6 Environmental management

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| **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. |
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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).

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| 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). |
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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

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| Jurisdiction | Relevant Acts | Other key legislation, guidelines and codes of practice |
| New South Wales | Protection of Environment Operations Act 1997  Protection of Environment Operations Amendment (Environmental Monitoring) Act 2010 | Protection of the Environment Operations (General) Regulation 1998  Clean Waters Regulations 1972 |
| Victoria | Environment Protection Act 1970  Flora and Fauna Guarantee Act 1988  National Parks Act 1975  Environment Effects Act 1978 | State Environment Protection Policies (eg. ambient air quality, control of noise, water quality)  National Parks (Parks) Regulations 2003 |
| Queensland | Environmental Protection Act 1994 | Environmental Protection Regulations 1998 |
| Western Australia | Environment Protection Act 1986  Conservation and Land Management Act 1984 | Environmental Protection Regulations 1987  Conservation and Land Management Regulations 2002  Wildlife Conservation Regulations 1970  Draft Guidelines for Environmentally Responsible Mineral Exploration and Prospecting in Western Australia, March 2012 |
| South Australia | Environmental Protection Act 1993  Wilderness Protection Act 1992  National Parks and Wildlife Act 1972  Marine Parks Act 2007 | Environment Protection Regulations 2009  Wilderness Protection Regulations 2006  National Parks and Wildlife Regulations (various)  Marine Parks Regulations 2008 |
| Tasmania | Environmental Management and Pollution Control Act 1994  Nature Conservation Act 2002  National Parks and Reserves Management Act 2002  Forestry Act 1920  Regional Forest Agreement (Land Classification) Act 1998 | Environmental Management and Pollution Control Regulations (various)  Mineral Exploration Code of Practice |
| Northern Territory | Environmental Assessment Act 1994  Waste Management and Pollution Control Act 1998  Territory Parks and Wildlife Conservation Act 2001 | Environmental Assessment Administrative Procedures 2003  Waste Management and Pollution Control (Administration) Regulations 1998  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

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| 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

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| 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). |
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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.

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| 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). |
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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

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| 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). |
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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)

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| 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. |
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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.