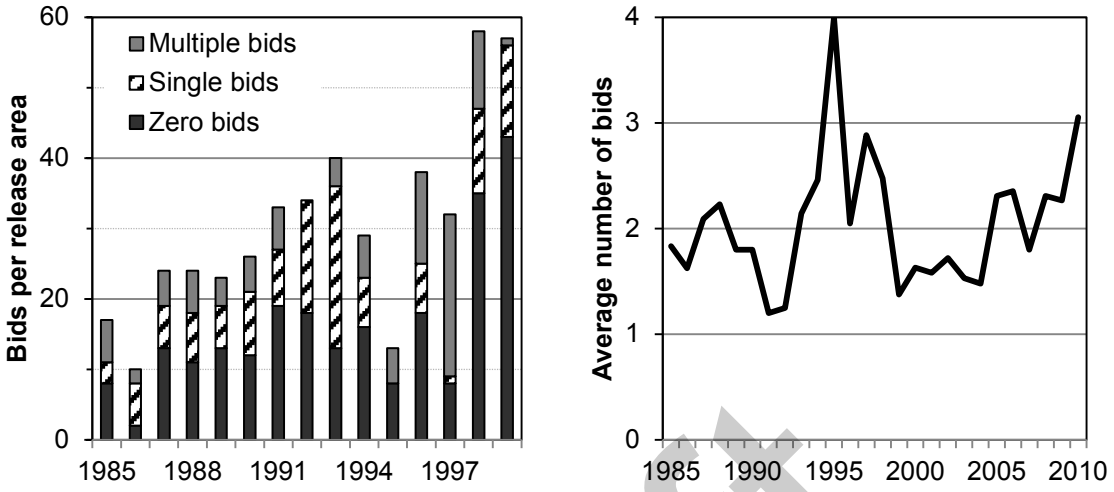
Figure 3.2 **Offshore petroleum exploration licences**
Whether released licences were issued or not




*Data source*: Geoscience Australia (2012).

[3] The information for the period 2007 to 2012 comes from various editions of *Australian Petroleum News* published by the Department of Resources, Energy and Tourism and its predecessors. While the Geoscience Australia data does not directly indicate the number of bids received, any year in which the average number of bids per allocated release area is less than two must comprise at least one area with a single bid. For years with an average number of bids less than 1.5, the majority of allocated areas must have received a single bid.

Figure 3.3 **Bids received and average number of bids[a] for offshore petroleum areas**




[a] Average number of bids for tenements that received at least one bid.

*Data sources*: Maritz et al. (2010); Geoscience Australia (2012).

The lack of competing bids under both work program bidding and cash bidding allocation systems undermines the rationale for such allocation mechanisms — that is to allocate tenements among competing explorers. It suggests that both mechanisms are being used in many cases where they are not warranted.

The generally low rate of bids for exploration licences under work program bidding and cash bidding could be symptomatic of structural problems associated with allocation mechanisms. Previous reviews of the exploration industry have highlighted that impediments to exploration — stemming from the length of tenure of exploration licences, reporting and activity requirements, and the regulation, taxation and royalty arrangements relating to extraction industries — can reduce the effectiveness of cash bidding as an allocation mechanism (IC 1991, Henry et al 2010, ACIL Tasman 2012).

A specific factor that has affected cash bidding in Australia has been that explorers also need to submit a work program when applying for an exploration licence even under cash bidding (ACIL Tasman 2012). Such requirements are likely to reduce demand for exploration licences issued under cash bidding arrangements, but it is unclear how big a barrier to exploration those work program requirements are. It may soon be possible to determine the scale of burden imposed by work program commitments under cash bidding systems, as offshore petroleum exploration licences will be allocated by cash bidding from 2014, and under that arrangement there will be no minimum exploration requirement during the first term of permits (DRET nd).

A full assessment of exploration tenement allocation mechanisms requires consideration of the link between cash bidding and subsequent royalty payments. However, given that examination of financial barriers to exploration (including royalty and tax arrangements) is excluded from this inquiry's terms of reference, it has not been possible for the Commission to fully compare the relative merits of alternative allocation mechanisms for exploration licences.

In the Commission's view, no single method of allocating exploration permits is likely to suit all situations in Australia. However, cash bidding still appears to be superior to work program bidding. Cash bidding will not distort decisions on the amount or type of exploration that will occur. While cash bidding can discourage explorers from applying for exploration licences in some circumstances, work program bidding appears to have similar impacts.

Cash bidding would appear to be most appropriate for highly prospective exploration tenements where the likely rents are known and there is a greater likelihood of multiple potential bidders for the exploration tenement. These situations will usually be in areas where pre-competitive geoscientific evidence indicates that an exploration tenement will be likely to contain sizable mineral or energy resources.



### Sub-optimal sized and configured exploration tenements

Governments' land release strategies, covering the location of tenements, their size and the timing of their release, influence explorers' interest and the value of the tenements. A challenge faced by governments is to develop a land release strategy that maximises the benefits to the community.

It is not uncommon for exploration tenements to be small in size, odd-shaped, or both. This usually arises because of the requirement for exploration tenements to be partially relinquished, and is especially the case on tenements that have been previously explored.

The Commission understands that small exploration tenements complicate the efficient scale of exploration efforts. For example, in order to undertake survey work on an odd shaped offshore exploration tenement, a survey ship was required to traverse an adjacent tenement, which is not permitted without the approval of the holder of the adjacent tenement. Moreover, the explorer was not permitted to directly approach the tenement owner, but had to seek approval through the regulator.

Where possible and appropriate, tenements should be of sufficient size to allow the efficient operation of mineral and petroleum exploration sites. Releases of land should be deferred where partially relinquished tenements can subsequently be combined into optimally sized tenements.

DRAFT RECOMMENDATION 3.2

***Where possible, governments should not allocate exploration licences for tenements that would be too small or too irregular a shape for an efficient mine or production wells to be established. The release of exploration tenements should be deferred until tenements of appropriate size and shape can be issued.***

### Competing resource uses

An emerging issue is the potential for conflict between coal and coal seam gas exploration and extraction. There is no clear priority between a tenement granted for coal under the *Mining Act 1992* (NSW) or one granted for coal seam gas under the *Petroleum (On-shore) Act 1991* (NSW). This could have impacts on the operation of coal seam gas and coal projects. The NSW Minerals Council indicated that this tension needs to be resolved in order to prevent '…an inefficient jigsaw fit of tenements of differing type and the unnecessary or temporary sterilisation of resources.' (sub. 11, pp. 7–8) The NSW Minerals Council said that this is part of a review of licence conditions that has been underway for over two years (sub. 11, pp. 10).

INFORMATION REQUEST

*The Commission is seeking information on the steps being taken to resolve the potential for regulatory tension in relation to co-located coal and coal seam gas resources.*

## 3.3 Issues with regulatory practices

The Commission received a number of submissions raising concerns about administrative processes. Issues include how regulatory change should be managed, rules governing the use of ministerial discretion and appeal processes that exist for decisions relating to exploration licensing.

## Amendment and administration of regulation

Frequent or unexpected regulatory change creates uncertainty for explorers. Given the intrinsically high risks of exploration and significant upfront capital investments, an uncertain regulatory environment can damage investor confidence and weaken exploration spending. David Watkins, a geologist and company director, said:

> When someone explores they do it for profit; if this motive is destroyed by changing the goal posts because of public pressure being put onto government officers and ministers it is hardly going to inspire people to spend money in an industry which is traditionally high risk … (sub. 1, p. 1)

COAG Principles of Best Practice Regulation (box 3.3) were agreed upon to assist and improve regulatory decision making. Consistent with these principles, the industry has expressed the need for clarity and certainty in the regulatory framework and for stakeholder consultation before legislative or regulatory changes are decided upon and after they have been implemented.

### Box 3.3 COAG Principles of Best Practice Regulation

COAG has agreed that all governments will ensure that regulatory processes in their jurisdiction are consistent with the following principles:

1. establishing a case for action before addressing a problem;
2. a range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs assessed;
3. adopting the option that generates the greatest net benefit for the community;
4. in accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:-
    a. the benefits of the restrictions to the community as a whole outweigh the costs, and
    b. the objectives of the regulation can only be achieved by restricting competition;
5. providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear;
6. ensuring that regulation remains relevant and effective over time;
7. consulting effectively with affected key stakeholders at all stages of the regulatory cycle; and
8. government action should be effective and proportional to the issue being addressed.

*Source*: COAG (2007).

These mechanisms help to identify any issues with the proposed changes and options for how they can be resolved. AMEC put it this way:

> In order to plan their exploration programs, explorers need clarity and certainty from the regulatory system. In this sense by 'clarity', AMEC means the government has articulated its policy position and desired outcome publically and in a manner which is not ambiguous and is easy to understand. By 'certainty' AMEC means the policy will remain in force for a timeframe that is relevant and appropriate to business planning and investment decisions. (sub. 24 p. 21)

The Commission has been informed of a number of cases where regulatory changes occurred without consultation or with retrospective application. Recently, for example, a Commonwealth environmental assessment for water impacts was announced without industry consultation and without a regulatory impact statement.

> … on 12 March 2013 the Commonwealth Government announced it would add a new approval trigger to the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) to require approval for a mining or CSG project with likely significant impacts on water resources. (Thomas 2013)

Another example is the new strategic land use policy in New South Wales which was applied retrospectively to applications that were in process of assessment.

> Significant reform was introduced following the Mining Act Regulation 2010 and the recent Strategic Regional Land Use Policy. An example was the introduction of the requirement for an Agricultural Impact Statement for activity approvals from the day the policy was announced. This applied to all approvals (even those where all the application documentation had been submitted) and guidelines on the requirements for the Statement were not released for over two months following the policy announcement. (NSW Minerals Council, sub. 11, pp. 5–6)

A related issue is that frequent regulatory changes increase the costs associated with consultation and staying abreast of the changes. The Minerals Council of Australia said that:

> Even where changes were of a technical nature, the persistent "churn" of legislation means that multiple Acts need to be consulted by project proponents and operators seeking to undertake exploration and mining in Australia. Overall the pieces of primary legislation have increased by 53 per cent and the pieces of subsidiary legislation by 80 per cent [between 2006 and 2012]. (sub. 27, p 39)

The Commission's view is that regulators should be mindful of the compliance burden that even minor changes can, in aggregate, impose on industry participants. All Governments should adhere to principles of best practice regulation, including consultation with key stakeholders at all stages of the regulatory process.

## Transparency of assessment and granting of licences

The Commission notes that a range of stakeholders — both proponents and opponents of exploration — have drawn attention to a lack of transparency in regulatory processes, suggesting that the current requirements do not ensure a public and transparent process.

NSW Irrigators' said in this regard:

> Furthermore, there is considerable public concern about the assessment process undertaken by the Department of Primary Industries. Without having comprehensive public and stakeholder consultation, such one-sided assessment must be evaluated with caution. (sub. 5, p. 9)

NSW Minerals Council also pointed out:

> The processing time for coal applications is particularly long due to their complexity. Currently, all coal exploration licence applications must be competitively tendered when the Government releases specific 'Coal Allocation Areas'. There have been multiple issues regarding fairness, transparency and lack of industry consultation in the process for mineral allocation areas. The process is marked by the Government as 'under review' and is also the subject of a current Independent Commission Against Corruption (ICAC) investigation. (sub. 11, p. 7)

The Australian Network of Environmental Defenders Offices called for improved notification, education, public participation, appeal and compensation rights. Specifically it said this should include:

- ensuring that both mining and planning laws include comprehensive and mandatory rights to public access to information, notification and consultation at all stages (licensing, environmental assessment, approval and post-approval), including for major projects;
- improving trust and accountability through community rights for merit appeals, judicial review, and 'open standing' for enforcement proceedings, including for major projects;
- consultation with Indigenous communities to identify and implement leading practices for tailored engagement strategies and cultural heritage protection;
- establishing a robust, equitable and transparent compensation regime for mine-affected stakeholders, in addition to comprehensive environmental management;
- improving the clarity and consistency of terminology used across mining laws. (sub. 17, p. 11).

Improvements in the transparency of decision making, including public consultation where appropriate, benefit all stakeholders by clearly articulating rights and responsibilities and highlighting regulatory processes. However governments must

consider not only the need for public consultation to underpin public confidence in the regulatory process, but also the cost of any such measures and how to minimise that cost.

## Ministerial discretion

Mineral and resource legislation grants significant ministerial discretion on decisions that restrict or facilitate exploration activities. The Minister's discretion usually extends to the imposition and variation of conditions attached to an exploration licence (table 3.7).

Some ministerial powers have transparency requirements attached to their use. For instance, in Tasmania, if the Minister refuses to grant an exploration licence or renewal, or varies any conditions subsequent to granting a licence, reasons must be given to the applicant and the applicant can appeal that decision to the Mining Tribunal within 28 days. No other jurisdiction, however, requires reasons to be given for decisions to grant or refuse an initial mineral exploration licence (table 3.8).

The use of ministerial discretion is frequent. For example:

- In NSW legislation, coal is not treated differently, but under legislative powers, the Minister declared a 'mineral allocation area'[4] for coal over the whole of the state, triggering a tender process for all coal exploration applications. This tender process is subject to an extensive and ongoing investigation of coal exploration licensing by the Independent Commission Against Corruption.
- In Western Australia, the Minister for Aboriginal Affairs has discretion to allow harm to Aboriginal heritage sites under s 18 of the *Aboriginal Heritage Act 1972*.
- In South Australia, the Minister has discretion to invite tenders for exploration licences, but must base the decision on whether the area is highly prospective (*Petroleum and Geothermal Energy Act 2000* (SA) s 16). This allows a limited avenue of procedural appeal if tenders were to be called for any reason other than high prospectivity.

[4] Under the *Mining Act 1992* (NSW), an area may be declared a 'mineral allocation area' in relation to all minerals or specified minerals. If land is declared a mineral allocation area, applications for exploration licences over that land are not permitted except with the Minister's consent (section 13). The Minister may invite tenders for an exploration licence in such areas (section 14).

Table 3.7 **Conditions on exploration licences**
Onshore petroleum

| | *NSW* | *Vic* | *Qld* | *WA* | *SA* | *Tas* | *NT* |
|---|---|---|---|---|---|---|---|
| Minister can impose conditions | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Minister can vary conditions | ✓ | ✓ | | | ✓ | ✓ | |

*Sources*: LexisNexis 2013; legislation.

The Commission considers that at a minimum all ministerial decisions should be accompanied by a statement of reasons. These statements promote confidence in the administrative process, enable decisions to be properly explained and defended and can foster acceptance even among those who would have preferred a different decision. They also assist individuals in deciding whether to appeal a decision, and assist the appellate body in conducting the appeal.

Transparency could be improved by a legislative requirement to give reasons for every decision and to specify what reasons are to be relied on in the event of an appeal in those cases where the Minister failed to make a decision (such as the reasons set out by the recommending authority in their ministerial brief).

If the legislation required reasons to be given, any decision made without reasons would be appealable on procedural grounds, as would any decision based on irrelevant considerations. Decisions that were properly made with relevant reasons would not be appealable on the merits of the decision, thus preserving the power of the Minister to exercise discretion, but would allow public discussion of those reasons, enhancing community confidence in the regulatory process.

There are many examples of this kind of requirement to give reasons. A formulation such as the following, based on the *Aged Care Act 1997* (Cth) (s 85-3) could be applied to the exploration sector:

> If this Act requires the Minister to notify a person of the making of a decision, the notice must include reasons for the decision.

The exact formulation would have to take into account how Ministerial discretion is worded in each specific Act. This requirement would increase transparency without requiring an onerous level of detail in reasons given.

DRAFT RECOMMENDATION 3.3

***If an Act requires the Minister to notify a person of a decision regarding an exploration licence, the Act should require that the notice include the reasons for the decision.***

*Transfer of title: exploration and other tenements*

In all jurisdictions, ministerial approval is needed before ownership of exploration or other licences can be legally transferred. This approval process is guided, in most jurisdictions, by considerations the Minister must or may take into account.

In New South Wales and Tasmania, the ministerial discretion includes the power to amend or add to the licence conditions (*Mining Act 1992* (NSW) s 121(4); *Mineral Resources Development Act 1995* (Tas) s 33(1)(a)).

The Commission considers that transfer of title should not be a trigger to reassess the licence and add further conditions. Rather, the basis of the decision to renew an exploration licence should be limited to the prospective title holder and whether that entity meets all the regulatory requirements.

## Concerns with appeal processes

Appeal processes ensure that redress is available if regulatory powers are not exercised in accordance with the law. This promotes certainty of process (where the legislation specifies a process for decision making) and confidence that the regulations will be enforced in a non-discriminatory manner among all parties.

There are two types of legal review: a review of the merits of a decision, which looks at whether the outcome of the decision was correct or preferable; and judicial review, which looks only at the legality of the decision-making process.

Judicial review is available in all jurisdictions. However, by its nature, judicial review is limited to procedural issues such as whether the decision maker considered all the items the legislation required him or her to consider. If the decision maker made the appropriate considerations, the courts cannot review the conclusions thus arrived upon.

The scope to dispute the merits of the decision to grant an exploration licence varies across jurisdictions (table 3.8). In Tasmania, only those whose property interests are affected can apply to prevent the granting of an exploration licence, while in Western Australia, any party can apply for a review. In both Western Australia and Tasmania, the court considers the issues prior to the finalisation of a decision to grant or refuse an exploration licence. Other jurisdictions do not permit a review of the merits of a decision to grant an exploration licence, although third party objections to the grant of an exploration licence will be taken into account by the decision maker in Victoria and the Northern Territory.

Table 3.8 **Objections to exploration licence decisions** [a]
Onshore minerals

| | *Third party can object to grant of licence* | *Third party objection is considered by:* | *Minister must provide reasons for decision to grant/refuse* | *Applicant can appeal refusal to grant licence* |
|---|---|---|---|---|
| NSW | No | | No, s 22 | No |
| Vic | Yes, any third party, s 24 | Minister, s 25 | No, s 25 | 'Disputes' are heard by the mining warden, ss 4, 97 |
| Qld | No | | No, s 136 | No |
| WA | Yes, any third party, s 59(1) | Mining warden, s 59 | No, s 59(6) | No |
| SA | No | | No, s 28 | No |
| Tas | Yes, landowners only, ss 15 and 17(2) | Mining Tribunal, s 128(v) | Yes, to applicant if application is refused, s 17(3)(b) | No [b] |
| NT | Yes, landowners may object and any third party may make a submission, s 71 | Minister, s 78 | No, s 78 | No |

[a] Reference to legislation in brackets: refer to onshore mineral legislation in table 3.1. [b] A refusal to grant a licence renewal (but not the initial grant of a licence) can be appealed to the mining tribunal, s 25.

*Source*: Legislation.

### *Cost of appeals*

Formal courts can prove difficult to access for individuals or small businesses due to the cost of obtaining legal representation and the potential for long delays at various stages of the process. Thus courts, including land and environment courts, can be perceived as favouring the party with the greater financial resources and legal expertise. Less formal alternatives for obtaining redress are discussed below.

Appeals can delay the start of exploration for long periods of time. This is often the case if, for example, the statement of claims is amended multiple times or the court or tribunal has a long backlog of cases. The potential for delay applies not only to generic courts, but also to resource-sector specific appeal bodies, such as mining wardens. Box 3.4 contains an example of delay caused by an appeal that was ultimately unsuccessful.

Box 3.4 **Impact of appeal processes on time delay — case study**

Gas explorer AGL resumed work on its Gloucester Gas Project in September 2012 after almost a year's delay caused by an unsuccessful legal challenge in the NSW Land and Environment Court, and more scientific assessments.

AGL said that exploration work would enable a better assessment of the natural gas potential of the area and more information on hydrogeology. However Barrington Gloucester Stroud Preservation Alliance spokesman Graeme Healy said only an independent study that addressed all aspects of the area's hydrology could determine if it was safe to proceed at all.

Stage one of the project (about 110 wells) was approved, but a residents' blockade following the legal challenge stopped work. A review of the company's surface and underground water studies for stage one recommended more studies and further delayed the project.

*Source*: Thompson 2012.



### *Vexatious litigation*

'Vexatious litigation' is legal action without merit (and often with a low likelihood of success), brought before the courts to harm the defendant in some way, for example by delaying or frustrating a project. For instance, objectors may apply to the courts for review of an issue even if that issue is otherwise dealt with by the assessment process. This may require explorers to go through essentially the same assessment twice, leading to the creation of a parallel assessment process and the potential for stakeholders to engage in 'forum shopping' for the decision maker most likely to be sympathetic to their cause.

Appeal processes also have the potential to be 'gamed' to frustrate projects. For example, the Australian anti-coal movement has an overt strategy of 'lodging legal challenges' to delay projects and therefore cause companies to give up, down-scale or lose investment. They describe it thus:

> Our strategy is essentially to 'disrupt and delay' key projects and infrastructure while gradually eroding public and political support for the industry … (Hepburn et al. 2011, p. 5)

### *Issues relating to resource-sector specific review bodies*

Some jurisdictions have review bodies (such as mining wardens) established under resource legislation to deal with resource-specific issues. They are intended to be less formal and thus faster and less expensive than review by generic courts.

However, various concerns have been raised in other reviews that are yet to be resolved.

A Victorian parliamentary inquiry (Government of Victoria 2012) recommended that the functions of the Victorian Mining Warden be divided up and the dispute resolution function be assigned to the Small Business Commissioner. This was partially due to the high cost and declining number of disputes and also because of the conflict caused by assigning both executive and judicial functions to the Warden. The Mining Warden currently continues to exercise these functions.

The WA Mining Warden was created to be fast, inexpensive and informal. However, the Keating review (Independent Review Committee 2002) found evidence of avoidable delay and unnecessarily wide jurisdiction, thus increasing the cost of litigation. Recommendations made in that report to address these concerns do not appear to have been fully addressed.

Appeals lodged through the WA Mining Warden can cause substantial delays and cost to an explorer even when the objections are unfounded or out of scope. The WA Ministerial inquiry into greenfields exploration (Bowler 2002) supported the recommendations of the Keating review, and additionally recommended a bond system to avoid frivolous litigation, with the bond refundable if the action is successful or deemed by the Warden to have been a serious action. This recommendation has not been implemented. Objections to exploration licences can be lodged online with the WA Mining Warden, and no fee or bond is payable.

### *Mediation and internal review as alternatives to merits review*

Land access disputes between explorers and other land users such as farmers are more likely to undergo mediation than formal review in the courts. Mediation is where parties discuss the issues with the help of an impartial negotiator, who does not impose a solution but rather assists the parties in reaching an outcome they can agree to. Land access dispute resolution mechanisms vary between jurisdictions and are discussed in chapter 4. They are designed to be much faster, cheaper and less formal than review by the courts.

Issues that arise between a regulator and a licence applicant are also unlikely to proceed to a court hearing, due to the time and cost involved. In such cases, a complaints or appeals mechanism internal to the regulator is generally more cost effective and appropriate. AMEC highlighted the need for escalation mechanisms within the regulator:

> The ability of a proponent to escalate an assessment or approval decision in a timely and orderly manner from the assessing officer to higher levels of the agency is a key

component of an efficient approvals system. The experience of AMEC members has been one of frustration at the seemingly ad hoc nature and slow manner in which regulatory agencies approach a proponent's appeal for a review of the administrative decision. (sub. 24, p. 22)

*Deterrents to vexatious litigation*

Courts and tribunals have various powers to deal with the potential for vexatious litigation.

- First, they can dismiss vexatious litigation if it can be established that the application is without merit, very unlikely to succeed or commercially motivated.
- Second, if a case proceeds but is ultimately unsuccessful, the court can award costs to the defendant to reimburse legal expenses incurred. This discourages vexatious litigation, as costs can be high. However, for an explorer, often the cost of delay is more significant than the legal costs of defending the case.

A third option, recommended in the Bowler Review (2002), is the use of bonds, payable on application to the court (described above). However this could be seen to limit judicial review to only those with sufficient financial means to pay the bond upfront.

There is no comprehensive solution to prevent vexatious and costly litigation; however, these approaches can reduce its likelihood or impact. Judicial review can be costly but is an important safeguard for the legal rights of both proponents and opponents of exploration.



## 3.4 Concerns with regulator performance

### Funding and staffing

Regulator staffing issues have been particularly acute in recent years due to the resources boom, which has led to a sharp rise in applications for tenements and related applications (such as for work program approval). At the same time, increased competition from explorers and mining companies for similarly skilled staff has reduced the available supply of some labour skills (see discussion in chapter 8).

The Commission heard frequent assertions that faster, lower cost and higher quality assessments would be made if regulators were better staffed. Specific complaints

related to the movement of staff within agencies and lack of industry experience. David Watkins, a geologist and company director, said:

> Government officers now tend to be career public servants with no direct industry experience. They tend to have come straight from an education institution, know it all and do not take kindly to criticism, being shown to being wrong and not knowing the subject. (sub. 1, p. 2)

The Australian Petroleum Production & Exploration Association said:

> Given the growth of the industry in Australia, the changes in offshore petroleum regulatory structure and the ongoing government turnover of staff, industry remains to be convinced that government officials have the requisite skills to assess the types and volume of approvals that are now required. (sub. 22, p. 15)

*Reforms underway*

A number of participants to this inquiry commented on the underfunding of regulatory agencies. For example, the NSW Minerals Council considers the NSW Division of Resources and Energy to be underfunded (sub. 11, p. 9). Additional fees and levies introduced in New South Wales in July 2012 were partially designed to address this funding shortage. It remains to be seen whether this change has been effective.

The Queensland Government is reforming its exploration licensing system to reduce regulatory costs (both for the regulators and those who are regulated) in response to the rapid increase in exploration permits in recent years and subsequent '…enormous increase in the number of variation applications' (sub. 25, p. 11). This reform includes separating departmental resources according to coal, mineral and petroleum assessments, thus allowing for specialisation and the development of human capital. The Queensland Government said:

> As an element of the Streamlining Approvals Project, the [Queensland] Government is building a refined service delivery model involving three centres (hubs) of dedicated resource expertise – for coal; minerals; and petroleum – with an exclusive focus on assessment. Dedicated staff will concentrate on the assessment of applications within their dedicated sector. This will foster the development of sector specific expertise and ensure that field officers' time is spent working directly with industry. (sub. 25 p. 10)

In some cases, regulatory bottle necks are created because specific regulators that form part of a chain of approvals are underfunded or under resourced compared to the core regulator (usually the mining department). Adequate, skilled staffing is something governments must address so that exploration proponents, communities and other stakeholders can be confident that the regulations in place are being properly administered.

## Lead agencies

The regulation of resource exploration can become quite complex where a project requires multiple approvals from separate regulators. Good communication and coordination among regulators, proponents and other stakeholders are essential for reducing approval times and costs and for ease of navigating the system.

All jurisdictions have adopted what is termed a 'lead agency' approach. The lead agency is the key regulator of exploration licences and a project proponent's central point of contact. However, the functions of lead agencies differ between jurisdictions.

Some lead agencies assign a case manager to each project to liaise with the proponent and guide the project through all the necessary approvals. The lead agency determines what approvals are necessary and either conducts the assessment itself or passes the relevant information to other agencies.

For example, in Western Australia, the Department of Mines and Petroleum (DMP) is responsible for coordinating exploration approvals and providing a single point of entry for applicants. Projects are assigned a case manager or team according to how complex the approvals process is likely to be. The DMP said:

> DMP's electronic online tracking system automatically notifies other key approval agencies involved in the assessment process. In general, other agencies have a target of 20 business days to respond to DMP. (sub. 29, p. 9)

Mineral Resources Tasmania is a lead agency that is empowered to make all the relevant exploration state approvals and consults with other state agencies rather than referring stages of the approval process to those agencies.

The Department of Primary Industries in Victoria advises proponents of all the necessary consents and approvals, providing a single point of information, but it does not always coordinate the approval process. The lead agency model in Victoria is currently under review and two questions being asked are whether the role should be more formalised and whether more detailed information about approval processes should be made available to proponents (Vic DPI 2011).

Despite apparent use of a lead agency model in New South Wales, the NSW Minerals Council highlighted gaps:

> Conditions of exploration licences in NSW often necessitate an explorer to sequentially notify or seek approval from a number of differing Government agencies, offices or departments. For example, an approval for a drill program is generally required from the Minister administering the Mining Act 1992. Conditions of the licence might then necessitate notification or approval from the Sydney Catchment Authority, the Office

> of Environment and Heritage and the Environment Protection Authority (each of which may impose further conditions on the proposed drill program). This slows down and complicates the exploration approval process as well as introducing additional uncertainty to the process. (sub. 11, p. 8)

In Commonwealth waters, exploration is administered under a lead agency model through the National Offshore Petroleum Titles Administrator as the single point of contact for all title related issues.

Explorers, particularly junior explorers, prefer to work with a lead agency. While lead agencies exist in all jurisdictions in various forms, some industry participants have called for further development of this model. AMEC commented:

> As an aspirational goal AMEC would like to see a one-stop-shop approvals system for exploration and that this should lie within the relevant agency for the regulation of minerals exploration and mining. (sub. 24 p. 21)

Similarly the Australian Uranium Association forwarded the following model for project assessment:

> Operating ideally through a single point of contact between the company and authorities and regardless of how many governments and authorities are involved, authorities engage with the company as far as possible with a unified approach, notwithstanding the different legislative and political conditions under which they may operate (sub. 4, attachment 2, p. 1)

The practice of assigning case managers to each project, as in Western Australia, is favoured by explorers but may require additional funding for agencies taking on the lead role. For example, the Northern Territory does not assign case managers:

> With around 600 exploration applications per year it is not possible to assign case managers to guide each exploration (applicants) application through the system. Information on requirements can be readily obtained from the department and assistance is provided on request. There are private agencies which have contracts to case manage exploration applications. (NT Department of Mines and Energy, pers. comm., 12 April 2013)

A lead agency is much better placed than an individual explorer to determine the range of approvals that may be required, who they may be required from and the nature of what must be done to gain approval. Inadequate guidance in this area discourages new entrants and therefore competition for tenements, by providing an informational advantage to explorers who are already familiar with the system. Up-front information helps explorers to avoid delays arising from failing to satisfy unknown regulatory requirements and being required to resubmit material to regulators. It also facilitates informed business decisions as to whether to proceed with a project.

DRAFT RECOMMENDATION 3.4

***Where not already implemented, governments should ensure that at a minimum their lead agencies responsible for exploration, coordinate exploration licensing and related approvals (such as environment and heritage approvals). This should include the provision of guidance on the range of approvals that may be required, and on how to navigate the approvals processes.***

## Enforcement

Regulators have many enforcement tools available to them. These include 'soft' tools such as persuasion, inspections and verbal and written warnings as well as 'hard' tools such as fines, licensing cancellations and ultimately prosecution.

Leading practice in the area of regulatory enforcement looks to combine the use of these tools under the concept of 'escalating enforcement'. Under this model, regulators focus on education and apply punitive measures only for repeated or very serious breaches.

Without effective assessment and enforcement, conditions placed on exploration activities become ineffective. Some participants highlighted the lack of enforcement by regulators. In one example, it was reported that the regulator did not act upon community complaints of unauthorised discharges of coal-seam gas (CSG) water and treated water. The Australian Network of Environmental Defenders Offices pointed out that:

> In its May 2012 report, the NSW [Legislative Council] CSG Inquiry concluded:
>
> It is inexcusable that this pollution went undetected by NSW Government authorities, despite community complaints, until [the company that took over the exploration tenement] admitted many months later that a breach had occurred. … This incident demonstrates the weakness in Government monitoring and enforcement activities … . (sub. 17 p. 14)

## Approval timelines

Delays associated with approvals processes can impose significant costs on explorers. Moreover, uncertainty about the time regulatory approvals may take creates difficulties for explorers scheduling their equipment requirements (such as drilling rigs and sonar equipped vessels) in the least cost manner.

The climatic conditions where exploration occurs can sometimes mean the time period suitable for exploration activity is limited, for example during the cooler,

dryer months in northern Australia. Delays in approvals processes of only a few months may mean the whole exploration season is lost. AMEC pointed to these costs in its submission:

> The adage that 'time is money' is nowhere more pronounced than in the exploration industry. … Explorers have small windows of opportunity to actually explore or undertake preliminary studies. If delays … result in them missing their window, they are often forced to wait until the same time the following year. This is in addition to issues such as inclement weather conditions, drill rig equipment and crew availability and the remote location of the tenement. (sub. 24, p. 3)

The Commission received numerous examples of the extensive time taken to process exploration licence or renewal applications.

- The average approvals time for an exploration licence in Queensland in 2011 exceeded 20 months for coal permits and 25 months for minerals permits (QEC 2012, p. 24).
- New South Wales has a target indicator of 90 per cent of exploration licences assessed within 60 days. However, the NSW Minerals Council said that the average elapsed time is close to 250 days. It also indicated that even renewing exploration licences can be time consuming, with five to 12 months being the most common timeframe, and a single renewal that took three years to process (sub. 11, pp. 6-7).
- In Western Australia in the first quarter of 2013, 98 per cent of mineral exploration licences were assessed within the target 65 business days, but none of the petroleum exploration permits met the target of 120 business days (out of five permits finalised) (WA DMP 2013a).
- The WA Department of Mines and Petroleum has produced a Gantt chart showing that the minimum time it would take to get an approval to explore for uranium would be 358 days (sub. 24, p. 17).

### *Measuring approval timelines*

The first step to reducing timelines is measuring them and setting targets. Making that data public would improve transparency and accountability and ultimately help to improve the timeliness of decisions. The Commission, in its inquiry into upstream petroleum, found that one of the major unnecessary burdens arising from the current regulatory regime is:

> A lack of clear and certain administrative timelines contained in laws or regulations … Where timelines do exist for regulators there is a lack of compliance or enforcement mechanisms, and in many cases poor transparency and reporting of regulators' performance against legislative timelines. (PC 2009, p. 228)

The National Offshore Petroleum Safety and Environmental Management Authority has timelines specified in regulations or guidelines (for example, 30 days for environmental assessment, or reasons provided for delay). However most regulators either do not have target or mandatory timelines, or targets are not public or are not reported.

Western Australia is an exception, with publically available information and reports on key performance figures, including number of approvals received and processed and the percentage processed within the target timeframe on the department's website (WA DMP 2013a). This can lead to the identification of areas of poor performance and subsequently drive efficiency improvements. For example, in the first quarter of 2013, only half of the 43 native vegetation clearing permits finalised met the target 60 elapsed days (not business days) for assessment, leading the regulator to note that internal restructuring would be managed to address this delay (WA DMP 2013a).

WA Department of Mines and Petroleum (pers. comm. 12 April 2013) indicated that one of the corollary benefits of reporting was aligning terminology across departments and divisions. This involves a short-term cost, but has transparency and efficiency benefits both for the regulator, the regulated and the public. Specifically, consistent use of terminology reduces confusion for explorers and other stakeholders, and could enable regulators to share information technology or other resources. Consistency reduces the potential for misunderstanding and thus facilitates communication among all parties.

Target assessment timeframes have been introduced in Queensland, including specific targets to reduce current timeframes by six months for mineral or coal exploration permits (a time saving of up to 65 per cent) and three months for exploration permit applications with code compliant assessment and exclusive of native title (a time saving of up to 25 per cent) (sub. 25, p. 10).

However, in measuring time taken, measurement is suspended (the 'clock' is stopped) when the applicant is required to provide more information or the application is being assessed by another government agency. This means that the total time to acquire a licence often remains unmeasured or at least unreported. AMEC has called for whole of government timeframes such that the clock would not be stopped while the application was with government (sub. 24, p. 22). The Commission supports such an approach and suggests that at a minimum, whole of government reporting should be available through the lead agency, stating the average time elapsed while applications were being assessed by other agencies.

Reporting should be done as transparently as possible, with methodological information available to describe the design of performance indicators (sub. 24, p. 23). The Commission's view is that reporting should include:

- the number of applications received and finalised, separated into types of application (including exploration licence applications and subsequent applications, for example for detailed environmental and work program approval)
- percentage of applications meeting target timeframes
- average and median time taken, separated into total elapsed time and time when the 'clock' was stopped because the regulator was waiting on further information from the applicant.

DRAFT RECOMMENDATION 3.5

***Governments should ensure that their regulators publish target timeframes for approval processes, including exploration licensing and related approvals (for example environmental and heritage approvals). The lead agency for exploration should publish whole-of-government performance reports against these timeframes on their website.***

### *Online approval systems*

A further measure to improve timeliness and transparency is introducing an electronic approvals tracking system, which allows applicants to log in to a website and monitor the progress of their application. This has the added benefit of establishing IT systems that can then be used for reporting, which is recommended above (draft recommendation 3.5).

Electronic lodgement and online tracking are available in Western Australia and Queensland (box 3.5). Furthermore, the WA Government has committed to expanding this tracking system, which will allow applicants to track the progress of their approvals, regardless of which government department is evaluating them (WA Liberals, p. 5). The WA Department of Mines and Petroleum said that:

> Online lodgement provides more certainty and reduces approval timelines for proponents and reduces administrative handling and costs for government. (2013, p. 2)

The Commission, in its review of the upstream petroleum sector, noted that a tracking system has the potential to apply a greater degree of accountability to decision makers and proponents, as it would be clear which party (if any) was the cause of delays (PC 2009, p. 283). This information could then be used to address regulatory bottlenecks or inefficiencies over time.

AMEC noted that as well as improving the efficiency, effectiveness, openness, transparency and accountability of the approvals process, the use of contemporary information communication technology creates benefits such as:

- reducing paper use,
- provision of real-time information,
- improved proponent and regulator relations,
- increased agency productivity,
- improved agency demand responses, and
- improved collaboration, integration and sharing of information between agencies (sub. 24, p. 23)

**Box 3.5 Queensland's online service delivery**

The Queensland Government is continuing to develop its online service delivery platform, 'MyMines'. Online lodgements commenced in late 2012, and allows participants to view information pertaining to the status of their tenures. Further work is being done to increase integration with various related systems. This will provide:

- improved search functions and the ability to respond to the applicant to provide further details or omit others
- a consolidated view of all the proponents applications for resource approvals
- a projection of timeframes for the finalisation of approval processes.

*Source*: (Queensland DNRM sub. 25, p. 9).

In other jurisdictions, applications must be lodged by mail, email or in person, and the only way to track the progress of an application is to contact the regulator. However, the administrative costs of online tracking may outweigh the benefits in jurisdictions that receive a much smaller number of applications. Such jurisdictions should conduct further analysis before committing to this approach.

### *A second best solution — increasing tenement licence duration*

The best solution to overcome the increase in compliance costs created by regulatory delays is to reduce those delays by tackling the source of the problem, and that has been the focus of the Commission's recommendations. If these delays cannot be reduced sufficiently and are significantly truncating the time explorers may have available to undertake their exploration activities due to their licence period restrictions then additional solutions may be required. These could include:

- increasing the tenement licence period by one year

- increasing the tenement by a period of time that reflects the increase in the time taken for regulatory compliance
- starting the tenement period after all approvals have been granted and exploration can commence.

There are concerns with all of these options. A one-year increase is unlikely to be appropriate for all exploration types and all jurisdictions. Allowing tenement duration to begin from the time approvals and agreements are in place would allow proponents to hold up the process if they wanted to delay exploration, thus facilitating land banking.

Calculating the average delay incurred after a tenement is granted would be possible if tracking and reporting of approval timeframes was implemented or expanded in all jurisdictions to include the approvals required post-grant of exploration licence, in line with draft recommendation 3.5 above. However, data collected on delays may reveal a significant range of approval times for different types of projects. For example, the time taken to reach land access agreements differs significantly depending on whether native title is involved. Therefore an increase in tenement length by the amount of the average delay could end up being unsatisfactory in the majority of cases.

INFORMATION REQUEST

*The Commission is seeking more information on the most appropriate way to change exploration tenure so that the time taken for regulatory compliance does not detract from the time to explore.*

# 4 Land access issues

**Key points**

- Governments regulate land access for exploration to:
  - manage and protect the property rights of land holders, traditional owners, lessees and explorers
  - address externalities arising from exploration activities.
- Government decisions to declare a new national park or conservation reserve should draw on the guiding principles contained in the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources to analyse the costs and benefits of alternative or shared land use, including exploration.
- Governments should, where they allow for consideration of exploration activity, assess applications by explorers to access a national park or conservation reserve according to the risk and the potential impact of the proposed activity on the environmental and heritage values and other users of that park or reserve.
- The likelihood of conflict between exploration and other (predominantly agricultural) activities varies with the intensity of land use. In low-density grazing areas, land owner concerns with exploration activity tend to be less than in areas of intensive cropping and irrigation.
- Land access agreements are achieved through negotiations between explorers and land holders regarding the terms and conditions of access and the compensation payable by explorers.
- Some jurisdictions explicitly provide for the reasonable legal costs of land holders in negotiating agreements to be compensable and paid by the explorer. In others, such costs are not explicitly 'ruled out'. All jurisdictions should ensure that land owners are made aware that such support is available.
- Governments have adopted different regulatory approaches to land access for coal seam gas (CSG) exploration (and extraction) in response to: opposition by some groups; a rapid expansion of the industry; and scientific uncertainty as to its impacts. Some of the recent changes to the regulatory framework have been introduced with little consultation with affected parties.
- The development of CSG exploration regulation should be informed by evidence and be proportionate to the level of risk. It should consider the economic, social and environmental costs and benefits for those directly affected as well as for the whole community.
- Although not a regulatory requirement, there is a wide acceptance that explorers should aim to acquire a 'social licence to operate' through the development of good relations with land holders and the wider community.

This chapter first outlines the regulatory arrangements governing access by explorers to different types of land tenure. The chapter then discusses exploration restrictions on Crown land set aside as parks and reserves, the decision-making process employed when considering establishing parks or reserves and the potential for land use conflicts between agriculture and exploration, with a particular emphasis on the coal seam gas (CSG) industry.

## 4.1 Land access regimes

Land access for exploration is primarily regulated by state and territory governments. The Australian Government is limited to regulating access to Commonwealth land and offshore waters.

The state and territory governments regulate access by explorers to land to:

- manage and protect the property rights of land owners, lessees and traditional land owners
- manage and protect the property rights of the explorers (the conditions attached to the relevant exploration licence or permit)
- address externalities arising from exploration activities by prohibiting exploration on particular land or placing conditions on the access to land.

Land access regimes vary by tenure type — Crown land, land leased from the Crown, private land, Aboriginal freehold land and land subject to native title — and to a lesser extent they vary across jurisdictions. Regulation regarding access to each of these different types of land tenure is discussed below.



### Crown Land

The majority of Crown land in Australia is under the control of the states and territories. This Crown land is used for various purposes — pastoral lease arrangements, national parks, conservation reserves, recreation reserves, state forests — or left as vacant or unallocated. Commonwealth land holdings are more limited and are primarily used for defence and aviation (airports) purposes.

#### *Commonwealth land*

Access to undertake exploration activities on Commonwealth land is regulated under the *Lands Acquisition Act 1989*. This requires an explorer to apply to the Department of Finance and Deregulation (DoFD) setting out details of the

exploration proposed, the minerals sought, the duration of access and the exploration activities proposed.

Depending on the application, DoFD may consult with other Australian Government agencies, such as the Department of Defence, the Department of Sustainability, the Environment, Water, Population and Communities (SEWPaC) and the Department of Resources, Energy and Tourism (DRET). DoFD also consults with the relevant state or territory agencies responsible for exploration and resource extraction activities.

Any terms or conditions attached to the access are typically set out in a deed of access between the Commonwealth and the explorer. The Special Minister of State is currently the relevant decision maker in relation to exploration on Commonwealth land.

The Commonwealth also regulates access to exploration in offshore waters — this is discussed further in chapter 6.

### *State and territory land*

The level of access provided to explore on state and territory Crown land depends on the current usage of that land.

Generally, there is a hierarchy of conservation value attached to the different types of parks and reserves with exploration prohibited on the most environmentally sensitive or highest environmentally valued land. This land is usually reserved as a national park. Key features of the regimes in regard to exploration are as follows.

- New South Wales — Exploration is not permitted in national parks, but is permitted on state conservation reserves subject to the proposal having regard to the natural and cultural values of the reserve.
- Victoria — Exploration is prohibited in national parks and state parks. Exploration in coastal parks and reserves and forest parks requires the consent of both the Minister for Energy and Resources and the Minister for Climate Change (Economic Development and Infrastructure Committee 2012).
- Queensland — Exploration is not permitted in national parks and conservation reserves, but can be permitted on nature refuges provided the exploration activity complies with the management principles of the area.
- South Australia — Exploration and resource extraction are prohibited in reserves dedicated under the *National Park and Wildlife Act 1972* and the *Wilderness*

*Protection Act 1992*, in the Arkaroola protection area and on land reserved for the preservation of heritage and tourism areas (SA DMITRE 2012).

- Western Australia — Exploration leases cannot be granted in a national park or class A nature reserve without the consent of both houses of the Western Australian Parliament (Environmental Defender's Office of Western Australia 2011).
- Tasmania — Land categorised as national parks, state reserves, nature reserves and game reserves is excluded from an exploration licence. Exploration licences can be granted on land categorised as nature recreation areas, state forests and public reserves not yet proclaimed (Mineral Resources Tasmania 2011).
- Northern Territory — Exploration on land declared as a national park or reserve requires the Minister for Mines and Energy to consult with the Minister administering the *Territory Parks and Wildlife Conservation Act 2006* and take into account their opinion before a tenement can be issued.

Other conditions placed on accessing Crown land are to minimise the impact on the activities of existing land users. In South Australia, in the Woomera Prohibited Area — most of the land in this area is South Australian Crown land — a zoning system is used which limits the number of days per year exploration activities are permitted in each zone. For example, the exclusion periods for 2012–2013 require that in the 'continuous defence use zone' all exploration is prohibited apart from government geological surveys collecting pre-competitive geoscientific data. In other zones, mineral and resource exploration and production is excluded from between 14 to 70 days in a year. These arrangements are agreed by a joint Australian and South Australian Government coordination office established to administer non-defence use of the Woomera Prohibited Area (Woomera Prohibited Area Coordination Office 2012).

The conditions surrounding access to Crown land leased for pastoral purposes more closely resemble the conditions placed on explorers to access private land (see below). There are also codes of conduct in place for exploration on pastoral leases and provisions to make good any damages resulting from exploration activities.

## Native title

The native title regime provides a further overlay to land access for explorers. The native title regime provides for Indigenous communities to claim their native title rights and interests in the land through the *Native Title Act 1993* (Cth) (NTA). Indigenous people can be granted exclusive possession of, or limited access to, their

traditional lands for a wide range of purposes that could include hunting, fishing, medicine, accommodation, religion and culture.

The NTA also provides the mechanisms for processing future acts, such as the granting of an exploration licence which may affect native title rights. The NTA is designed to allow a cooperative regime between the Australian Government and the states and territories. While states and territories can elect to use the Australian Government's native title regime, the NTA also enables them to enact complementary regimes provided they are consistent with the requirements of the NTA.

In effect, the native title regime requires explorers to have negotiated an agreement with any native title holders and registered claimants to enable an exploration permit or licence to be issued. If the relevant parties cannot reach agreement through negotiation after six months, any party may apply to the National Native Title Tribunal (or other recognised body) for a determination. The NTA provides native title holders and registered claimants with a 'right to negotiate' with those seeking an exploration tenement, but it does not provide a right to veto exploration.

### Aboriginal freehold land in the Northern Territory

Access arrangements for exploration on Aboriginal freehold land in the Northern Territory provide the land owners with effective veto rights over exploration.

The *Aboriginal Land Rights (Northern Territory) Act 1976* (Cth), enables traditional owners to refuse access to exploration activities. If refused, the exploration licence is placed in moratorium for five years after which the applicant can reapply. Alternatively, the relevant Land Council can apply at any time to recommence negotiation (Northern Territory Department of Primary Industry, Fisheries and Mines 2006; Northern Land Council 2012).

### Private land

Access to private or freehold land for exploration varies by jurisdiction. However, in general terms, there are a number of common features across jurisdictions. These include:

- a requirement to notify the landholder prior to the commencement of exploration
- the negotiation of an access agreement between the landholder and the explorer which determines the terms and conditions of access

- compensation payable by the explorer to the landholder for any loss arising from the exploration activities
- arbitration where landholders and explorers are unable to come to an agreement over land access and, failing that, recourse through the relevant court or tribunal.

Further details of the land access arrangements relating to exploration on private land are discussed in box 4.1.

In each jurisdiction, exploration is prohibited within specified distances of buildings, bores, dams and other improvements. Land holders generally do not have the right to veto exploration activities on land outside of these prohibitions. However, in some jurisdictions, high-value agricultural land is also protected either by providing the land holder with additional property rights over specified agricultural land or through the use of specific legislation or planning policies.

For example, in South Australia, the *Mining Act 1971* requires land holder consent for exploration on cultivated land, orchards, plantations and vineyards. This usually requires the explorer to reach an agreement with the land holder over compensation and other conditions. Where no agreement is reached, the explorer has the option of seeking a determination through the Environment, Resources and Development Court (PIRSA 2011).

In Western Australia, farmers have an effective veto right on exploration for minerals on agricultural land. The Western Australian *Mining Act 1978* requires the written consent of both the owners and occupiers of the land before an exploration or mining tenement can be granted on agricultural land used for cropping or pasture. This consent only applies to land down to 30 metres below the natural surface of that private land.

Oil and gas tenements are treated differently. The Western Australian *Petroleum and Geothermal Energy Resources Act 1967* limits the requirement to obtain the land holder's consent. Consent is only required from the land holder for exploration on those properties less than 2000 square metres in area, burial grounds and cemeteries and within 150 metres of reservoirs or substantial improvements (Bodenmann et al. nd); (Western Australian Farmers Federation 2011).

Box 4.1 **Accessing private land for exploration**

**New South Wales:** The *Mining Act 1992*, the *Petroleum Act 1991* and the *Environmental Planning and Assessment Act 1979* regulate access to private land in New South Wales. Explorers are required to have negotiated a land access arrangement with the land holder before entering the land. These arrangements cover issues such as where the exploration will occur, at what times of the day and year, for how long and under what conditions as well as any special terms and conditions agreed to between the parties. Land holders are also entitled to compensation for any loss arising from exploration on their land and reimbursement for a set amount to cover any legal fees incurred in making the access arrangement. Where arrangements cannot be reached there is scope for arbitration and, failing successful arbitration, there is recourse through the Land and Environment Court. There is also provision in the legislation that requires land holder consent to allow exploration activities within certain distances of buildings, gardens and significant improvements.

**Victoria:** Access to private land is mainly regulated through the *Mineral Resources (Sustainable Development) Act 1990* and the *Petroleum Act 1990*. Written consent from the land holder is required prior to the exploration commencing and a compensation agreement is required to be registered. For low impact exploration, informed verbal consent is sufficient. For exploration activities that involve ground disturbance, a works approval and a rehabilitation bond are required. Compensation may be payable for loss of amenity, use of land, damage to land or depreciation of land value or any other agreed matter. Where the parties cannot agree to access or compensation, either party can take the matter to the Victoria Civil and Administrative Tribunal (VCAT) or can seek to take the matter to the Supreme Court.

**Queensland:** The Queensland Land Access Code regulates land access under all Queensland resource Acts (*Mineral Resources Act 1989, Petroleum and Gas Production and Safety Act 2004, Petroleum Act 1923* and the *Geothermal Energy Act 2010*). It places mandatory conditions on explorers and land holders and provides best practice guidelines. For example, the Code places mandatory conditions on explorers in relation to access points, roads and tracks, weeds and pests, damages to livestock and property and items being brought onto the property. Under the code, preliminary exploration activities (low impact exploration) only require the explorer to provide 10 days' notice before initial entry. More advanced activities require a Conduct and Compensation Agreement to be completed with the land holder before an explorer can access the land. Compensation is payable for damage and loss of land, severance of land and reduction in land value as well as the land holder's legal fees. Dispute resolution includes a graduated process of arbitration through departmental officers, independent third parties and, finally, to the Land Court.

(continued next page)

Box 4.1 continued

**South Australia:** Land access arrangements in South Australia are regulated under the *Mining Act 1971* and the *Petroleum Act 2000*. Authorisation to enter private land can be provided through the written agreement of the land holder or by the serving of a statutory form. Land holders are entitled to seek compensation for economic loss, hardship and inconvenience due to exploration activities and for costs incurred in negotiating the agreement. Dispute resolution is provided through the Warden's Court. There are also 'exempt land' provisions in the legislation which require the land holder to provide approval before exploration can commence in these areas. Exempt land is generally cultivated land, vineyards or orchards, or land within a defined proximity of a structure.

**Western Australia:** The *Petroleum and Geothermal Energy Resources Act 1967* and the *Mining Act 1978* provide the legislative underpinning of the land access arrangements. For low-impact exploration, access can proceed on the issuing of an access permit by the Mining Warden or the Department of Mines and Petroleum. This allows access for 30 days. For more invasive exploration activities, the explorer is required to seek the consent of the land holder and negotiate an access agreement to establish the timing, duration and extent of the exploration and for compensation for any damages or depreciation in land values. Dispute resolution is undertaken by the Mining Warden.

**Tasmania:** The *Mineral Resource Development Act 1995* sets out the access arrangements for exploration on private land. No formal agreement is required before exploration commences on private land and the exploration licence holder is only required to give 14 days' notice to the land holder. However, if the exploration activity is likely to involve ground disturbance, departmental officers organise discussions between the land holder and the explorer. Officers from the Department of Infrastructure, Energy and Resources are generally involved in the oversight of exploration activities on private land and to ensure that the exploration activities adhere to the work program approved by the Department. Land holders can object to the granting of an exploration licence and, where mediation fails, the matter is referred to the Mining Tribunal. Compensation is payable to the land holder for any loss of use, severance or damage caused by the exploration or other matters negotiated between the parties.

**Northern Territory:** Most private land in the Northern Territory is restricted to cities and towns. Outside of the urban areas, around half of all land is Aboriginal land and the other half is Crown Land under pastoral lease.

*Sources*: NSW DTI (2012); Vic DPI (2010a); Queensland Department of Employment, Economic Development and Innovation (2012); PIRSA (2011); CMEWA (2011); WA DMP (2011); Department of Infrastructure, Energy and Resources, Mineral Resources Tasmania (2009); Northern Land Council (2012).

In other jurisdictions, specific legislation and planning policies have been introduced to protect high-value agricultural land. For example, in Queensland,

Strategic Cropping Land legislation requires that any development activities, including exploration, taking place on such land are required to be assessed by the Queensland Department of Natural Resources and Mines as to the permanent impact on the land.

## 4.2 National parks and conservation reserves

National parks and conservation reserves protect specific bioregions, maintain plant and animal diversity, protect rare and threatened species and preserve specific natural and cultural heritage. As noted in section 4.1, jurisdictions vary in their procedures for approving exploration access to parks and reserves.

### Declaration of new parks and reserves

Jurisdictions use multiple, but varying, criteria to decide whether to declare a national park or conservation reserve. In general terms, however, they include the conservation values of the area, its natural diversity, its uniqueness, existing cultural heritage features, the degree of disturbance to the area and whether the shape and size of the area are appropriate for its intended purpose.

There is also variation in how governments use these criteria to evaluate the wider costs and benefits of declaring a national park or conservation reserve, as there is in the scope and focus of consultation. For example:

- In Victoria, prior to declaring a national park, the Minister is provided with independent advice from the Victorian Environmental Assessment Council (VEAC) as to alternative land uses. This advice is developed following a public investigation process (VEAC 2012).
- In New South Wales, where conducted, a regional assessment provides for the impact of a new national park on the local community to be considered (NSW Parliament 2013). The National Parks and Wildlife Service consults with other government agencies that may have an interest in the land proposed as a national park or reservation. Industry bodies such as the NSW Minerals Council may also be consulted.
- In Queensland, there are consultations with interested government departments and other stakeholders before a national park is gazetted (Queensland Department of National Parks, Recreation, Sport and Racing 2011).
- The Australian Government, when establishing marine reserves, consults with industry, the community and scientific experts. They also provide for the

> Australian Bureau of Agricultural and Resource Economics and Sciences to assess the social and economic impact of creating a reserve (SEWPaC 2012b).

Some participants to this inquiry raised concerns about these decision-making processes and about the regulations governing access to parks and reserves for exploration. For example, the Minerals Council of Australia (MCA) had general concerns with how decisions are made that limit access to land for exploration. In particular, they referred to:

- the failure of governments to appropriately assess all land values in an area and to engage relevant stakeholders in the decision-making framework;
- the lack of reference to multiple and sequential land use options in land use decision making processes. (sub. 27, p. 27)

The Standing Council on Energy and Resources (SCER) has developed guiding principles under a Multiple Land Use Framework. In relation to ensuring the best use of resources, the Framework states:

> Governments should seek to maximise the economic and social benefits of regulated land use for all Australians and future generations through encouraging the multiple use of regulated land, while respecting and protecting environmental, cultural and heritage values. (SCER 2012c, p. 11)

The Framework also recommends that decisions on land use should be evidence based, use risk-based approaches that make clear the consequences of different land uses, and involve the participation of the community and affected land holders (SCER 2012c). The Multiple Land Use Framework is outlined in box 4.2.

The principles underpinning the Framework can be used to inform assessments on whether or not to declare an area of land as a national park or conservation reserve. Any assessment should weigh up the costs and benefits to all Australians of the use of the land as a park or reserve (including any permitted shared use) against the costs and benefits of alternative land uses. Again with reference to the Framework, any assessment should be conducted in a consultative and transparent manner and involve participation of local communities and land holders and other interested and affected parties. Only then should declarations include prohibitions on other land uses.

### Box 4.2 The Multiple Land Use Framework guiding principles

**Coexistence:** The rights of all land users and the potential of all regulated land uses should be acknowledged and respected, while ensuring that regulated land is not restricted to a sole use without considering the implications or consequences for other potential land uses, and the broader benefits to all Australians.

**Best use of resources:** Governments should seek to maximise the economic and social benefits of regulated land use for all Australians and future generations through encouraging the multiple use of regulated land, while respecting and protecting environmental, cultural and heritage values.

**Coordinated preparation informed by effective planning:** Governments should coordinate planning (involving government and industry) to recognise the community's expectations and capacity to adapt to land use change. Effective regional-scale planning establishes clear spatial parameters for multiple and sequential land use over time, providing community and investor certainty while retaining the flexibility to adapt to change.

**Tailored participation of communities and land holders in decision making on land use change:** Participation of communities and land holders should be tailored, targeted and timely. Genuine participation involves communities having the capacity to shape how land use change occurs. Directly affected land holders should be meaningfully informed and consulted in a timely way on multiple land use options and potential for coexistence to promote a greater understanding of mutual benefits and to resolve concerns.

**Engagement and education are paramount to informed debate:** Open and constructive debate and analysis of different multiple land use options should be informed by facts. Stakeholders should be genuine in their willingness to listen and appreciate the views, concerns and needs of other land use stakeholders.

**Decision making:** Evidence based decision making on land use should be informed by risk-based approaches that make transparent the consequences of different land uses. Accountabilities regarding decision making should be clear and enduring.

**Efficient processes:** Governments should work towards streamlined, transparent and consistent legislated approvals processes in which land access for multiple use is handled in accordance with risk. This includes ensuring that processes define multiple and sequential land use of cross-cutting issues (water, heritage and cultural values) based on the best available evidence and sustainable development principles.

**Access to relevant information:** Relevant information about land and resource capability and values, current and proposed multiple and sequential land use, and land management performance should be accessible to all stakeholders.

*Source*: SCER (2012c).

## Assessing proposals to explore in parks and reserves

The Framework principles can also be used for assessing proposals for exploration in parks and reserves, where jurisdictions allow for consideration of such activity. The assessment process, in drawing on the Framework principles, should undertake a risk-based analysis of the impacts of the various exploration activities on areas of environmental and heritage significance:

> Evidence-based decision-making on land use should be informed by risk-based approaches that make transparent the consequences of different land uses. (SCER 2012c, p. 11)

The Tarkine National Coalition drew attention to the significant differences in impact of the various forms of exploration activity:

> Early stages of mineral exploration, including aerial reconnaissance, surveys and mapping and stream sampling, cause little environmental disturbance. However, the later stages of exploration, which involve cutting of grid lines, and drilling at certain sites, involves the clearing and disturbance of vegetation and the construction of access tracks for drilling equipment. (Tarkine National Coalition 2012)

Gaps in geoscience knowledge can limit the ability of governments to consider the benefits of other land uses in areas where pre-declaration exploration was incomplete or where subsequent exploration is prohibited. The Association of Mining and Exploration Companies (AMEC) argued:

> Restricted access to the conservation estate leaves significant gaps in our knowledge of our mineral resources. AMEC is aware of an example where a series of aerial surveys excluded a conservation estate resulting in a blank spot in the data set. Aerial surveys are a low impact exploration activity. (sub. 24, p. 19)

The Commission considers that restrictions on access to parks and reserves should be proportionate to the likely level of impact of that activity on the environmental and heritage values of the park or reserve as well as on other shared users, such as tourism operators and park visitors. A risk-based approach to access would preserve the values of the park or reserve and, where appropriate, provide wider benefits to the community from additional activities having access to that land. The Commission endorses the view that:

> Governments should work towards streamlined, transparent and consistent legislated approvals processes in which land access for multiple use is handled in accordance with risk. This includes ensuring that processes define multiple and sequential land use of cross-cutting issues (water, heritage and cultural values) based on the best available evidence and sustainable development principles. (SCER 2012c, p. 11)

DRAFT RECOMMENDATION 4.1

***Drawing on the guiding principles of the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources, Governments should, when deciding to declare a new national park or conservation reserve in recognition of its environmental and heritage value, use evidence-based analyses of the economic and social costs and benefits of alternative or shared land use, including exploration.***

***Governments should, where they allow for consideration of exploration activity, assess applications by explorers to access a national park or conservation reserve according to the risk and the potential impact of the specific proposed activity on the environmental and heritage values and on other users of that park or reserve.***

## 4.3 Native title and Aboriginal freehold land

### Native title

There have been concerns raised by explorers that the native title negotiation process can be lengthy and complex and can often involve multiple parties, which in turn can lead to significant delays in gaining access to land.

The Australian Institute of Mining and Metallurgy said:

> Where native title agreements are in place and publicly documented, minerals explorers can successfully access land by entering into Indigenous Land Use Agreements. However, where claims are before the courts, difficulties can be experienced in accessing information and in the negotiation process. Many explorers struggle with the regulatory burden placed upon them in relation to native title. Much of the cost is borne before explorers are able to determine whether recoverable mineral resources are present. This presents a significant disincentive to minerals exploration where there is uncertainty about native title status. (sub. 12, pp. 6–7)

The Association of Mining and Exploration Companies (AMEC) commented:

> Despite the fact that the *Native Title Act 1993* (Cth) is nearly 20 years old, AMEC understands there are still approximately 450 native claims throughout Australia requiring resolution. Various attempts have been made by governments to streamline the process, however more work needs to be done to reduce the current timeframes and subsequent costly delays. (sub. 24, p. 13)

The Government of Western Australia noted that while there had been a significant increase in average times taken to grant an exploration licence in Western Australia

following the introduction of the native title regime, delays are now back to levels similar to those in the early 1990s:

> Prior to the introduction of the Commonwealth *Native Title Act 1993* (NTA), in 1994, the average time taken for the grant of an exploration licence in WA was 205 days. After 1994, the average time increased to 542 days. Timelines are now around 200 days but there is a growing cost to industry to achieve this. (sub. 29, p. 3)

A related issue is that the interaction between the native title regime and the protection of Indigenous heritage adds further complexity to land access. This is discussed in chapter 5. The terms of reference for this inquiry specifically precludes the Commission from making an assessment of the impacts of native title arrangements on exploration.

## Aboriginal freehold land

The Aboriginal freehold land tenure in the Northern Territory provides for right of veto over exploration by land holders. The Northern Territory Department of Mines and Energy said:

> Resource companies seeking to work in the Northern Territory are faced with unique legislation in the form of ALRA [*Aboriginal Land Rights (Northern Territory) Act 1976*], which applies to approximately 50% of the Territory. Under this Act, Aboriginal clan groups hold inalienable freehold rights to the land and can veto mining. (sub. 2, p. 3)

The Department was critical of the impact of this legislation on exploration:

> … the *Aboriginal Land Rights [Northern Territory] Act 1976* (ALRA) is considered to be the foremost non-financial barrier to exploration in the Northern Territory. …
>
> As at 31 January 2013, there were 815 outstanding exploration licence applications, of which 282 were in moratorium (compared with 212 outstanding exploration applications on non-Aboriginal freehold land). (sub. 2, p. 2)

This legislation, including Part IV of the Act which deals with exploration and mining, has been subject to several reviews which, among other things, addressed access to Aboriginal freehold land. In response to the various findings, the legislation was amended in 2006 to introduce negotiating periods and timelines for the negotiations between Aboriginal land owners and access seekers. The amendments required a further review of Part IV after five years. This review is currently being undertaken by the Aboriginal Land Commissioner and the report is yet to be released (FaCHSIA 2012).

There has been, and continues to be, scrutiny of the *Aboriginal Land Rights (Northern Territory) Act 1976*. However, the impact of this legislation (and state

indigenous land rights) on exploration activity are outside the terms of reference of this inquiry.

## 4.4 Managing conflict between land uses

Some groups in the agricultural sector, and elsewhere in the community, have expressed objection to explorer's rights to access land, in part out of concern that exploration will in turn result in resource extraction activities. They refer to the potential disruption of agricultural activities and negative impact on soil, water availability and water quality.

The view that exploration is a precursor to resource extraction has more validity where the location, scale and quality of the resource is known, such as large coal seams in well-known geological basins. Exploration is undertaken in these areas primarily to prove up the size and quality of the resource and there is high probability that extraction will proceed subject to gaining the relevant approvals.

However, for most resources, only a very small percentage of land on which exploration is undertaken ever proceeds to an extraction operation (DTI NSW 2012). Resource Futures commented that:

> Very few exploration licences transform over time into mining leases, possibly fewer than one in a hundred or even a thousand. (sub. 14, p. 4)

In the case of exploration and agriculture, the exploration activities of the licensee (the holder of the resource rights) can impact on the property rights of a land holder or lessee (the holder or user of the surface rights). As the Association of Mining and Exploration Companies (AMEC) said:

> Landholder rights relate to the use of the surface of the land. However access to those mineral rights often means infringing on the rights of the landholder. Therefore negotiation between the owner of the mineral rights and the landholder rights takes place such that the infringement on the rights is appropriately compensated. (sub. 24, p. 8)

The potential for conflict between exploration and agricultural activities tends to rise with the intensity of land use and the magnitude of the potential impact. In sparsely stocked grazing areas land holder concerns about exploration activity on their land are not as great as in areas where land is intensively cropped and irrigated. Resolution is normally reached through negotiated agreements between land holders and explorers as to the conditions of access and the compensation payable to the land holder. These agreements are common in all agricultural areas. For example, nearly 3500 land access agreements had been negotiated between land

holders and CSG companies across the Surat and Bowen basins in Queensland as at 2012 (APPEA 2012).

Early consultations between the explorer and the land holder as to the scale and scope of the proposed exploration prior to any formal negotiations commencing are important in diffusing any potential conflict. In highlighting the importance of the initial contact between explorers and land holders, the Minerals Council of Australia, Victorian Division said:

> … it is accepted that the first approach to a landowner should be in person and at the front door where the project can be explained and the intentions of the explorer discussed. (2011, p. 34)

## The land holder's perspective

One of the sources of land holder concerns is uncertainty. Uncertainty may relate to whether exploration will result in resource extraction, over the potential impacts of exploration activities on agricultural production and to how farmers plan their future agricultural activities.

There was also some concern from land holders that the legislation places limits on what the compensation payments cover. Some participants argued that the loss of visual amenity in regard to the location of exploration wells and the time and stress of dealing with explorers proposing to access their property should be compensable (sub. 18). The NSW Farmers Federation, for instance, was concerned that compensation in that state for legal costs was capped and limited to the initial stages of the negotiation of an access agreement (sub. 21).

There are also calls for compensation to take into account the involuntary nature of the arrangements on the land holder's part as it is the explorer who initiates the arrangements (SSCRAT 2011). The Basin Sustainability Alliance (sub. 18) similarly noted the involuntary nature of the arrangements.

## The explorer's perspective

Some explorers argued that the restrictions on their ability to access all the available land on an exploration lease, such as land near structures and on land used for certain agricultural purposes, limits their property rights relative to the those of the land holder. SACOME said:

> Contrary to the perception that the rights of exploration companies exceed the importance of food and fibre production and that farmers have little option but to agree to this 'interference', mining legislation does give farmers options and does protect

> farmland (i.e. the exempt land provisions in section 9 of the *Mining Act 1971*). (sub. 9, p. 5)

Explorers have pointed out that exploration activities generally have a low impact on the surrounding environment. SACOME commented:

> Exploration and farming are not necessarily mutually exclusive. Early exploration activities are relatively flexible and short lived, involve relatively few people, mobile equipment and can be managed so that activities occur outside critical farm programs or the cropping season. (sub. 9, p. 4)

The Queensland Resource Council considered that the land access framework contained in the Queensland Land Access Code — the Code contains both mandatory conditions for explorers as well as voluntary guidelines — focused on maximising compensation rather than on building effective working relationships between resource companies and land holders:

> Unfortunately, a perverse outcome of Queensland's land access laws is that the land access process has become focused on maximizing compensation with little priority on building effective working relationships to ensure there is a minimal impact on the landholder business or enjoyment of the land. (sub. 13, p. 3)

## Negotiations between explorers and land holders

In general, across jurisdictions, agreements are reached between explorers and land holders through negotiations on the conditions of access and the compensation payable to the land holder. The requirement to provide compensation for any damage or loss of earnings gives the explorer a financial incentive to minimise the impact of their activities.

As noted by the Senate Standing Committee on Rural Affairs and Transport (SSCRAT 2011), land access is based on a business arrangement between two entities, both with legal rights and reasonable expectations. Such arrangements can be assisted through early consultation between the parties to ensure the land holder is aware of the nature and extent of the proposed exploration prior to entering into negotiations. Where negotiations break down, there is recourse to the relevant Land Court or Mining Court to seek enforceable outcomes.

Land Court or Mining Court decisions are limited to the conditions of access and compensation matters and not to the explorer's access to the property as such. The rights generally conferred on land holders over their land do not provide for them to deny access to exploration activities, but only to negotiate the conditions of access.

However, it appears that few access-related matters end up being determined in the relevant Mining or Land Court. SACOME said:

> The ERD [Environment, Resources and Development] Court has the powers to authorise access, subject to conditions and make determinations relating to compensation. However since 1994 there are very few examples of companies seeking such orders either from the ERD or Wardens Courts. (sub. 9, p. 5)

That few matters are referred to the relevant court process may indicate that, from the explorer's perspective, court action could be detrimental to establishing good relations with the land holder and to acquiring a 'social licence' to operate from the broader community. This is discussed further in section 4.5.

Most rural land holders are at some disadvantage in undertaking negotiations with explorers. There is an asymmetry of experience as most land holders will have little or no previous experience in negotiating access agreements and compensation — such negotiations will most likely be a 'one-off'. There is also an asymmetry of information regarding the potential impact of the exploration activity. The land holder will have limited knowledge and experience from which to evaluate the impact of exploration activities on rural land.

Further, there is an imbalance of power due to the involuntary nature of the negotiations. In most jurisdictions the legislative framework requires land holders to allow explorers to access their land, subject to the negotiated terms and conditions of the access agreement.

The regulatory framework in Western Australia is the exception to this imbalance of power. Western Australian legislation requires the consent of the individual land holder to mineral exploration on land used for cropping or pasture. Bodenmann et al. (nd) claimed that the Western Australian legislation has provided an avenue for land holders to negotiate substantial payments with resource companies, with compensation more likely to reflect the value of the resources than the value of personal disturbance and the agricultural activity that has been displaced.

A number of jurisdictions explicitly require explorers to compensate land holders for the legal costs of assistance with negotiations (in addition to the compensation payable by the explorer for any loss or damages resulting from the exploration activities). Under the New South Wales, Queensland and South Australian regimes there is specific reference to the financial compensation available to the land holder. The Western Australian *Mining Act 1978* provides for reasonable legal or other costs of negotiation for private land under cultivation. In Victoria and Tasmania, although there is no specific reference to such compensation in the legislation, the provision of such compensation is not 'ruled out'.

Given the asymmetries in experience and information and the involuntary nature of the negotiations, the Commission considers that compensation should be available to meet the reasonable legal costs incurred by land holders in making any access agreement.

All jurisdictions should ensure that the guidelines and information provided to land holders explicitly state that such compensation is available.

DRAFT RECOMMENDATION 4.2

***State and territory governments should ensure that land holders are informed that reasonable legal costs incurred by them in negotiating a land access agreement are compensable by explorers.***

## Coal seam gas

Exploration for coal seam gas (CSG) is an activity where various land holder and other community groups have expressed concerns over land access. These concerns relate to the potential for contamination of groundwater, reduction in groundwater and the safe disposal of waste water on the surface. There is also concern as to the impact of gas wells and other related infrastructure on agricultural activities, particularly on intensively cropped land. In residential and urban areas the concerns tend to focus on subsidence, issues of amenity and contamination of groundwater resources in those areas where household water is sourced from groundwater.

Many people in the community do not differentiate between CSG exploration and CSG extraction, as both involve extensive drilling over large areas.

The CSG industry, unlike other resource activities, does not have a long history in Australia. It has been operating in Queensland since 1996 and is beginning to expand in New South Wales. In 2012, Queensland had nearly 4000 active CSG wells compared to just under 250 in New South Wales (APPEA 2012). In Victoria, the other jurisdiction potentially affected by CSG developments, there has been a moratorium on the issue of further CSG exploration licences since 2012 and there is currently no CSG extraction taking place in Victoria (Ballieu 2012). Exploration has been undertaken in other jurisdictions, but extraction has yet to commence.

The *Energy White Paper* (DRET 2012c) noted that most of the areas, and therefore the land holders and communities, where CSG exploration and extraction is now occurring have had little previous involvement with the resource sectors.

In Queensland, until more recently, CSG activity has been on land primarily used for grazing and broad acre cropping activities and there has been much less

opposition. However, as CSG development has extended onto more intensively cropped land on the eastern Darling Downs, opposition to CSG has also increased (Basin Sustainability Alliance, sub. 18). The Queensland Department of Natural Resource and Mines advised that:

> In Queensland the experience has been that a boom in CSG and coal exploration in more closely settled, and higher value agricultural areas of the Darling Downs has seen concern levels heightened with agricultural stakeholders and landholders. This is also compounded by the fact that unlike some other parts of the State (North West Queensland, Bowen Basin) there is not a significant history of co-existence of the two sectors. (sub. 25, p. 17)

In New South Wales, CSG development has been on land used for intensive agriculture activities and on closely settled land. CSG development has centered on the Hunter Valley land that is widely used for wine production, tourism and horse breeding as well as in south-west Sydney in proximity to residential areas. Further exploration is also being undertaken in northern New South Wales in the Gunnedah Basin as well as in north-eastern areas of the state in the Clarence Moreton basin.

### *Different regulatory approaches*

There are different approaches to the regulation of CSG development in Queensland and New South Wales. Queensland has mostly relied on generic resource and minerals regulation whereas in New South Wales there has been a focus on introducing regulation specifically directed at CSG exploration activities. However, both jurisdictions have established government bodies to specifically deal with CSG-related issues.

Under the Queensland Land Access Code (see box 4.1), land holders retain veto rights over all exploration activities on land within 100 metres of buildings and within 50 metres of a stockyard, bore, dam, other water storage or place of burial. Queensland has also established urban restricted areas which prohibits all resource activity without the written consent of the relevant local government. These areas cover all towns with a population of over 1000, include a 2 kilometre buffer zone and are to be integrated into the planning system (Queensland Department of Employment, Economic Development and Innovation 2011).

In April 2013, the Queensland Parliament passed legislation to establish an independent statutory body, the Gas Fields Commission, to manage and improve coexistence between rural land holders, rural communities and the CSG industry. Its Commissioners are drawn from community leaders and rural land holders in areas where the CSG industry operates and includes gas industry representation. The

Commission has no regulatory or policy role, although it can provide advice on proposed legislation for the onshore gas industry (Gas Fields Commission 2013).

The New South Wales Government, in September 2012, announced a strategic regional land use policy containing a number of specific measures to regulate land access by CSG explorers and other CSG-related activities. This is in contrast with the generic regulatory response by the Queensland Government. A Land and Water Commissioner has been created in New South Wales to oversee implementation of a standard CSG land access agreement and advise on access issues.

Other requirements targeted at CSG exploration in NSW included the requirement for an Agricultural Impact Statement to be undertaken at the exploration stage to detail the impact of the activity on agricultural resources, farm businesses and regional communities. An Aquifer Interference Policy has also been introduced, requiring exploration activities taking in excess of 3 megalitres of water per year to hold a water access licence, as well as new drilling codes for CSG exploration and a draft code of practice for CSG explorers (New South Wales Department of Planning and Infrastructure 2012).

In February 2013, the New South Wales Government announced additional regulatory measures. They included a 2 kilometre exclusion zone around residential areas for new CSG exploration and production, exclusion zones for specific land uses such as viticulture and horse breeding and the establishment of a specialist regulator, the Office of CSG Regulation (O'Farrell 2013).



### *Concerns surrounding CSG regulation*

The recent changes to the regulation of CSG activities in New South Wales have attracted criticism from some participants to this inquiry. The NSW Minerals Council advised that a number of these changes, such as the introduction of the Agricultural Impact Statements, had been made with little consultation or communication with industry:

> An example was the introduction of the requirement for an Agricultural Impact Statement for activity approvals from the day the policy was announced. This applied to all approvals (even those where all the application documentation had been submitted) and guidelines on the requirements for the Statement were not released for over two months following the policy announcement. (sub. 11, p. 5)

The Australian Petroleum Production and Exploration Association (APPEA) commented that the introduction of the exclusion zones for specific land uses such as viticulture and horse breeding was reactive and without any scientific basis:

> Decisions relating to exclusion zones are often politically driven (e.g. urban exclusion zones in Queensland and NSW, critical industry clusters in NSW) or based on anecdotal views or non-scientific grounds. (sub. 22, p. 17)

However, environmental groups such as the Nature Conservation Council of New South Wales called for further action:

> The government must seize the opportunity to respond to well-founded community concerns about unrestrained mining and gas expansion by placing a moratorium on CSG development and delivering real protection for public health, water resources and natural areas. (Nature Conservation Council of New South Wales 2013, p. 1)

### *An evolving regulatory framework*

The regulatory frameworks governing CSG exploration have been changing quickly. These changes stem from the pressures generated by the rapid expansion of the industry, uncertainty as to the impacts of CSG activities and concerns and opposition from some parties. Strongest opposition to resource exploration (and extraction) is usually from a number of the land holders directly impacted and some special interest groups. Little opposition or support has been expressed by the broader community, where any potential benefits, such as taxation and royalty payments, would be more widely dispersed.

Faced with these pressures, governments have searched for appropriate regulatory responses. The Australian, New South Wales and Queensland governments have commissioned a range of research into the environmental impacts of CSG exploration and extraction to inform improvements with the regulation of CSG. For example, an expert Committee on Coal Seam Gas has been established under the EPBC Act to provide independent scientific advice to governments. The National Water Commission is examining effects on groundwater. CSIRO, in conjunction with the gas industry, is undertaking a range of research on CSG activities. The Queensland Water Commission is developing regional groundwater models. Further research activities have been announced, such as the review by the New South Wales Chief Scientist and Engineer to identify any gaps in the known risks arising from CSG activities on human health, the environment and water catchments (O'Farrell 2013).

Governments are also improving their regulatory practices in relation to CSG activities. The Standing Council on Energy and Resources (SCER) has developed a framework of best practice CSG regulation to guide regulators, as well as the afore-mentioned Multiple Land Use Framework (box 4.2).

SCER's framework of best practice CSG regulation provides guidance on what constitutes leading practice in the core areas of well integrity, water management and monitoring, hydraulic fracturing and chemical use. This framework emphasises the importance of regulatory regimes to be informed by scientifically-driven evidence and reflect a risk-based approach to managing concerns (SCER 2012c).

The Commission supports efforts to improve the regulation of CSG exploration. Further regulatory changes should be based on the best available evidence of the impacts and be appropriate to the level of risk. As set out in the agreed Multiple Land Use Framework (box 4.2), land use decisions should be directed towards promoting the economic, environmental and social benefit of the use of the land for the whole community, including at the state and national level.

DRAFT RECOMMENDATION 4.3

***Governments should ensure that the development of coal seam gas exploration regulation is evidence-based and is appropriate to the level of risk. The regulation should draw on the guiding principles of the Multiple Land Use Framework endorsed by the Standing Council on Energy and Resources to weigh the economic, social and environmental costs and benefits for those directly affected as well as for the whole community, and should evolve in step with the evidence.***

## 4.5 Social licence to operate

Throughout the course of this inquiry, the Commission has been informed of the need for explorers to achieve a social licence to operate (SLO). A SLO is not a regulatory requirement, but refers to community acceptance:

> An operation is said to have a social licence when it achieves ongoing acceptance or approval from the local community and other stakeholders who can affect its profitability. (CSIRO 2012, p. 1)

While most explorers understand the importance of a social licence, the Commission is aware of situations where explorers or their subcontractors have lacked the skills or motivation to obtain a social licence. On Common Ground Consultants (2007) identified a number of reasons why this may be the case:

- In the past, it has been considered unnecessary for explorers to invest in activities not central to finding resource deposits, especially given limited capital.
- The training and experience of personnel who work in resource exploration is heavily weighted towards technical and scientific knowledge, with a lesser knowledge of social and socio-economic matters. Many of the workers are also

employed on a temporary subcontract basis and may have little incentive to develop and maintain relationships with the local community.

- Some (mainly junior) explorers view their work as transitory, selling on the rights to any discoveries they find, and therefore view a SLO as unimportant.
- In the past, explorers have had a need for secrecy and transparent discussions with stakeholders were viewed as being detrimental to this requirement.

Maintaining good working relations with neighbouring land holders and the wider community is good business practice, and the breakdown of such relationships can hamper exploration.

> One global trend that has evolved rapidly over the last five years is the need for a new standard relationship between resource development and the populations directly impacted by the project. … Communities want a voice in their future, to participate from the earliest stages and, for a variety of reasons, feel empowered to demand performance from international companies. Coupled with this is a growing awareness by major companies, banks, and the multilateral financing institutions, that social problems pose significant risks of project disruption and delay, and therefore financial risk. (Thomson and Joyce nd, p. 1)

Ernst and Young (2012) identify the maintenance of a SLO as the sixth highest risk faced by mining and metal companies in 2012-13, ahead of other risks such as price and currency volatility, capital management and access and competing demands for land use.

Through interviews with industry representatives, Lacey et al. explored whether there was a role for government in assisting firms in gaining a SLO and found that:

> … government again was painted as a potentially problematic partner in SLO, with its involvement seen by respondents to complicate matters. (2012, p. 10)

The Commission agrees that the onus to develop a SLO lies with the resource explorers. However, there is merit in governments providing broad guidance on how to pursue a social licence.

### *Recent developments*

In 2005, the Ministerial Council on Mineral and Petroleum Resources (MCMPR 2005) — comprising representatives from the Australian Government and the governments of each state and territory — released *Principles for Engagement with Communities and Stakeholders*. These principles were designed to 'help people in the resources sector improve their engagement skills'.

The principles centre on five core themes and are subsequently expanded to identify good practices for companies to follow when engaging with communities and building a SLO. The five themes are:

- communication — open and effective engagement that involves both listening and talking
- transparency — clear and agreed information and feedback processes
- collaboration — working cooperatively to seek mutually beneficial outcomes
- inclusiveness — recognise, understand and involve communities and stakeholders early and throughout the process
- integrity — conduct engagement in a manner that fosters mutual respect and trust.

The Commission views these principles as a useful foundation for organisations which recognise the need to obtain a social licence to operate, but are seeking guidance as to what constitutes good stakeholder engagement.

# 5 Heritage protection

**Key points**

- While all forms of heritage (historical, natural and Indigenous) can be impacted by exploration, Indigenous heritage policy challenges are the most pronounced.
- All states and territories have dedicated legislation to protect Indigenous heritage. However, there is variation in how Indigenous heritage is defined, how it is protected from resource exploration and who makes decisions on heritage matters.
- Participants raised a number of concerns, at times conflicting, including:
  - inadequate protection of Indigenous heritage
  - overlap between Commonwealth and state/territory legislation
  - inadequate heritage registers and associated information problems
  - costs of conducting cultural heritage surveys, particularly when the area has been surveyed previously
  - delays in identifying, consulting and negotiating with Indigenous parties.
- Recent reforms by various jurisdictions include increased consultation and involvement of Indigenous representatives in heritage decision making, alignment of heritage legislation with native title and increased fines for unintentional damage.
- Overlap between the Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* and state/territory legislation needs to be addressed. Accreditation of state and territory regimes can resolve the issue.
- Building better Indigenous heritage registers is necessary for greater expediency in heritage decisions and for avoiding unnecessary cost.
- Indigenous heritage protection should be based on risk management processes.
  - Where risk of harming heritage is low, a streamlined 'duty of care' or 'due diligence' process will prevent an unnecessary regulatory burden for explorers.
  - Where Indigenous heritage is of high significance, expediency in approvals and agreements is not the primary goal. Rather, the objective is to protect Indigenous heritage while facilitating exploration to the extent possible.
- Negotiated agreements between explorers and Indigenous parties (or third parties) are likely to produce better outcomes for heritage protection than systems which rely on ministerial or departmental authorisation for exploration.
- When harm to heritage cannot be avoided and/or management plans cannot be agreed upon, ministerial (or departmental) decisions to allow exploration to go ahead should be based on clear decision making criteria, transparency and consultation with all parties that have a direct-interest.

This chapter commences with a summary of the types of heritage and their regulatory framework. The main focus of the chapter is on Indigenous heritage issues that relate to exploration. The chapter also discusses historic heritage issues. Natural heritage issues are discussed in chapter 4 (exploration in national parks) and chapter 6 (in relation to the *Environment Protection and Biodiversity Conservation Act 1999*).

## 5.1 The broad regulatory framework

### What is heritage?

Heritage includes artefacts, tools, historical sites, myths surrounding natural features, stories, traditions, languages, events and experiences inherited from the past. It comprises both natural and cultural places with tangible and intangible values. Resource exploration has the potential to damage, destroy or lead to the relocation of some features of heritage or cause indirect pressures, such as loss of access to a heritage place.

The Australian heritage system identifies three types — Indigenous, historical and natural heritage (State of the Environment 2011 Committee 2011, p. 700).

- Indigenous Aboriginal and Torres Strait Islander heritage extends over tens of thousands of years. As well as being historically important, Indigenous heritage is of continuing cultural significance. It has both tangible and intangible dimensions:
  - tangible Indigenous heritage includes material manifestations of life including burial sites, rock art, carved trees, middens and scatters of stone tools
  - intangible Indigenous heritage relates to places where there may be no physical evidence of past cultural activities. It includes places of spiritual and ceremonial significance, landscapes, important waters and trade and travel routes. Significant sites are often associated with stories of the dreamtime or with initiation, mortuary and other ceremonies. Generally, information about such places is passed down orally from one generation to the next.
- Historical places relate particularly to the occupation and use of the Australian continent since the arrival of European and other migrants. It includes remnants of early convict history, pastoral properties and small remote settlements, as well as large urban areas, engineering and mining works, factories and defence facilities.

- Natural heritage refers to land and environmental heritage. It includes areas of land which have aesthetic, historical, scientific or social significance, or other special values for the present and future community. Such places may include national parks, reserves, botanic gardens and private conservancies, as well as significant fauna and flora habitats or geological sites.

## Laws and regulations protecting heritage

Australia has a complex set of laws governing heritage protection. As well as Commonwealth heritage statutes there are heritage Acts in each state and territory. There are also state environmental and development laws and local government by-laws that allow for the protection of heritage places and objects. While all forms of heritage — Indigenous, historical and natural — can be impacted by exploration activities, policy challenges are most pronounced for Indigenous heritage — the primary focus of this chapter.

Heritage protection is primarily the responsibility of the states and territories. Most jurisdictions have both historical and Indigenous heritage Acts while regulation relating to natural heritage is often embodied in environmental protection Acts.

New South Wales and the ACT are the only two jurisdictions that do not have a specific act dedicated to Indigenous heritage. In New South Wales, the *Heritage Act 1977* allows for Indigenous places to be nominated to the New South Wales Heritage Register. Indigenous heritage is also incorporated into sections dealing with archaeological materials in the *National Parks and Wildlife Act 1974*. In the ACT, Indigenous heritage is incorporated into the ACT *Heritage Act 2004* (table 5.1).

Table 5.1 **Principal state and territory heritage legislation**

| *Jurisdiction* | *Principal legislation* | *Administered by* |
|---|---|---|
| New South Wales | *National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996*<br>*National Parks and Wildlife Act 1974*<br>*Heritage Act 1977* | Office of Environment and Heritage |
| Victoria | *Aboriginal Heritage Act 2006*<br>*Heritage Act 1995* | Department of Planning and Community Development |
| Queensland | *Aboriginal Cultural Heritage Act 2003*<br>*Torres Strait Islander Cultural Heritage Act 2003*<br>*Queensland Heritage Act 1992* | Department of Environment and Heritage Protection |
| Western Australia | *Heritage of Western Australia Act 1990*<br>*Maritime Archaeology Act 1973*<br>*Aboriginal Heritage Act 1972* | State Heritage Office<br>Western Australian Museum<br>Department of Indigenous Affairs |
| South Australia | *Heritage Act 1993*<br>*Historic Shipwrecks Act 1981*<br>*National Parks and Wildlife Act 1972*<br>*Aboriginal Heritage Act 1988* | Department for Environment and Heritage<br>Department of the Premier and Cabinet, Aboriginal Affairs and Reconciliation Division |
| Tasmania | *Tasmanian Historic Cultural Heritage Act 1995*<br>*Aboriginal Relics Act 1975* | Department of Primary Industries, Parks, Water and Environment |
| Northern Territory | *The Heritage Act 2012*<br>*Aboriginal Sacred Sites Act 1989* | Department of Lands, Planning and Environment<br>Aboriginal Areas Protection Authority |
| ACT | *Heritage Act 2004* | ACT Heritage |

The Australian Government's role predominantly relates to listing and protecting places with world and national heritage significance. Principal Commonwealth heritage legislation of relevance to resource exploration is summarised in box 5.1.

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act) enables the Australian Government to act as a 'protector of last resort' for Indigenous heritage by responding to requests to preserve important Indigenous areas and objects where it is perceived that state or territory laws have not provided effective protection.

## Box 5.1 Principal Commonwealth heritage legislation

*The **Aboriginal and Torres Strait Islander Heritage Protection Act 1984*** allows the responsible Commonwealth Minister to make a declaration to preserve or protect an area from injury or desecration if satisfied that 'the area is a significant Aboriginal area' and there is a 'serious and immediate threat'. The Act allows for intervention if state and territory laws do not provide effective protection.

The Minister cannot make a declaration unless an Indigenous person or representative has made an application. In making a decision, consideration is given to all relevant information presented by the applicant, affected parties and the relevant state or territory government. The Minister can take into account the financial impact on affected parties if a declaration is made and what is in the national interest. The Minister has discretion and is not required to make a declaration, even if a significant area or object is under threat of injury or desecration.

Any party whose interests might be adversely affected by a declaration (including explorers) must have a reasonable opportunity to comment. If this opportunity is not provided, a person who is adversely affected may seek a judicial review of the Minister's decision in the Federal Court.

In 2004 heritage provisions were introduced in the ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act), replacing the *Australian Heritage Commission Act 1975*. The legislation is administered by the Department of Sustainability, Environment, Water, Population and Communities.

The EPBC Act allows natural, historic and Indigenous places of significance to be recognised under the National and Commonwealth Heritage Lists. The Australian Heritage Council — an independent body of heritage experts advising the Minister on heritage matters — is constituted under the EPBC Act.

The Minister for Sustainability, Environment, Water, Population and Communities decides whether to include a place on the list by following the consultation process set out in the Act. The Minister can also make an emergency listing if an unlisted place which is capable of meeting the criteria for National Heritage listing is under threat.

Once a site is listed, a referral to the Minister must be made under the EPBC Act for actions that are likely to have a significant impact on a declared world, national or Commonwealth heritage site.

The ***Historic Shipwrecks Act 1976***, protects historic shipwrecks and associated relics that are more than 75 years old and in Commonwealth waters. Each of the states and the Northern Territory has complementary legislation which protects historic shipwrecks in state waters, such as bays, harbours and rivers. The Minister can also make a declaration to protect any historically significant shipwrecks or articles and relics that are less than 75 years old.

Source: SEWPaC (2012a).

Heritage legislation at all levels of government provides for a listing process — the process of identifying and recording significant heritage sites. The overwhelming majority of listings occur at the state level, often in response to perceived threats. The main implication of a site being placed on a heritage list is that restrictions apply as to what works can be carried out on the site (section 5.4). In addition to statutory listings, some unofficial lists are recorded by non-government organisations (box 5.2).

### Box 5.2 Lists of significant heritage sites

The **World Heritage List** (maintained by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) includes places of cultural and natural heritage which UNESCO's World Heritage Committee considers to have 'outstanding universal value'.

The **National Heritage list** established under the EPBC Act includes Indigenous, historic and natural places that are of national heritage value to Australia.

The **Commonwealth Heritage List** also established under the EPBC Act, includes Indigenous, historic and natural heritage places that are within a Commonwealth area, or are owned or leased by the Australian Government.

The **Register of the National Estate** lists significant natural, Indigenous and historic heritage places in Australia (originally established under the *Australian Heritage Commission Act 1975).* In February 2012, superseded by the National Heritage List and the Commonwealth Heritage list, the register ceased operating as a statutory register but remains as a publicly available archive.

The **Australian Shipwrecks Database** commenced in 2009 and includes all known shipwrecks in Australian waters.

**State heritage registers** vary between jurisdictions. All states and territories have national parks and reserves. Each state and territory has a statutory list of historic places but the criteria and thresholds for listing vary. In addition, all jurisdictions have registers of Indigenous sites which generally include information about objects and places that have been declared as significant to Indigenous culture and information from heritage surveys such as reports, photographs and maps.

**Local heritage** identification is highly variable. There are many managed local reserves that identified because they have natural heritage significance. Some buildings are protected and some Indigenous places are managed by local governments. Generally, Indigenous heritage is not protected at the local government level.

**Non-statutory heritage lists** are recorded by non-government organisations including the National Trust of Australia, the Institution of Engineers and the Royal Australian Institute of Architects. Despite having no statutory basis, they can be used in decision-making processes.

*Source*: State of the Environment 2011 Committee (2011, pp. 697–699).

Indigenous Australians can also obtain protection for heritage through registered Indigenous land use agreements under the *Native Title Act 1993* and under land rights legislation in each state and territory. The processes under native title and Indigenous land rights Acts, however, are outside the terms of reference for this inquiry.

## 5.2 Indigenous heritage requirements and processes

While all states and territories have enacted legislation to protect Indigenous heritage sites and objects, there is substantial variation in how Indigenous heritage is defined, how it is protected and who decides whether an activity can go ahead if harm to an Indigenous heritage site cannot otherwise be avoided.

There are penalties for unauthorised damage or destruction of Indigenous heritage. In order to avoid prosecution, explorers need to identify whether the area for the proposed activity has heritage significance and, if so, what the appropriate management options are in the relevant jurisdiction. Table 5.2 provides a snapshot of Indigenous heritage requirements for exploration in each state and territory.

### What is protected?

The definition of protected Indigenous heritage varies between jurisdictions (table 5.2). For example, in South Australia protected Aboriginal heritage is broadly defined and includes all Aboriginal sites, objects and remains in South Australia that are of significance to Indigenous prehistory and tradition, archaeology and anthropology (SA DPC 2007).

In New South Wales, protected Indigenous heritage is defined as all Aboriginal objects and declared Aboriginal places. More specifically, Aboriginal objects are defined as physical evidence of the use of an area by Aboriginal people including:

- physical objects, such as stone tools, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps
- material deposited on the land, such as middens
- the ancestral remains of Aboriginal people.

## Table 5.2 A snapshot of Indigenous heritage approval systems for exploration

| *Jurisdiction* | *What is protected* | *Heritage management process for exploration* | *Consultation with Aboriginal parties* | *Decision making* |
|---|---|---|---|---|
| New South Wales | Aboriginal objects and declared 'Aboriginal places'. | Due diligence code of practice with penalties for non-compliance. Permits can be issued where harm to an Aboriginal object or place cannot be avoided. | Consultation with traditional owners, custodians and people with ties to a site. | Permit decisions rest with the Director General of the NSW Office of Environment and Heritage. Appeals can be taken to the Land and Environment Court. |
| Victoria | All Aboriginal places, Aboriginal objects and Aboriginal human remains. | Cultural Heritage Management Plans required for 'high impact' exploration activities. Cultural Heritage Permits required for 'low impact' activities. When a heritage plan or permit is not required a voluntary Cultural Heritage Agreement between the explorer and Aboriginal party(ies) can be created. | Traditional owners or people with historical attachment to an area may be recognised as Registered Aboriginal Parties. | Permits & plans must be approved by the relevant Registered Aboriginal Party (RAP). Where no RAP exists, the Secretary of the Department of Planning and Community Development, or the Aboriginal Heritage Council, may approve the permit or plan. Decisions may be appealed at the Victorian Civil and Administrative Tribunal. |
| Queensland | Blanket protection for areas and objects of traditional, customary and archaeological significance. | Mandatory for major developments which have an Environmental Impact Statement (EIS) to carry out heritage assessments and Cultural Heritage Management Plans (CHMP). When an EIS is not required explorers can:<br>• comply with gazetted duty of care guidelines<br>• negotiate a voluntary CHMP (statutory process) with relevant Indigenous group<br>• negotiate other cultural heritage agreement with relevant Indigenous party<br>• proceed in compliance with native title protection conditions. | Aboriginal parties are identified via the native title system — Registered Native Title Holders, then Claimants, then 'failed claimants' are identified and notified of proposed activities. If there is no native title party, Aboriginal people with a 'particular knowledge' can be identified. | Agreement-making with Indigenous groups is a key approach to meeting duty of care.<br>When agreement cannot be reached a proposed CHMP can be referred to the Land Court. The tribunal will make a recommendation to the responsible Minister who makes the decision. |
| Western Australia | Automatic protection for all places and objects that are important to Aboriginal people because of connections to their culture. | Due diligence guidelines (not statutory) may be used to identify activities which may impact on heritage and to assist in compliance with legislation. Consent from the Minister for Aboriginal Affairs is required to harm any 'Aboriginal site'. An application for consent requires an Aboriginal Heritage Survey report. | No definitive list for consultation. The Aboriginal Cultural Material Committee suggests: determined native title holders; registered native title claimants; informants recorded on the Register; and other Aboriginal persons who demonstrate relevant knowledge. | Decisions on the protection, disturbance or destruction of Aboriginal sites rest with the Minister for Indigenous Affairs after considering recommendations from the Aboriginal Cultural Material Committee. |

Table 5.2 **Continued**

| *Jurisdiction* | *What is protected?* | *Heritage management process for exploration* | *Consultation with Aboriginal parties* | *Decision making* |
|---|---|---|---|---|
| South Australia | Blanket protection of Aboriginal sites, objects and remains that are significant to Aboriginal tradition, archaeology, anthropology and/or history. | A determination decision from the responsible Minister (whether a site is an Aboriginal site as defined by legislation) is required before undertaking exploration. The Minister generally bases the decision on a cultural heritage survey and/or anthropological opinion. Following a determination a proponent can seek authorisation from the Minister to damage, destroy or interfere with an Aboriginal site or object. This process is separate from the determination process. | These groups must be consulted by the Minister before making a determination or authorisation.<br>• The Aboriginal Heritage Committee.<br>• Any Aboriginal organisation with a particular interest in the matter.<br>• Any traditional owners and other Aboriginal persons who in the Minister's opinion, have a particular interest in the matter. | Decisions to damage or disturb an Aboriginal site, object or remains rest with the responsible Minister.<br>Decisions can only be appealed through the Supreme Court of South Australia. |
| Tasmania | Blanket protection of Aboriginal relics prior to European arrival in 1876 for 'protected sites' and 'protected objects'. | Aboriginal heritage assessments are undertaken for exploration activities to determine whether a site has Aboriginal heritage significance.<br>Permits are required prior to any interference with sites of Aboriginal heritage significance. | The interim Aboriginal Heritage Council was established in 2012 to provide a view to the Minister on new permit applications, development proposals and policies, as well as provide advice and recommendations on the protection and management of Aboriginal heritage. | All recommendations and considerations are presented to the Director of National Parks and Wildlife who then makes a recommendation to the Minister for Heritage. Decisions can only be appealed through the Supreme Court of Tasmania. |
| Northern Territory | Blanket protection for sites that are sacred or significant according to Aboriginal tradition. | On non-sacred sites a permit is required to harm Aboriginal heritage.<br>An Authority Certificate must be obtained to undertake work on a sacred site. | The heritage branch requires that Traditional Owners are notified of proposed survey work, where possible involved in fieldwork, consulted and acknowledged for their contribution. On sacred sites, the Aboriginal Areas Protection Authority (AAPA) consults and works directly with custodians. | Permit decisions on non-sacred sites rest with the Minister.<br>The AAPA issues Authority Certificates on sacred sites. A Minister's Certificate can override non-certification by the AAPA. |
| ACT | All Aboriginal places and objects. | If development is likely to impact upon heritage a cultural heritage specialist is employed to consult with each Representative Aboriginal Organisation (RAO). Voluntary heritage agreements are encouraged. | The ACT Heritage Council is required to consult with RAOs. | The Heritage Council advises the Minister for Heritage on heritage places and objects. |

*Sources*: NSW OEH (2011, 2012a, b); Vic DPCD (2013); Qld DATSIMA (2012); WA DAA (2011, 2012a, b); WA DIA/DPC (2013); SA DPC (2007); Transport SA (1999); Aboriginal Heritage Tasmania 2012, Aboriginal Heritage Council 2013; NT DLPE (2012a) and AAPA (2013); ACT ESDD (2011).

In New South Wales, the Minister can also declare an area to be an 'Aboriginal place' if the Minister believes that the place is or was of 'special significance' to Aboriginal culture. An area can have spiritual, natural resource usage, historical, social, educational or another type of significance (NSW OEH 2012b).

In all states and territories, the significance of Indigenous heritage is generally determined through heritage surveys and/or consultation with Indigenous parties on a case-by-case basis.

## Indigenous heritage surveys

In most jurisdictions, heritage surveys and assessments are a significant factor in Indigenous heritage decision making. Generally, to identify and understand the heritage significance of an area, an explorer will contact the relevant government department or authority which maintains the heritage register for the proposed area.

When a tenement has not previously been surveyed, only been partially surveyed or there are no accessible records of previous surveys, explorers may be required to conduct heritage surveys or assessments. This may involve, to varying degrees, engagement with government departments, Indigenous representatives for 'country', third parties such as Aboriginal Land Councils, and heritage professionals such as archaeologists and anthropologists. For example, Western Australia requires both archaeological and ethnographic research to identify the significance of Indigenous heritage on a proposed exploration site.

- Archaeological research involves determining whether a site contains physical evidence of past occupation by Indigenous groups through inspection of the ground surface of a site.
- Ethnographic research is about identifying and recording significant Indigenous heritage sites through interviews and site inspections with Indigenous groups.

Box 5.3 lists guidelines developed by the Western Australian Department of Indigenous Affairs on preparing an Indigenous heritage survey in Western Australia. Explorers are responsible for meeting the cost of survey work, which may include the fees of archaeologists, anthropologists and other professionals, expenses for survey teams and transport (4WDs, helicopters etc.), daily rates for Indigenous parties involved in consultation and survey work and fees for Aboriginal Land Councils.

Box 5.3 **Aboriginal heritage survey guidelines, Western Australia**

The Western Australian Department of Indigenous Affairs has designed a set of guidelines for land owners and users including explorers, consultants and researchers to follow when undertaking heritage surveys. These guidelines include:

- copyright: licensing the department to use the report for specified purposes
- spatial accuracy statement
- acknowledgements and list of survey participants
- purpose of the heritage survey report, including proposed development
- desktop study: previously reported Aboriginal sites, identification and review of previous heritage survey reports, identification of Aboriginal people and organisations affected by the proposed use of the land and a summary of the main findings of the heritage survey
- methodology: type of survey, field methodology and consultation (including how Aboriginal advisors were selected)
- survey area with supporting maps and diagrams
- field survey: location, survey dates, persons involved, archaeological and ethnographic surveys, evaluation of significance for each Aboriginal site
- potential effects: strategies to avoid or minimise the effect of the proposed land use on any Aboriginal site and, where a proposed land use will affect an Aboriginal site, identification of any site affected, why the site cannot be avoided and the type and degree of effect on the site
- discussion and conclusions
- recommendations: including the mitigation of any potential effects on Aboriginal sites, a statement as to whether an opportunity has been provided to the Aboriginal people involved in the survey to comment on the contents of the report and whether further consultation with Aboriginal people is required or more information about the proposed use of the land and its effects is needed.

*Source*: WA DIA (2010).



In contrast, in Queensland the focus of heritage decision making is on consultation and agreement making between explorers and Indigenous parties prior to exploration. Heritage surveys based on archaeological and anthropological research are generally not conducted.

## Indigenous heritage management processes for exploration

When Indigenous heritage of significance is discovered, there are requirements on explorers to manage the site, depending on the nature of the activity and the legislation in the relevant jurisdiction. Table 5.2 provides a snapshot of the heritage management requirements in each jurisdiction.

Some jurisdictions, including New South Wales, Victoria and Queensland, provide exemptions for activities considered 'low impact'. In some cases, heritage obligations may be met by avoiding sensitive areas on the exploration site. Sensitive areas may include sand dunes, rock outcrops and stone arrangements, scatters of stone artefacts, middens, scarred trees and the edges of lakes, rivers and claypans.

In most instances, Indigenous heritage is managed during exploration through duty of care processes, agreed cultural management plans or land use agreements and authorisation systems. In brief:

- 'duty of care' (Queensland) or 'due diligence' (New South Wales) processes require explorers to take all reasonable and practicable measures to prevent harm to Indigenous cultural heritage
- in some instances cultural heritage management agreements are made between Indigenous parties and explorers to allow exploration to take place in heritage areas. The content of an agreement is generally not prescriptive and may include the protection or maintenance of a heritage site or object, right to access the site by Indigenous people and the rehabilitation of Indigenous places or objects
- in most jurisdictions (except Queensland) explorers can apply for a permit or consent (from a Minister or department) to proceed with exploration when it is likely to destroy Indigenous heritage.

## Consultation with Indigenous parties

When Indigenous heritage is discovered on an exploration site, it is considered best practice in heritage management for explorers to consult with Indigenous parties that have been identified as having authority to speak for country (box 5.4).

NTSCORP commented that effective consultation first requires the identification of the correct Traditional Owners for the proposed area.

> Effective consultation with Traditional Owners requires proponents to do more than simply establish a dialogue with local Aboriginal organisations. Effective consultation can only be achieved by identifying the correct Traditional Owners of the project area, and ensuring that these are the people speaking for their traditional country. (sub. 31, p. 5)

Box 5.4 **Consultation with Indigenous people is best practice**

In 2002 the Australian Heritage Commission's *Ask First* publication identified consultation with Indigenous people as best practice in Indigenous heritage management. This guide, designed for use by heritage professionals and land users such as exploration companies, identifies Indigenous people as the 'primary source of information on the value of their heritage and how it is best conserved' and states that Indigenous people must have:

- an active role in any Indigenous heritage planning process
- input into primary decision-making in relation to Indigenous heritage so they can continue to fulfil their obligations towards this heritage …

In identifying and managing this heritage the guide also states:

- uncertainty about Indigenous heritage values at a place should not be used to justify activities that might damage or desecrate this heritage
- all parties having relevant interests should be consulted on Indigenous heritage matters.

*Source*: Australian Heritage Commission (2002, p. 6).

The Chamber of Minerals and Energy of Western Australia (CMEWA 2012, p. 1) notes that the process of identifying and consulting with Indigenous parties for Indigenous heritage matters in Western Australia is not a native title process. Heritage, although somewhat related to native title, is a separate issue. Native title and Indigenous heritage parties are likely to have common members but are not always the same people. The Chamber also notes that the native title claimant group is usually larger than the group of Indigenous people that is consulted on heritage matters.

The process of identifying the appropriate Indigenous parties for consultation on heritage matters varies between jurisdictions. For example:

- Queensland legislation provides a chain of preferences as to who should be the Indigenous party consulted for an area, drawing heavily on the native title process.
- In New South Wales, at sites not covered by the native title process, explorers are required to attempt to contact Indigenous people who may have knowledge of heritage within the area of a planned activity. Generally this requirement is satisfied by the placement of a public notice about the activity, to which Indigenous people may respond.
- In Western Australia, the heritage Act predates the Commonwealth *Native Title Act 1993* and there is no definitive list of which Indigenous people should be consulted in Western Australian legislation (table 5.2).

## Who makes heritage decisions?

In Western Australia, South Australia and Tasmania, heritage decisions rest with the relevant Minister. In New South Wales, decisions rest with the head of the department which administers heritage. In the Northern Territory, the independent authority — the Aboriginal Areas Protection Authority (AAPA) — issues Authority Certificates for access and activity near sacred sites. However, a Minister's Certificate can override non-certification by the authority (table 5.2).

In contrast to Ministerial and departmental approval processes, in Victoria, heritage plans and permits for exploration must be approved by the relevant Registered Aboriginal Party (RAP). Traditional Owners must apply to the Victorian Aboriginal Heritage Council to be appointed as a RAP. When a proposed exploration area does not have a RAP, the Secretary of the Department of Planning and Community Development, or in some instances the Aboriginal Heritage Council, may approve the permit or plan.

The duty of care and agreement making model in Queensland minimises government involvement in decision making. However, when cultural heritage agreements cannot be negotiated, a proposed cultural heritage management plan can be referred to the Land Court. The court will make a recommendation to the Minister (for the Department of Environment and Resource Management) who makes the decision.

Appeals systems also vary by jurisdiction. For example, in Victoria, an administrative review of a decision is available through the Victorian Civil and Administrative Tribunal. In Queensland, the Land Court is responsible for reviewing decisions, while in South Australia and Tasmania, recourse to the relevant Supreme Court is the only avenue for review (table 5.2).

## The enforcement of Indigenous heritage regulation

Enforcement mechanisms are a key aspect of any regulatory system. As noted above, Indigenous heritage legislation in all states and territories includes penalties to provide a deterrent against harming protected places and relics. For example, in New South Wales the maximum penalty for harm to an Aboriginal object or Aboriginal place is $550 000 and/or two years imprisonment for an individual or $1.1 million for a corporation (NSW OEH 2010).

The monitoring of compliance with permit conditions and agreements is also a feature of heritage Acts and enforcement systems in some jurisdictions. In particular:

- Victorian inspectors have extensive powers of entry, search and seizure and are responsible for overseeing Cultural Heritage Audits (these are ordered by the Minister when it is suspected that a Cultural Heritage Management Plan or Permit has been breached) and have the power to issue Stop Orders in emergency situations (Vic DPCD 2013).
- Similarly, in South Australia, inspectors appointed by the Minister have powers of entry, search and seizure.
- In Western Australia, officers of the department responsible for heritage and honorary wardens (appointed by the Minister) have powers to enter and inspect Aboriginal sites.
- In Queensland, heritage Acts provide for 'authorised officers' to investigate and monitor compliance with the Acts. However their powers are not as extensive as in Victoria and South Australia and an officer can only gain access to land with a warrant or the consent of the land owner.

There have been very few prosecutions for unauthorised harm under Indigenous heritage legislation.

> Information available indicates there have been a very small number of prosecutions for unlawful [destruction of] Indigenous heritage, including one prosecution in Victoria since the operation of the *Aboriginal Heritage Act 2006* (Vic) and four stop work orders, an average of one investigation per year in Tasmania over the reporting period and none in the Northern Territory. (Schnierer et al. 2011, p. 60)

## Many reviews are underway

In recent years Indigenous heritage legislation in all jurisdictions has been under review although, in most jurisdictions, the reviews remain inconclusive or proposed reforms have yet to be implemented (box 5.5).

### Box 5.5 State and territory reform of Indigenous heritage

**New South Wales:** In 2010 an Aboriginal Cultural and Heritage Working Party was formed to advise the NSW Government on options for the protection and management of Aboriginal culture and heritage in NSW. A discussion paper was released to identify key issues and seek ideas on the way forward.

**Victoria:** The review of the *Aboriginal Heritage Act 2006* was completed in 2012. The Victorian Government is due to respond in 2013.

**Queensland:** The Department of Environment and Resource Management (DERM) has finalised the review of the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003*. Amendments were introduced into the Queensland Parliament on 29 November 2011 by the Minister for Finance, Natural Resources and the Arts.

**Western Australia:** In 2011 the Government announced its intention to amend the *Aboriginal Heritage Act 1972*. In April 2012 a discussion paper was released, containing seven proposals to regulate and amend the Act for improved clarity, compliance, effectiveness and certainty. Submissions to the review closed in June 2012. To date no legislative changes have been made following the review.

**South Australia:** In 2008 the Minister for Aboriginal Affairs and Reconciliation announced a review of the *Aboriginal Heritage Act 1988*. In September 2010, a consultation report, *It's Not Just About Sacred Sites*, was released. To date, no legislative changes have been made following the review.

**Tasmania:** In the 2012-13 State Budget the Government committed additional funding to continue the development of contemporary Aboriginal heritage legislation. Consultation with the Aboriginal community and other key stakeholders occurred from July 2011 to September 2011. A draft of the Aboriginal Heritage Protection Bill 2012 has been released with public consultation closing in December 2012. It is expected that a new Bill will be introduced in Parliament in 2013.

**Northern Territory:** *The Heritage Act 2012* commenced on 1 October 2012, replacing the old *Heritage Conservation Act 1991*.

*Sources*: NSW OEH (2012b); Vic DPCD (2012); Qld DATSIMA (2012); WA DAA (2012); Tas DPIW (2013); NT DLPE (2012b).



While there is no uniformity to the changes or recommended changes in each state and territory, a number of trends are apparent.

- Changes appear to be entrenching a consultation model with, in some instances, some measure of Indigenous decision-making power and recognition of custodianship of Indigenous heritage.
- There is increasing recognition of the primacy of Traditional Owners and alignment of heritage legislation with Native Title in terms of determining who may speak for country.

- The fines in some jurisdictions have increased and there are more enforcement mechanisms for damage to heritage, including unintentional damage (Schnierer et al. 2011, p. 27).

The Commonwealth's ATSIHP Act has also been under review since 2009 when the Australian Government released a discussion paper on proposed reforms. At that time, it was stated that the reforms would aim to improve the opportunities for Indigenous Australians to protect their heritage and decrease duplication and red tape in Indigenous heritage processes (DEWHA 2009b, p. 3).

In addition, in 2011, the Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) began the process of developing an Australian heritage strategy (SEWPaC 2013).

However, there has been concern that reform is taking too long. For example, the *Australia State of the Environment 2011* report discussed the consequences of delay in reforming the ATSIHP Act.

> In 2009, the Australian Government released a discussion paper on proposed reforms to the ATSIHP Act. The reforms aim to improve the protection of the traditional heritage of Indigenous Australians in all jurisdictions through accreditation of state and territory laws that meet a set of rigorous standards. This would enable the Australian Government to take a more active and coordinated approach in the protection of sacred sites and objects. However, the delay in reforming the Act is prolonging uncertainty, especially for the states and territories, most of which are reviewing their Indigenous heritage legislation. (State of the Environment 2011 Committee, p. 750)

## 5.3 What are the key Indigenous heritage issues?

This section addresses options for reforming heritage legislation and processes (such as consultation, regulation and administration) so as to achieve an appropriate balance between heritage protection and resource exploration, efficiently and cost effectively.

### The protection of heritage

The fundamental question of balance comes to the fore in deciding on applications from explorers which seek permission to harm or destroy Indigenous heritage. Understandably, it is a highly contentious matter and in many jurisdictions it is an ongoing source of conflict between explorers, Indigenous communities, archaeologists and government agencies.

The *Australia State of the Environment 2011* report explained the issue in the following terms:

> One of the main threats to Indigenous heritage places is conscious destruction through government-approved development — that is, development for which decision-makers are aware of (or obliged to be informed about) Indigenous heritage impacts, yet choose to authorise the destruction of Indigenous heritage. This widespread process, combined with a general lack of understanding of physical Indigenous heritage, means that individual decisions on assessment and development result in progressive, cumulative destruction of the Indigenous cultural resource. (State of the Environment 2011 Committee 2011, p. 721)

Several submissions argued that current regimes do not adequately protect Indigenous heritage. NTSCORP expressed concern that economic values are given a higher value than Indigenous cultural values in making decisions about heritage:

> There is a perception that Aboriginal cultural values are consistently overridden by economic considerations and decisions are frequently made in favour of development at the expense of intangibly valuable Aboriginal culture and heritage sites, objects and places. (sub. 31, p. 4)

Some archaeologists have also expressed concern about the inadequate protection of heritage. For example, Melissa Hetherington, based on her experience undertaking archaeological research in Western Australia, commented:

> Heritage legislation needs be restructured in a way that facilitates effective, quality archaeological research. However, this doesn't seem to be happening in an effective manner. In fact, current cultural heritage management practices seem to be facilitating the destruction of archaeological sites, even sites which have been classified and registered as highly significant and which have the potential to contribute valuable information to research goals. (sub. 16, p. 3)

In a number of jurisdictions, inquiry participants commented that there is a lack of confidence in the ability of state legislation to adequately protect Indigenous heritage. For example, in Western Australia, Indigenous heritage legislation has persisted largely unchanged since its introduction in the 1970s, despite the introduction of native title. Yamatji Marlpa Aboriginal Corporation (YMAC) commented:

> A major challenge for YMAC and our clients is that the *Aboriginal Heritage Act 1972* (WA) has not been amended to recognise the introduction of the *Native Title Act* and therefore offers no direction on how the two pieces of legislation should properly interact. (sub. 34, p. 3)

YMAC also reported:

> The Native Title Tribunal has acknowledged that the 'protective regime' of the *Aboriginal Heritage Act* [Western Australia] is sometimes insufficient to protect

> Aboriginal heritage … The Auditor General of Western Australia has also criticised the heritage regime, noting the State Government 'has not actively monitored if operators are meeting … [heritage] conditions… Aboriginal heritage sites could have been lost or destroyed without the State knowing or taking action. (sub. 34, p. 4)

Similarly, in New South Wales, the NSW Aboriginal Land Council stated:

> … Aboriginal culture and heritage laws, at least in New South Wales, are failing to provide the appropriate protections for Aboriginal culture and heritage. (sub. 10, p. 1)

And NTSCORP argued for stand-alone heritage legislation:

> The current framework for culture and heritage NSW consists of a plethora of overlapping regulations and guidelines …
>
> There is concern and confusion amongst Traditional Owners regarding their rights and obligations, and the rights and obligations of exploration proponents… We believe consolidating these regulations and guidelines would result in a clearer, more streamlined and more accessible process for both Aboriginal stakeholders and exploration proponents. (sub. 31, p. 3)

The NSW Aboriginal Land Council's submission contained recommendations for a process that seeks to achieve a balance between often competing interests:

> Aboriginal people in New South Wales must have their inherent right to control and manage Aboriginal culture and heritage recognised.
>
> Any legislative system must effect a practical balance between:
>
> a. the recognised need to preserve and enhance Aboriginal cultural traditions
> b. the need to deliver social justice to Aboriginal peoples in New South Wales to redress the significant cultural, economic and social dispossession they have suffered
> c. the need for the economic, social and cultural advancement of other non-Aboriginal interests in New South Wales. (sub. 10, p. 3)

The Commission is mindful of the current reviews and reforms being undertaken in Indigenous heritage protection and also that the focus of this inquiry is on exploration, not heritage. This inquiry cannot offer a comprehensive analysis of the effectiveness of all jurisdictional heritage legislation and processes. For example, to answer the question, 'Is the level of protection of Indigenous heritage adequate?' a more extensive inquiry into Indigenous heritage would be required.

In terms of exploration issues, however, the Commission has considered options to achieve a balance which minimises costs and delays for explorers within the framework of efficient and effective Indigenous heritage legislation.

## Overlap in Commonwealth legislation

Many participants in the above-mentioned review of the ATSIHP Act observed that the Act overlapped with state and territory Indigenous heritage legislation, creating an unnecessary burden through duplication in processes and delays for explorers. Concern was also expressed that the Act has been ineffective.

> The ATSIHP Act has not been effective in meeting its purpose, which was to provide a direct and immediate means for the Commonwealth to protect traditional areas and objects when there are gaps in state and territory legislation. Instead it has created uncertainty about decisions made under other laws, provoked disputes and led to duplication of decisions, with increased costs for all parties involved. (DEWHA 2009, p. 4)

Moreover, only five per cent of the 394 valid applications received since the Act commenced in 1984 have resulted in emergency protection declarations (Schnierer et al. 2011, p. 48).

The primary concern for explorers is that the ATSIHP Act provides an opportunity for Indigenous 'forum shopping'. In this regard, the Minerals Council of Australia (MCA) commented:

> Dual and parallel layers of Commonwealth and State heritage legislation encourage 'forum shopping' – where a group dissatisfied with the outcomes of a state based cultural heritage approval process may then move to utilise the Aboriginal and Torres Strait Islander Heritage Protection Act to overturn the State decision. (sub. 27, p. 30)

The MCA suggested that this problem could be overcome by merging the ATSIHP Act into the EPBC Act.

> At the Commonwealth level, the MCA considers there is significant value in rolling the Aboriginal and Torres Strait Islander Heritage Protection Act into the Environment Protection Biodiversity Conservation Act (EPBC Act). Following this, and in line with the broader EPBC reforms, state processes could then be accredited by the Commonwealth as they meet pre-determined national standards. This amendment would streamline the legislative requirements around cultural heritage and would prevent the current practice of "forum shopping" between state and federal processes on this matter. (sub. 27, p. 30)

However, the Commission supports the view that Indigenous heritage and environmental protection are separate issues. Given that the ATSIHP Act was designed as a short-term measure two decades ago, to operate where Indigenous heritage protection by state or territory jurisdictions fail, a preferred interim solution would be to introduce state and territory accreditation into the ATSIHP Act. This was a proposal in SEWPaC's discussion paper on Indigenous heritage law reform:

> The ATSIHP Act was intended to fill gaps in protection when state and territory laws were inadequate or not applied. Accreditation can promote high standards of protection across all states and territories and minimise overlaps in responsibilities. To make this idea work, the reformed legislation could set standards for state and territory laws … and enable the Minister to accredit laws that meet the standards. The opportunity to gain accreditation could be an incentive for each state and territory to make sure its laws are effective, provided it is clear that by gaining accreditation a state or territory could stop the Australian Government from overriding its decisions. (DEWHA 2009b, p. 15)

As noted above, all states and territories have now enacted some form of Indigenous heritage legislation but some Acts are outdated and some reviews have not been concluded. Accreditation of complying legislative regimes would be a positive first step for the avoidance of unnecessary overlap. This should then be followed by the repeal of the ATSIHP Act when all state and territory regimes comply, so as to eliminate duplication and increase certainty in state and territory decision making.

DRAFT RECOMMENDATION 5.1

***Until concerns with state and territory legislation have been fully addressed, the Commonwealth should retain the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act) and amend it to allow state and territory regimes to be accredited if Commonwealth standards are met. Once all jurisdictional regimes are operating satisfactorily to Commonwealth standards, the Commonwealth should repeal the ATSIHP Act.***

## Multiple heritage surveys of the same tenement

In practice, while all jurisdictions maintain records of Aboriginal sites and objects, the listing of Indigenous heritage is widely viewed as inadequate.

In jurisdictions such as Western Australia, where explorers may be required to undertake heritage surveys, inquiry participants reported that the inconsistent and inadequate listing of heritage surveys is leading to repeat surveys of the same site. The Australasian Institute of Mining and Metallurgy (AusIMM) commented:

> Conducting Indigenous heritage surveys or reviews and negotiating native title are important issues for minerals exploration. All Australian States and Territories have different enquiry and notification systems that an explorer must navigate if they require information about whether a known Aboriginal heritage site or parcel of land subject to native title is situated on an area of interest. These systems are not comprehensive and not all jurisdictions keep a register of heritage surveys, meaning surveys can be unnecessarily repeated where an area is explored by a different company. (sub. 12, p. 6)

Registers with up-to-date information about all known Indigenous heritage sites and previously completed surveys could avoid multiple surveys of the same land by explorers. In 2008 AusIMM recommended to the Ministerial Council on Mineral and Petroleum Resources, that:

> Jurisdictions maintain a heritage survey database containing all the surveys conducted and which is accessible by relevant interested parties (those holding rights to the tenement). (sub. 12, p. 7)

One issue preventing the establishment of heritage survey registers (or the inclusion of heritage survey information in existing Indigenous heritage registers) is that the copyright of heritage surveys commissioned by the explorer is usually owned by the consultant that undertook the survey. A notable exception is the Northern Territory where mining and exploration companies are required to lodge all heritage and archaeological surveys with the Northern Territory Department of Lands, Planning and the Environment for inclusion in the heritage library. Sites are then entered into the Northern Territory Archaeological Sites Database.

In Queensland and Victoria, listing of heritage surveys is also not an issue.

> Commonly, each state maintains a central register of Aboriginal sites and objects. While the site registers are important, they appear to be less significant in Queensland and Victoria where the primary objective is consultation with Traditional Owners before development [and exploration] commences. (New South Wales Aboriginal Land Council, 2010, p. 40)

That said, in all jurisdictions, Indigenous registers which list up-to-date information — about all known Indigenous heritage sites, areas that have been the subject of cultural heritage management plans, who has been identified as responsible for country, and previously completed surveys and assessments — can be efficient and timely sources of information for explorers about their tenements.

Incomplete information on registers may be attributed to the unwillingness of Indigenous Australians to divulge sensitive information.

> Inappropriate release of information about sites can … cause serious damage to Aboriginal people. Information may be released by mining companies or by government regulatory authorities that have become aware of it through their interaction with Aboriginal custodians. Alternatively, Aboriginal people may release information themselves because they are required to do so in order to seek protection under relevant legislation or agreement provisions, or more generally because they believe that only by highlighting the importance of a site have they any chance of protecting it. In this regard Aboriginal custodians face serious dilemmas. The public release of information that is supposed to be secret causes great anguish, and thus people are reluctant to release it unless a site is in imminent danger. (O'Faircheallaigh, 2008, p. 8)

In principle, it should be possible to develop registers containing maps of heritage significance and related information (such as who has been identified as having authority to speak for country) that are regularly updated with new details of Indigenous heritage, in much the same way as occurs for pre-competitive geoscientific information.

There should be a risk management approach to the maintenance of the registers. Agreed protocols could be developed such that sensitive information is only released to approved persons, and only at a level of that is necessary for the conduct of the approved purpose. Under the protocols, information could be made available to explorers on a tenement-by-tenement basis.

The protocols would need to recognise that the registers relate to living cultures and that there may be a need, at times, to remove or redact sensitive cultural material from the maps and documentation.

DRAFT RECOMMENDATION 5.2

***Governments should ensure that their heritage authorities:***

- ***require that resource explorers or other parties lodge all heritage surveys with that authority***
- ***maintain registers which map and list all known Indigenous heritage***
- ***adopt measures to ensure that sensitive information collected by a survey is only provided to approved parties (and only as necessary for the purposes of their activities), on the basis of agreed protocols.***



## Establishing who has authority to speak for country

Consulting and negotiating with Indigenous groups who have responsibility and authority to speak for country is a fundamental aspect of heritage management. However, where it is not easy to identify the individuals and groups who have authority to speak for country, consultation can be costly and time consuming.

In the Northern Territory, the AAPA advised that:

> AAPA and various Land Councils regularly cooperate to ensure that AAPA Authority Certificates are in place but it raises a number of hurdles involving increased timeliness and costs. (sub. 23, p. 1)

The Western Australian Government drew attention to circumstances where several Indigenous groups have responsibility for country.

> Additional barriers can arise when there are multiple Traditional Owner groups that cover a single area. This increases the costs and time to consult with all groups and

> coordinate representatives from all groups to participate in surveys. (Western Australian Government, sub. 29, p. 13)

Several inquiry participants noted that determining who has culturally appropriate responsibilities for country and the authority to speak for country could be more complex in non-native title areas. The Australian Petroleum Production and Exploration Association stated:

> Companies have a record of working collaboratively with Indigenous groups, however difficulties can arise in the context of unrealistic expectations, the role played by 'third parties' and in determining the appropriate representative body or bodies. (sub. 22, p. 18)

The Commission supports the general intention underlying the view of NTSCORP (which was directed specifically at New South Wales), that:

> A mechanism to identify the correct Traditional Owners and RAPs with authority to speak for country should be developed and applied to all exploration and assessment processes... (sub. 31, p. 6)

## Promoting good working relationships with Indigenous communities

The value of constructive consultation and negotiation between explorers and Indigenous parties is well recognised and is central to effective outcomes in Indigenous heritage.

> With more than 60 per cent of Australian minerals operations neighbouring Indigenous communities, the development and maintenance of strong and positive relationships with Indigenous communities is critical to securing and maintaining the industry's social licence to operate …
>
> Cultural heritage places are integral to Indigenous Australians' connection with their traditional lands. Therefore any successful relationship between a mining company and an Indigenous community will include recognition and respect for the community's cultural heritage. (Department of Industry Tourism and Resources 2007, p. 3, 44)

Similarly, the MCA commented:

> … the minerals industry has long recognised that engagement with Indigenous peoples needs to be founded in mutual respect and in the recognition of Indigenous Australians' rights in law, interests and special connections to land and waters. This has been reflected in the multitude of arrangements made between the minerals industry and Indigenous peoples, including traditional owners, around industry contribution to the management of cultural heritage. (sub. 27, p. 30)

The Commission found that in practice there were marked differences of view about the negotiating behaviour of exploration companies, Indigenous parties and third party representatives.

On the one hand, some Indigenous groups claimed that consultation with Indigenous parties on heritage matters can be insufficient or 'tokenistic'. NTSCORP asserted:

> Proponents should be required to demonstrate a concerted effort to ensure that engagement with Traditional Owners and RAPs for culture and heritage management assessment processes is genuine and inclusive, rather than tokenistic. (sub. 31, p. 7)

On the other hand, the Australian Petroleum Production and Exploration Association claimed:

> The experience of the industry to date suggests that the behaviour of some negotiating representatives or groups is very 'tactical' in nature, with a view to place considerable commercial pressure on explorers or developers. Such an approach is inconsistent with the policy intent of the negotiation process and leads to outcomes that impose sub-optimal outcomes for all parties. (sub. 22, p. 18)

While governments cannot tailor solutions to address the actions of negotiating parties, constructive behaviour can be facilitated through the dissemination of guidance and leading practices. Several such practices have been developed and published. These include:

- work with Indigenous parties as early as possible when exploration is being planned, to identify potential impacts and to try to agree on how to avoid damage to traditional areas and objects. (DEWHA 2009b, p. 1)
- agree on the timing and the level of consultation required for the activity (Australian Heritage Commission 2002, p. 10).
- engage with Indigenous communities (or a third party) to build a social licence to operate (Department of Industry Tourism and Resources 2007, p. 3).
- investigate whether the interests of Indigenous people from surrounding areas may also be affected by an activity (Australian Heritage Commission 2002, p. 8)
- involve Indigenous people in decision-making processes, not just consultation processes (NTSCORP, sub. 31, p. 2).

## Efficient and effective Indigenous heritage protection

State governments have adopted different models for protecting Indigenous heritage. At one end of the spectrum, Western Australia relies on ministerial decisions based on archaeological and anthropological heritage surveys. At the other end, the Queensland Government has adopted a streamlined 'duty of care' process for most cases.

Many explorers have expressed concern about costs and delays associated with the Western Australian approach. For example, the Association of Mining and Exploration Companies (AMEC) said:

> AMEC members have consistently expressed deep concern with the time delays and increasing costs in undertaking a heritage survey, and in progressing Section 18 consents. Some progress has been made in respect of the latter through the administrative processes of the ACMC [Aboriginal Cultural Materials Committee] however, the high costs that are incurred by industry in obtaining a heritage survey continue unabated. (sub. 24, p. 14)

AMEC reported that costs have increased significantly since 2010 and that its members have no ability to control the cost of heritage surveys.

> Based on member feedback the average cost of a heritage survey has increased from $11,000 per day in 2010 to the current approximate cost of $15,000 per day. There have also been examples where the daily cost of undertaking the survey has exceeded $20,000. There is limited opportunity for exploration companies to negotiate these costs. (sub. 24, p. 14)

Similarly, the Western Australian Government stated that 'escalating costs of Aboriginal heritage surveys is a significant disincentive for exploration in Western Australia' (sub. 29, p. 12). The Government provided a case study of a company undertaking exploration in midwest Western Australia. The study reported that:

- the onus is on the company to negotiate with Traditional Owners or Representative Bodies to reach an agreement which can include a fee just to meet to begin negotiations. Once an agreement has been reached to conduct a survey the company may be required to pay the following costs related to the process. The quantum of these costs depends on the size of the survey, location of the site and cooperation between all parties …
- costs for an anthropological and ethnographic survey by an expert consultant including Aboriginal consultants… can be $25,000 for a 2 day survey
- the quality of the survey and the methodology employed can vary considerably between consultants
- … the company has had to wait 10 months between submitting a notice of intent to explore and receiving the final survey report. The cost of delays in the process can be $10,000 – $20,000 due to equipment on hire standing idle. The greater opportunity cost and internal costs to manage the process are not easily quantified. (sub. 29, p. 13)

Some participants claimed that the market for heritage surveys has become 'big business' in Western Australia. For example, AMEC, commenting on the *Aboriginal Heritage Act 1972* (Western Australia) said:

> A heritage survey industry has grown from this requirement for company due diligence and is now a significant 'industry' in its own right. Issues of supply and demand of

> qualified persons plus unrealistic expectations on the exploration industry's capacity to pay have meant the industry sustains a large number of anthropologists, archaeologists and native title representatives. In combination they are costing the industry $100 millions of dollars annually – money not being spent on the ground exploring. (sub. 24, p.14)

In a similar vein, Melissa Hetherington, who undertook archaeological research in the same jurisdiction, commented:

> One notable impact of these current heritage legislation and cultural heritage management practices is that archaeology in north Western Australia has become big business over the past 20 years. (sub. 16, p. 2)

In responding to the submission from the Western Australian Government, YMAC asserted:

> The WA Government's submission refers at length to the contemporaneous growth in expenditure and decline in minerals exploration activity and seeks to link this directly to heritage and native title related consultation and negotiations. However, the submission fails to provide strong evidence to support any direct correlation and does not sufficiently acknowledge the overall increase in the cost of doing business in remote areas of WA during a mining boom. (sub. 34, pp. 1-2)

The Queensland heritage protection system, which is based on cultural heritage agreements, is less vulnerable to these risks. The Queensland Resources Council (QRC 2012) reported:

> QRC members generally regard it [Queensland Indigenous heritage legislation] as the best Indigenous cultural heritage legislation in Australia and that both the certainty and flexibility it provides are crucial, as is its focus on the development of direct relationships between proponents and the owners and managers of Indigenous cultural heritage being the Indigenous people themselves.

The Queensland Government described the merits of its legislation in the following terms.

> The compliance framework established by the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* provides a streamlined and balanced process for managing cultural heritage arising from resource exploration activities. This is achieved by:
>
> - minimising direct government involvement in the negotiation of cultural heritage agreements
> - eliminating the need for government approval of cultural heritage agreements (with the exception of activities that trigger Environmental Impact Statements)
> - empowering Aboriginal and Torres Strait Islander people to determine the significance of cultural heritage

- enabling land users to liaise directly with the statutory Aboriginal or Torres Strait Islander party for an area to tailor specific agreements for their projects
- utilising provisions of the Commonwealth *Native Title Act 1993* where appropriate to eliminate duplication
- reducing mandatory reporting requirements to government
- encouraging flexible and non-prescriptive approaches to the management of cultural heritage. (sub. 25, p. 20)

Other reports also support negotiated agreements between explorers and Indigenous parties as being likely to produce sound outcomes for heritage protection and the authorisation of exploration. The basis for such views is that:

- agreements place the onus on the immediately affected parties — explorers and traditional owners — rather than a government agency, to decide how to best protect heritage values from being damaged or destroyed.
- negotiated agreements allow parties to negotiate flexible, pragmatic agreements to suit their particular circumstances.

For example, the Department of Industry, Tourism and Resources in its *Working with Indigenous Communities* handbook, concluded:

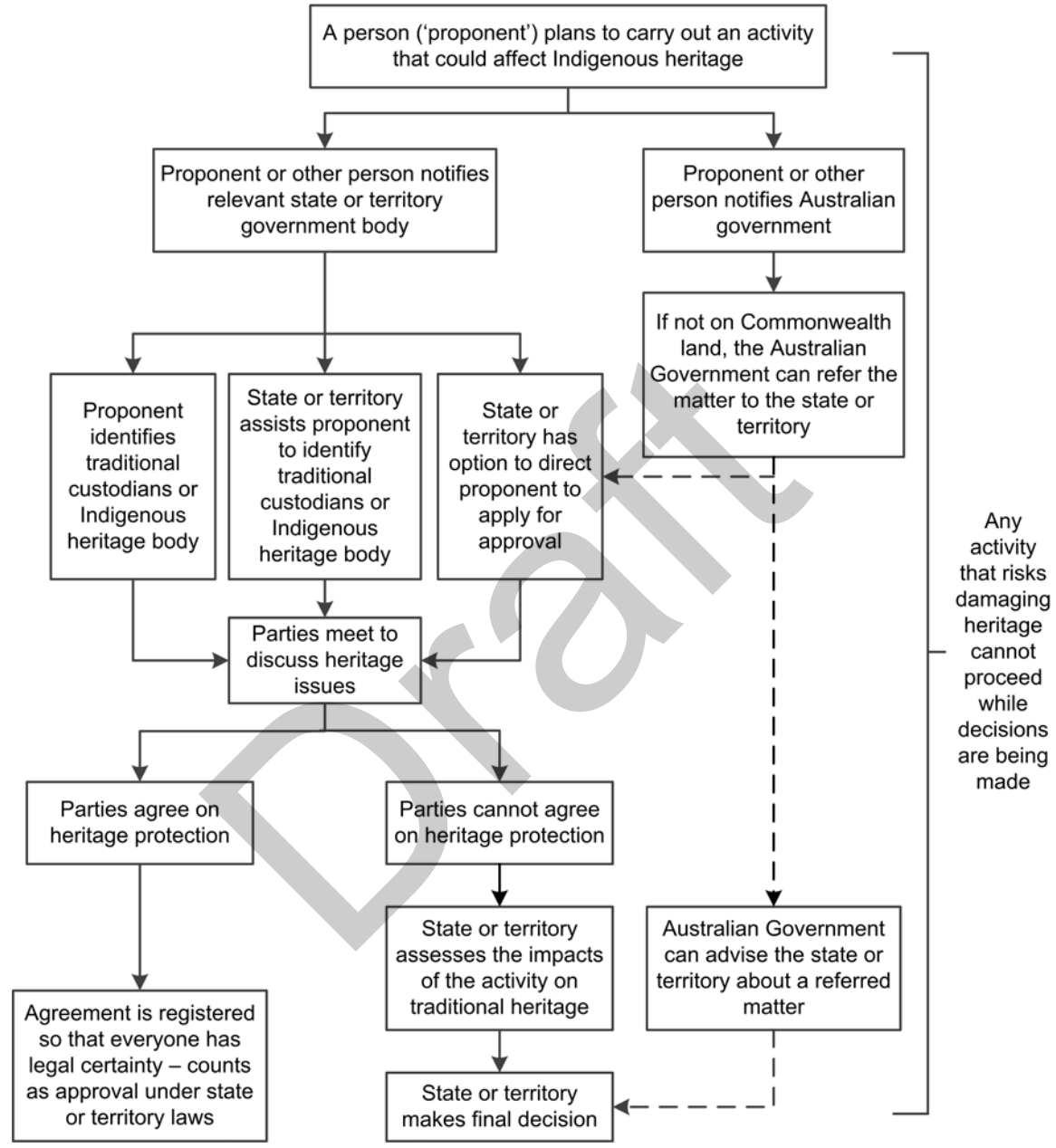
> Agreements between mining companies and Indigenous people with rights and interests in land and waters are the most practical approach to finding ways to accommodate each other's interests … Agreements provide mining companies with secure land access, which they need if they are to invest large sums in high-risk, long-term mining ventures. They also recognise the interests of Indigenous people who have maintained strong connections to the land and waters where, as a matter of law, their native title no longer exists, or only survives in a limited way. (2007, p. 32)

Similarly, in a research paper on Indigenous and mining company agreements, O'Faircheallaigh stated:

> In principle, such agreements could offer important advantages over legislation or direct political action as a means of protecting cultural heritage. They create, for the first time, an opportunity *for Aboriginal people themselves* to devise measures to protect their cultural heritage, and to negotiate acceptance of those measures by mining companies. Agreements could protect Aboriginal cultural knowledge, and could facilitate a proactive approach, allowing traditional owners to put systems in place designed to avoid damage. In addition, agreements could provide the resources required to support ongoing management and protection of sites over extended periods of time. (2008, pp. 14–15)

The preferred method for Indigenous heritage protection presented in SEWPaC's 2009 discussion paper on Indigenous heritage law reform was also centred on agreement making (figure 5.1).

Figure 5.1 **Reaching decisions about protecting Indigenous heritage**
Preferred method from the *Indigenous Heritage Law Reform Discussion Paper*




*Source*: DEWHA (2009b, p. 6).

Efficient and effective Indigenous heritage protection should be based on sound risk management processes. Indigenous heritage regimes need to provide strong protection for areas that are considered to have high levels of heritage significance. Conversely, where there is no heritage significance or there is only a low risk of harming heritage, a streamlined 'duty of care' or 'due diligence' process can be more appropriate and reduce unnecessary costs and delays for explorers.

The Commission considers that — when there is a high level of heritage significance and the exploration activity is likely to impact on the heritage values of a site — systems that rely on ministerial or departmental approval are less likely to produce sound outcomes than agreement making. Further, the latter is likely to be more effective when explorers consult and negotiate directly with Indigenous groups. However, when either party lacks the necessary financial resources or expertise to negotiate agreements, processes can be delayed and outcomes may be unsatisfactory. A third party (such as a government agency or land council) may be able to improve outcomes. Third party involvement may also have the additional benefit that Indigenous Australians may be more willing to divulge sensitive information to them (when they have established a trusted working relationship) than to an explorer.

If negotiations fail and agreement cannot be reached, it is then the government's role to make informed decisions about whether or not Indigenous sites, artefacts, remains and objects are to be preserved, conserved and protected or are allowed to be damaged, destroyed or relocated. This involves clear decision-making criteria (including consideration of the economic and social benefits of the land and the impact that exploration is likely to have on the heritage value of the site), transparency, and consultation with all parties that have a direct interest.

DRAFT RECOMMENDATION 5.3

***State and territory governments should manage Indigenous heritage on a risk assessment basis.***

- ***Where there is a low likelihood of heritage significance in a tenement and the exploration activity is low risk, a streamlined 'duty of care' or 'due diligence' process should be adopted.***
- ***Where there is a high likelihood of heritage significance and the exploration activity is higher risk, models of agreement making should be adopted rather than a government authorisation system.***
- ***When negotiated agreements cannot be reached, governments should make decisions about heritage protection based on clear criteria, transparency and consultation with all parties that have a direct interest.***

## Native title and Indigenous land rights regimes

Chapter 4 noted participants' concerns with the costs and delays with native title regimes and with the interaction of native title and Indigenous land rights regimes with heritage processes. Box 5.6 provides background on the *Native Title Act 1993* and Indigenous heritage protection.

NTSCORP commented:

> We note that while consideration of the *Native Title Act* is explicitly excluded from the Terms of Reference of the study, native title and culture and heritage are fundamentally interconnected concepts and processes. We believe that better integration of native title and culture and heritage processes in the mineral exploration realm would lead to a substantial amount of regulatory duplication being avoided. (sub. 31, p. 7)

### Box 5.6 Native title and Indigenous heritage

The *Native Title Act 1993* (NTA) commenced on 1 January 1994 and has since been substantially reviewed and amended. Native title is a set of rights that are possessed under the traditional laws and customs of Indigenous people that can provide them with exclusive possession of, or limited access to, their traditional lands for a wide range of purposes that could include hunting, fishing, medicine, accommodation, religion and culture.

The NTA provides a systematic legal framework to balance the common law native title rights and interests of Aboriginal and Torres Strait Islanders against the requirements of other land users (miners, pastoralists, tourist operators and others) who need land access and certainty of title while also ensuring that governments can continue to improve infrastructure and manage natural resources. More specifically, the objectives of the NTA are to:

- recognise and protect native tile as defined under the common law
- confer legal validity on 'past acts' (that is, legislative and administrative actions by governments and persons generally before 1 January 1994) that may otherwise have been invalid because of the existence of native title
- provide a framework for 'future acts' (that is, actions by governments and persons which affect native title and which are not past acts) and establish conditions, including a 'right to negotiate', by which future acts can proceed
- establish a mechanism by which native title and compensation can be determined.

The NTA was a significant development for the management of Indigenous heritage. Native title establishes processes of mediation and negotiation between native title parties, governments and proponents (including exploration and mining companies), providing some Indigenous people the ability to negotiate the identification and care of their own heritage on more equitable terms (Edelman et al 2010, p. 6).

Similarly, the Northern Territory Department of Mines and Energy asserted that 'the *Aboriginal Land Rights Act 1976* is considered to be the foremost non-financial barrier to exploration in the Northern Territory'(sub. 2, p. 1).

Further, participants noted that heritage legislation may be confused with processes under native title and Indigenous land rights acts. The AAPA noted:

> … our Authority Certificate process for the protection of sacred sites is often confused with Land Councils' charter in forming agreements on land use. While sacred sites are taken into consideration during Land Council consultations, an AAPA certificate is the only document under the *Northern Territory Sacred Sites Act* legislation that provides indemnity against prosecution if damage to a sacred site occurs. (sub. 23, p. 1)

Despite the close interaction between Indigenous heritage, native title and Indigenous land rights Acts, the examination of processes under the Commonwealth's *Native Title Act 1993*, the *Aboriginal Land Rights (Northern Territory) Act 1976* and state Indigenous land rights regimes are outside the terms of reference for this inquiry.

## 5.4 Historic heritage

Australia's historical heritage consists of places that are important to Australia's national identity and warrant protection from damage or modification. Historic heritage applies to a diverse range of sites — including shipwrecks, buildings, bridges, mines, farms, gardens and graves — that have been endorsed by an authorised body as having cultural value to Australia and/or the wider world.

### *Onshore historic heritage*

All three levels of governments contribute to the protection of Australia's onshore historic heritage. Whether on a national, state or territory level, the basic regulatory framework is broadly similar. Each jurisdiction maintains a list or register of identified historic heritage places administered by a jurisdiction-specific Heritage Council. Depending on the jurisdiction, the decision as to what sites should be placed on these lists is either made by these Councils, or by the Minister (usually on the basis of advice from the Council).

Local governments also identify places of local heritage value and regulate these through their planning schemes. All states, with the exception of Tasmania, have provisions or requirements for local governments to establish a register of locally

significant places (PC 2006)[1]. In 2006, the Commission identified that there were over 147 000 listed local government heritage places in Australia.

The main implication of a site being placed on a heritage list is that restrictions apply as to what works can be carried out on the site — generally, anything beyond minor maintenance and upkeep requires prior approval from the appropriate government agency. Although exploratory activity may be restricted in and around listed sites, relative to other forms of heritage, the burdens caused by historical heritage are small. This is because:

- most historic heritage is concentrated in small pockets and often in locations where exploration is unlikely (for example, in residential or commercial districts of cities and towns)
- the maintenance of up-to-date heritage lists allows explorers to gauge the degree to which their planned exploration activities will impact on historic heritage sites prior to commencing their operations.

That said, the MCA noted that the need for companies to consult multiple lists is problematic:

> … MCA considers that significant opportunity exists to reduce the complexity of the Heritage processes through the consolidation of heritage listings in a National Heritage Register. A single Register would reduce the existing challenges of understanding the heritage values within a region by having to consult multiple registers. (sub. 27, p. 30)

The establishment of a national heritage register which consolidates local, state and national heritage lists is likely to expedite searches by explorers (and others) as part of their approval processes, but the level of additional benefit is uncertain. Online, searchable databases of listed heritage places already exist for listings by the Australian Government and each State and Territory government. Some local governments publish their heritage lists online, while those that do not typically provide access through a public facility, such as a library (PC 2006). Further, developing a national list would also involve costs in establishing the list and maintaining its currency across all jurisdictions as heritage places are listed or delisted. On balance, it is unlikely the benefits of a national list would outweigh these costs.

An alternative way to reduce the burden of having multiple heritage lists would be for state governments to encourage those remaining local governments that do not yet publish databases of their historic heritage online, to do so. Explorers would be able to expediently search for local heritage places around their areas of operation,

[1] Historic heritage protection in the Northern Territory and the ACT is solely the responsibility of Territory governments.

reducing their costs of identifying heritage listed areas and possibly raising their level of compliance with regulatory requirements.

Additionally, the MCA suggested that there is a lack of opportunity for stakeholders to comment on proposed heritage listings:

> Property owners and those with interests in an area should be entitled to make submissions on listing proposals that fundamentally affect the value of, and use that can be made of, their assets. (sub. 27, p. 30)

The Commission heard similar suggestions in its 2006 inquiry on the conservation of Australia's historic heritage. Recommendation 10.1 (p. 264) from that inquiry was directed at State and Territory governments and proposed, among other things, that they should:

- require that listing authorities directly notify owners of any intention to add their place to the statutory list
- require that listing authorities make available a preliminary statement of significance to the owner and the public, prior to public consultation
- require that listing authorities follow timely consultation procedures following a decision to consider a place for statutory listing.

In its response to this recommendation, the Australian Government agreed that these points 'encourage best practice in the management of privately-owned historic heritage places by state and local governments' (Australian Government 2007, p. 6). The response by Chairs of the State and Territory Heritage Councils also noted:

> Statements of significance, and consultation with owners and the public, are already an integral part of the listing process in most jurisdictions.

And:

> The *Cooperative National Heritage Agenda for Australia* includes improved policy guidance on managing changes to heritage places. All jurisdictions are working to improve the level of information available to owners of heritage places. (Chairs of State and Territory Heritage Councils of Australia 2006, p. 12)

The Commission encourages the continued implementation of this recommendation. By allowing sufficient time for public comment prior to listing a nominated site on a heritage register, regulators have greater scope to gauge the views of affected parties and will have more information to weigh the costs and benefits of the listing.

The MCA also presented concerns that heritage decisions can be made without due consideration to wider social and economic factors and, as such, listings can be made without fully assessing the impacts on the local community or region.

There are costs associated with heritage listing a site. One of these costs is an opportunity cost because once a place is listed on a historic heritage register, it is difficult to convert the site to an alternate use. In its 2006 inquiry into historic heritage, the Commission found:

> Current methods of identifying historic heritage places for statutory listing focus on the benefits expected to accrue to the community. Typically, there is little, if any, consideration to the costs imposed either on the owner or the community more generally. (p. 149)

Within the specific domain of resource exploration, listing can result in forgone opportunities to explore for resources on a heritage listed site. However, as discussed above, the burdens imposed on the industry by complying with historic heritage are small and furthermore, changes to the criteria used by each jurisdiction to nominate and assess historic heritage places have policy implications far beyond the exploration industry alone. As such, the Commission will not be examining this issue further in this inquiry.

### *Offshore historic heritage*

Australia's offshore historic heritage consists predominately of shipwrecks and the relics in and around them. These shipwrecks are protected under the *Historic Shipwrecks Act 1976,* although state and territory legislation has a role for wrecks not found in Commonwealth waters. The *Act* mandates that a historic shipwreck must not be damaged, destroyed or interfered with without a permit. The Act automatically protects shipwrecks that are 75 or more years old regardless of whether their location is known. Shipwrecks less than 75 years old can also be protected under the Act by declaration of the Minster[2] (SEWPaC 2009).

In 2009, the Australian Government announced that the *Historic Shipwrecks Act* would be reviewed. In the ensuing discussion paper, the ambiguity around the extent that shipwrecks could be disturbed for development purposes — including for oil and gas exploration — was noted:

> Since 1976 many shipwreck sites have been located in Australian waters. Some of the shipwrecks are currently being exploited for development, such as coastal developments, aquaculture or oil and gas exploration. While the Act clearly states that historic shipwrecks should not be damaged or interfered with, it is unclear how development proponents can ascertain what shipwrecks might be in their development area and how they should manage the sites if historic shipwrecks are located.

[2]The Minister currently responsible for this declaration is the Minister for Sustainability, Environment, Water, Population and Communities.

> The Act contains no clear procedures that a developer should follow to assess the impact the development would have on historic shipwreck sites, to undertake mitigation activities, or to obtain approval for works prior to any actions that may damage historic shipwreck sites. (Australian Government 2009, p. 14)

The 2011-12 Annual Report of SEWPaC stated that the review of the Act is 'ongoing' (SEWPaC 2012d p. 212).

During this inquiry, the Commission has not heard of any instances where the current regulations around historic shipwrecks have represented barriers for oil and gas exploration companies. However, further clarification on the processes and procedures explorers must meet when working around historic shipwrecks — as flagged in the review of the *Historic Shipwrecks Act* — is likely to be of benefit to the industry.

# 6 Environmental management

**Key points**

- Environmental impacts arising from exploration activity can range from those that are minor and temporary, such as limited soil disturbance, to those that are large and longer term, such as an oil leak in a sensitive marine environment.
- The policy challenge for governments when establishing environmental regulatory frameworks, and the administration task of regulators, is to achieve an appropriate balance between the benefits of mineral and energy resource exploration and the associated potential for adverse environmental impacts.
- State and territory governments are the main environmental regulators for onshore exploration.
- The Australian Government's onshore role is largely limited to defined 'matters of national environmental significance'. It is also responsible for the Commonwealth marine area. The main Australian Government environmental regulators are the Department of Sustainability, Environment, Water, Population and Communities and the National Offshore Petroleum Safety and Environmental Management Authority.
- Opportunities for reform include:
  - reducing duplication of environmental assessments and approvals within and between jurisdictions — for example by accrediting the National Offshore Petroleum Safety and Environmental Management Authority to undertake assessments and approvals under the *Environment Protection and Biodiversity Conservation Act* (EPBC Act)
  - establishing bilateral agreements with the states and territories for approvals under the EPBC Act
  - ensuring regulatory requirements are commensurate with the likely level of impact or risk and do not anticipate that exploration will lead to extraction
  - ensuring regulatory requirements are outcome-focused by, for example, adopting performance based standards
  - improving the clarity and transparency of regulatory requirements and increasing the public availability of archived environmental data
  - where there is scientific uncertainty as to the environmental impacts of exploration, objectively assessing the evidence and adopting an adaptive management approach.

This chapter provides an overview of the environmental impacts and risks arising from mineral and energy exploration. It then proposes reforms that address

instances of regulatory duplication as well as situations where the regulatory requirements are not commensurate with the likely environmental impact. The chapter concludes with a series of reforms for the assessment and approval processes.

## 6.1 Potential environmental impacts of exploration

The potential environmental impacts arising from mineral and energy exploration are diverse. Effects depend on the nature of the environment in the area being explored, the scale of activity, and the techniques and equipment used for exploration. They range from minor and temporary impacts — such as disturbance of surface soil as a result of sampling activities — to potentially large impacts, such as oil leaks in sensitive marine ecosystems.

For the majority of exploration activity, the likely impacts on the environment are relatively straightforward to assess. They can include: discharges to land or water — including 'drilling muds' and fluids; emissions to air; noise; clearance of topsoil; and disturbance to native flora, fauna and ecosystems, both terrestrial and marine. In some cases, however, there can be uncertainty as to the nature and extent of impacts, particularly where the scientific understanding is still evolving. Examples include the impacts of seismic surveys on marine mammals and the impacts of coal seam gas (CSG) exploration on aquifers.

### Minerals exploration — techniques and impacts

Onshore exploration for minerals is undertaken using a variety of techniques. Those that generally have a negligible impact on the environment include: geological mapping and geochemical sampling, which may include taking small rock or soil samples; and geophysical, aerial, gravity, magnetic, resistivity, induced polarisation, electromagnetic and seismic surveys. The main impacts of some of these activities will be caused by vehicles accessing and moving around the survey area.

Techniques that have the potential for larger impacts include drilling, costeaning and trenching, and surface bulk sampling. Impacts can include loss of vegetation, erosion and intersection with groundwater aquifers (box 6.1).

### Petroleum and natural gas exploration — techniques and impacts

Exploration for petroleum and natural gas — both onshore and offshore — has some similar impacts to exploration for minerals, but also has differences. Seismic surveying and drilling are two commonly used methods to define and analyse

subsurface geological structures for the presence and abundance of these resources (box 6.1).

### Box 6.1 The potential environmental impacts of exploration

Onshore exploration for minerals is undertaken using a variety of methods, many of which have a low impact on the environment:

- **Geological mapping, geochemical surveying** and **geophysical surveying** are generally carried out on foot, with access to the area by conventional vehicles on existing tracks. Geochemical surveys involve taking rock and soil samples using hand tools, while geophysical surveys involve generating data using small portable instruments such as gravimeters. Environmental impacts are generally negligible.
- **Aerial surveying** has negligible impact, other than perhaps annoyance from low flying aircraft.
- **Resistivity, induced polarisation and electromagnetic surveying** are carried out using equipment with interconnecting cable arrays. Electricity is supplied by a generator which can be vehicle mounted. Impacts include the excavation of shallow holes or the insertion of metal probes and are generally small and temporary.
- **Seismic surveying** may require the drilling of shallow holes, usually with a hand-held power auger, and access for light vehicles. Either a small explosive charge is detonated below ground, or a hand-held mechanical hammer or a vehicle-mounted weight is used to generate shock waves in the ground. Impacts involve noise and minor ground vibration, and are generally small and temporary.
- **Drilling** involves taking subsurface samples. The larger the drill rig, the greater the environmental disturbance will be. Environmental impacts can arise from drill pad construction, access to the drill site, sump construction, noise, waste water disposal and intersection of groundwater aquifers.
- **Costeaning** and **trenching** involve mechanical excavation of trenches to expose ground for the observation of geological features and for sampling. Possible impacts include erosion on steeper slopes, damage to vegetation through excavation or from clearing to allow access for equipment, and mixing of topsoil with the subsoil.

Exploration for petroleum and natural gas is largely undertaken through seismic surveying and drilling. Onshore impacts are similar to those outlined above, although they can also include hydrocarbon contamination. There are also specific impacts from offshore exploration:

- **Offshore seismic surveying** generates short, intense pulses of sound directed at the seafloor. This can cause disturbance to marine mammals — including to their breeding and migration activities — and to ecological communities.
- **Offshore drilling** involves the mechanical drilling of a wellbore through the seabed. Submarine cables and anchors can cause scouring of the sea floor, and drill cuttings can smother marine fauna. There are risks of hydrocarbon contamination and disturbance to ecological communities and marine habitats.

*Sources*: Vic DPI (2010b) and WA DMP (2013b).

Potential impacts tend to be larger offshore. Seismic surveying utilises a technique that directs acoustic energy (sound) into the rock beneath the sea floor from equipment towed behind a purpose-built seismic vessel. The loudest sound sources used in seismic survey operations are produced by air-guns which generate short, intense pulses of sound directed at the seafloor. Offshore exploratory drilling is a mechanical process where a wellbore is drilled through the seabed.

Potentially significant impacts could occur in areas that contain habitats for threatened or migratory species — for example, if seismic activity is likely to interfere with breeding, feeding or migration, or if a habitat critical to the survival of a species is damaged by drilling. There is also the potential for impacts if drilling occurs in sensitive marine areas — for example, sea mounts and other areas with high biodiversity value — or if there is hydrocarbon contamination.

## 6.2 The regulatory frameworks for managing the environmental impacts of exploration

Governments have developed environmental regulatory frameworks because many of the environmental costs associated with resource exploration are not directly borne by the mineral and energy resource explorers that cause these costs; that is, there are negative environmental externalities.

The regulatory frameworks seek to ensure that such externalities will be recognised and taken into account during the assessment and approval process for exploration proposals. The policy challenge for governments when developing regulatory frameworks — and the administrative task for regulators — is to achieve an appropriate balance between the potential benefits afforded by resource exploration and the associated potential environmental costs.

### State and territory environmental legislation

State and territory governments are the main authorities for environmental management within their respective jurisdictions. Their regulatory frameworks typically distinguish between exploration for minerals and for petroleum and natural gas, and between exploration on land and at sea. This approach reflects the differing techniques associated with such exploration activities and the differing environments within which such activities occur. The jurisdictions also have environmental protection Acts that establish impact assessment requirements.

The main Acts and supporting legislation, codes of practice and guidelines to manage the environmental impacts of onshore exploration are outlined in table 6.1.

The states and the Northern Territory have title and powers over the resources of the seabed adjacent to their shores, from the low water mark to the outer limit of the first three nautical miles of the territorial sea — the so called 'coastal waters'. State and territory environmental, conservation and planning legislation applies to activities in the coastal waters under their jurisdiction. The key coastal waters legislation in each state and territory is listed in table 6.2.

## State and territory assessment and approval processes

While jurisdictions have varying processes for identifying environmental impacts and determining ways to manage those impacts, there are many common features.

### *Proposal, Notice of Intention, Environment (Management) Plan or Initial Advice Statement*

In seeking environmental approval, the proponent is required to outline: the proposal and its duration; the infrastructure it will need; the proposed community consultation program; and potential environmental impacts, their significance, and how it plans to manage those impacts. The proposal is often presented as a formal document of advice that the proponent uses to:

- trigger the approvals process
- inform the community about the project.

### *Assessment and approval*

The relevant state or territory regulator decides whether an environmental assessment is necessary based on the likely significance of the environmental impacts. In some jurisdictions, the regulator is an environment agency; in others, it is the resources department operating on the advice of an environment agency.

Most processes have several levels of assessment, appropriate to the environmental significance and complexity of the proposed project. Where it is clear from the initial advice that the explorer has adequately addressed environmental concerns and will be using appropriate environmental management practices, the regulator

Table 6.1 **Key state/territory environmental protection legislation for onshore exploration**

| *Jurisdiction* | *Relevant Acts* | *Other key legislation, guidelines and codes of practice* |
|---|---|---|
| New South Wales | Protection of Environment Operations Act 1997<br>Protection of Environment Operations Amendment (Environmental Monitoring) Act 2010 | Protection of the Environment Operations (General) Regulation 1998<br>Clean Waters Regulations 1972 |
| Victoria | Environment Protection Act 1970<br>Flora and Fauna Guarantee Act 1988<br>National Parks Act 1975<br>Environment Effects Act 1978 | State Environment Protection Policies (eg. ambient air quality, control of noise, water quality)<br>National Parks (Parks) Regulations 2003 |
| Queensland | Environmental Protection Act 1994 | Environmental Protection Regulations 1998 |
| Western Australia | Environment Protection Act 1986<br>Conservation and Land Management Act 1984 | Environmental Protection Regulations 1987<br>Conservation and Land Management Regulations 2002<br>Wildlife Conservation Regulations 1970<br>Draft Guidelines for Environmentally Responsible Mineral Exploration and Prospecting in Western Australia, March 2012 |
| South Australia | Environmental Protection Act 1993<br>Wilderness Protection Act 1992<br>National Parks and Wildlife Act 1972<br>Marine Parks Act 2007 | Environment Protection Regulations 2009<br>Wilderness Protection Regulations 2006<br>National Parks and Wildlife Regulations (various)<br>Marine Parks Regulations 2008 |
| Tasmania | Environmental Management and Pollution Control Act 1994<br>Nature Conservation Act 2002<br>National Parks and Reserves Management Act 2002<br>Forestry Act 1920<br>Regional Forest Agreement (Land Classification) Act 1998 | Environmental Management and Pollution Control Regulations (various)<br>Mineral Exploration Code of Practice |
| Northern Territory | Environmental Assessment Act 1994<br>Waste Management and Pollution Control Act 1998<br>Territory Parks and Wildlife Conservation Act 2001 | Environmental Assessment Administrative Procedures 2003<br>Waste Management and Pollution Control (Administration) Regulations 1998<br>Territory Parks and Wildlife Conservation Regulations 2001 |

*Source*: URS Australia Ltd., National Audit of regulations influencing mining exploration and project approval processes 2006 and 2012 (sub. 27).

Table 6.2 **Key state/territory environmental protection legislation for offshore petroleum exploration**

| *Jurisdiction* | *Key Acts* |
|---|---|
| New South Wales | Petroleum (Offshore) Act 1982 |
| Victoria | Offshore Petroleum and Greenhouse Gas Storage Act 2010 |
| Queensland | Petroleum (Submerged Lands) Act 1982 |
| Western Australia | Petroleum (Submerged Lands) Act 1982 |
| | Petroleum (Submerged Lands) Regulations 1990 |
| South Australia | Petroleum (Submerged Lands) Act 1982 |
| Tasmania | Petroleum (Submerged Lands) Act 1982 |
| Northern Territory | Petroleum (Submerged Lands) Act 1981 |

*Source*: Department of Resources, Energy and Tourism (2013).

may not require further assessment. This often applies to exploration programs. In Queensland, for example, codes of environmental compliance are used for low impact activities — activities covered by these codes do not require any further government assessment. Where further assessment is required, the government agency scopes the environmental issues and priorities to be addressed, frequently with some community consultation.

A public environmental report, or similar document, is generally used for proposals that are likely to be of only local or regional public interest and where potential environmental impacts are minor or easily managed. A public environmental report provides details of the proposal including potential environmental impacts and proposed management techniques.

An environmental impact statement or similar document may be required for exploration projects that deal with complex issues of environmental significance. Because of their potentially significant impacts, these proposals require detailed evaluation and extensive community consultation and review, and may need comprehensive environmental management programs.

The government regulator, or the responsible Minister, will then either issue an environmental approval — sometimes with conditions attached — for the project or, if they consider that the project would have an unacceptable effect on the environment, decide not to issue an approval.

## The Australian Government's environmental legislation

The Commonwealth regulatory framework covering mineral and energy resource exploration largely relates to:

- 'matters of national environmental significance', as defined in the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- offshore petroleum exploration, governed by the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act).

### *Regulation of matters of national environmental significance*

Many of the matters of national significance defined in the EPBC Act arise from the obligations contained in various international environmental conventions that the Australian Government has ratified. This ratification provides the constitutional basis for Commonwealth environmental legislation that is not within its own jurisdiction. The major conventions that were significant to the enactment of the EPBC Act are: the World Heritage Convention; the Ramsar Convention; the United Nations Convention on Biological Diversity; and the United Nations Convention on Climate Change.

Various intergovernmental agreements and national strategies have been developed to facilitate Australia meeting its international obligations, including the 1992 Intergovernmental Agreement on the Environment, the 1997 COAG Heads of Agreement on Commonwealth and State roles and responsibilities for the Environment, the National Strategy for Ecologically Sustainable Development, and Australia's Biodiversity Conservation Strategy 2010–2030.

There are currently eight matters of national environmental significance that can 'trigger' the need for assessment and approval under the EPBC Act (box 6.2). The

**Box 6.2 EPBC Act — matters of national environmental significance**

The eight matters of national environmental significance under the EPBC Act are:

- listed threatened species and ecological communities
- migratory species protected under international agreements
- Ramsar wetlands of international importance
- the Commonwealth marine area
- World Heritage properties
- National Heritage places
- Great Barrier Reef Marine Park
- nuclear actions.

*Source*: DEWHA (2009c).

Commonwealth has recently moved to introduce water resources as an additional matter of national environmental significance in relation to coal seam gas and large coal mining development. Any exploration activity that is likely to have a significant impact on a matter of national environmental significance needs to be considered for environmental assessment and approval under the EPBC Act.

### *Environmental regulation of offshore exploration*

Offshore petroleum operations in Commonwealth waters are governed by the Commonwealth OPGGS Act and related regulations, including the *Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations 2009* (OPGGS (Environment) Regulations).

The OPGGS (Environment) Regulations have the primary objective of ensuring any petroleum activity in Commonwealth waters is carried out in a manner consistent with the principles of ecologically sustainable development, and in accordance with an environment plan that has appropriate environmental performance objectives and standards, as well as measurement criteria for determining whether objectives and standards are met.

The Commonwealth has another legislative base for regulating offshore petroleum exploration. Under the EPBC Act, the Commonwealth has responsibility for regulating activities in its waters (those areas more than three nautical miles from the territorial sea baseline and within the Commonwealth Petroleum Jurisdiction Boundary).

For early stage petroleum exploration, the main trigger for assessment under the EPBC Act is 'the Commonwealth marine area' and, in particular, the noise impacts on marine mammals — particularly whales — from seismic activities. Aside from this, in general only exploration projects in nationally significant (environmentally sensitive) areas require approval under the EPBC Act, for example, in areas that provide habitat for listed threatened species.

## Australian Government assessment and approval processes

### *Administering the EPBC Act*

The EPBC Act is administered by the Australian Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC).

The EPBC Act offers two pathways to obtain approval for actions that are likely to have a significant impact on matters of national environmental significance. The first of these is the referral, assessment and approval process, which involves project-by-project assessments. The second pathway is the strategic assessment process.

### *The referral, assessment and approval process*

The majority of referrals under the EPBC Act follow the referral, assessment and approval pathway.

#### *Referral*

The EPBC Act places the onus for referring proposals on the person or company proposing to take the action. Proponents may refer their exploration proposals to the Minister for Sustainability, Environment, Water, Population and Communities who has 20 business days in which to decide whether the proposed action is likely to require approval under the EPBC Act.

If a significant impact is considered unlikely, further assessment is not required and the proponent can proceed to take the referred action with legal certainty. In such cases, the proposal is determined by the responsible Minister to be either:

- 'not a controlled action'
- 'not a controlled action – particular manner'.

In the latter case, the activity can only proceed provided it is undertaken in a manner specified in the decision notice. This 'manner' can refer to timing, management measures, or other regulatory instruments or decisions.

If the action is deemed to be a 'controlled action' it requires Ministerial approval, and the application proceeds to the second stage: assessment.

Most exploration activity would not usually be expected to have a significant impact on matters of national environmental significance, unless directly impacting on an endangered species or ecological community, migratory species, national heritage site or Ramsar wetland (table 6.3). Of the 439 exploration referrals since the commencement of the EPBC Act in 2000, 101 have been deemed to be 'not a controlled action' and 286 'not a controlled action – particular manner'.

*Assessment*

The Minister may base a decision on one of a number of assessment approaches, including:

- the information provided by a proponent in its referral form
- preliminary documentation (the referral form and any other relevant material identified by the Minister as being necessary to adequately assess a proposed action
- a public environment report
- an environmental impact statement
- a public inquiry.

If a proposed action is covered by a bilateral assessment agreement with a state or territory, then the action can be assessed under an accredited state or territory process (section 6.3).

The majority of assessments for exploration activities under the EPBC Act have been by preliminary documentation (eight out of 13 assessments) (sub. 33, p. 9).

Assessments focus on the matters of national environmental significance. For example, where a proposal is likely to have a significant impact on a listed threatened species, the assessment required under the EPBC Act only needs to consider the impact of the proposal on the particular threatened species. As noted earlier, the states and territories will also undertake assessments of environmental impacts in accordance with their processes.

*Approval*

Approval is either granted, granted with conditions, or denied, by the Minister.

*Strategic assessments*

Strategic assessments are landscape-scale assessments. In contrast to project-by-project assessments, which look at individual actions (such as a proposed exploration project), they can consider a much broader set of issues. The strategic assessment process is much less commonly used than the referral, assessment and approval process.

The strategic assessment process has two steps:

- assessment and endorsement of a 'policy, plan or program'

- approval of actions (or classes of actions) that are associated with the policy, plan or program. This second step potentially allows development to proceed across a large area without further need for EPBC Act approval of individual (project-by-project) developments (SEWPaC 2012c).

Strategic assessments are undertaken by the organisation responsible for implementing the policy, plan or program — for example, a state or territory government, local council, industry group or organisation — in partnership with the Australian Government. They are designed to be collaborative processes that deliver positive outcomes for both parties.

### *Administering the OPGGS Act*

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is the environmental regulator for petroleum exploration and development activities in Commonwealth waters.

The OPGGS Act and OPGGS (Environment) Regulations require those who want to conduct a petroleum activity in Commonwealth waters to prepare and implement an adequate environment plan for the period of the activity. The required content of an environment plan is detailed within the OPGGS Regulations. NOPSEMA must assess and determine the environment plan to be acceptable before the activity can proceed.

The Regulations utilise a risk-based approach for managing environmental performance through the environment plan regime, which requires demonstration that the environmental impacts of petroleum exploration activities are of an acceptable level and are reduced to 'as low as reasonably practicable' in order for a petroleum activity to proceed.

This approach enables operators to employ innovative and effective environmental protection measures that are tailored to their specific circumstances to achieve good environmental practice and outcomes. The Regulations are, therefore, primarily objectives-based and in the most part do not attempt to prescribe a particular environmental risk reduction approach.

The *Offshore Petroleum and Greenhouse Gas Storage (Regulatory Levies) Act 2003* provides for NOPSEMA to function on a full cost recovery basis.

### Natural Heritage

The National Heritage List, established under the EPBC Act, includes natural places of outstanding heritage value to the nation. The list includes numerous natural heritage sites, such as the Stirling Range National Park, Fraser Island and the Tasmanian Wilderness World Heritage Area.

National Heritage places are matters of national environmental significance protected by the EPBC Act. If the responsible Commonwealth Minister decides that an action will or is likely to have a significant impact on a National Heritage place, then the action will require approval under the EPBC Act.

If a National Heritage place is on non-Commonwealth land, the values are protected to the full extent of the Australian Government's constitutional powers. In some cases, the value of places may be protected under state or territory legislation (through a bilateral agreement between the relevant state or territory government and the Australian Government) or by private owners under a conservation agreement with the Australian Government.

National Parks that are not on the National Heritage List are managed by state or territory governments. Policies towards exploration in national parks vary between jurisdictions, ranging from complete prohibition in Victoria, through to exploration permits requiring the approval of both Houses of Parliament in Western Australia. The issue of exploration activity within national parks and reserves is addressed in chapter 4.



## 6.3 Duplication of regulatory agency responsibilities

### Duplication of the Australian Government regulatory framework

*Overlap between the EPBC Act and the OPGGS Act*

At the Australian Government level, the main duplication of regulatory responsibilities is between the administration of the EPBC Act (by SEWPaC) and the OPGGS Act and OPGGS (Environment) Regulations (by NOPSEMA) for exploration proposals in Commonwealth waters.

The potential for overlap arises because the environmental regulations administered by NOPSEMA have the goal of ensuring that offshore petroleum activities are carried out in a manner consistent with the principles of ecologically sustainable

development. Such objectives are consistent with the protection of matters of national environmental significance, which is the focus of the EPBC Act.

Table 6.3 sets out the number of exploration-related referrals and associated determinations made under the EPBC Act since its commencement. It shows there are far fewer onshore than offshore referrals. Most onshore exploration activities do not have a material impact on matters of national environment significance as defined by the EPBC Act (box 6.1).

Table 6.3 **Referrals and associated determinations under the EPBC Act — onshore and offshore exploration**

Estimated number since the commencement of the Act in 2000

| *Determination* | *Onshore referrals* | *Offshore referrals* |
|---|---|---|
| Not a controlled action | 14 | 87 |
| Not a controlled action – particular manner | 11 | 275 |
| Controlled action | 4 | 9 |
| Action clearly unacceptable | 0 | 1 |
| Referral withdrawn or decision yet to be made | 0 | 38 |
| Total | 29 | 410 |

*Source*: sub. 33, p. 4.

The Montara Commission of Inquiry recognised the potential for duplication. One of its recommendations — which was accepted by the Australian Government — was:

> The Government should examine the scope for a single environment plan to meet the regulatory requirements of both the OPGGS Act and the EPBC Act. This could possibly be achieved by way of bilateral agreements and accreditation arrangements and/or legislative amendment. (Montara Commission of Inquiry 2010, p. 317)

The *Independent Review of the Environment Protection and Biodiversity Conservation Act 1999* (the Hawke Review) (DEWHA 2009a, p. 43) also recommended the Australian Government consider streamlining the OPGGS Act and the EPBC Act 'with a view to maximising regulatory efficiency while retaining strong environmental safeguards'. The Australian Government agreed with this recommendation.

Several submissions to this inquiry have observed that duplication between the two Acts leads to increased compliance costs arising from the necessity to produce different environmental plans, delays in approvals processes, and inconsistent and sometimes incompatible operational requirements from regulators.

For example, NOPSEMA stated:

> It is NOPSEMA's view that duplication of assessment effort under the two pieces of legislation imposes an unnecessary regulatory burden on the Commonwealth and industry and does not afford any additional environmental protection. (sub. 28, p. 2)

The Australian Petroleum Production and Exploration Association (APPEA) provided a number of examples of the effects of regulatory duplication at the Australian Government level in its 2013 report *Cutting Greentape: Major Oil & Gas Project Environmental Approvals Processes in Australia* (APPEA 2013). One of these, which relates specifically to an offshore exploration project, is summarised in box 6.3.

*Removing Commonwealth regulatory duplication of offshore petroleum exploration activities*

NOPSEMA provides a documented, systematic and consistent approach for the completion of environment plan assessments associated with all petroleum activities in Commonwealth waters. It is, therefore, equipped with the necessary management and technical expertise to be able to undertake assessments and approvals under the EPBC Act.

NOPSEMA stated that there are options available under the EPBC Act for streamlining the assessment and approvals processes, one of which is:

> … granting a section 33 authorisation process, thereby authorising NOPSEMA to administer the EPBC Act on its [SEWPaC's] behalf (accreditation). (sub. 28, p. 2)

SEWPaC, the Department of Resources, Energy and Tourism and NOPSEMA are currently working together on options to streamline environmental approvals for offshore petroleum activities, including the potential for accrediting NOPSEMA to undertake assessments and approvals under the EPBC Act.

### Box 6.3 Case study – approvals for an offshore seismic survey

In 2011-12, BP conducted a 3D Marine Seismic Survey in the Great Australian Bight. The proposed survey area was located in Commonwealth waters of the Ceduna sub-basin, around 400 kilometres west of Port Lincoln.

For the Ceduna exploration program, BP required three separate approvals to address the same environmental risks in the same environmental management plan:

- an accepted environment plan under the OPGGS Act
- a referral under the EPBC Act
- an access request to conduct a mining operation in the Great Australian Bight Marine Park (GABMP) under the EPBC Act.

The EPBC Act referral was submitted on 16 May 2011, the environment plan on 17 May 2011 and the GABMP access request on 20 May 2011.

The environment plan and the EPBC Act referral were fundamentally the same document except for formatting. Both addressed the fact that the survey would be partly within the GABMP. Consequently, the GABMP access request simply referred to the other documents.

The outcome of the applications differed in terms of timeliness.

- The environment plan was accepted by NOPSEMA on 13 July.
- The referral resulted in a 'not controlled if conducted in a particular manner' decision by SEWPaC on 4 August.
- The GABMP access request was granted on 1 September, with the additional time required to process the paperwork through Executive Council for the Governor General's signature rather than deliberation on any environmental issues raised.

The outcomes also differed in terms of substance.

- The environment plan was accepted unamended following some clarification regarding procedures for cetacean entanglement in seismic lines.
- The referral deliberation was held up due to the potential impact on blue whales. After the referral was submitted, a new draft bio-regional plan for the south west marine area was published for comment, with a possible extension to the area known as a blue whale feeding zone. The referral was assessed against this subsequent draft boundary, not the official published one at the time of referral, which required modelling to be resubmitted. Ultimately, the required conditions were accepted but the time lost placed significant pressure on the project timetable.
- The GABMP access request required no further assessment once the referral decision was made.

*Source*: APPEA (2013).

Accreditation may involve some legislative amendments. To the extent that additional regulatory effort would be required on the part of NOPSEMA, an amendment to NOPSEMA's levy arrangements would be required, given

NOPSEMA's status as a fully cost recovered statutory agency. There should be cost savings for SEWPaC and, overall, there should be an efficiency gain in line with the reduction in regulatory duplication.

DRAFT RECOMMENDATION 6.1

***The Commonwealth should accredit the National Offshore Petroleum Safety and Environmental Management Authority to undertake environmental assessments and approvals under the Environment Protection and Biodiversity Conservation Act for petroleum activities in Commonwealth waters.***

### *The Commonwealth marine area*

The EPBC Act defines the whole of 'the Commonwealth marine area' — an area of around 16 million square kilometres — as a matter of national environmental significance. Accordingly, exploration proposals in this area that will have a significant environmental impact require approval from the responsible Minister.

The sizable geographic extent of the Commonwealth marine area makes it unlikely that all activities in the area will necessarily have an impact on an area or species of significant environmental value, a point noted by APPEA.

> As it is so broad and all encompassing, the inclusion of the Commonwealth marine environment as a [matter of national environmental significance], at the margin, does not necessarily enhance environmental outcomes. It does however create a large degree of administrative overlap between other regulatory requirements (such as the OPGGS Act). (2013, p. 10)

Further, many of the environmentally significant aspects of the Commonwealth marine area (such as migratory and endangered species) are protected by other triggers under the EPBC Act.

Industry tends to engage extensively in the referrals process, with an estimated 410 referrals to date for offshore exploration. However, only nine of these referrals have been deemed 'controlled actions' and just one ruled to be clearly unacceptable. Most have been deemed to be either 'not a controlled action' (87 referrals) or 'not a controlled action – particular manner (275 referrals) (table 6.3).

Regardless of whether or not NOPSEMA becomes accredited to undertake offshore Commonwealth environmental assessments and approvals under the EPBC Act for petroleum and gas activities, the duplication between the EPBC Act and the OPGGS Act — and associated compliance costs for explorers — could both be reduced if the defined matter of 'the Commonwealth marine area' were able to be

clarified to better target specific areas and issues of national environmental significance.

INFORMATION REQUEST

*The Commission seeks views from inquiry participants on the scope for — and costs and benefits of — clarifying the defined matter of 'the Commonwealth marine area' under the Environment Protection and Biodiversity Conservation Act 1999 to better target matters of national environmental significance.*

## Duplication between the states and the Commonwealth

### *Onshore exploration*

For onshore exploration, there is potential for the EPBC Act to intersect with state-based regulatory regimes. The extent of duplication of assessment processes will be limited to, at most, the assessment of specific matters of national environmental significance potentially affected by the exploration proposal, such as the impact on a particular listed threatened species or on a Ramsar wetland of international significance.

The potential for duplication exists despite the presence of bilateral agreements between the Commonwealth and each of the states and territories to accredit state and territory environmental assessment processes (although the agreement with New South Wales lapsed in 2012). With the agreement of the responsible Commonwealth Minister, a proposed action that would otherwise require assessment under the EPBC Act can be assessed using an accredited state or territory assessment process for the purposes of both the EPBC Act and the relevant state or territory legislation.

Since the commencement of the EPBC Act in 2000, an estimated 29 onshore exploration (minerals and non-marine oil and gas) referrals have been received by SEWPaC. Of these, just four have been assessed as 'controlled actions', that is, they required assessment (including an environmental impact statement) and Ministerial approval before they proceeded (table 6.3). Most have been deemed either 'not a controlled action' (14 referrals) or 'not a controlled action – particular manner (11 referrals). No proposed exploration actions have been assessed under a bilateral agreement (sub. 33, p. 15).

The Hawke Review recommended that the Commonwealth work with the states and territories to improve the efficiency of the assessment regime under the EPBC Act,

including through accreditation of state and territory processes where they meet appropriate standards. The Review suggested the focus should be on improving the operation of these bilateral assessment agreements rather than legislative amendments, noting the need for better understanding between Commonwealth and state agencies (DEWHA 2009a).

The Minerals Council of Australia also called for greater cooperation between governments, but said there was room for significant gains even without accreditation of state and territory processes:

> As identified by COAG, governments need to cooperate more effectively in administering their EIA [environmental impact assessment] regimes. There is currently a disconnect between different processes in different jurisdictions which can lead to inefficiencies. Better cooperation is clearly necessary but must occur in a transparent and accountable way, recognising the legitimate interests of all governments and all stakeholders. Transparency and accountability are especially important in maintaining the confidence of stakeholders.
>
> Commitments by governments to streamlining EIA processes, rely on accreditation arrangements as the principal mechanism for achieving efficiency. Even without accreditation, however, there are considerable gains to be made through better cooperation between Australian governments, particularly in the best practice context. Arguably, such gains would be necessary in any event as a prerequisite for successful accreditation. (sub. 27, p. 28)

Despite there being bilateral agreements covering the assessment process, the Western Australian Government noted in its submission that the Australian Government had recently 'unilaterally introduced a new matter of national environmental significance trigger relating to water associated with coal seam gas and coal mining' which was ' … likely to further duplicate State assessment processes' (sub. 29, p. 11).

Another recent development has been the Australian Government's addition of the West Kimberley region of Western Australia to the National Heritage List, which brought around 200 000 square kilometres under the scope of the EPBC Act. The listing of the West Kimberley region gives rise to further potential duplication between state legislation (in this case, existing Western Australian environmental legislation) and the EPBC Act. As AMEC noted, it is questionable whether the listing will provide any additional environmental benefit. Further, as AMEC also noted, the listing appears to have set a precedent that could be replicated elsewhere in Australia with similar impacts (sub. 24, p. 20).

*Extending accreditation arrangements to approval processes*

If a proposed action is covered by a bilateral assessment agreement, then that action may be assessed under an accredited state or territory process. However, after assessment, the proposed action still requires approval from the responsible Commonwealth Minister under the EPBC Act.

Some participants in the inquiry regarded duplication of approval processes as worthwhile. For example, the Australian Network of Environmental Defender's Offices (ANEDO) stated:

> While some stakeholders have raised perceptions of regulatory overlap and duplication, ANEDO believes the case for shared responsibility and oversight between Commonwealth and State governments is strong. As the first headline of the *State of the Environment Report 2011* (Cth) notes, 'Our environment is a national issue requiring leadership and action at all levels.' (sub. 17, p. 5)

ANEDO has elsewhere outlined other reasons against accreditation of state and territory approvals processes, including the potential for conflict of interest if a state or territory government stands to benefit financially from a proposal, and states and territories not having a mandate to consider consequences outside their borders (Australian Network of Environmental Defender's Offices 2012).

In contrast, the exploration industry expressed concern about the potential for duplication. For example, AMEC noted:

> AMEC has raised the issue of duplication of federal and state approvals as a barrier to not only exploration but mining development more broadly. Duplication is not only contained in multiple approvals, but the submission of the same information to more than one agency. (sub. 24, pp. 20)

At its meeting on 13 April 2012, the Council of Australian Governments (COAG) recognised duplication between the EPBC Act and state and territory processes as one of six 'priority areas for major reform to lower costs for business and improve competition and productivity'. The COAG communique stated that governments would work to develop bilateral arrangements for accrediting state approval processes:

> First Ministers reaffirmed COAG's commitment to high environmental standards, while reducing duplication and double-handling of assessment and approval processes. To achieve these commitments, our governments will work together to fast-track the development of bilateral arrangements for accreditation of state assessment and approval processes, with the frameworks to be agreed by December 2012 and agreements finalised by March 2013; [and] develop environmental risk- and outcomes-based standards with States and Territories by December 2012 … (COAG, 2012)

A number of participants in the inquiry, including APPEA (2013) and the South Australian Chamber of Mines and Energy (sub. 9, p. 9), supported COAG's 2012 commitment. The Minerals Council of Australia (sub. 27, p. 5) also proposed that approvals processes should be devolved to the states, and that the Commonwealth's role be limited to 'strategic oversight and enforcement' (strategic assessments are discussed below).

However, as noted by SEWPaC, progress towards accreditation of approval processes has subsequently halted.

> Since August 2011, much work has been done to progress the Government Response, both within the Commonwealth and in partnership with state and territory governments and stakeholders. During 2012, the Commonwealth worked with states and territories on the viability of signing approval bilateral agreements … This proved to be complex and would have resulted in systems that would not have simplified the regulatory regime. As a result the Commonwealth is not progressing negotiation of approval bilateral agreements. (sub. 33, p. 13)

Nonetheless, accreditation of approval processes still has the potential to remove a layer of decision-making duplication between the states and the Commonwealth. Appropriate safeguards could ensure that this occurs without compromising environmental outcomes.

In the Commission's view, there is merit in renewing efforts to reach agreement between the Australian Government and the states and territories on bilateral arrangements for approval processes and to strengthen existing bilateral arrangements for assessment processes. This work should be properly scoped to identify the necessary steps, be reviewed by jurisdictions and a timetable for implementation be set.

DRAFT RECOMMENDATION 6.2

***The Commonwealth should improve the efficiency of environmental assessment and approval processes under the Environment Protection and Biodiversity Conservation Act by strengthening bilateral arrangements with the states and territories for assessments and establishing bilateral agreements for the accreditation of approval processes where the state and territory processes meet appropriate standards. The necessary steps to implement this reform should be properly scoped, identified and reviewed by jurisdictions and a timetable for implementation should be agreed.***

*Strategic assessments*

SEWPaC noted in its submission that the Australian Government is increasing the use of strategic assessments. To date, four strategic assessments have been completed and at least another 15 are underway. SEWPaC provided two examples of strategic assessments currently being undertaken, both of which are relevant to resource exploration:

> … BHP Billiton Iron Ore and Hamersley Iron Pty Limited are undertaking strategic assessments covering their major expansion plans for iron ore mining in the Pilbara region of Western Australia for a period of up to 50 years …
>
> As another example, the Australian and NSW Governments have signed an agreement to undertake a strategic assessment under the EPBC Act of new and expanded coal mining operations in the Upper Hunter River district of NSW over the next 30 years. Ten mining companies with exploration and mining leases in the district are participating and have agreed to fund the strategic assessment. (sub. 33, p. 14)

Strategic assessments provide an alternative to assessing 'controlled actions' on a project-by-project basis. They offer an avenue to streamlining and simplifying the approvals process and resolving many of the issues of Commonwealth and state or territory duplication — particularly if accompanied by accreditation of state and territory approval processes for individual projects.

Under such a streamlined approach, state and territory governments could have responsibility for individual project assessment and approval and the Australian Government could shift its attention away from individual projects towards more high level strategic assessments.

The Minerals Council of Australia supported an approach along these lines:

> Federal/State relations should be streamlined to institute strategic land use assessment and planning, and to limit the Commonwealth to a strategic oversight and enforcement role while devolving access and approvals processes to the States. (sub. 27, p. 5)

Strategic assessments allow for the assessment of broad scale environmental impacts that would not normally be in the scope of an individual project assessment, a point noted by the Minerals Council of Australia:

> … while there will always be a place for the more traditional project-level EIA [environmental impact assessment], Australian practice needs to move much more to strategic and regional approaches more able to deal with the environmental problems of the 21st century. Strategic-level EIA, undertaken at the policy and planning stage, can deal much more effectively with cumulative and regional environmental issues; and it can also provide industry with much more certainty about acceptable parameters for future development proposals. (sub. 27, p. 28)

Strategic assessments may shift some of the cost of environmental assessments from proponents to government. However, strategic assessments can potentially be a more efficient process — providing one holistic assessment for a region as opposed to a number of individual project assessments that may not, for example, consider the cumulative impacts on that region.

INFORMATION REQUEST

*The Commission seeks views from inquiry participants on the benefits and costs of strategic assessments in relation to resource exploration proposals, as a tool to avoid unnecessary regulatory burden and to improve environmental outcomes.*

### *Offshore exploration*

The potential for duplication between the EPBC Act and state or territory environmental regulatory regimes has lessened for offshore exploration activities since 2012 when the Commonwealth assumed full responsibility for offshore petroleum regulation in Commonwealth waters. Prior to 2012, responsibility had resided with the Joint Authorities for the offshore area of each state or territory — that is, for the area extending seaward from the low tide mark to the outer limit of the continental shelf, including Commonwealth waters and coastal waters. The Joint Authorities were constituted by the responsible state or territory Minister and the responsible Commonwealth Minister.

This change was largely the result of implementing recommendations from the Montara Commission of Inquiry. The inquiry recommended a single, independent regulatory body be responsible for safety as a primary objective, in addition to well integrity and environmental approvals. It proposed that these functions and responsibilities be allocated to a single governing body. As noted, NOPSEMA has subsequently become that governing body.

As a result of this change, the potential for EPBC Act duplication with state regulatory regimes for offshore exploration is now confined to exploration activities that take place within the coastal waters of the states and territories.

### *Separate 'coastal waters' regime for each jurisdiction — is there scope for conferral of powers to the Commonwealth?*

The 'coastal waters' of the states and Northern Territory are the areas between the territorial sea baseline (generally situated at the lowest astronomical tide line along the coast) and the line that is three nautical miles seaward of the territorial sea

baseline, as well as any waters landward of the baseline that are outside the limits of the states and the Northern Territory. As noted previously, petroleum exploration in coastal waters is regulated under state and territory legislation and, beyond three nautical miles, petroleum exploration is regulated under Commonwealth legislation.

In its 2009 research report *Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector* (PC 2009), the Commission recommended that:

> The Australian Government should give State and Territory Governments, on a bilateral basis, the option of conferring their existing petroleum-related regulatory powers in State and Territory waters seaward of the low tide mark, including islands within those waters, on the new national offshore petroleum regulator and ultimately the Commonwealth Minister as relevant. The respective powers of the Commonwealth and State and Territory Ministers that would then apply should be similar to those applying to the National Offshore Petroleum Safety Authority. For States and Territories that wish to opt-in, it would be a requirement that all their relevant State or Territory petroleum Acts fully mirror the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (Cwlth) and its subordinate regulations, including provisions relating to pipelines. (pp. 292–93)

The Commonwealth Government supported this recommendation, but not all other jurisdictions did. The Commonwealth subsequently amended the OPGGS Act to include provision for the states and Northern Territory to individually opt-in and confer their upstream petroleum responsibilities for their coastal waters on NOPSEMA.

No state or territory has conferred powers of regulation of environmental management on NOPSEMA. As a result, it is likely that an explorer seeking approval for an offshore exploration activity that crosses jurisdictions would need to seek approvals from two regulators for possibly similar activities.

Given that around 90 per cent of oil and gas resources are found within Commonwealth waters (APPEA 2007), it is questionable whether the scale and frequency of activity that occurs within state and territory coastal waters warrants separate state and territory administrative regimes. The broad industry support for the arrangements that were implemented in 2012 for the regulation of petroleum activities in Commonwealth waters also lends weight to the argument for removing this potential source of duplication.

DRAFT RECOMMENDATION 6.3

***State and territory governments should reconsider the option of conferring their existing petroleum-related regulatory powers in state and territory waters seaward of the low tide mark, including islands within those waters, to the National Offshore Petroleum Safety and Environmental Management Authority.***

## 6.4 Proportionate regulation

### Aligning regulatory requirements with the likely magnitude of impacts

Most environmental impact assessment processes have several levels of assessment, depending on the environmental significance and complexity of the proposed activity. The aim of these multi-layered approaches is to weigh the risk and significance of environmental impact against the compliance costs and delays associated with the assessment process.

Nonetheless, participants in the inquiry reported numerous instances where regulatory requirements are not commensurate with the likely environmental impacts. For example, Resource Futures observed:

> … in the NT, annual exploration programs require prior approval under the term "Mine Management Plan" and require extensive detailing of proposed work, siting of drill-holes, etc. … In Victoria, this informant is aware of circumstances where non-invasive geophysical programs required prior regulatory risk assessment and approval, resulting in additional equipment hire costs and delay.
>
> Overall, there is increasing evidence of 'make work' bureaucratic intervention and micromanagement of relatively straightforward exploration work programs with no defined risk reduction or community benefit resulting from the regulatory involvement. (sub. 14, p. 7)

And AMEC observed:

> Exploration is transient in nature and following rehabilitation the disturbed ground is returned back to the environment. However regulating agencies tend to take an overly conservative approach to managing risk which manifests itself as micro-managing exploration activities at considerable costs to explorers and regulatory agencies. AMEC is a strong advocate of risk-based outcome focused assessments … (sub. 24, p. 18)

Participants in the inquiry also expressed concern over attempts to 'bring forward' resource extraction-related regulation onto exploration activities (a form of so called 'regulatory creep'). In this regard, APPEA stated:

> … [R]egulators need to consider the vast differences in risk in the context of the activities being undertaken. For example, offshore exploration operators are asked to consider the 'worst-case' scenario of an oil spill in the marine environment. This focuses regulatory process on extremely remote events which are not credible or even remotely likely. Such rigorous criteria may be applicable and appropriate for low likelihood yet high risk activities such as production drilling, however lower risk activities (such as the risk of a collision or a spill from a seismic vessel) should not need such extensive documentation … (sub. 22, p. 19)

Some inquiry participants, however, supported more stringent regulation of exploration in anticipation of subsequent mining activity. For example, the NSW Irrigators Council stated:

> All relevant regulation governing mining and energy resource extractive activities has to apply through all stages of mining and CSG activities (exploration, operation, and post-closure). (sub. 5, p. 20)

And the Upper Dawson Branch of the Wildlife Preservation Society of Queensland observed:

> As a consequence, we have dealt extensively with the early exploration stages of these developments and are convinced that it is imperative that stringent environmental conditions be enforced during this exploration phrase. If after this phase, the company decides to proceed to production then having an appropriate set of environmental conditions already in place helps the flow on of these conditions as the development proceeds. (sub. 8, p. 1)

In a related matter, in Western Australia the Warden's Court recommended to the Minister that some exploration activity be halted because the court did not expect that any potential discovery would receive environmental approval for its development as a mine (box 6.4). In this case the Warden's Court was apparently

**Box 6.4 WA Wardens Court**

The Association of Mining and Exploration Companies (AMEC) said:

> In WA for example, the Wardens Court is a court to resolve administration issues associated with the Mining Act and is not a place for issues relating to the environmental policy.
>
> A good case study that AMEC considers highlights the issue is that of Darling Range South P/L v Ferrell & ors [2012] WAMW 1214. In this case the Warden has recommended the Minister for Mines and Petroleum not grant the exploration licence based on the premise that exploration will inevitably lead to mining and that mining will be incompatible with the environmental values contained within the exploration lease. The Minister has yet to make his decision adding further delays and uncertainty to the company's operations. … [T]he case highlights how the Warden's Court has been hijacked by unrelated and ill informed third parties.
>
> … [T]he Warden appears not to fully understand the environmental approval process and conflate the hearing of the applications/objections of mining tenure with the environmental impact assessment process, and potentially create a case law precedent.

*Source*: (sub. 24, p. 11).

applying a different set of criteria from that applying to exploration activity. Also, this view does not recognise that exploration can be valuable in its own right, regardless of whether it leads to resource extraction. In particular, exploration activity can improve the community's knowledge of its resources.

Participants were supportive of aligning regulatory requirements to the likely level of impacts. Resource Futures Pty Ltd also noted the benefits of designing regulation from the bottom up rather than from the top down:

> … [E]xploration related approvals processes have particularly suffered from 'top down' regulatory creep over the decades leading to the insertion of mining-related risk assessment parameters into the exploration process. …
>
> Unravelling the added red tape to understand more specifically what risks are experienced during the exploration process and then to engineer approvals and regulatory processes better matched to such risks would seem a smarter and more cost-effective way to proceed. (sub. 14, p. 9)

The Queensland Government has recently introduced legislation to provide an increased range of standard applications with standard conditions for low risk exploration activities, thus reducing the need for case-by-case assessments (sub. 25, p. 12). Appropriately designed reforms such as these help to better align environmental risks with the level of regulatory scrutiny and control and, in so doing, lower business compliance costs and reduce administrative costs for governments, without adversely affecting environmental outcomes.

Resource extraction usually involves a much larger scale of activity than does exploration activity and the processes of extraction can themselves be more invasive, for example open cut mines. Accordingly, the level of risk and the significance of potential adverse environmental impacts from resource extraction will generally be considerably higher than those arising from exploration. Further, as noted elsewhere in this report, only a small proportion of exploration activity leads to extraction.

The Commission is of the view that regulatory requirements should be proportionate to the likely level of impacts from exploration. In effect, the COAG principles of best practice regulation should be adhered to — they specify that government action should be proportional to the issue being addressed:

> Proportionality involves ensuring that government action does not 'overreach', or extend beyond addressing a specific problem or achieving the identified objective. The scope or nature of government action should be commensurate with the magnitude of a problem, its impacts, or the level of risk without action. The principle of proportionality applies equally to the implementation of regulation, including the development of frameworks for ensuring compliance. (COAG 2007, p. 6)

DRAFT RECOMMENDATION 6.4

***Governments should ensure that their environment-related regulatory requirements relating to exploration:***

- ***are the minimum necessary to meet their policy objectives***
- ***proportionate to the impacts and risks associated with the nature, scale and location of the proposed exploration activity.***

## Outcome-focused regulation

AMEC described an outcome-focused approach in the following terms:

> 'Outcomes focused' means a regulatory system that focuses on high-level principles and a requirement to achieve the best outcomes for the environment, business and the community. It should enable business to use appropriate methods of achieving outcomes which suit their business, their type of operation and their workplace without having to follow prescriptive rules. (sub. 24, p. 18)

Industry participants to the inquiry were generally supportive of outcome-focused approaches, noting that they allow for more flexibility in achieving the sought after environmental outcome — directly lowering compliance costs — and allow for innovative methods to be developed and used.

The Australian Institute of Mining and Metallurgy claims that there have been significant advances in industry capabilities in recent years:

> There is considerable opportunity to update Australian regulatory practice to reflect the significant advances in industry performance and capability that have occurred in recent decades. Without commenting on any specific government's regulations, businesses are often required to seek regulatory approval or report to regulators on their steps to manage community relationships and environmental or OHS risks that are now well understood and can be competently managed by the companies on a day to day basis with or without regulatory oversight. (sub. 12, p. 5)

The NSW Minerals Council provided an example of how prescriptive conditions can directly increase compliance costs — in this case the costs associated with transporting waste water potentially long distances:

> An example is when waste water from drill sumps cannot be disposed of in an adjacent tailings impoundment owned by the same company, but must be transported to an 'approved waste facility'. (sub. 11, p. 8)

In APPEA's view, prescriptive regulations have a negative effect on the capability of regulators to undertake their function compared to more objective-based systems:

> Industry remains concerned about the capability of the regulators to undertake the full suite of regulatory functions. This is primarily a skills rather than funding issue. … It is critical that regulators are adequately 'skilled-up' to perform their duties. Overall, the experience of a number of companies is that the regulators are suffering from a lack of relevant experience of the industry's operations. APPEA acknowledges that this skilling requirement is more prevalent in a prescriptive regime such as the EPBC Act, rather than an objective based system, such as the OPGGS Act. (sub. 22, p. 15)

Previous studies, such as the (Victorian) Economic Development and Infrastructure Committee's (2012) inquiry into greenfields exploration, have aired industry concerns about insufficient use being made of performance based standards and other more risk-based approaches, and excessive use of prescriptive regulations.

The Minerals Council of Australia stated:

> More attention also needs to be paid to outcomes rather than process. Clarification of desired outcomes that decision makers are seeking through the use of EIA would help facilitate greater consistency between Australian jurisdictions. It would also help restore the community's confidence. Such clarification should be achieved through outcome standards that are both specific and measurable.
>
> Clear outcome standards would also assist in identifying key risks associated with new proposals. This would help regulators to adopt a more effective risk management approach than is often currently the case. (sub. 27, pp. 28–29)

The Commission notes that there has been a general shift away from prescriptive regulatory requirements towards more outcome-focused regulatory requirements in recent years — such as performance based standards — as exemplified in South Australia. In some jurisdictions, however, there is room for further reform in this direction.

The Commission supports outcomes-based approaches, recognising that exploration companies will often be in a better position than regulators to identify the most efficient and effective means to minimise — or reduce the risk of the occurrence of — a particular adverse impact. Equally, explorers must be accountable for their actions, as assessed against performance-based standards.

This is a further case where jurisdictions should comply with the COAG principles of best practice regulation:

> Regulation should have clearly identifiable outcomes and unless prescriptive requirements are unavoidable in order to ensure public safety in high-risk situations, performance-based requirements that specify outcomes rather than inputs or other prescriptive requirements should be used. (COAG 2007, p. 5)

As COAG noted, there may be instances where some level of prescription is appropriate. The Commission notes that prescriptive requirements can provide

companies with a relatively high degree of certainty about what is required, and they can be simpler for the regulating agency to enforce and monitor.

However, regulators should be mindful of the many advantages of outcomes-based approaches. They provide scope for flexible and innovative solutions to environmental issues, and they permit companies to adapt to changing circumstances without compromising the environmental outcome sought.

DRAFT RECOMMENDATION 6.5

***Governments should ensure that their environment-related regulation of exploration activities should be focused towards performance-based environmental outcome measures and away from prescriptive conditions, in order to better manage risk and achieve environmentally sound outcomes.***

## Dealing with uncertainty

Information about the nature, magnitude and likelihood of adverse consequences from particular activities may be uncertain and/or incomplete. This uncertainty is often heightened when a new industry is establishing (such as CSG) or new technology is introduced (such as fracking).

Several participants in the inquiry commented on the presence of such uncertainty in resource exploration. For example, the New South Wales Irrigators' Council stated that there was insufficient information to assess the likely environmental impacts of exploration and subsequent resource development of CSG:

> … the potential threat that mining and energy resource exploration activities pose to water sources — i.e. structural damage to existing water sources, contamination and changes in water pressure and quality — are additional sources of concern for NSWIC. While data and information on mineral and energy resource deposits are extensive, insufficient work has been done to assess the impact of mining and energy resource exploration and extraction on water resources. (sub. 5, p. 5)

While the environmental risks associated with exploration are generally lower than those associated with resource extraction, exploration activities can pose risks to the environment. For example, in relation to exploration for CSG, Edwards observed:

> Exploration in this [CSG] industry is intensive, conducted on a 1 km grid, and requiring extraction of large volumes of water (and hence construction of evaporation ponds) even to prove the resource. (2006, p. 18)

Uncertainty about impacts can present difficulties for policy makers. It can be difficult to link causes and effects, such as in the example of the impacts of fracking on groundwater quality (which can be affected by a number of other factors

unrelated to exploration). Long term and cumulative impacts can be particularly difficult to understand, measure and attribute.

High levels of uncertainty over environmental impacts can make policy making and subsequent decisions vulnerable to popular pressure. For example, the CSG industry has been subject to a moratorium in Victoria and a number of regulatory restrictions in New South Wales. And the Federal Government recently announced that it is introducing an amendment to the EPBC Act to define water resources as a matter of national environmental significance in relation to coal seam gas and large coal mining developments (such developments are currently largely the responsibility of states and territory governments). This decision appears to have been made without appropriate regulatory impact analysis to assess the benefits and costs associated with the proposed amendment.

Some companies have suspended certain CSG activities as a result of the regulatory situation. For example, Dart Energy announced that:

> … following the recent regulatory changes by the NSW and Federal Governments, the Company has decided to not undertake any further work on its NSW assets until there is greater regulatory clarity and certainty. (2013, p. 5)

### *Stakeholders' views on uncertainty*

Several participants expressed concern that current regulatory arrangements do not sufficiently take into account the uncertainty associated with possible impacts of current exploration activities. For example, the Basin Sustainability Alliance (which describes itself as a 'Queensland-based group representing the concerns of landholders and rural communities in relation to the unprecedented scale and pace of development underway in the CSG industry in Queensland') noted:

> … it is our view that there is still currently not enough science and baseline information available to assess the true impacts that the coal seam gas industry will have on the future sustainability of our land and water resources. … [I]f water or any other environmental related impacts are greater than intended … or predictions of impact change for the worse – how does the Queensland Government wind back conditions for projects already approved in order to give assurance that water resources are not severely compromised? (sub. 18, p. 3)

Others, however, observed that risks tend to be overstated and that there is a need for better communication of the actual risks involved. Resource Futures Pty Ltd stated:

> Risk perceptions may frequently be overstated by project opponents, leading to excessive prudence on the part of decision makers. The result, however, is often to prevaricate and delay, leading investors to give up and look elsewhere. More effective

> engagement and communication mechanisms, involving both resource stewards and resource developers, are needed to diminish the red tape and delay that have grown over the past few decades in soothing community concerns. (sub. 14, p. 7)

### *Improving policy responses when there is a high level of uncertainty*

In cases where there is scientific uncertainty about impacts, adoption of a precautionary approach would enable a course of action to be determined that maximises the benefits to society, taking account of the probabilities of all possible impacts.

Uncertainty about the science should not lead to poor regulatory processes and decision making. Where there is a concern of substantial or permanent damage, a lack of certainty should not be used to justify a lack of action to mitigate or prevent such damage. But nor does uncertainty with the science reduce the need to identify the benefits and costs of activities such as exploration. Rather, scientific uncertainty is one factor that should be considered when deciding whether exploration can reasonably be expected to increase the community's wellbeing.

Decision makers should take into account all available information on the impacts and risks of a proposed exploration activity, and assign probabilities to all of the impacts and risks. Such an approach allows policy options to be compared. The basis for policy decisions should be transparent, and policies should be open to revision in the light of new information — that is, an adaptive management approach (box 6.5).

Policy responses that can be implemented to manage potentially hazardous activities include:

- conducting research to improve information and reduce uncertainties
- incorporating 'safety margins' or 'uncertainty factors' in risk assessments
- regulating the activity to reduce the potential for adverse impacts
- banning an activity, either temporarily or permanently — for example, if the activity is demonstrably likely to have impacts that will outweigh the benefits (Weier and Loke 2007).

Options may be combined — for example conducting research while regulating the activity in the short term.

Dr Nicola Swayne, at the Queensland University of Technology, noted that an effective adaptive management approach would require that the:

… approach be integrated into statutory provisions for the approval and management of CSG projects. … [and] … that the statutory regime be designed with sufficient flexibility to enable changes to be made to the regulatory framework in response to the improved knowledge and understanding of the impacts … ' (2012, p. 34)

### Box 6.5 Adaptive management

*Risk* can be defined in terms of two key concepts — the probability of an event occurring, and the level of benefit or cost should the event occur. *Uncertainty*, on the other hand, characterises a situation where the probability of an event occurring is unknown.

A decision-making rule when making a decision in situations of uncertainty is to choose the option that maximises the expected net benefit, taking into account all of the possible impacts and their associated probabilities.

This rule requires a regulator to analyse all relevant dimensions of a situation. It acknowledges that many aspects of an assessment may be subjective. However, analysing uncertainty by expressing probabilities quantitatively (that is, converting uncertainties into *risks*) — rather than in a purely intuitive or qualitative way — has a number of advantages. While the probabilities are necessarily subjective, their assumed values are made explicit, and hence are open to scrutiny by third parties. They can also be revised in a logically consistent way when new information becomes available.

Such an approach allows policy options to be compared, and for the decision maker to choose the option that provides the greatest expected net benefit to the community. Sensitivity analysis can be used to provide information about how changes in the values of variables will affect the overall costs and benefits.

Adaptive management approaches should be built on these criteria. Adaptive management involves drawing on research, monitoring and evaluation to improve the effectiveness of environmental management (Stankey and Allan 2009). Such approaches help to ensure that flexibility is incorporated into policy making to deal with changing risks and uncertainties. Policy can then be implemented iteratively over time in order to maintain risk levels within tolerable bounds, with the aim of reducing uncertainty over time through monitoring. This learning process improves long run environmental and regulatory outcomes.

Ex-post reviews are essential to adaptive management, and they help to validate and improve ex-ante assessment methodologies and better inform future decision making.

*Source*: OECD 2010; PC 2012.

The Queensland Government has adopted an adaptive management approach:

> Existing provisions of the *Environmental Protection Act 1994* allow the Department of Environment and Resource Management to amend CSG environmental authorities to protect the environment from unintended impacts. Such an amendment might be

> triggered if information submitted with an annual evaluation of the effectiveness of the management of CSG water showed that unintended impacts were occurring to the environment. (Queensland Government 2010, p. 1)

Queensland's approach is accompanied by the imposition of layered monitoring and reporting duties on CSG operators alongside obligations to compensate and 'make good' any harm caused (Swayne 2012). Arrangements to 'make good' any impact on groundwater may, for example, include restoration of the water supply (such as by deepening a bore) or financial compensation for the loss of supply to the bore owner.

In its comments on the draft Queensland approach to managing the water impacts of CSG development (*Coal Seam Gas Water Management Policy Draft - 2012*), AgForce Queensland (2012) was broadly supportive of the proposed approach, but noted:

> … it is important that CSG companies can demonstrate in their water management plans that they have considered their potential impacts on the environment and other water users and have a robust and strategic plan for the amelioration of these environmental impacts and to deliver on their 'make good' provisions into the future, including providing an ongoing supply of an equivalent amount of water of a suitable quality where that is required. (p. 3)

The Commission supports an adaptive management approach, combined with obligations on operators to compensate affected parties for any environmental impacts their activities may cause. To be effective, such approaches need to incorporate sufficient flexibility to allow regulations to change in response to improved knowledge of environmental impacts. This could mean, for example, that approval for certain exploration activities is conditional on environmental impacts not being significantly greater than anticipated at the time approval was granted. That is, there needs to be a tradeoff between providing certainty for explorers and being able to take action if impacts (or the risks of impacts) turn out to be greater than expected.

DRAFT RECOMMENDATION 6.6

***Governments should ensure that when there is scientific uncertainty surrounding the environmental impacts of exploration activities, regulatory settings should evolve with the best-available science (adaptive management) and decisions on environmental approvals should be evidence-based.***

*Research to improve the understanding of impacts*

In instances where there is significant scientific uncertainty about the environmental impacts of exploration — particularly for impacts that extend beyond the actual exploration site, or that are cumulative over time, or are otherwise difficult to measure or attribute — research may help to improve the evidence base for decision making.

In this regard, COAG has developed the Coal Seam Gas National Partnership Agreement. The agreement aims to improve the regulation of CSG and large coal mining developments by ensuring that future decisions are informed by substantially improved science and independent expert advice.

As a signatory to the partnership agreement, the Commonwealth Government is providing $150 million to fund scientific research on the potential water-related impacts of CSG and large coal mining activities through the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (a committee of experts established by the Australian Government in 2012).

The three priority areas for strengthening decision making under the partnership agreement are:

- more closely identifying potential and actual impacts on water resources, and supporting parties to avoid or minimise significant impacts through a transparent process that builds public confidence
- substantially improving governments' collective scientific understanding of the actual and potential effects of CSG and coal mining developments on water resources
- ensuring that the best scientific information and expertise underpins all relevant regulatory processes and decisions (COAG Reform Council, 2013).

As the community is the owner of mineral and energy resources, and can be a beneficiary of successful exploration, it is appropriate that Australian governments contribute to improving the knowledge base of not only the resource (see chapter 7) but also the impacts associated with the development of those resources, including exploration activity.

## 6.5 Improving the administration of assessment and approval processes

### Are regulatory requirements clear and well publicised?

There has been some criticism about a lack of clarity or certainty with respect to regulatory requirements under the EPBC Act. In this regard, APPEA supported:

> … improved and additional government guidelines to facilitate a better understanding of the regulatory process. For example, additional guidance on matters of National Environmental Significance (NES) would alleviate confusion and improve the functioning of the EPBC Act with respect to NES triggers. (APPEA 2013, p. 10)

Such an approach is consistent with COAG's principles of best practice regulation which state that:

> … it is necessary to clearly articulate … regulations for the benefit of regulators administering the solution as well as regulated parties. … Good regulation should attempt to standardise the exercise of bureaucratic discretion, so as to reduce discrepancies between government regulators, reduce uncertainty and lower compliance costs. … Where possible, regulatory instruments should be drafted in 'plain language' to improve clarity and simplicity, reduce uncertainty and enable the public to understand better the implications of regulatory measures. (COAG 2007, p. 5)

The Commission notes that administrative efficiency in environmental approval processes has improved in recent years through the use of the internet to publicise regulatory requirements. For example, Western Australia's Department of Mines and Petroleum has implemented an online Environmental Assessment Regulatory System (EARS online) that allows the lodgment, submission and tracking of applications, accompanied by guidelines to assist applicants.

In its report *A Sustainable Future for Victoria: Getting Environmental Regulation Right*, the Victorian Competition and Efficiency Commission recommended:

> … the [Victorian] Department of Primary Industries (DPI) expand its website to list all the approvals that a mining or extractive industries proponent may need, and to provide guidelines, policy notes and advice on the requirements of each approval. The DPI should regularly update the website, to ensure proponents are informed of any proposed changes to the legislation or the approvals process. (2009, p. 269)

The recommendation was supported by the Victorian Government.

The Commission sees value in all jurisdictions having high standards of transparency in their regulatory requirements (and changes to those requirements),

including how these requirements are interpreted and enforced by agencies. This will enhance understanding and help to improve the quality of applications. In turn, this can facilitate a quicker and smoother flow of applications through the assessment process.

DRAFT RECOMMENDATION 6.7

***Governments should clearly set out in a single location on the internet environment-related guidance on the range of approvals that may be required.***

## The issue of 'shifting goalposts'

The Commission was advised of concern that there were instances where explorers' environmental plans or environmental impact statements (or equivalent documents) were rejected several times with the regulating agencies adding new grounds for rejection — and issues to be addressed — following each assessment of the document.

Such problems can reflect staff turnover — for example, if a new case officer is assigned part of the way through the assessment of a particular proposal. They may also reflect an oversight on the part of the assessing regulator in its initial response to a draft environment plan.

The Commission notes that in some cases there may be merit in the assessing regulator providing some early 'informal' advice to a proponent in order to expedite and smooth the process. For example, where there are some clear shortcomings in the first draft of an environmental plan, the agency could notify the proponent of some of these main concerns before providing its full, detailed response to the proponent and in this way potentially reduce the turnover time between versions of the environment plan.

While some flexibility should be permitted, for example to allow informal, preliminary advice to be given to the proponent, or for an agency to address a significant oversight in its initial assessment, in general agencies should take all reasonable steps to avoid any 'shifting of the goalposts' during the assessment and approval process.

## The environmental information base

A number of stakeholders have called for better management of environmental data that has been submitted in the form of environmental plans, environmental impact statements and equivalent documents.

For example, in consultations the Conservation Council of WA called for a better register of environmental studies that have been conducted so that work does not need to be re-done. In its view, current processes amount to a 'piecemeal gathering of information'.

Duplication in assessment processes may be caused by a range of factors, such as inadequate record keeping by environment agencies, insufficient cross-referencing of approvals that have previously been granted in a particular area, or lack of information sharing between agencies and with explorers when they acquire tenements.

The Department of Resources, Energy and Tourism highlighted deficiencies in this regard:

> The offshore petroleum industry acquires a range of geotechnical and marine data to fulfil requirements under the OPGGS Act. … Greater accessibility and use of archived industry data would help promote sustained economic and social dividends from Australia's coasts and oceans, while protecting the integrity of their ecosystems. (DRET pers. comm. 27 November 2012)

The Hawke Review recommended that the EPBC Act be amended to require publication of a greater range of information gathered during assessment processes. The recommendation included reference to 'all additional information requested from proponents to support decision-making' and 'environmental management plans made in accordance with an approval under the Act' (DEWHA 2009a, p. 38).

### *Improving the information base*

Environment agencies should keep a complete record of environmental information provided by explorers and others who conduct environmental surveys and studies. This information will often be of use to other relevant agencies and to proponents of activities on areas that have already been studied or assessed.

The Commission notes that some jurisdictions perform better in this area than others. It also notes a proposal in Western Australia to establish a State Environmental Data Library that would feature a publicly available online biodiversity, water and cultural heritage database — which should help to make cultural and environmental assessment processes associated with project approvals more efficient and cost effective.

Such information systems help to ensure that environmental assessment processes associated with project approvals are efficient and cost effective, lessening the need for duplication of assessments and studies and expediting approvals processes. They

would help to inform environmental plans, assessments, monitoring and planning — effectively facilitating greater accessibility and use of archived industry data. This would help promote sustained economic and social dividends from Australia's lands and marine resources, while helping to protect the integrity of their ecosystems.

Additionally such environmental information could form the basis for the development of an integrated package of spatially based information containing pre-competitive geoscientific, heritage and environmental information.

DRAFT RECOMMENDATION 6.8

***Governments should ensure that their authorities responsible for assessing environmental plans and environmental impact statements (and equivalent documents) should make archived industry data publicly available on the internet.***

# 7 Pre-competitive geoscience information

Key points

- Pre-competitive geoscience information is generated from early stage, broad area geological surveying and analysis of the resulting data. The information is made available to private explorers to target prospective mineral and petroleum deposits.
- The case for public funding of pre-competitive geoscience information is widely accepted on the grounds of partial public good characteristics, primarily that the use of the information by one explorer does not prevent its use by others. Public provision of such information can also be considered analogous to the information required to prepare a prospectus to maximise the value of selling a community-owned asset (in this case Australia's mineral and energy resources).
- Australia's pre-competitive geoscience information is highly regarded by domestic and international explorers. It is not viewed as a barrier to resource exploration, but rather as an asset that encourages exploration investment in Australia.
- Comprehensive reform of Australia's pre-competitive geoscience information arrangements is not required. However, there may be opportunities to improve the funding of Australia's geoscience agencies and the coverage of Australia's geological database.
  - The movement towards a cost recovery framework in New South Wales provides an opportunity for other jurisdictions to assess the costs and benefits of this model.
  - The Commission notes the increasing use of initiative funding to finance pre-competitive geoscience information collection and is seeking feedback from stakeholders as to whether this represents a more effective and efficient way to finance geoscience activities compared to a more stable long term funding base.
  - Extending the public collection of data to those exploration companies which do not currently report publically on their mineral and energy reserves would address current gaps in the resource reserve information base and hence improve the attractiveness of Australia as an exploration destination.
    - The Exploration Investment and Geoscience Working Group of the Standing Council of Minerals and Resources is currently exploring policy options to address this.

This chapter examines the government provision of pre-competitive geoscience information in Australia. It examines why and how governments are involved in

delivering pre-competitive geoscience information, assesses the quality of Australia's geoscience database and explores some possibilities for improvement in Australia's pre-competitive geoscience information provision.

## 7.1 Government involvement in pre-competitive information

*Why are governments involved in geoscience information?*

Pre-competitive geoscience information involves the collection and analysis of geological data about the Earth's surface to inform decisions about the likely prospectivity of resource deposits. It involves the reconnaissance of broad areas to define the geology of a region, rather than to locate specific mineral and resource deposits.

Government involvement in the provision of pre-competitive information is typically justified because it possesses some attributes of a public good. The key attribute in this case is that, unlike most goods and services, pre-competitive information can be used by one explorer without preventing the use of the same information by another explorer. This means that pre-competitive information is *non-rivalrous* in its use.

Government involvement in the provision of pre-competitive geoscientific information may also be attributed to other purposes. Geoscience Australia (GA) argued that geoscientific information assists with the planning and management of community-owned resources:

> GA provides geoscientific information and knowledge to enable the government and the community to make informed decisions on the economic, social and environmental management and exploration of the nation's natural resources. (sub. 6, p. 1)

Duke (2010) further justifies government involvement in geoscience by citing the effects it has on risk, costs and therefore investment attractiveness:

> [public geoscience] attracts exploration investment by allowing industry to identify areas of favourable mineral potential. It increases exploration efficiency by making it unnecessary for individual companies to duplicate common information, or spend money on non-prospective ground. It increases exploration effectiveness by providing key information inputs to risk-based decision-making. By reducing exploration costs and risk, public geoscience not only improves returns on private investment but also increases revenues accruing to governments as royalties and taxes. (p. 28)

*How are governments involved in geoscience information*

The responsibility of collecting geoscience information is shared between the Australian and the State and Territory Governments. Each State and Territory, except the ACT, has their own geological survey organisation, and these are responsible for collecting *onshore* pre-competitive geoscience information.

GA, a Commonwealth agency, has prime responsibility for *offshore* pre-competitive information and mapping activities. It also conducts applied research and provides data, information and services to a wide range of government agencies, industry and international partners.

GA stores data, information and the physical samples generated by exploration companies through drilling and exploring offshore basins. GA also formally collaborates with its jurisdictional counterparts under the National Geoscience Agreement in gathering and assessing onshore geoscientific data (at national and regional scale).

In addition to collecting and disseminating geological data, governments also implement geoscience initiatives that aim to encourage private exploration activity within their jurisdiction. These initiatives have included co-funding drilling and facilitating the transfer of exploration technology.

Pre-competitive geoscience information is largely provided to explorers free of charge. The exception to this is New South Wales, which has recently moved towards full cost recovery charging. This issue is considered later in the chapter.



## 7.2 The quality of Australia's geological database

Around 80 per cent of the Australian continent is currently mapped by high resolution magnetic data while about 60 per cent is covered by radiometric data. Gravity datasets are available at reconnaissance scale (1:250 000) over most of the continent. Offshore oil, gas and condensate basins remain largely uncharted and are comparatively under-explored despite being estimated to hold more than 90 per cent of Australia's known oil and condensate reserve (ACIL Tasman 2010, 2011).

Australia's geological mapping is less detailed than in many other APEC economies (table 7.1). Many APEC economies provide maps at twice the resolution of those available in Australia while in several countries, including the United States, maps are at least four times more detailed.

## Table 7.1 Availability of geological information - APEC economies

■ Yes □ No ▒ Not indicated

| *Country* | *Restrictions on who can access data* | *Data is available online* | *Data is available free of charge* | *Smallest scale at which data available* | *Name of agency* |
|---|---|---|---|---|---|
| Australia | □ | ■ | ■ | 1:100 000 | Geoscience Australia, various state and territory geological survey agencies |
| Brunei Darussalam | ■ | □ | □ | 1:1 000 | Survey Department |
| Canada | □ | ■ | ■ | 1:50 000 | Geological Survey of Canada, various provincial agencies |
| Chile | ▒ | □ | ▒ | 1:50 000 | Sevicio Nacional de Geologia y Mineria (Sernageomin) |
| China | ■ | □ | ▒ | 1:50 000 | China Geological Survey |
| Chinese Taipei | □ | ■ | ■ | 1:25 000 | Central Geological Survey |
| Hong Kong, China | □ | ■ | ■ | 1:5 000 | Hong Kong Geological Survey Section, Civil Engineering and Development Department |
| Indonesia | □ | □ | ▒ | 1:100 000 | Geological Agency |
| Japan | ▒ | □ | ▒ | not indicated | Geological Survey of Japan |
| Malaysia | ▒ | ▒ | ▒ | not indicated | Minerals and Geoscience Department |
| Mexico | □ | ■ | ■ | 1:50 000 | Servicio Geológico Mexicano (Mexican Geological Survey) |
| New Zealand | □ | □ | □ | 1:50 000 | Institute of Geological and Nuclear Science |
| Papua New Guinea | ■ | □ | ■ | 1:250 000 | Mineral Resource Authority, Geological Survey of Papua New Guinea |
| Peru | □ | ■ | □ | 1:100 000 | Instituto Geologica Mineroy Metalurgicc - INGEMMET (Geological, Mining and Metallurgical Institute) |
| Philippines | □ | □ | □ | 1:50 000 | Mines and Geoscience Bureau |
| Republic of Korea | □ | ■ | ■ | 1:50 000 | Korea Institute of Geology, Mining and Materials[a] |
| Russian Federation | ■ | □ | ▒ | not indicated | Institute of Geology |
| Singapore | ■ | □ | □ | not applicable | No applicable body |
| Thailand | □ | ■ | ■ | 1:50 000 | Department of Mineral Resources |
| United States | □ | □ | ■ | 1:24 000 | United States Geological Survey |
| Viet Nam | ■ | □ | □ | 1:50 000 | Department of Geology and Minerals of Vietnam |

[a] KIGAM handles pure geological information. Information relating to the location of mineral and petroleum resources is managed by the Korea Resources Corporation (Korea).

*Source*: Penney et al. (2007).

Despite this, Australia's geological databases are generally considered to be of high and improving quality. The results of the Fraser Institute international *Survey of Mining Companies 2012/2013*, often quoted by industry, point to Australia's geological databases as being among the best in the world (table 7.2, left hand panel). In the latest edition of the Institute's mining survey, which ranked 62 national or subnational jurisdictions, the highest proportion of respondents identified the quality of South Australia's geological information as 'encouraging investment'. Western Australia (third), the Northern Territory (sixth) and Queensland (ninth) also ranked highly.

Australia also performs well in the Institute's equivalent petroleum survey (2012). Out of the 147 jurisdictions surveyed, South Australia, offshore Australia and Western Australia had the highest proportion of respondents who identified that the quality of geological information was encouraging investment in these jurisdictions (table 7.2, right hand panel).

Submissions to this inquiry similarly praised the quality of Australia's pre-competitive geoscience information. For example, the Australian Institute of Mining and Metallurgy (AusIMM) stated:

> AusIMM members are of the view that Australia's various geoscience organisations produce very high quality pre-competitive data, and play a very constructive role in supporting minerals exploration investment. (sub. 12, p. 2)

Likewise, an industry participant to the South Australia Chamber of Minerals and Energy submission commented:

> I think delivery of Geoscientific information is pretty good by both federal and state bodies. The govt needs to understand (and I think it does) that the mature exploration environment in Australia means that the search for new deposits is much harder and much more expensive these days. (sub. 9, p. 13)

The Minerals Council of Australia, while warning that Australia should not rest on past achievements, noted that:

> World-leading exploration geoscience has been a key competitive advantage of Australia's exploration sector and emerging mining regions are moving quickly to emulate this success. (sub. 27, p. 32)

## Table 7.2 Quality of the geological database: the highly ranked and selected other jurisdictions

Per cent of firms reporting that the available database encourages investment

| *Region* | *Survey of Mining Companies* | | | *Global Petroleum Survey* | | |
|---|---|---|---|---|---|---|
| | *2004-05* | *2008-09* | *2012-13* | *2007* | *2010* | *2012* |
| ***Australia*** | | | | | | |
| South Australia | 48 | 75 | 81 | na | 55 | 81 |
| Western Australia | 37 | 59 | 74 | na | 64 | 74 |
| Northern Territory | 38 | 64 | 67 | na | 67 | 54 |
| Queensland | 42 | 59 | 63 | na | 47 | 36 |
| New South Wales | 35 | 64 | 60 | na | 20 | 42 |
| Victoria | 38 | 61 | 58 | na | 55 | 46 |
| Tasmania | 0 | 60 | 48 | na | 29 | 27 |
| Offshore - Australia | | | | 53[a] | 59 | 79 |
| ***Canada*** | | | | | | |
| Quebec | 61 | 81 | 76 | na | 13 | 8 |
| Ontario | 55 | 66 | 71 | na | 25 | na |
| British Columbia | 66 | 63 | 69 | 43 | 65 | 62 |
| New Foundland and Labrador | 46 | 71 | 66 | 63 | 17 | 15 |
| ***United States*** | | | | | | |
| Nevada | 40 | 53 | 57 | na | na | na |
| Alaska | 16 | 43 | 56 | 67 | 58 | 47 |
| Utah | 22 | 41 | 56 | na | 58 | 44 |
| Montana | 23 | 35 | 55 | 40 | 31 | 36 |
| Offshore - Gulf of Mexico | na | na | na | na | 63 | 55 |
| Offshore - Alaska | na | na | na | na | 36 | 33 |
| ***Eurasia*** | | | | | | |
| Mongolia | 0 | 22 | 6 | na | na | na |
| China | 0 | 4 | 0 | 0 | 15 | 8 |
| Russia | 0 | 32 | 12 | 7 | 0 | 0 |
| ***Middle East*** | | | | | | |
| Kuwait | na | na | na | 60 | 5 | 44 |
| Qatar | na | na | na | 29 | 23 | 33 |
| ***Africa*** | | | | | | |
| Namibia | na | 35 | 30 | na | 33 | 0 |
| South Africa | 21 | 34 | 22 | na | 24 | 10 |
| Botswana | 8 | 32 | 21 | na | na | na |
| ***Latin America*** | | | | | | |
| Mexico | 7 | 22 | 28 | see United States above | | |
| Chile | 25 | 38 | 25 | na | 0 | 29 |
| Peru | 24 | 27 | 24 | 38 | 20 | 21 |
| Brazil | 4 | 17 | 13 | 36 | 14 | 27[b] |

[a] Scores for individual states and territories were not recorded for this year. [b] Overall score for Brazil not recorded for this year, this score applies only to offshore concession contracts.

*Sources*: Angevine and Cameron (2007); Angevine and Cervantes (2010); Angevine et al. (2010); McMahon (2005); McMahon and Cervantes (2009); Wilson et al. (2013).

Broadly positive opinions on Australia's pre-competitive geoscience information were also expressed in submissions from the Australian Petroleum Production and Exploration Association (APPEA) (sub. 22) and the Association of Mining and Exploration Companies (AMEC) (sub. 24). Recent reviews by the Policy Transition Group (PTG 2010) and the Australian National Audit Office (ANAO 2010) similarly confirm industry satisfaction with Australia's geological database.

This is not to say that submissions did not express concerns about current geoscience arrangements. For example, AusIMM (sub. 12) suggested that governments in Australia may be underinvesting in geoscience information and that this may be restricting greenfield exploration investment while APPEA (sub. 22) noted that coverage in some jurisdictions is patchy.

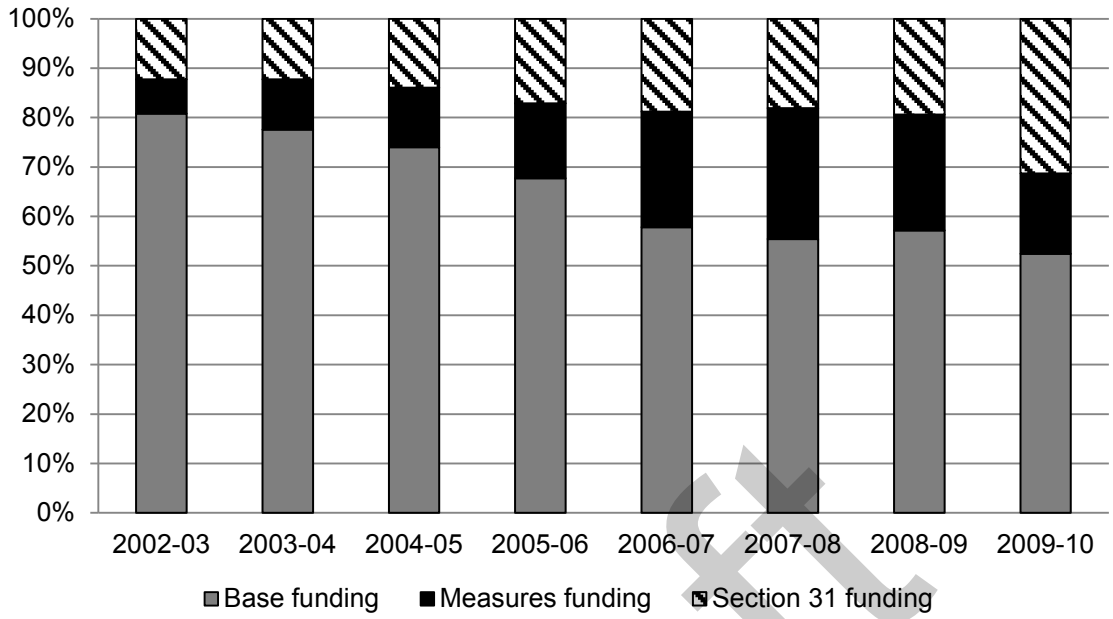
Based on the available evidence, the Commission concludes that comprehensive and wide ranging reforms of Australia's current geoscience arrangements are not required. That said, there are opportunities to pursue more focused reforms with a view to improving geoscience funding arrangements, governance and the coverage of Australia's geological database. These matters are explored below.

## 7.3 Opportunities to improve pre-competitive geoscience information

The proportion of GA's funding secured from base (block) funding has fallen in recent years (figure 7.1). In 2002-03, over 80 per cent of GA's resources were from base funding. This fell to 52 per cent by 2009-10, as program specific and Section 31 funding methods gained in prominence[1].

[1] Section 31 revenue refers to funding received from other Australian Government agencies and unrelated entities for the performance of services and the sale of goods.

Figure 7.1 **Funding composition of Geoscience Australia**




*Data source*: DoFD (2011).

While a similar breakdown for state-level geoscience agencies is not available, a survey of geoscience initiatives across jurisdictions (table 7.3) shows that the use of initiative programs to fund pre-competitive geoscience activities is widespread. This raises questions as to whether the increasing prominence of initiative funding represents the optimal means to finance the collection and provision of pre-competitive geoscience information.

Block funding offers a number of advantages over initiative funding arrangements for agencies such as GA and the State/Territory geological surveys. As the Commission argued in its report on *Public Support for Science and Innovation*, block funding:

- provides greater flexibility to make strategic decisions about research directions
- creates opportunities to respond to emerging priorities
- allows organisations to plan and build multi-disciplinary resource capability
- provides scope to engage in larger-scale, longer-term activities
- involves lower administrative and compliance costs compared to grant or program-specific funding (PC 2007).

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) — like Australia's geological surveys — undertake research that may be built upon by

the private sector. The CSIRO noted in its submission to the Commission's inquiry into *Public Support for Science and Innovation*:

> The budget appropriation … provides for a degree of certainty and stability. This facilitates the strategic planning of research and investment in longer term, challenging projects, as well as the maintenance of capability. Appropriation funding supports basic infrastructure, including facilities, equipment and expertise. Just as importantly, it provides an essential base from which it becomes possible to invest resources into the development of long term research projects requiring the assembly of large teams of experts from several disciplines across different organisations. Grant schemes do not support such planning or cover the considerable overheads required to manage such projects. Neither do grant schemes provide the single point accountability within one organisation which is necessary for the effective management of this kind of large scale program. (PC 2007, p. 481)

A specific example of the type of activity that is not suited to short-term funding arrangements is the role played by Australia's geological surveys in maintaining and updating databases of geoscientific information accumulated over the last 100 years. In that regard, geological and geospatial data has a long life cycle, primarily because of the requirement for time series continuity in certain fields but also because the development of new techniques and technology for data analysis and interpretation mean existing data can be continuously reinterpreted to provide new insights (PWC 2009).

Updating collections to a form more easily accessed and analysed is also an ongoing requirement as the data needs of explorers and other stakeholders change over time (such as through a move away from physical to electronic data). Hence, the costs associated with custodial and stewardship activities associated with database management are ongoing.

But there are also potential disadvantages associated with block funding including reduced external accountability (with initiative funding often tied to outcome-focused performance reporting requirements), less direct involvement in funding investment decisions by stakeholders and lower incentives to maintain or improve performance compared with more at risk, shorter, fixed-term funding sources.

Table 7.3 **Geoscientific initiatives across jurisdictions**

| *Jurisdiction* | *Initiative Name* | *Start date* | *Timeframe* | *Funding* | *Key features* |
|---|---|---|---|---|---|
| Commonwealth | Energy Security Program | 2006 | 5 years | $134 million | • $58.9 million for onshore seismic surveying, radiometric mapping and geochemical surveying<br>• $75.1 million for offshore surveys, prospectivity assessments and information management |
| Western Australia | Exploration Incentive Scheme (EIS) Phase 1 | 2009 | 5 years | $80 million | • $1.5 million for online application processes<br>• $26.9 million for innovative drilling in greenfield areas<br>• $32.5 million for geophysical and geochemical surveys<br>• $13.8 million for an online geological mapping system<br>• $2.3 million for strategic research<br>• $3 million for Indigenous and environmental approval initiatives |
| | Exploration Incentive Scheme (EIS) Phase 2 | 2014 | 2 years | $37.5 million | Funding to be continued along similar lines to the first phase of the Exploration Incentive Scheme.[a] |
| Queensland | Smart Mining - Future Prosperity | 2006 | 4 years | $29.1 million | Funding was used to increase and accelerate investment in exploration, address skills shortages, and promote the involvement of women in mining. |
| | Greenfields 2020 | 2010 | 4 years | $18 million | Funding to be delivered through 8 programs, including collaborative drilling grants, geological mapping and the modernisation of data delivery and management. |
| New South Wales | Exploration NSW | 2000 | 7 years | $30 million | • $12 million for mineral and mapping program<br>• $9.6 million to petroleum programs<br>• $8.4 million to computer based data delivery, data maintenance and online systems |
| | New Frontiers Initiative | 2006 | 6 years | $30 million | Expenditure breakdown similar to Exploration NSW but varying according to priorities. Extended in 2010-11 with the implementation of cost recovery funding. |

Table 7.3 (continued)

| *Jurisdiction* | *Initiative Name* | *Start date* | *Timeframe* | *Funding* | *Key features* |
|---|---|---|---|---|---|
| South Australia | Plan for Accelerating Exploration (PACE) | 2004 | 10 years | $53.9 million | Funding is distributed through four main work streams:<br>• PACE Exploration<br>• PACE Mining<br>• PACE Energy<br>• PACE Global |
| Northern Territory | Bringing Forward Discovery | 2007 | 4 years | $14.4 million | • $11.25 million for geoscientific data<br>• $0.75 million for promotion<br>• $2.4 million for co-funding greenfields exploration |
| | Bringing Forward Discovery (extension) | 2011 | 3 years | $11.4 million | Extension of original program, continuing original program elements |
| Tasmania | TasExplore | 2006 | 4 years | $5 million | • Acquisition of survey data<br>• Upgrading the 3D model of Tasmania<br>• Promotion of exploration opportunities |
| Victoria | Rediscover Victoria | 2007 | 4 years | $5 million | • $2.5 million to a strategic drilling project<br>• $2.5 million to develop a 3D geological model of Victoria |

**a** Figures announced in the 2012-13 state budget but the exact details have not been finalised.

*Sources*: Department of Infrastructure, Energy and Resources Tasmania (2013); Geoscience Australia (2011b); Government of South Australia (2012); NSW DTI (pers. Comm. 8 May 2013); Queensland Department of Natural Resources and Mines (pers. comm. 16 May 2013); Queensland Government (n.d.); Scrimgeour (2011); SA DIMTRE (pers. comm 10 May 2013); Government of Victoria (2011a).

The report by the Policy Transition Group on Minerals and Petroleum Exploration (PTG) commented indirectly on the desirability of moving back to a greater reliance on block funding, saying:

> The Policy Transition Group recommends that the Australian Government should provide for a more sustainable stream of funding for Geoscience Australia to acquire and make available pre-competitive geoscience and geospatial data, and manage publicly and privately acquired data through its national data repository. (2010, p. 23)

In assessing the impact of current funding arrangements on GA's ability to provide pre-competitive data, PriceWaterhouseCoopers (PWC 2009) also supported baseline (block) funding:

> In order to continue to deliver these outputs and to allow the geoscientific activities to be planned and undertaken in the most effective manner a structural change to the manner in which Geoscience Australia is funded is required, this involves:
>
> - Having appropriations provided on an ongoing basis (rather than through a series of lapsing programs);
> - Funding for the core capabilities required to deliver Section 31 funded projects to be directly appropriated; and,
> - Funding explicitly for two key functions for which Geoscience Australia has never received on-going funding for, namely the acquisition of precompetitive data for the resources sector and for Geoscience Australia's role as the custodian of Australia's legacy of geoscience and geospatial data, including associated stewardship. (p. 4)

PWC went on to say:

> The lack of funding certainty for these activities (in the form of baseline funding) presents a number of challenges for GA, including a lack of longer term planning, which would ensure GA has the personnel required to undertake such activities as well as prioritisation of such activities, allowing GA to play a more proactive role in the most effective data to acquire (rather than only reacting to requests from outside agencies). (p. 28)

The Commission considers that there is a strong in-principle case for a large proportion of the funding for Australia's geological surveys to be secured through ongoing block appropriations. However, there is a lack of information — particularly at a State and Territory level — as to what extent their geological surveys are already funded this way, compared to their level of reliance on other sources of revenue.

As such, the Commission is seeking information from stakeholders on the funding composition of Australia's geological surveys and whether this represents the optimal way to fund pre-competitive geoscience information.

INFORMATION REQUEST

*The Commission is seeking information on the current proportion of funding for Australia's geological agencies that is sourced from ongoing block appropriation. The Commission is also seeking views from stakeholders as to whether the current funding arrangements of Australia's geological surveys represent the optimal way to finance the collection and provision of pre-competitive geoscience information.*

## Exploring cost recovery pricing models

As discussed in section 7.1, pre-competitive geoscience information is a partial public good in the sense that it is *non-rivalrous* in use. However, geoscience information is not a pure public good because explorers can be *excluded* from accessing that information. This feature raises the prospect of public provision combined with cost recovery charging.

Arguments for full or partial cost recovery of pre-competitive geoscience information can be made in terms of both user pays principles, as discussed below, and the 'price' signals that cost recovery user charging would potentially send to government about the appropriate level of pre-competitive information provision. The ability to fully or partially recover the costs of generating the information is an indication of the value that private explorers place on the level and quality of information being provided.

The case for user charging was recently analysed and conditionally dismissed by the Department of Finance and Deregulation (2011). DoFD noted that it was in the government's and the community's interests to fund pre-competitive information in order to attract the largest possible competitive field of potential investors. This process, it was argued, was analogous to the due diligence that companies undertake in preparing an investment prospectus (or product disclosure statement) for the sale of a business or asset (DoFD 2011). Further:

> The 'prospectus' analogy represents a departure from the public good argument that is typically used to justify government provision of pre-competitive information. While public good attributes certainly apply to pre-competitive information, under this model it is the Government's desire to maximise its private interests, as sovereign owner of resources and recipient of secondary tax revenues from resource development, that forms the core business case for the Government to generate and provide pre-competitive information as described above. *This business case is heavily dependent on the current system for allocating exploration acreage which generally does not assign exploration rights at a scale where strategic regional framework studies become viable for private investors.* [emphasis added] (DoFD 2011, p. 39)

DoFD argued that cost recovery could reduce the number of potential competitors for exploration licenses. This would be particularly relevant for smaller specialist explorers that typically show the greatest interest in frontier or greenfield exploration areas that governments specifically target for exploration investment.

The Commission notes that, in contrast to the DoFD position, New South Wales has recently moved to a user-pays system to fully recover the cost of providing pre-competitive information. In outlining the new funding model, the New South Wales Department of Trade and Investment, Regional Infrastructure and Services said the New Frontiers initiative (which began in 2006 and focuses on attracting petroleum and mineral exploration investment in under-explored areas of the state):

> … will be extended beyond 30 June 2012, with funding on a cost recovery basis … A new rental fee on the mining industry to fund the continuance of the New Frontiers initiative will commence on 1 July 2012. This funding mechanism is expected to generate some $4.5 million in 2012-13, ramping up to $6.5 million per annum in future years. This level of funding represents an expansion of New Frontiers and will underpin its success into the future. (NSW DTI 2012a, p. 56)

Although mindful of the increased costs to industry, the submission by the New South Wales Minerals Council highlighted other benefits from user charging.

> The new fees will, however, provide certainty and security, especially for the geological data collection program which only received short term funding from government. (sub. 11, p. 6)

The Commission believes the New South Wales experiment provides an opportunity to observe the impacts of cost-recovery charging. In terms of administration, while all jurisdictions levy annual rental fees on exploration tenure, New South Wales is the only jurisdiction to hypothecate the revenue collected from those levies to pre-competitive funding.

DRAFT RECOMMENDATION 7.1

***Governments should monitor the outcomes of the cost recovery funding approach to the provision of pre-competitive geoscience information being adopted by the New South Wales Government, with a view to its possible broader application in those jurisdictions.***

## Improving priority setting and performance management

Rigorous priority setting and performance management processes are important means of ensuring that public funding is allocated effectively. Used properly, these processes also ensure that work conducted by each geological survey organisation is not duplicated by other agencies nor extends into areas that might otherwise be

performed by private explorers. The potential for duplicated effort is especially relevant where resource basins cross jurisdictional boundaries and where other public sector research agencies, such as the CSIRO and Cooperative Research Centres (e.g. the Deep Exploration Technologies CRC) are involved in related areas of research including land, environmental and hazard management.

While the priority setting and performance management approaches appropriate to different parts of Australia's public research system will reflect differences in purpose and function, sound governance arrangements share some common features. This is particularly the case for mission-based research agencies, such as Australia's geological surveys which conduct strategic research with public good attributes. These characteristics are common to the work conducted by a number of other public sector research agencies, notably the CSIRO.

In that context, the Commission's report into *Public Support for Science and Innovation* (PC 2007) argued that aspects of the CSIRO's approach to priority setting and performance management may have wider applicability to other parts of Australia's innovation system (including geological survey work). The aim of adopting such an approach would be to increase accountability across that system. CSIRO's approach incorporates both ex-ante and ex-post appraisal processes, combines bottom-up and top-down input to research planning, involves broadly-based consultation with potential users and other stakeholders and actively manages projects against performance benchmarks.

Most of Australia's geological survey organisations rely on only informal networks with industry and their representative associations to inform decisions about how and where pre-competitive geoscience funding should be allocated. Few of these organisations have employed structured performance management systems to evaluate research outcomes.

Some geological survey organisations do have more developed priority setting approaches. In particular, the Geological Survey of Western Australia (GSWA) formed the Geological Survey Liaison Committee. The Committee meets bi-annually, is chaired by the WA Department of Mines and Petroleum and includes CSIRO, Curtin University, University of Western Australia, APPEA, AMEC, the Chamber of Minerals and Energy and direct industry representatives. According to GSWA:

> The process provides key input into the strategic direction and planning of GSWA's future work program in pre-competitive geoscience in the areas of mineral-, petroleum- and geothermal-related exploration (including CO2 storage).
>
> The main committee has two technical subcommittees reporting to it:
>
> Mineral Exploration Technical Subcommittee (chaired by the AMEC representative);

Petroleum Exploration and Geothermal Technical Subcommittee (chaired by the APPEA representative).

The role and composition of the technical subcommittees is similar, but the technical subcommittees also review in detail GSWA's geoscience products and services actually delivered versus those planned, and formally rate the GSWA's performance in geoscience products delivered and exploration information management. (GSWA, pers.comm.).

The New South Wales Government has established a Geological Survey Advisory Committee to provide a forum for obtaining input and feedback from industry representatives (individual company executives) on the activities and outputs of the Geological Survey of NSW. The move to industry funding of pre-competitive data acquisition will see a restructuring of the membership of that committee with broader representation being provided by industry associations such as the New South Wales Minerals Council and AMEC. This will reduce the risk of potential conflicts of interest emerging compared with individual company representation.

Further, as discussed earlier in this chapter, Australia's pre-competitive geoscience data is well regarded by explorers, and this can be considered evidence that the current arrangements of setting priorities and performance management may be sufficiently effective. The Commission is seeking feedback from stakeholders as to whether more formal priority setting and performance management arrangements of Australia's geological surveys are warranted.

INFORMATION REQUEST

*The Commission is seeking views from stakeholders as to whether more formalised approaches to priority setting and performance management would enable Australia's geological survey organisations to make more informed decisions about the use of pre-competitive geoscience information funding.*

## Extending database coverage

Although Australia ranks highly in international comparisons of database quality, there are opportunities to improve on those databases and the attractiveness of Australia as an investment destination without the need for any additional public funding. This is due to significant gaps in resource reserve information from inadequate disclosure of that information by certain corporate entities.

Currently, resource companies listed on the Australian Stock Exchange (ASX) are required to report (with a lag) publicly on exploration results, mineral resources and ore reserves. However, foreign companies and privately owned Australian companies not listed on the ASX are not required to publicly report on mineral and

energy resources. According to the Exploration, Investment and Geoscience (EIG) Working Group of the Standing Council on Energy and Resources (SCER 2012a), takeover and merger activity by foreign resource firms over time has reached a point where ' … Australia no longer has an accurate Economic Demonstrated Resource for a range of minerals' (p. 4). The potential consequences are that a:

> Lack of accurate, consistent data could reduce governments' ability to forecast production for policy and revenue purposes. It also reduces the ability to make informed decisions on land-use planning (SCER 2012b).

Although the states and Northern Territory impose reporting requirements on mineral and petroleum exploration and production licences, these are primarily focused on production data (for the purpose of royalty collection) and vary by commodity and jurisdiction. According to an issues paper prepared by the Department of Resources, Energy and Tourism and Geoscience Australia on behalf of SCER's EIG Working Group:

> Reporting requirements for minerals inventory and for production vary across the States and Territories … Reporting has not been systematically enforced by jurisdictions and information reported is focused more on production. (SCER 2012a, p. 4)

Moreover, according to SCER , the lack of systematic reporting has left gaps in the resource information base across commodities and jurisdictions. The extent to which data collection issues have hampered access to sufficiently reliable information on Australia's resource reserves and production, and whether the imposition of reporting requirements on non-reporting companies is warranted, is currently being considered by the EIG Working Group within SCER.

The issues paper for the EIG Working Group advanced three options to improve data collection rates from non-reporting companies: a voluntary survey; a regulatory approach; and improved use of current data collection mechanisms.

- A voluntary survey could be administered by jurisdictions to collect resource information from companies. Jurisdictions would collate information and supply the data to GA by 30 September each year for inclusion in the national dataset.
- Under a regulatory approach, a compulsory requirement for non-listed companies could be developed which mirrors the current compulsory reporting requirements for listed companies.
- Existing mechanisms could be used, such as State and Territory legislation and direct approaches by data collection and analysis agencies, to capture data from non-reporting companies (SCER 2012a).

Submissions to this inquiry generally supported the aim of improved disclosure but warned against imposing additional regulatory costs on business. For example, AusIMM said:

> AusIMM supports the development of a more comprehensive understanding of mineral resource and reserve estimates for Australia by establishing a mechanism to gather key data from companies not reporting to the ASX. However, this must be done in a way that does not impose significant administrative costs on businesses or discourage investment in minerals exploration and development in Australia. (sub. 12, p. 8)

The Commission notes that SCER is due to report on options to improve resource reserve disclosure shortly after the release of this draft report. Accordingly, the Commission will await the outcome of that process before making any recommendations on this issue.

# 8 Workforce issues

**Key points**

- Resource exploration is currently experiencing skills shortages, especially for geoscientists, mining engineers and drillers.
- The presence of skills shortages can be attributed to supply and demand factors:
  - On the demand side, exploration activity in Australia is historically high and the industry is competing with the resource extraction sector to secure skilled labour.
  - On the supply side, exploration businesses do not in aggregate train a sufficient number of trade apprentices to meet industry requirements and the number of undergraduate students in geoscience has been volatile in recent years.
- In recent years the peak of the skills shortfall has moderated, as employment growth in resource exploration and extraction has eased.
- Continuing with the implementation of the National Resources Sector Employment Taskforce (2010) recommendations will help to foster a culture of training and workforce planning within the exploration industry.



This chapter discusses a range of workforce issues that participants in this inquiry have raised that may act as a barrier to exploration. These issues include the impact of skills shortages, workplace health and safety (WH&S) regulations and workplace relations policies.

Many of these issues relate to regulatory regimes that are the subject of ongoing COAG intergovernmental review and implementation processes, such as WH&S reform, or have been the subject of recent reviews, such as workplace relations regulations. The Commission notes that, unlike in inquiries where workforce issues loom large, the exploration sector is only a small window through which to view these issues.

## 8.1 Skills shortages

Skills shortages can impact on the ability of explorers to undertake exploration activity in a timely and efficient manner. This section examines the evidence of these shortages and the extent they are faced by resource exploration companies.

A workable definition of what constitutes a skills shortage is when:

> … employers are unable to fill or have considerable difficulty filling vacancies for an occupation or significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and in reasonably accessible locations. (DEEWR 2012a, p. 4)

In submissions to this inquiry, participants have drawn the Commission's attention to the difficultly of recruiting skilled staff given current market conditions. For example, the South Australian Chamber of Mines and Energy (SACOME) said:

> … the human capital side of the resources industry is struggling. There simply are not enough trained people to meet the needs of resources companies in South Australia — and it would appear this problem is a national one. (sub. 9, p. 9)

Similarly, the Minerals Council of Australia (MCA) commented:

> Despite less buoyant industry conditions, the minerals sector continues to experience notable skills gaps, most apparent for professional, skilled trades and skilled operator categories. On current trends, Australia will not be able to supply sufficient technicians, geologists, mining engineers or other related skills to meet immediate industry needs. (sub. 27, p. 34)

The Australian Petroleum Production and Exploration Association (APPEA sub. 22) said geologists, geophysicists, specialised engineers and managers, experienced drillers, environmental scientists, hydrographic surveyors and occupational, health and safety advisors are in short supply. The Australian Mines and Metal Association (AMMA sub. 32) listed, among others, shortages of professional engineers, mining engineers and liquid natural gas professionals.

These views are broadly consistent with reports by the National Resources Sector Employment Taskforce (NRSET 2010a), the Australian Workforce and Productivity Agency (AWPA 2012), Kinetic Group (2012) and Michael Page International (2011) which identify skills shortages in the mining sector and outline what occupations are in shortage.

A number of occupations that are critical to resource exploration are on the Australian Government's Skill Shortage List for 2012 (DEEWR 2012a). These include:

- mining engineers
- petroleum engineers
- geologists
- geophysicists
- production managers (with a specialisation in mining)
- metal machinists (first class).

Fitters have also been assessed as being in short supply in Western Australia, Queensland and New South Wales. For many of the above occupations the shortages have persisted for an extended period of time (table 8.1).

Table 8.1 **Some occupational shortages have been persistent**
Number of years assessed as being in shortage (selected occupations)

| | *Number of years in shortage in last 10 years (to 2012)* | *Number of years in shortage to last 5 years (to 2012)* |
|---|---|---|
| Geologist | 7 | 4 |
| Geophysicist | 1 | 1 |
| Mining Engineer | 8 | 5 |
| Petroleum Engineer | 6 | 4 |
| Production Manager (mining) | 5 | 4 |
| Fitter | 7 | 2 |
| Metal Machinist (first class) | 9 | 4 |
| Driller | 2 | 1 |

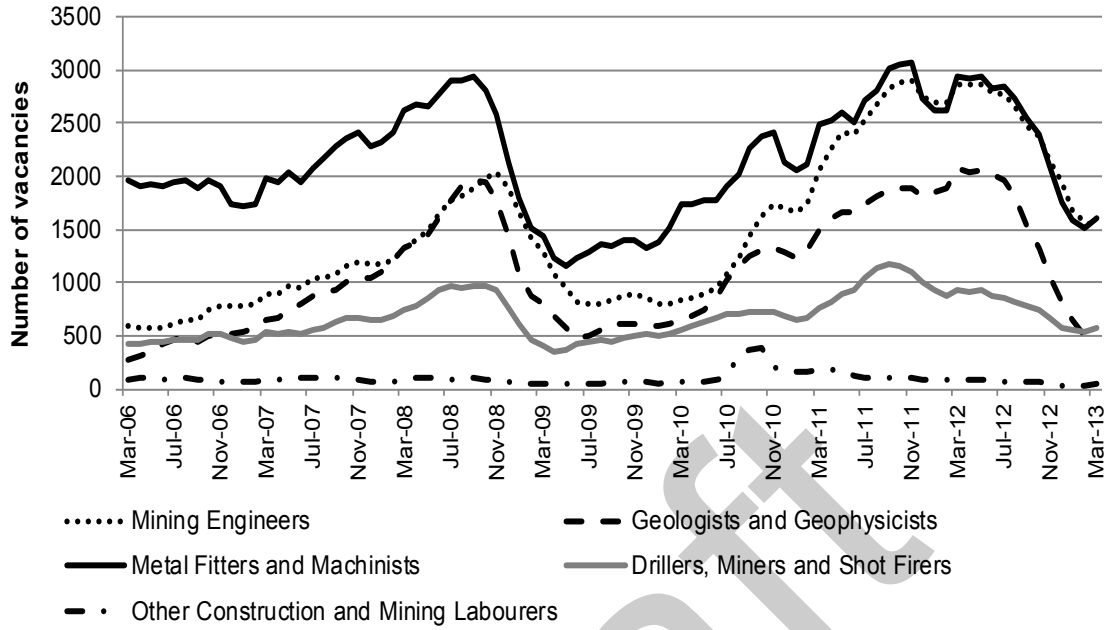
*Source*: DEEWR 2013a.

The Department of Education, Employment and Workplace Relations (DEEWR) has collected data on online vacancies since 2006. It shows a significant reduction in online vacancies in occupations critical to resource exploration after September 2008 (related to the global financial crisis), However this was short-lived and was followed by a second peak in 2011-12 (figure 8.1). The more recent decline suggests that while skills shortages are persisting in the industry, their severity may be waning. The overall volatility is a reminder of the 'boom and bust' nature of resource exploration and extraction.

Skills shortages are often accompanied by above average growth in wages as employers offer higher remuneration to attract or retain employees whose skills are in short supply. Evidence of this occurring in resource exploration is mixed. While growth in average hourly earnings for exploration and other mining support services did outstrip that of the wider economy between 2004 and 2006, the rate of growth subsequently slowed between 2006 and 2012. Over the period 2004 to 2012, wage growth in the exploration sector has been on a par with wage growth across all industries (table 8.2).

Figure 8.1 **Online vacancies are cyclical**

Monthly online vacancy data from March 2006 to March 2013




*Data source*: DEEWR 2013b.

This pattern of wage movements is broadly consistent with the findings of the National Resources Sector Employment Taskforce Report (NRSET 2010a) into Australia's wider mining workforce (i.e. resource extraction), which suggested that although skills shortages do exist, they are 'yet to add significantly to wage pressures in the mining workforce, as they did in previous economic cycles.'(p. 38)

Table 8.2 **Industry earnings are growing at the same rate as the wider economy**

Average total hourly cash earnings for full time, non-managerial employees 2004-2012

| | *2004* | *2006* | *2008* | *2010* | *2012* |
|---|---|---|---|---|---|
| Average total hourly cash earnings ($) | | | | | |
| Exploration and other support services | 30.00 | 36.00 | 39.70 | 41.70 | 44.60 |
| All mining | 33.70 | 37.50 | 45.30 | 49.00 | 52.30 |
| All industries | 23.20 | 26.30 | 30.10 | 32.20 | 34.70 |
| | | | | | |
| Average total hourly cash earnings (index) | | | | | |
| Exploration and other support services | 100 | 120 | 132 | 139 | 149 |
| All mining | 100 | 111 | 134 | 145 | 155 |
| All industries | 100 | 113 | 130 | 139 | 150 |

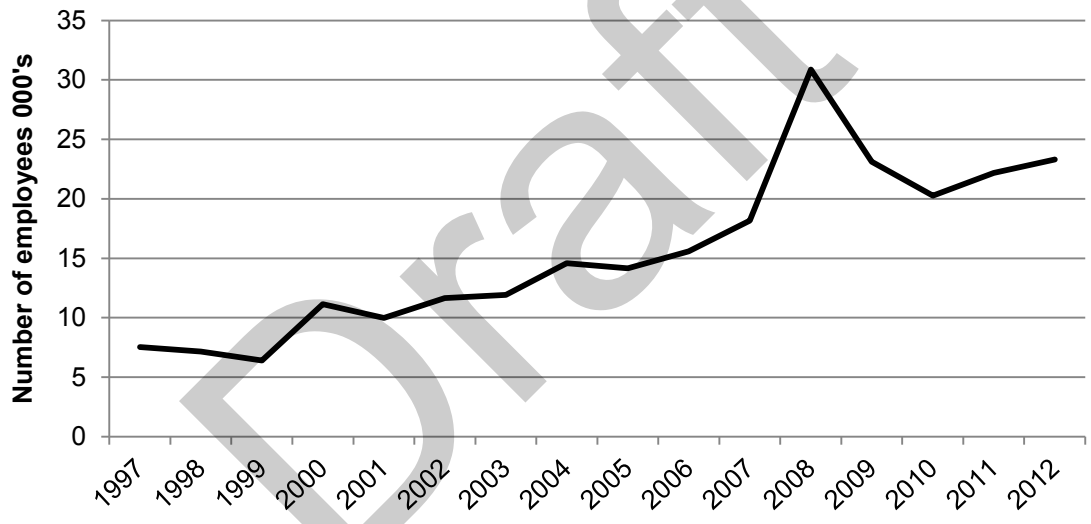
Source: ABS 2013a.

### *Factors contributing to this shortage*

#### *Demand side factors*

The current skills shortage in resource exploration is in part demand driven. In line with the sizable growth in resource exploration expenditure, the number of people working in the sector has grown strongly amidst the wider mining boom — it now employs twice as many workers as it did ten years ago (figure 8.2). The growth of the exploration workforce spiked in 2008, prior to the global financial crisis, then subsequently fell back and has now resumed growth at decadal trend rates.

Figure 8.2 **Employment in resource exploration peaked in 2008**
Annual employment in industry




*Data source*: ABS 2013b.

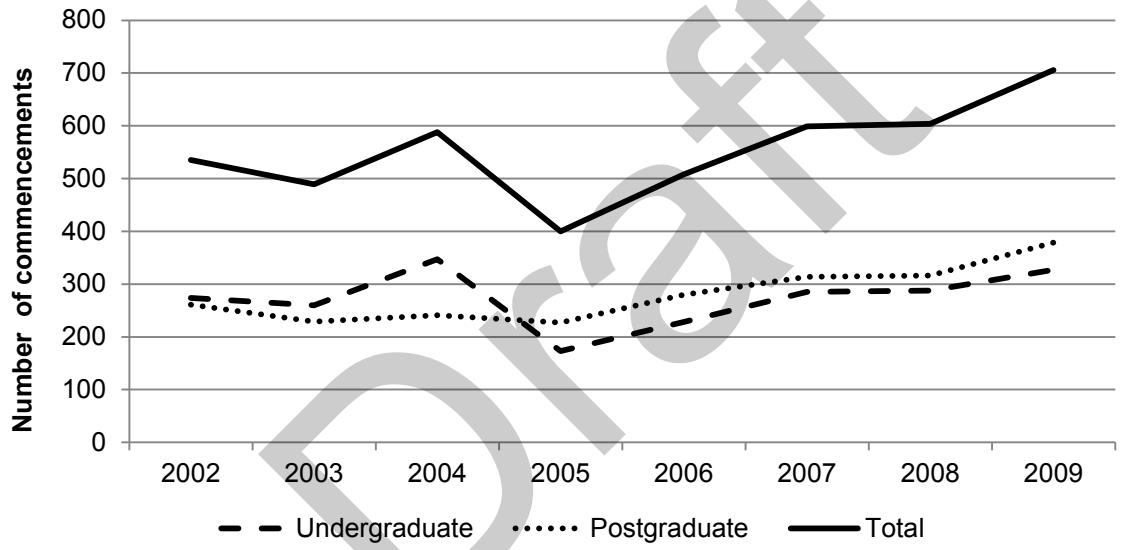
The resource exploration workforce requires similar skill sets to the far larger resource extraction workforce. Higher average wages for resource extraction employees compared to those engaged in exploration would place competitive pressure on explorers when recruiting and retaining sufficiently skilled workers in exploration.

#### *Supply side factors*

While strong demand for skills has been an important driver of the current shortage of skillsets required for exploration, a number of supply side issues are also contributing to these shortages.

A likely reason for the current shortages in geoscience occupations is that commencements in geoscience courses at Australian universities have been volatile in recent years (figure 8.3). The number of new students in these courses at Australian universities were at their lowest point in 2005, which was when demand for employment in the exploration sector started to pick up. Commencements have since rebounded and in 2009 (the latest year for which data is available) there were more than 700 new students in geoscience courses (an increase of 75 per cent). This signals that the supply of geoscientists can be expected to increase as these students complete their studies.

Figure 8.3 **Student commencements in geoscience courses**
2002 – 2009[a]

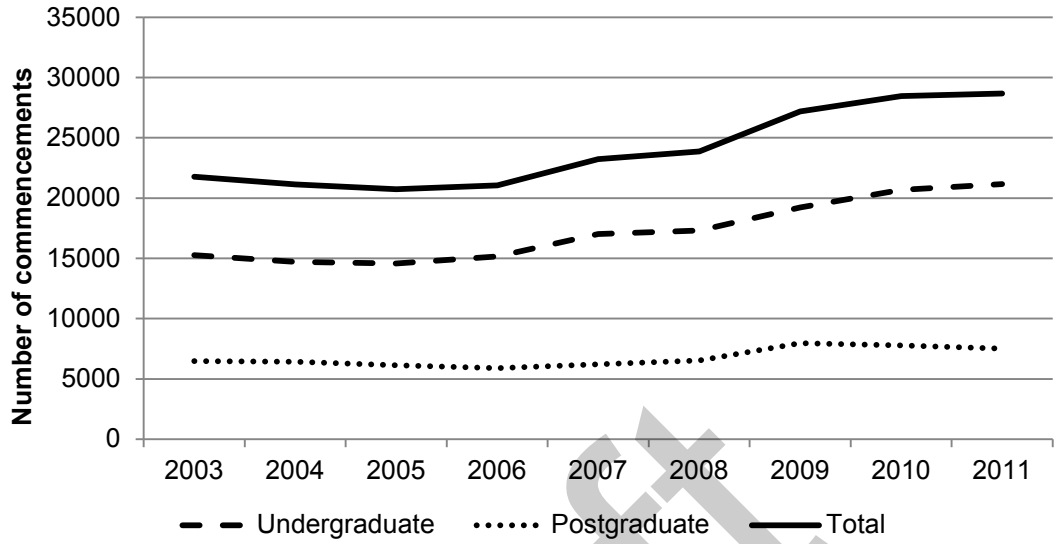



[a] 2009 is the latest year for which data is publically available.

Sources: NRSET (2010b); Skills Australia (2011).

Compared to geoscience, university commencements in engineering and related fields has been less volatile, growing by 38 per cent between 2005 and 2011 (figure 8.4).

Figure 8.4 **Student commencements in engineering and related fields**
2003–2011




*Data source*: DIISRTE (2013).

The training of sufficient number of professionals is not the only relevant factor in meeting needs for professionals. The other factor is whether the graduates are being provided with the correct skills. SACOME noted that the quality of geoscience graduates presented an issue for some explorers:

> The quality of technical degrees (especially geology) in universities was keenly disputed by some companies, who complained geologists did not have sufficient in-depth knowledge of geology to be useful. Geology is now just one component of a more general Earth Science degree. In addition, the courses do not contain enough field study: geology graduates are not adequately 'work-hardy' and have insufficient field experience in remote locations. (sub. 9, p. 11)

Shortages also seem more pronounced in roles that require more extensive experience and higher level qualifications than possessed by graduates (DEEWR 2012b). These characteristics make it difficult to develop timely responses to particular skills shortages as even if new graduates were attracted to the industry, they may not have the necessary experience demanded by employers.

There also appear to be shortages in apprenticeship based training placements for key skilled trades occupations employed by resource explorers. According to the NRSET:

> Although some companies have a strong commitment to apprentice training, the resources sector as a whole does not train enough apprentices. There is a reluctance by many employers to hire young people. Companies prefer to attract mature workers in their mid twenties and older with life and work experience. (NRSET 2010a, p. 3)

Karmel and Mlotkowski (2010) found that the exploration industry employs a disproportionately low level of trade apprentices compared to trade workers. In December 2009, the resource exploration industry employed about 0.1 per cent of all (economy–wide) trade apprentices but employed 0.3 per cent of all trade workers. As such, Karmel and Mlotkowski estimated the exploration industry would need to increase its employment of trade apprentices by 150 per cent if it were to employ the same proportion of trade apprentices as it does trade workers in the economy.

SACOME identified issues with apprenticeship training but suggested the problem was the result of inadequate access to trainers, rather than the industry failing to provide sufficient training places:

> Providing more training to unskilled or new-to-resources workers is not a viable short-term solution because there are not enough trainers to meet current needs, let alone the growing future requirements of the industry. First of all, trainers must be found or created. (sub 9, p. 9)
>
> One major cause of the problem is that with current mining sector wages, trainers can make a lot more money actually doing their trade, rather than training others to do it. (sub 9, p. 10)

In the Commission's view, lack of appropriate apprenticeship opportunities for drillers, fitters and machinists is likely to be an important explanation for why exploration companies are experiencing difficulty in recruiting these occupations. Indeed the concerns raised by SACOME regarding the 'work hardiness' of new graduates from higher education may in part reflect the unwillingness of some resource explorers to provide the 'on the job' aspects of training that is required to develop the skills of their workforce.

However, certain aspects of resource exploration work may also discourage new entrants. These include:

- a perception that resource exploration follows pronounced 'boom and bust' cycles and that this may make a long term career in resource exploration difficult
- large amounts of time are spent working in rural or remote locations away from family or large population centres
- a perception of long working hours — ABS (2012) data suggests that average full time hours for resource exploration are above the average for most other industries.

### *Short term options to address the shortage*

There are two approaches to increase the supply of skilled workers to resource exploration in the short term. The first involves encouraging workers from other sectors in Australia to enter resource exploration and the second is to promote skilled migration in occupations that are subject to current shortages.

The first approach is likely to have limited impact. More than half of all mining engineers and geologists and geophysicists already work in resource exploration and extraction (table 8.3). Furthermore, most of those who work within the professional, scientific and technical services industry provide work indirectly for the mining sector through contact and consulting work (AWPA 2012). The vast majority of drillers, miners and shot firers also already work in the resources sector.

Table 8.3 **Industry employment breakdown for selected occupations**
Per cent of workers in occupation

| *Industry* | *Mining engineers* | *Geologists and geophysicists* | *Drillers, miners and shot firers* | *Metal fitters and machinists* |
|---|---|---|---|---|
| Mining | 58 | 56 | 82 | 17 |
| Professional, scientific and technical services | 25 | 31 | 1 | 2 |
| Public administration and safety | - | 6 | - | 2 |
| All other industries | 17 | 7 | 17 | 79 |
| Total | 100 | 100 | 100 | 100 |

Source: 2011 Census of Population and Housing.

A second option is to recruit workers from other countries. Submissions to this inquiry emphasised the current importance of skilled migration to the resource sector. For example, APPEA stated:

> The oil and gas sector is undergoing a period of rapid expansion, and it is critical that there is efficient access to appropriate levels of temporary skilled migration to ensure the projects proceed on time and budget and that labour productivity is maximised. (sub 22, p. 22)

AMMA echoed the importance of skilled migration to resource exploration:

> … skilled migration plays a small but particularly important role in meeting Australia's complex skills challenges. It constitutes a flexible contingency option for resource employers, and an essential means to supplement the local workforce, particularly when local workers are unwilling to relocate to regional and remote areas. Skilled migration also facilitates access to highly specialised skills that may not exist locally (sub. 32, pp. 7–8).

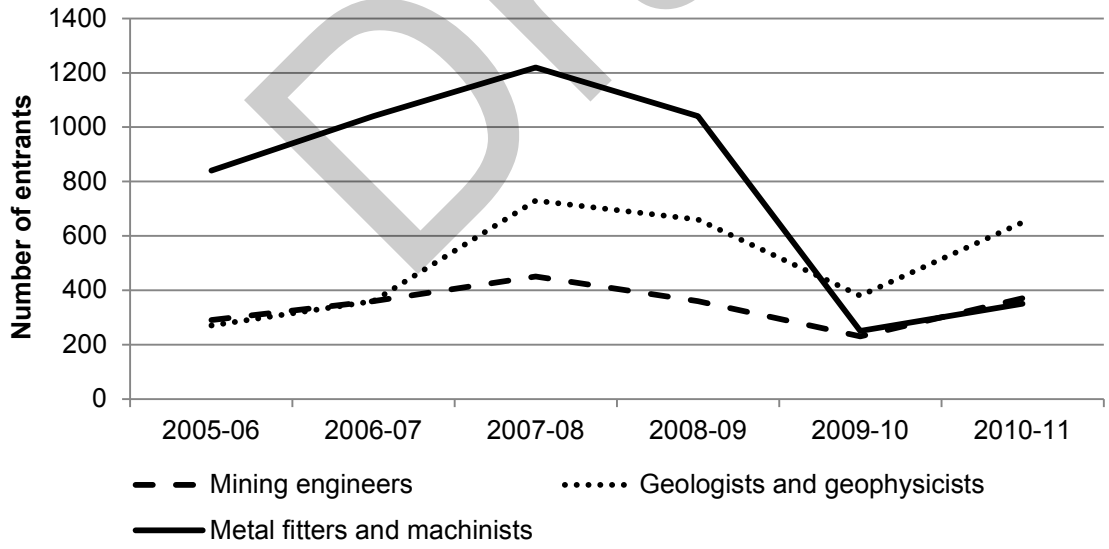
Also confirming this view, SACOME have said:

> SACOME would contend … that employer sponsored migration is needed and an effective way to address skills shortages (sub 9, p. 13)

The Temporary Business (Long Stay) visas — commonly known as subclass 457 — is the primary vehicle for allowing foreign workers to fill temporary skills shortages. In 2010-11, there were 3650 mining industry workers who entered Australia on 457 visas, representing just under 8 per cent of sponsored 457 visas issued (DIAC 2012a).

Employers have used subclass 457 visas to fill particular occupational shortages. Between 2005-06 and 2010-11 over 2000 mining engineers and 3000 geologists and geophysicists have entered Australia under employer sponsored subclass 457 visas (figure 8.5). The annual intake peaked in 2007-08, the year before the onset of the global financial crisis. It is not possible to determine how many of these visa recipients proceeded to work in resources exploration. Nonetheless, the entry of workers with these specific skills into the workforce would have moderated the severity of skills shortages generally and reduced the difficulty resource explorers find in attracting appropriately skilled workers.

Figure 8.5 **Entrants under employer sponsored subclass 457 visas**
Selected occupations




*Data source*: AWPA (2012).

Skilled workers can also enter Australia permanently under the 'Skill Stream' of Australia's *Migration Program*. The majority of migrants who enter Australia under the *Migration Program* do so as employer sponsored migrants or as 'general skilled migrants'. General skilled migration consists of skilled migrants entering Australia independently, with sponsorship of a family member, or with sponsorship from a

State or Territory. Nearly 114 000 people entered under the Skills Stream program in 2010-11. No sectoral breakdown of employment under this stream is available (DIAC 2012a).

The Commission, through its issues paper and consultations, sought comment from all stakeholders regarding the effectiveness of current employer sponsored, skilled migration processes, and received little feedback on how current arrangements could be improved. That said, in consultations, participants to this inquiry have suggested that the omission of geologists and geophysicists from the Skilled Occupations List (SOL)[1] restricts the extent that skilled migration can moderate the effect of shortages in these occupations.

The SOL determines what occupations are eligible for permanent independent and family sponsored skilled migration into Australia (DIAC 2012b). The Department of Immigration and Citizenship administers the SOL, with the list updated annually to keep abreast of the changing skills needs of the economy. The Department gives considerable weight to advice from the Australian Workplace and Productivity Agency (AWPA) as to what occupations should be included on the SOL. The criteria the Agency uses to assess whether an occupation should be listed on the SOL is shown in box 8.1.

The Commission notes that AWPA encourages consultation and input from stakeholders as part of its assessment as to whether occupations are listed on the SOL. The Commission has not been presented with evidence that the criteria and process used to identify occupations that should be placed on the SOL is inadequate.



[1] The SOL is different from the Skills Shortage List maintained by the DEEWR. This is because both lists have different purposes — The Skills Shortage List reflects DEEWR research around what occupations are currently in shortage. The SOL looks to identify occupations that will assist in meeting the medium and long term needs of the Australian economy. That said, many occupations on the Skills Shortage List also appear on the SOL.

**Box 8.1 Assessing occupations for the Skilled Occupations List**

AWPA assesses specialised occupations for listing in the SOL against five criteria. An occupation *is not* listed on the SOL if it meets one or more of the following:

1. If the evidence shows it is an occupation likely to be in surplus in the medium-to-long term (based on a combination of data including the size and age of the current workforce, expected employment growth rates, labour force turnover, and trends in enrolments and completions).
2. If there are other more appropriate and specific migration options (e.g. temporary skilled migration or employer sponsored or state migration).
3. If the job requires the person to be an Australian citizen.
4. If the course of study required to undertake the occupation can, and usually is, completed without a long lead in time and is not sufficiently skilled.
5. If it is a niche occupation (i.e. with very few employers or employment opportunities as these are more appropriately addressed through Employer Nominated or Regional sponsored skilled migration).

Source: Skills Australia (2012).



*Longer term options*

The recent study by the NRSET (2010a) modelled the future skills needs of Australia's resource sector to 2015. It found that the sector could face skills shortages across a number of key occupations, some of which have relevance to resource exploration. That study outlined 31 recommendations 'for governments, the resources sector and stakeholders to address critical skill needs and plan for future growth' (NRSET, 2010 p. iii) within the resources sector. One recommendation was for annual reporting on the extent of the shortages.

The most recent of these annual reports, completed by AWPA in 2012, found that while skills shortages were currently prevalent, it was uncertain whether they would persist:

> At present Production Managers, Mining Engineers, Geologists and Geophysicists are in shortage nationally. We expect that new supply will increase to meet demand across all industries. The question is whether this new supply will adequately meet the specific needs of the resources sector.
>
> The challenge for the resources industry is the attraction and retention of skills given the potential competition for critical skills from other industries based in metropolitan areas. (AWPA 2012, p. 50)

The NRSET recommendations spanned a number of themes including workforce planning, training, participation and migration, and were all accepted by the

Australian Government. A subset of these recommendations — namely those with the potential to have the greatest impact on the skill needs of resource exploration — are listed in box 8.2.

**Box 8.2 Selected recommendations from the NRSET Report**

Recommendation 1.3

'That Skills Australia report annually through the Ministerial Council for Tertiary Education and Employment to the Ministerial Council for Mineral and Petroleum Resources and the Ministerial Council on Energy on the status of skills shortages in the resources sector.'

Recommendation 1.4

'That resources and construction companies place a very high priority on training as a means of addressing their current and future skills needs and consider adopting a training culture similar to their approach to safety.'

Recommendation 2.1

'That the resources sector significantly increase the number of apprentices it employs. The sector currently employs considerably fewer apprentices than would be expected given its share of trade employment.'

Recommendation 2.2

'That the Australian Government work with industry, unions, training providers, state and territory governments, skills councils, state skills bodies and industry associations to trial alternative apprenticeship models with a view to increasing the number of trade-qualified people in occupations and locations where a shortage is expected.'

Recommendation 3.1

'That universities with a teaching profile that delivers professionals to the resources and construction sectors formalise and strengthen their ties with each other and industry, and articulate their role and strategic intentions in their mission statements.'

Recommendation 6.3

'That the Australian Government work with education authorities to ensure future rounds of Trades Training Centre funding take into account the anticipated strong demand for skills in the resources and construction sectors. Schools with strong links to the resources and constructions sectors could be targeted as they should have the greatest capacity to graduate year 12 students into these sectors.'

Recommendation 6.5

'That the Australian and state and territory governments continue to work together on strategies to urgently increase senior schools students' participation, attainment and engagement in mathematics and science, noting these subjects open the door to careers in the resources and construction sector.'

Source: NRSET (2010a).



These recommendations formed the basis of the National Resource Sector Workforce Strategy (NRSWS), to be overseen by a steering committee consisting of

Australian government departments, state and territory governments, industry associations, unions and training providers. The steering committee has developed an implementation plan, with the latest update on the strategy — released in July 2012 — indicating that to date, fourteen of the thirty-one recommendations have been actioned[2] (NRSWS Steering Committee 2012).

The Commission considers that the implementation of the NRSET recommendations will assist with moderating the effects of skills shortages in resource exploration, particularly over the longer term. The value of continuing the work of the NRSWS has also been identified in submissions to this inquiry (including that by the MCA) and in the Australian Government's Energy White Paper (DRET 2012c).

## 8.2 Workplace health and safety

The state and territory governments are responsible for the onshore workplace health and safety (WH&S) regulations that apply to resource exploration. These regulations are set out in sector specific safety legislation or general WH&S legislation or a combination of the two. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is responsible for WH&S regulations for offshore exploration.

The MCA (sub. 27) endorsed current movements towards harmonised WH&S regulation for the resources sector, and recommended that governments reinvigorate attempts to develop uniform regimes across jurisdictions. APPEA (sub. 22) stated that some jurisdictions have started to implement the model (harmonised) WH&S reforms, and the interaction of these regulations with existing state–based requirements is causing confusion.

The reforms to sectoral WH&S requirements are associated with attempts to harmonise all WH&S requirements on an economy-wide scale. As resource exploration represents a small part of the broader resources sector, the Commission will not be examining this issue further as part of this inquiry.

2 'Actioned' is defined in the progress report as 'recommendations for which implementation activities are now part of normal service delivery arrangements and the implementation of which will continue without direct engagement or directive from the NRSWS.'

## 8.3 Workplace relations

Australia's current workplace relations system — the Fair Work system — commenced operation in July 2009 and took full effect from January 2010. A small number of submissions to this inquiry raised matters relating to the current workplace relations regulatory framework as it applies to resource exploration. The issues covered spanned themes linked to bargaining, flexibility, union rights of entry and greenfield agreements.

### *Bargaining*

The MCA (sub. 27) proposed that: good faith bargaining rules be amended so that the confidentiality of commercial operations is respected; legislative protection from legal actions for 'fanciful claims' be removed; and that bargaining representatives be appointed explicitly by employees, and not by default. AMMA proposed a wide suite of reforms to the bargaining arrangements, including that the default bargaining representative status for employee organisations be removed (sub. 32, attachment 3).

The MCA also suggested that arbitration should be available if agreed to by both parties, with compulsory arbitration only used where it is in the national interest. AMMA also have expressed misgivings about the use of compulsory arbitration. Both the MCA and AMMA also suggest changes to the circumstances under which protected action can be pursued during a bargaining process.

### *Flexibility*

Both the MCA and AMMA argued that the current industrial relations environment is not conducive to individual flexibility. The MCA (sub. 27) suggested that agreements should be prohibited from restricting Individual Flexibility Agreements (IFAs). This concern is shared by AMMA, who also suggests, among other reforms in this area, it should be possible to make IFAs a condition of employment and be able to run for the nominal term of an enterprise agreement (sub. 32, attachment 3).

### *Union right of entry*

AMMA submitted that the Fair Work Act has increased union access to worksites, imposing additional costs and uncertainty on employers. AMMA also suggested that current provisions have allowed a greater number of unions to visit worksites and this is being used by unions to promote membership (sub. 32, attachment 3).

The MCA (sub. 27) also expressed broader dissatisfaction with current right of entry provisions, suggesting that the rules should reflect the interests of the workers and not unions' claims.

### *Greenfield agreements*

Several submissions pointed to inflexibility around the establishment of greenfield agreements within the framework of the *Fair Work Act*. Greenfield agreements are enterprise agreements between one or more employers and one or more unions for a genuinely new enterprise that does not have employees as yet (Fair Work Ombudsman 2013).

Business SA noted the degree of union influence in greenfield agreements and suggested the *Fair Work Act* be amended to:

> … allow employers the option of a non-union greenfield agreement that would be tested against the relevant modern award, minimum standards and a 'no disadvantage test'. (sub 7 , p. 2)

The MCA also noted that:

> … greenfield agreements should not be subject to lengthy tortuous, onerous negotiation process arrangements caused by default representatives of a yet to be appointed workforce. (sub. 27, p. 37)

### *The Commission's view*

The resource exploration workforce only represents a very small proportion (about 0.2 per cent) of employment in the national workforce and also a small proportion (about 8 per cent) of those in the mining sector. It is not possible to estimate what proportion of employees who work in resource exploration are covered by the *Fair Work Act,* given that many workers offer their services on a contract basis.

Accordingly, any examination of workplace relations concerns would need to consider matters well beyond those of resource explorers. In this context, the Commission notes that the Review of the *Fair Work* legislation, commissioned by the Australian Government in 2011-12, examined Australia's industrial relations system. The Review's scope included the issues identified above, and no substantive changes were recommended in these areas. The modern award covering exploration activities — the Mining Industry Award — was also reviewed in 2012.

Any future reviews of the *Fair Work Act* or the Mining Industry Award would represent more appropriate fora for examination of the issues canvassed above.

# A Conduct of the inquiry

The Commission received the terms of reference for this inquiry on 27 September 2012. Notices were then placed in the press and on the Commission's website inviting public participation. Information about the inquiry was also circulated to parties identified as likely to have an interest.

The Commission released an issues paper on 14 December 2012 to assist inquiry participants in preparing their submissions. Thirty four submissions were received prior to publication of this report. A list of these submissions is provided below in table A.1.

The Commission has held informal consultations with governments, regulatory bodies, conservation groups, Indigenous heritage organisations, peak industry groups in the minerals and energy resources sector, as well as with a number of companies and individuals. A list of the meetings and informal discussions undertaken is provided below in table A.2.

The Commission would like to thank all those who contributed to the inquiry.

## Table A.1 **Submissions received**

| *Participant* | *Submission No* |
|---|---|
| Aboriginal Areas Protection Authority | 23 |
| Association of Mining and Exploration Companies | 24 |
| Australasian Institute of Mining and Metallurgy | 12 |
| Australian Mines and Metals Association | 32 |
| Australian Network of Environmental Defenders Offices | 17 |
| Australian Petroleum Production and Exploration Association Limited | 22 |
| Australian Uranium Association | 4 |
| Basin Sustainability Alliance | 18 |
| Business SA | 7 |
| Department of Sustainability, Environment, Water, Population and Communities | 33 |
| Geoscience Australia | 6 |
| Hetherington, Melissa | 16 |
| Minerals Council of Australia | 27 |
| National Offshore Petroleum Safety and Environmental Management Authority | 28 |
| Northern Territory Department of Mines and Energy | 2 |
| NSW Aboriginal Land Council | 10 |
| NSW Farmers' Association | 21 |
| NSW Irrigators' Council | 5 |
| NSW Minerals Council | 11 |
| NTSCORP | 31 |
| Queensland Department of Natural Resources and Mines | 25 |
| Queensland Murray-Darling Committee | 20 |
| Queensland Resources Council and Queensland Exploration Council | 13 |
| Resource Futures Pty Ltd | 14 |
| South Australian Chamber of Mines and Energy | 9 |
| Watkins, David | 1 |
| Western Australian Government | 29 |
| Wildlife Preservation Society of Queensland – Upper Dawson Branch | 8 |
| WWF-Australia | 26 |
| Yamatji Marlpa Aboriginal Corporation | 34 |
| Confidential | 3, 15, 19, 30 |

## Table A.2 **Meetings**

| *Participant* |
|---|
| **Australian Government and national bodies** |
| Association of Mining and Exploration Companies |
| Australasian Institute of Mining and Metallurgy |
| Australian Coal Association |
| Australian Petroleum Production and Exploration Association |
| Blue Planet Marine |
| BP Australia |
| Bureau of Resources and Energy Economics |
| Department of Finance and Deregulation |
| Department of Resources, Energy and Tourism |
| Department of Sustainability, Environment, Water, Population and Communities |
| Geoscience Australia |
| Herbert Smith Freehills |
| Minerals Council of Australia |
| National Farmers' Federation |
| National Offshore Petroleum Safety and Environment Management Authority |
| WWF-Australia |
| **New South Wales** |
| Department of Trade and Investment, Regional Infrastructure and Services |
| Independent Commission Against Corruption |
| NSW Minerals Council |
| **Northern Territory** |
| Aboriginal Areas Protection Authority |
| Department of Mines and Energy |
| Department of Lands, Planning and the Environment |
| Northern Land Council |
| **Queensland** |
| AgForce Queensland |
| Arrow Energy |
| Basin Sustainability Alliance |
| Central Downs Irrigators Limited |
| Department of Aboriginal and Torres Strait Islander and Multicultural Affairs |
| Department of Natural Resources and Mines |
| GasFields Commission Queensland |
| Queensland Exploration Council |
| Queensland Gas Company |
| Queensland Murray-Darling Committee |
| Queensland Resources Council |
| Western Downs Regional Council |

(Continued next page)

## Table A.2 **(continued)**

| *Participant* |
|---|
| **South Australia** |
| Department of Environment, Water and Natural Resources |
| Department of Manufacturing, Innovation, Trade, Resources and Energy |
| Department of Premier and Cabinet |
| Rex Minerals |
| South Australian Chamber of Mines and Energy |
| South Australian Native Title Services |
| **Tasmania** |
| Department of Infrastructure, Energy and Resources |
| **Victoria** |
| Department of Primary Industries |
| Department of Sustainability and Environment |
| O'Neill, Dennis |
| **Western Australia** |
| Alchemy Resources Limited |
| Archae-Aus |
| Chamber of Minerals and Energy |
| Conservation Council of Western Australia |
| Department of Indigenous Affairs |
| Department of Mines and Petroleum |
| Department of Premier and Cabinet |
| Finder Exploration |
| Phoenix Gold Limited |
| Western Australian Local Government Association |
| Woodside Energy |
| Yamatji Marlpa Aboriginal Corporation |
| **Canada** |
| Alberta Energy, Government of Alberta |
| Athabasca Chipewyan First Nation |
| Canadian Association of Petroleum Producers |
| Canadian Environmental Network |
| Commissioner of the Environment and Sustainable Development, Auditor General's Office |
| Ecojustice |
| Explorers and Producers Association of Canada |
| Fraser Institute |
| Major Projects Management Office, Government of Canada |
| Mining Association of Canada |
| Natural Resources Canada |
| Pembina Institute |
| Sierra Club |

(Continued next page)

Table A.2 **(continued)**

| *Participant* |
| --- |
| **United State of America** |
| National Mining Association |
| Department of the Interior |
| White House Council on Environmental Quality |

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