



**Chief Scientist  
& Engineer**

## Independent Review of Coal Seam Gas Activities in NSW

Study of regulatory compliance systems and processes  
for coal seam gas

September 2014



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# Chief Scientist & Engineer

The Hon Michael Baird MP  
Premier  
Minister for Infrastructure  
Minister for Western Sydney  
Parliament House  
SYDNEY NSW 2000

Dear Premier,

## Compliance Study

As part of the independent review of coal seam gas activities in NSW, I present the report of a study examining the effectiveness of the processes and systems for ensuring compliance with legislative instruments, regulations and conditions applying to coal seam gas extraction in NSW.

Under the Terms of Reference for the Review, I was asked to undertake a comprehensive study of industry compliance informed by compliance audits undertaken by regulatory officers. This proved difficult due to the paucity of compliance information available from regulators. Accordingly the Review turned its attention to understanding why compliance is proving problematic.

While some good practices were observed, there is a clear need for structural and cultural change to improve regulatory and compliance oversight of coal seam gas in NSW. The issues raised in this report can be addressed, but support from across Government will be needed.

Throughout the Review it has been pointed out by stakeholders, and noted by the Review itself, that the legislation and regulations around CSG in NSW are complex and difficult to navigate, contributing to low transparency and poor compliance and enforcement. These problems lead to matters of compliance falling through the cracks, as detailed in this report. To facilitate necessary improvements and encourage a culture of compliance, this report recommends the Government move to a more strategic legislative and regulatory system for CSG and makes four recommendations in this regard.

It is important to note that the results of the compliance study reflect the evidence that was available from regulatory agencies and audits at the time of the study, and does not necessarily reflect poor actual industry compliance.

In presenting this report I wish to acknowledge the assistance of regulatory agencies and officers in responding to requests for information and data.

Yours sincerely,

**Mary O'Kane**  
**Chief Scientist & Engineer**  
30 September 2014

## EXECUTIVE SUMMARY

This Study examines the effectiveness of the processes and systems for ensuring compliance with legislative instruments, regulations and conditions applying to coal seam gas (CSG) extraction in NSW.

The Independent Review of Coal Seam Gas Activities in NSW was asked to examine industry compliance in the NSW CSG industry using information from the various regulators. To facilitate this, the Review first commissioned an analysis of legislation covering CSG to understand compliance points and sought data and reports from the various regulators on whether compliance requirements had been met. It rapidly became apparent that this task would probably be impossible given the paucity of information from the regulators and the varying quality of the detail in much of what was available. Accordingly the Review refined its approach, and examined how compliance is being managed across government agencies and why it is proving problematic.

The Study selected a sample of licences and sought evidence from agencies about how industry compliance with legislative requirements was being monitored and enforced over a selected period of time (1 July 2010-30 June 2013). Specifically, the Study looked at two of six Petroleum Production Leases in place at the time; two of 39 Petroleum Exploration Licences; the only Environment Protection Licence held for CSG extraction activities; and a Groundwater Licence.

While some good practices were observed, most notably in the Environment Protection Authority (EPA), some clear findings are that:

- there is a lack of alignment between requirements set out in licences and Government regulatory activity based on legislation
- regulatory capacity is limited in some agencies
- documentation and record keeping is often poor
- management of legacy requirements is limited
- new requirements are introduced without removing or aligning with existing requirements
- there is no clearly articulated whole-of-Government regulatory approach.

In particular, there is a concerning culture of some agencies not requiring or checking evidence to ensure industry compliance.

It is important to note that there is no evidence that the outcomes of mixed levels of regulatory oversight have been serious to date. This observation is supported by the results of available industry audits taken as a set. However, it is clear that some regulators have not been checking that required data and reports are delivered; not reviewing or verifying the material that companies are obliged to provide; not checking operations; and not reviewing or managing conditions which have become outdated or problematic with the passing of time.

Many of the issues identified have already been acknowledged by Government, and the Review has observed a commitment to improvement and change within the relevant agencies. Government has already made some improvements to the legislative arrangements, and is planning further reform. The multi-agency regime managing compliance for this industry adds further complexity that needs to be managed proactively.

While the Review acknowledges that Government is making positive steps, it is clear to the Review that there is a need for a clearly articulated whole-of-Government regulatory approach. The Review considers an overhaul of the legislative and regulatory system is

required and has made four recommendations to Government to advance this objective. These recommendations draw on observations from this study, which included a desktop analysis of national and international regulatory practice, and the report on *Environmental risk & responsibility and insurance arrangements for the NSW CSG industry*.

The system needs strengthening, with application of the same rigour and scientific underpinnings to regulatory practice that is expected in other industries.

Support from across Government is needed to address these issues adequately. Existing institutions and capabilities within the NSW public sector, such as the Auditor-General and Ombudsman, and central agencies, such as the Department of Premier and Cabinet, need to be involved to drive reform and eliminate silo-like approaches.

The core observation from this report is the need for a streamlined and cohesive approach to regulation and compliance, with clear accountability points on both industry and the regulator throughout the framework. The business of regulation and compliance needs to be resourced and empowered appropriately.

Significant change is still required to achieve a 'world class' regime for CSG extraction.

These reforms must be considered carefully and strategically to ensure that they address the full range of issues identified in this and allied reports.

## RECOMMENDATIONS

### **Recommendation 1**

That Government use its planning powers and capability to designate those areas of the State in which CSG activity is permitted to occur, drawing on appropriate external expertise as necessary.

### **Recommendation 2**

That Government move to a single Act for all onshore subsurface resources (excluding water) in the State, constructed to allow for updating as technology advances. This will require a review of all major Acts applying to the resources sector.

### **Recommendation 3**

That Government separate the process for allocation of rights to exploit subsurface resources (excluding water) from the regulation of the activities required to give effect to that exploitation (i.e. exploration and production activities); and that it establish a single independent regulator. The regulator will require high levels of scientific and engineering expertise, including geological and geotechnical ability, environmental and water knowledge and information, and ICT capability including data, monitoring and modelling expertise; and will be required to consult – and publish details of its consultations – with other arms of Government and external agencies, as necessary. The regulator will also require appropriate compliance monitoring and enforcement capability.

### **Recommendation 4**

That Government move towards a target and outcome-focused regulatory system, with three key elements:

- regularly reviewed environmental impact and safety targets optimised to encourage uptake of new technologies and innovation
- appropriate and proportionate penalties for non-compliance
- automatic monitoring processes that can provide data (sent to and held in the openly accessible Whole-of-Environment Data Repository) which will help detect cumulative impacts at project, regional and sedimentary basin scales which can be used to inform the targets and the planning process.

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# 1 INTRODUCTION

Term of Reference 1 for the Independent Review of Coal Seam Gas Activities in NSW (the Review) required the Chief Scientist & Engineer to:

*“undertake a comprehensive study of industry compliance involving site visits and well inspections. The Chief Scientist's work will be informed by compliance audits undertaken by regulatory officers, such as the Environment Protection Authority and other government agencies”.*

This report examines the regulatory requirements placed on existing licensed coal seam gas (CSG) operations (up to mid-2013), and outlines evidence available through regulators about how compliance with those requirements is managed.

## 1.1 CONTEXT

Regulation and industry compliance are issues of concern repeatedly raised with the Review. Seventy-seven of over 230 submissions addressed regulation, compliance or monitoring. Concerns expressed about regulation and compliance in these submissions and other consultations related to:

- complexity of the regime and lack of regulatory certainty
- poor quality of inputs to the assessment process, and perceived lack of rigour in assessment of proposals and application of conditions
- lack of oversight and reliance on industry self-regulation. Concerns expressed in the submissions included a lack of monitoring or rigorous oversight of industry activities or impacts; lack of (or lack of rigorous) enforcement actions in response to breaches; and reliance on members of the public or companies to identify problems.

The Initial Report of the Review (CSE, 2013) recommended (Recommendation 1) *“That the Government commits to establishing a regime for extraction of coal seam gas that is world class”.*

This study (the Study) of compliance issues was undertaken at a time of significant change to regulatory roles and responsibilities and implementation of a range of initiatives by the NSW Government (see Chapter 6 for more information).

## 1.2 APPROACH

The approach to reviewing compliance activity was informed by consultation, public submissions, well inspections, site visits and extensive interaction with the various agencies responsible for compliance with the legislation and regulations pertaining to CSG extraction.

### 1.2.1 Analysis of legislation governing CSG in NSW

An initial step was to commission an analysis of the NSW legislation governing CSG extraction to identify the relevant compliance points and requirements. This analysis showed a highly complex and fragmented regulatory framework, with “considerable cross-referencing, layering, exceptions and variations within and between legislative instruments” (Appendix 2). There are some 14 principal acts, eight regulations, four statutory instruments and three different NSW agencies (as well as the Commonwealth and sometimes local government) involved. Some legislative provisions apply at a very broad level (all types of petroleum exploration, all forms of development) and others are specifically applicable to CSG activities. This makes obtaining a clear ‘roadmap’ of the process for obtaining the necessary approvals for CSG exploration and production extremely difficult – for regulators,

the operators and the general public. Some elements have been subject to considerable recent change (e.g. planning legislation on strategic agricultural land use); others have not been reviewed recently. Criteria for the exercise of decision-making discretions by Government agencies are lacking. Obligations may be imposed on operators by a variety of means (legislation, condition of approval instrument, cross-reference to a subordinate document), making it difficult to record and to monitor the obligations for any one explorer/producer.

The detailed analysis of the legislation and an overview of the issues raised by this analysis are at Appendix 2.

### **1.2.2 Checking industry compliance was confounded by problems obtaining data and information from Government agencies on compliance outcomes**

In parallel with the legislative analysis, the Review sought fundamental data about CSG sites and activities so it could then ask regulators for documentation to confirm that these sites and activities had been and were currently compliant with relevant legislation at the various compliance points identified in the legislation analysis.

The first problem encountered with this approach was establishing reliable fundamental information. As noted in the Initial Report of the Review (CSE, 2013), establishing fundamental data on CSG activities in NSW is not straightforward. For example, at the time of release of the Initial Report, NSW Trade and Investment Division of Resources and Energy (DRE) had been unable to supply an authoritative list of numbers of various categories of CSG wells. More than a year later, this is still an issue although a much clearer picture is now available.

Accessing primary documented evidence of compliance for cases even where the fundamental data was sound also turned out to be complicated – the first complication being that various aspects of CSG regulation are managed by different Government departments and agencies, including those with responsibility for planning, resources, water, and environment. It turned out that there are many cases where agencies are unclear about which agency has responsibility for what, and formal protocols between agencies and shared data systems did not exist to clarify this. The absence of shared understanding and shared systems for capturing data and information meant that it was often not possible to distinguish between poor record keeping, an absence of compliance effort and possible non-compliance.

The second complication was that for many cases it proved difficult to locate information from regulators to indicate whether requirements had been met or not, and in aligning any located information with the compliance requirements as they appear in leases, licences or statutory instruments.

Considering all this, the Review decided to refine its approach and examine the effectiveness of compliance checking for CSG legislation across Government in NSW. This report presents the data from this Study.

### **1.2.3 Process used to examine effectiveness of compliance checking for CSG legislation across Government in NSW**

To provide an understanding of what constituted good regulatory practice, a review of recent literature on good regulatory practice and compliance standards was undertaken (see Bibliography).

The Study then took a representative sample of CSG activities authorised through consent or licence and focused on activities and requirements that were relevant during the three-

year period from 1 July 2010-30 June 2013. However, where necessary it has examined activities outside of this period, for example, where it was known that certain activities such as fracture stimulation did not occur in this time period.

The Study examined the following sample of leases, licences and requirements relevant to different regulating agencies:

- assessment of evidence for two full Petroleum Production Leases (PPLs), which covers the majority of the field of production leases issued<sup>1</sup> plus assessment of compliance with additional legislative or regulatory provisions not already contained in the lease or the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR) associated with one production lease (responsibility of DRE)
- assessment of evidence for two full Petroleum Exploration Licences (PELs) plus assessment of compliance with additional legislative or regulatory provisions (not already contained in the lease or SOPEPSR) in one exploration licence (responsibility of DRE)
- assessment of evidence on a subset of wells for well-related activity requirements (drilling, hydraulic fracture stimulation, suspension and abandonment – responsibility of DRE). The sample represents approximately 10% of total wells drilled (identified as at 27 September 2013), namely 58 wells on 17 Titles. The sample encompasses production leases, exploration licences, a mix of operators across geographic areas and includes wells from the defined study period supplemented by some wells drilled earlier.<sup>2</sup> The focus on well-related activities reflected expert advice on well integrity as fundamental to safe operations
- assessment of the one Environment Protection Licence (EPL) issued for CSG extraction activities in place at the time of the Study (responsibility of the NSW Environment Protection Authority [EPA])
- assessment of a sub-set of related groundwater licences (GWL) issued to one company at the time of the review (responsibility of the NSW Office of Water [NOW])
- initial assessment of complaint and incident reporting requirements across regulators.

It was also intended to assess evidence for one Department of Planning and Environment (DP&E) development approval. However, this was excluded when it was discovered that no documented formal compliance activity associated with this had been carried out and there was no available documentation regarding desktop reviews of reports that may have been submitted. The Department advised that when post-approval documentation is received, planning officers review the document against relevant conditions of consent and may refer documents to the compliance team for further review if concerns arise.

The Study aimed to identify and analyse the evidence available from regulators about company compliance. The Study developed a tool for gathering and codifying evidence collected that:

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<sup>1</sup> There are six Production leases in scope, five of which are held by one company, one of which had not had any CSG wells drilled on it in the Study period. Due to the way in which plans and reports have been prepared, one of the leases assessed represents the majority of findings across the other three leases although there are minor variations.

<sup>2</sup> Assessment leases were not included in the well cohort as no wells on this lease type were identified as being drilled, suspended or abandoned in the relevant period at the time the cohort was selected. It is not anticipated that the inclusion of these wells would have any significant influence on the findings.

- rated levels of evidence available via regulators (evidence ratings including ‘evidence requirement met’, ‘evidence met in part’, ‘no evidence met’, ‘evidence not met’, ‘no evidence requirement invoked’)
- established standardised coding for common evidence findings (e.g. ‘no specific guidelines for titleholder to prepare report’; ‘no formal guidelines/process for regulatory review’; ‘content does not obviously address requirement’; ‘no evidence of regulator reviewing report or plan’; ‘operations ahead of approval’; ‘no evidence of any remedial action’; ‘correspondence without clear resolution’).

Two additional steps were taken to provide a broader analysis:

- a review of recorded inspections by safety inspectors
- a review of reports for a small sample of wells drilled, suspended or abandoned after the introduction of new guidelines in 2012 for Well Completion Reports (WCRs).

In reviewing Government-held material, the Study drew on information from the relevant audits that were available over the Study period. Where material cited in the audits provided documentary proof of compliance with compliance points in the licence/legislation, this was included in the material for the Study. The Study drew on any documentary evidence available through these audits that was not available through other agency sources to inform its findings.

Audits can be important components of licencing and compliance activities, and can be undertaken through regulations governing Planning Development Consents (requiring audits every two to three years), petroleum regulations, EPA Compliance Policy and groundwater licences (for water data quality assurance).

There have been several Government audits of compliance. In 2014 the EPA reported on an audit of the relevant EPL, and DP&E requires independent audits of relevant titles. For example, the audit of the environmental conditions under the development consent of the Camden CSG activities was undertaken during the period of the Study.

In addition to regular auditing activities of individual licences, the Government has, from time to time, used relevant regulations to trigger some systematic audits over a group of industry players or developments. For the period relevant for this Study, the Government asked for audits to be undertaken on a set of mining Exploration Licences (ELs) and Petroleum Exploration Licences (PELs). These were undertaken in 2011-12. DRE oversaw the audit of compliance with licence conditions for 20 ELs and 22 PELs (DTIRIS, 2012a).

These audits, which at the level of the companies generally were carried out by regulator-approved audit firms and, in one case, by the EPA itself, present a general picture of compliance.

The approach of the Study, reflected in this report, differs in its focus and approach from that of a title or activity audit, as the Study focused on how compliance activities were managed in the regulatory system – not just the company. Therefore, in undertaking its work, the Study reviewed not only the available audits of industry activities but also the processes used in Government to review and watch over the industry. Audits are one such mechanism for regulators to assess compliance, but there are also a number of other mechanisms.

The process used in the Study had a clear threshold for the evidence standard and governance documentation against which compliance was measured and reported in this Report. For example, documentation had to be viewed by the Study, with appropriate date of receipt. Verbal evidence was not accepted, and documentation of regulatory decisions

needed to be observed e.g. whether the report submitted by the company was received and deemed adequate.

Finally, the Study reviewed agency websites for updated policies and information, and sought advice from regulators directly in late April and May 2014 to obtain information about changes planned or implemented over the period of the Review.

This is not a formal audit. The Study has drawn on and is informed by previous reviews and audits as well as consultations and findings of the wider Review. This report often cites advice provided by Government agencies. In all cases this is supported by documentation.

#### **1.2.4 National and international regulatory practice**

To complement the information gained from the legislative review referred to in 1.2.1, and bearing in mind Recommendation 1 of the Initial Report of the Review (CSE, 2013) *“That the Government commits to establishing a regime for extraction of coal seam gas that is world class”*, the Review also undertook a desktop analysis of selected legislative and regulatory regimes in Australia and overseas applying to conventional and unconventional gas extraction industries, and the approaches taken to regulating and managing such industries. This analysis is included at Appendix 1.

### **1.3 STRUCTURE OF THIS REPORT**

The remainder of this report explains the findings and evidence:

- **Chapter 2** outlines initial observations about the regulatory and compliance systems governing CSG extraction
- **Chapter 3** outlines the review of six full licences/leases regulating CSG activity in NSW, with the purpose of assessing evidence of compliance with requirements
- **Chapter 4** examines a subset of planning and reporting requirements that may flow from statutory instruments or licences
- **Chapter 5** contains a review of requirements for well-related activities (drilling, hydraulic fracture stimulation, suspension and abandonment)
- **Chapter 6** describes some of the steps that Government is already taking to improve compliance practice and streamline regulatory requirements, summarises the findings of the Study, and makes proposals for further regulatory change.

## 2 THE REGULATORY FRAMEWORK: INITIAL OBSERVATIONS

Regulator responsibilities include quantifying risk and ‘setting the bar’ for its management; monitoring compliance with requirements within its remit; and implementing strategies that will most effectively encourage compliance.

A number of international guides to good regulatory practice are available, including the OECD’s (Organisation for Economic Co-operation and Development) *Recommendation of the Council on Regulatory Policy and Governance* (OECD, 2012), and associated *The Governance of Regulators*, OECD Best Practice Principles for Regulatory Policy (OECD, 2014b). These are both referred to in the Australian National Audit Office’s recent *Better Practice Guide: Administering Regulation, Achieving the Right Balance* (ANAO, 2014). In 2012 the Council of the OECD adopted the *Recommendation of the Council on Regulatory Policy and Governance*, representing an international instrument addressing regulatory policy, management and governance as a whole-of-Government activity. Per the instrument, regulatory quality requires, *inter alia*, explicit policy, objectives and implementation frameworks, and principles of open government to ensure regulatory policy serves the public interest and is informed by the legitimate needs of those interested in and affected by regulation (OECD, 2012).<sup>3</sup>

In 2014 the OECD released *Regulatory Enforcement and Inspections*, OECD Best Practice Principles for Regulatory Policy. Principle 9 states that: “Governments should ensure clarity of rules and process for enforcement and inspections: coherent legislation to organize inspections and enforcement needs to be adopted and published, and clearly articulate rights and obligations of officials and of businesses” (OECD, 2014a).

As noted above, the analysis of NSW legislation and regulation applying to NSW CSG activities commissioned as part of the Study showed a highly complex and fragmented regulatory framework (Appendix 2). Similarly, subsequent work has found licensing and authorisations are voluminous, overlapping and complex and the picture of which agency has responsibility for what historical compliance activities is confusing.

Government has recognised many of the issues outlined in this Chapter, and is taking steps to streamline regulatory requirements. An overview of the main initiatives at the time of writing is provided in Chapter 6.

The following sections outline:

- characteristics of best practice regulation
- initial observations about the overall regulatory framework for CSG in NSW
- observations about governance, including whole-of-Government approach and cohesion
- observations about compliance systems and regulatory capacity, as well as information, data and knowledge management.

### 2.1 WHAT IS WORLD CLASS REGULATION?

There is an abundance of literature on risk management and regulatory practice (OECD, n.d.; Sparrow, 2000, 2008; United Nations, 2012). Functions fundamental to most systems include those which are protective – in the case of CSG activities these include operational, and public and environmental health and safety issues – and those which set and maintain standards. Also important is the management of regulatory business processes to maintain

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<sup>3</sup> The mandate of the OECD Regulatory Policy Committee (RPC) is to assist members and non-members to strengthen capacity for regulatory policy and reform.

confidence and trust in the regulatory system itself; and regulating the mechanisms by which State-owned assets (such as minerals, oil and gas) are transferred to private operators who extract, process and sell them (ICAC, 2013; OECD, 2014a).

The reality is no regulator can – nor should it be asked to – oversee every activity all of the time. Aside from the resource implications, it deflects primary responsibility for activities and their impacts from those who should assume it, namely those undertaking them. Regulators provide independent assurance that the standards are correct and being adhered to, especially in areas not the primary concern or interest of those undertaking the activities. There is also increasing recognition of the need to articulate the necessity, value, cost and limits of regulatory interventions (DPC, 2009).

Common features of world-class regulatory systems include:

- good governance – an integrated and streamlined system
- independence – impartiality and lack of conflicts from the point of assessment to the point of enforcement
- simplicity – clear line of sight from legislation to approvals, requirements and conditions
- proportionality – a risk escalation framework, with strong problem definition and quantification of risk; and regulatory effort and controls proportionate to risk, supported by a mix of tools (encouragement, rewards and sanctions backed up with strong enforcement powers)
- clarity – formal articulation of regulatory objectives and roles: who is doing what and how will applications, compliance and emerging issues be assessed and managed
- an outcomes focus rather than rules-based approach – supported by technical and process standards as required, followed up with good monitoring, data and intelligence analytics
- efficiency – shared systems, communication, intelligence and skills
- transparency – of decision making and of reporting by industry and regulators, with concise, meaningful data sets
- a reflective and learning system – regular review of industry and regulatory practice, which is adjusted and refreshed in light of findings and emerging research knowledge.

The key questions for considering regulatory performance can be summarised as:

1. *standards performance* – Are our standards what they can and should be; do our regulators have an appropriate spectrum of powers and tools available to them; and do all elements in the framework fit together cohesively?
2. *authorisation performance* – Are our regulators applying the full scope of available law and standards at the point of approvals and when setting licensing conditions to meet policy objectives, having regard to current knowledge and data?
3. *company performance* – Are authorised companies complying with and proactively seeking to improve upon requirements? Are appropriately trained professionals managing CSG operations?
4. *compliance and enforcement performance* – Are our regulators effectively applying the full scope of available law and standards at the point of compliance and enforcement for optimal outcomes; and are learning and outcomes applied to future practice both within individual companies and industry-wide?

## **2.2 OBSERVATIONS ABOUT THE COAL SEAM GAS LEGISLATIVE FRAMEWORK IN NSW**

The legislative instruments covering CSG exploration and production activities are complex and the framework for managing them is fragmented (Appendix 2). There are some 14

principal acts, eight regulations, four statutory instruments and three different NSW agencies (as well as the Commonwealth, and sometimes local government) involved in overseeing this industry in NSW. Some legislation, particularly environmental, has been subject to considerable change over time, while others have not been reviewed recently (e.g. the SOPEPSR from 1992)<sup>4</sup>. Some requirements are supported by Codes and Guidelines, as well as extensive conditions of the many licences that apply.

Relevant NSW regulatory authorities include the NSW Department of Planning and Environment (DP&E); the Environment Protection Authority (EPA); Trade and Investment NSW, which includes: the Office of Coal Seam Gas (OCSG); the Mineral Resources Branch in the Division of Resources and Energy (DRE); and the NSW Office of Water (NOW) in the Department of Primary Industries.

The analysis presented in Appendix 2 also noted a high degree of Ministerial and agency discretion in statutory instruments but little guidance on the exercise of that discretion; and a similar lack of detail or direction for the exercise of powers and other decision-making. In terms of compliance, the analysis noted that “*The existence of the requirements implies a need for compliance with them to be monitored. There are few legislative obligations for the relevant Ministers and/or Departments to positively undertake monitoring activity.*”

Determining which agency has responsibility for monitoring compliance with terms and conditions linked to licences issued years ago has also proved difficult. Licensing and authorisations were found to be complex, overlapping and voluminous as can be seen from the examples in Table 2.1.

Challenges experienced during the Study included difficulties in obtaining a clear picture of agency roles or activities; a disconnect between some licences and regulatory focus; and fragmented, inaccessible or absent documentation or records.<sup>5</sup>

**Table 2.1: Snapshot of regulatory complexity: Sample of legislative and licensing requirements (excluding planning, environment and water-related legislation and regulations)**

Instrument	Formal Clauses	Requirements
Petroleum (Onshore) Act 1991 (POA)	141	833
Petroleum (Onshore) Regulation 2007	31	93
Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR) 1992	90	297
Petroleum Production Lease example	18	98
Petroleum Exploration Licence example	20	75
Development Consent approval example	51	200
Environment Protection Licence example	32	224
Groundwater Licence example <sup>6</sup>	16	41

<sup>4</sup> SOPEPSR was published by the (then) NSW Department of Mineral Resources in 1992 and is a condition of all titles under Regulation 27 of the Petroleum (Onshore) Regulation 2007. Notwithstanding its title, it encompasses more than what might otherwise be (ordinarily) regarded as ‘safety’ issues. While still in force, the Schedule predates the unconventional gas industry and more CSG specific requirements have been developed. For example components relating to well integrity and hydraulic fracture stimulation were developed in NSW through two Codes of Practice released in September 2012, although these Codes are only a requirement of licences issued since their introduction. Equivalent Schedules were reviewed and revised in the Northern Territory and Western Australia in 2010. The OCSG has advised that a review of the NSW regulatory model for (onshore) petroleum is currently being undertaken and it is intended that the Schedule will be addressed as part of a broader legislative reform program.

<sup>5</sup> The extent to which these issues were observed varies across regulators.

<sup>6</sup> NOW has a range of authorisation instruments. For the purposes of this report, Groundwater Licence or GWL is used (with the agreement of NOW) although it has a narrower and more technical meaning within that agency.

### 2.2.1 Governance

This section outlines observations about the regulatory model and governance arrangements having regard to expectations of good regulatory practice (e.g. existence of a consolidated whole-of-Government framework; clear application and approval pathways and assessment criteria; streamlined operating and reporting requirements; clearly articulated compliance and enforcement roles and activities).

Key observations about governance in the CSG regulatory system include:

- **lack of overarching and whole-of-Government regulatory model and rationale** Gaps include clearly defined objectives; formal articulation of the role of Government and industry in regulation; a description of the interface and operations of an integrated (cross-agency) monitoring and compliance program. In consultation meetings it became clear that no single person had a clear understanding of processes and requirements across the whole system. Further, no Government website gives a complete picture of the whole-of-Government approach to regulation of CSG
- **limited powers to regulate, enforce or update requirements**  
For example, until mid-2013, an Environmental Protection Licence (EPL) was only required where there was capacity to produce more than 5PJ of natural gas and/or methane per year. As a result, only one CSG related EPL was in place. In the absence of an EPL, the EPA was confined to reactive responses after complaints and incidents.  
OCSG reported a limited ability and narrow scope to update existing licence conditions as new knowledge emerges and standards evolve – problematic in light of lease and licence lifespans (six years for exploration and assessment licences to 21 years for production leases)
- **lack of industry-focused and whole-of-project detailed information about the pathways and requirements for applications, assessment, approvals and review across regulatory/ approval authorities**  
Agencies advised the Study of work in train to map the over-arching application processes for exploration and production for both state significant development (SSD) and non-SSD projects across all regulators. This exercise had proved challenging in light of system complexities
- **duplication and overlap of conditions and reporting requirements set by different regulatory authorities**  
This is a particular issue for environmental conditions, which could appear in different forms across a Development Consent approval, a DRE petroleum title and an EPA Environment Protection Licence. One regulatory authority could adjust or remove a condition that would remain in its original form on another licence
- **fragmentation and both duplication and lack of delineation of roles and responsibilities of different regulators**  
For example, DRE advised that its primary focus has been on monitoring compliance with the rehabilitation conditions contained in the Production Leases, as the development, construction and operation of a production field are predominantly authorised by DP&E. Agencies advised there was no formal inter-agency agreement or documentation relating to such an arrangement, or evidence of communication with companies regarding such an arrangement.

### 2.2.2 Compliance systems and capacity

This section focuses on NSW Government CSG compliance systems, including public availability of CSG-related information (relating to application and approvals, data and reporting, incidents and complaints) and regulatory capacity. This section focuses primarily

on higher level observations on compliance activities. More detailed comments on systems and observed compliance practice appear in Chapters 3-5.

Key observations about compliance systems and capacity include the following.

- With the exception of the EPA, regulatory officers commented on a lack of capacity and expertise to undertake compliance functions effectively.
- There is no common approach to regulatory practice between agencies. Compliance effort is fragmented and reactive, and in most agencies there is limited expert regulatory capability that ideally would be partnered with technical expertise.
- There is significant variation across regulators in the provision of public and easy-to-access, industry-focused information (e.g. guidelines; applications and their status; reasons for decisions; monitoring; inspections and audit reports; compliance and enforcement actions). The most notable recent change was the relaunch of the DRE website (April 2014).
- Multiple and fragmented information systems undermine good regulatory practice and intelligence analytics. Information and data in some agencies has historically been held in diverse and unconnected databases, spreadsheets or in individuals' folders/emails.
- Several regulatory officers commented on limitations associated with paper-based systems; expressed frustration with the voluminous and inconsistent nature of current reporting practice; and noted the value of real-time and integrated data.
- Standard business excellence frameworks (Balanced Scorecard Institute; SAI Global, 2011) and quality systems (ISO, 2008, 2010) recommend utilisation of incident reporting and complaints as significant mechanisms for practice improvement. As with other elements of the multi-agency regulatory regime, there is no centralised complaint or incident response system or database across Government and not all regulators have maintained a system or collect data, and some have multiple systems. Compared with other industries, the numbers of safety-related incidents for petroleum are modest, but available data for historical environmental matters are fragmented, as is the picture of complaints.<sup>7</sup>

Overall, the EPA was observed to have the most robust systems and greatest capacity among its staff for managing its compliance functions. Key elements observed include:

- open access to information about applications, licences and requirements, updated daily, and requirements for licence holders to make monitoring data available to the public<sup>8</sup>
- 24-hour-a-day complaints line, which includes CSG-related complaints
- clear 'line of sight' from licences to compliance tools and activity. Licence notes reinforce relevant legislative provisions and underpinning guidelines are available online. Records indicate proactive on-site monitoring, with spot checks on conditions as well as audits of licences.

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<sup>7</sup> The annual NSW Mine Safety Performance Report (DTIRIS, 2011, 2012e, 2013) gives figures on the number of incidents and complaints per sector, allowing a comparison between mining sectors, however CSG is included in petroleum and cannot be readily separated out. Of the information available, petroleum represents one or less than one percent of total incidents and the same for health and safety related complaints, fatalities and serious bodily injuries.

<sup>8</sup> Similarly, DP&E provides open online access to applications, submissions, decisions and reasons for decisions, as well as the status of applications. 'Contemporary' conditions of approval or consent require all approved plans, reports and audits to be made available on proponent websites. DP&E also publish a monthly report on compliance activities.

## 3 SAMPLE LICENCE REVIEW

This Chapter sets out the outcomes of the review of six full licences/leases.

Section 3.1 explains the licences/leases selected and Section 3.2 describes the rating method used to assess evidence available via regulators. Sections 3.3-3.5 set out the observations and evidence ratings for each of the selected licences/leases which are relevant to three of the four agencies with regulatory responsibilities.<sup>9</sup>

There were variations between the evidence ratings of licences or leases managed by different regulators. Generally speaking, where they were observed, poor evidence ratings relate to:

- lack of inspection or documentation of inspection, particularly around operating requirements
- lack of evidence that data and reports are reviewed or managed by the regulator
- voluminous materials which lack clear alignment to requirements, exacerbated by poor 'front end' articulation of requirements
- legacy requirements.

### 3.1 TITLE SELECTION AND TOOL MAPPING

Note that in this reports, names and obvious identifying details have been generalised to maintain primary focus on compliance systems and activity. It is still quite easy however to identify the relevant licences from other information.

Six licences or leases regulating CSG activity in NSW were reviewed as a representative sample. They were: two Petroleum Production Leases (PPL) A and B, two Petroleum Exploration Licences (PEL) C and D, one Environment Protection Licence (EPL) and one Groundwater Licence (GWL). The Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR) was also assessed as part of each PPL and PEL.

Six PPLs have been issued for CSG in NSW to date. Petroleum titles A and B were chosen as sample leases because they provide a representative sample of leases within a limited cohort.

Petroleum titles C and D were chosen because they allowed a diverse assessment of different geographic locations, a different title type (exploration) and a different titleholder.

Initially, each licence or lease (and, where applicable, SOPEPSR) requirement considered applicable during the relevant time period was allocated one of five requirement types. In two cases (one PPL and one PEL) this was also applied to additional legislative requirements not contained in the licence or lease. For the purposes of the analysis these requirement types were defined as follows:

- definition: a description of the nature of the requirement, rather than a requirement for an action
- approval: authorisation is required before an action commences

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<sup>9</sup> As previously indicated, DP&E development approvals (consent) were excluded from the tool and evidence rating process. However, an audit report (provided to the Study by another government agency) undertaken as a condition of Consent was used as part of the petroleum title assessment where requirements under the Consent and title aligned.

- notification: requirement to notify an authority, organisation or person of an action, intent or event, either before or after the action or event occurring
- operating: requirement to operate in a certain manner but the requirement does not stipulate any feedback or reporting
- reporting: requirement to provide an authority with some form of documentation, be it a report, plan, or record.<sup>10</sup>

Across the six licences or leases under review, 1580 requirements were relevant to the titleholders within the defined study period.<sup>11</sup> The majority (57%) were operating requirements, followed by reporting requirements (19%) and approval requirements (14%). Definitions and notification requirements made up the remaining 10%.

Requirements were broken down into three further categories, designed to reflect whether the titleholder was required to operate or report in a certain manner at all times, or only under specific circumstances. These were defined as:

- required: the titleholder must operate in accordance with these conditions
- required if imposed: relate to the discretionary exercise of powers e.g. “if the Minister/Director General believes/is of the opinion that/directs...” and include, for example, request for additional information, issue of stop work orders or specific operating requirements
- required if triggered: relate to actions that may arise from a discretionary request from the titleholder e.g. titleholder may request a change in a condition or time frame.

## 3.2 EVIDENCE MAPPING

The analysis assesses evidence of compliance available via regulators. Any documentation that was relevant to a requirement was noted and an evidence rating allocated accordingly. These evidence ratings were: evidence requirement met (E), evidence requirement met in part (P), no evidence requirement met (N), evidence requirement not met (NM) and no evidence requirement invoked (NEI), as outlined below.

### **Evidence requirement met (E)**

For a requirement to be assigned this rating, very stringent criteria for evidence were used by the Study and all relevant evidence had to be provided. For example, if a licence condition required a company to lodge a report, the following criteria were looked at in allocating an evidence category:

- evidence that a report was lodged
- evidence that the report was lodged in the time frame required
- evidence that the report contained the requisite information to address the licence condition
- evidence that the information was set out in a way such that the Study team could identify it as satisfying the licence condition
- evidence that the report was lodged in the correct format (if this was specified)
- evidence that the regulator viewed the report and deemed it to be both accurate and adequate (e.g. where required to be to the satisfaction of the Director General).

<sup>10</sup> Some requirements were excluded as out of scope as they were not applicable to the title under review during the relevant period (1 July 2010 – 30 June 2013). This included instances where a particular activity did not occur or reports were not required to be submitted within this timeframe. However, the various condition types were all captured across the six mapped titles.

<sup>11</sup> This number exceeds the total number of requirements appearing in each licence or lease as some conditions were split according to content and allocated to more than one requirement type.

### **Evidence requirement met in part (P)**

A requirement was given this evidence rating if evidence was located from any source that pertained to the requirement, but was insufficient to be certain that all relevant evidence was provided and met. The main reasons for 'met in part' ratings were that the content of documentation sighted did not obviously address the licence requirement and that the Study could not locate any evidence of the regulator reviewing or approving the adequacy and accuracy of much of the submitted documentation (e.g. where a requirement included that the material had to be to the satisfaction of the relevant authority).

Many of the conditions allocated the rating of P could have been rated E if there had been some evidence of the regulator reviewing the operations, plans and reports of the titleholder. However, on most occasions, this information was not able to be located. This does not necessarily indicate that no review was undertaken; rather that evidence to indicate that a review was undertaken was absent.

### **No evidence requirement met (N)**

This evidence rating indicates that the Study was unable to locate any evidence to indicate whether or not a requirement that was identified as needing to be met by the titleholder during the three year period was met. For most requirements rated N, no information at all was located that pertained to the licence condition in question.

### **Evidence requirement not met (NM)**

For a requirement to be allocated this evidence rating, the Study needed to sight documentation indicating that a condition that was required to be met by the titleholder within the relevant period had been breached. Examples of NM ratings include: operating without approval of a required report or plan; equipment and safety issues noted at site visits; incidents and breaches.

### **No evidence invoked (NEI)**

A requirement was given this evidence rating if the Study team was unable to ascertain whether the requirement had either been imposed by the regulator, or triggered by the titleholder themselves, and was therefore required to be met during the relevant period. Many of these pertain to activities, events or operations that may have occurred during the tenure of the licence, but where it was not possible to be certain whether they occurred or not in the absence of documentation. Given the difficulties with some regulators in locating evidence around many requirements generally, the Study could not be confident that a lack of documentation meant that these conditions had not been activated – it may have been that information was not recorded or that the records could not be located (detailed at section 3.3.2).

The following tables set out observations of compliance evidence held by regulators and available to the Study in the sample of leases and licences.

## **3.3 PETROLEUM TITLES: PRODUCTION (LEASE) AND EXPLORATION (LICENCE)**

This section presents the evidence rating of two production leases (PPLs), two exploration licences (PELs) and additional legislation pertaining to one PPL and one PEL, set out in Tables 3.1 to 3.4.

Petroleum titles (PELs and PPLs) are granted under the *Petroleum (Onshore) Act 1991* by the Minister for Resources and Energy, following application. Renewals of PELs (not PPLs) may be granted by specified Departmental officers to whom authority has been delegated by the Minister. It is an offence to "prospect for or mine petroleum" except in accordance with a petroleum title (s7). 'Petroleum' includes CSG. Applications for new titles are reviewed and assessed by Departmental officers, who advise the Minister whether to approve or reject

them. Section 23(1) of the Act specifies that PELs and PPLs are subject to “the conditions imposed by the Minister and specified in the title” and “any conditions prescribed by the regulations”. The Act itself also specifies some conditions. The Minister has delegated the power to impose conditions under s23(1) to Departmental officers. All PELs and PPLs contain a significant number of conditions set by authority of s23(1). A number of conditions are also included in the *Petroleum (Onshore) Regulation 2007*, including the requirement to comply with the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR).<sup>12</sup> All conditions have been broken down into requirements, as described in 3.1 and referred to throughout this Chapter. Multiple systems were exhaustively reviewed for any and all available evidence.

### 3.3.1 Initial evidence rating

Across the four titles, four requirements (1%) and eight SOPEPSR requirements (1%) were allocated the evidence rating of E (evidence met) in the Study. This in part reflects the application of stringent evidence criteria by the Study, but mainly reflects the difficulty encountered in locating evidence held by the regulator to indicate whether requirements have been met or not.<sup>13</sup>

The number of requirements rated P (evidence met in part) across the four titles varied between 22 (PELs C and D) and 43 (PPL A). In total, 117 requirements (28%) were allocated this evidence rating. The bulk of these (49%) related to reporting requirements, with the next largest group (32%) related to operating requirements. The main reason for this rating was that the content of documentation (e.g. reports and plans) did not obviously address the requirement, or that no evidence of the regulator reviewing or approving the adequacy and accuracy of much of the submitted documentation was able to be located.

Evidence of SOPEPSR-related requirements rated P was relatively constant (20-22% relating to 166 requirements in total). Of these, 86% related to operating requirements and the majority were in the SOPEPSR section on wells and drilling. The most common reason for this rating was a disconnect between SOPEPSR requirements (which remain a requirement of title) and Well Completion Reports (WCR) which are the main form of reporting for these activities. In light of this, the Study separately examined the level of evidence for WCRs, which is described in Chapter 5. The second reason for this rating was lack of evidence of the regulator reviewing or approving the adequacy and accuracy of the WCRs and other submitted documentation.

Across the four titles, 111 licence or lease requirements (27%) were allocated a rating of N (No Evidence) with 207 (27%) of SOPEPSR requirements in this category. As discussed previously, evidence to indicate compliance or non-compliance with these requirements was unable to be found, notwithstanding extensive searches. Operating requirements constitute a significant proportion of requirements within this category. As defined for this analysis, operating requirements do not require a report on the part of the titleholder, and evidence would only emerge through a trigger (e.g. audit; complaint; incident; site visit). Formalised approaches to checking and recording compliance with operating conditions vary significantly between agencies.

Across the four titles, 11 licence or lease requirements (3%) were allocated the evidence rating of NM (evidence requirement not met), and for the corresponding SOPEPSR requirements 21 (3%) fell into this category – that is, evidence was sighted that the titleholder had not operated in accordance with requirements. There were three main reasons for this rating. The first relates to the content and timing of lodgement of plans and

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<sup>12</sup> However, evidence rankings are presented separately.

<sup>13</sup> A proportion of the remaining requirements may have been met by the titleholder but the Study team was unable to locate evidence to indicate this from available sources.

reports which is discussed further in Chapter 4; the second to operating issues noted during site visits by agencies; the third to an incident.

The proportion of lease or licence requirements (174 in total) allocated the evidence rating NEI (no evidence invoked) across the four titles ranged between 27% (PPL A) and 51% (PEL D). The Study found no evidence as to whether or not titleholders were required to meet any requirements in this category in the relevant time period – i.e. no evidence for whether or not they were imposed or triggered. The majority (52%) related to operating requirements, with most of the remainder split between approvals (27%), and reporting (18%). The breakdown for SOPEPSR-related requirements is similar.<sup>14</sup>

### 3.3.2 Review of ‘No Evidence Invoked’ evidence rating

On one level, it could be suggested that, if there was no evidence that a requirement was imposed or triggered (NEI), then it could be assumed that it wasn’t, and could reasonably be put aside from calculations. However, the observed level of documentation by the regulator was so poor and fragmented across multiple systems, the Study did not feel it could definitively or confidently reach this conclusion.

Further analysis was undertaken to look at the effect on the different evidence categories of excluding conditions that had been allocated the rating NEI. Once these requirements were removed from the numerical totals of requirements across the four sample titles, it was apparent that even if subsequent evidence came to hand to indicate that none of the conditions allocated NEI were required to be met on any of these titles during the relevant period, the overall proportion of requirements with evidence that they had been met or not been met would not change substantially.

For example, the percentage of conditions where evidence could be located to indicate they had been met would still be around 2% on the leases/licences and 2% on SOPEPSR. The corresponding figures for conditions where evidence was located that the condition had not been met were both 5%. After excluding the NEI group, approximately half the conditions fell into the category where no evidence was able to be located to indicate either way whether the requirement had been met.

### 3.3.3 Evidence rating individual petroleum titles

Tables 3.1-3.4 set out the evidence findings for Petroleum Titles A-D.

**Table 3.1: Petroleum Title A: Summary evidence assessment for period 1/7/10 – 30/6/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Lease requirements		SOPEPSR requirements	
	Number	%	Number	%
Total for E - Evidence that requirement met	1	1%	0	0%
Total for P – Evidence requirement met in part	43	46%	44	22%
Total for N – No evidence requirement met	22	23%	63	32%
Total for NM – Evidence requirement not met	3	3%	12	6%
Total for NEI – No evidence invoked	25	27%	80	40%
<b>Total</b>	<b>94</b>	<b>100%</b>	<b>199</b>	<b>100%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

#### Observation notes

- The relevant Production Operations Plan (POP) for the title was approved in 2008. This plan does not reflect the actual operations conducted on this title. Since 2008, two amended POPs have been lodged as draft versions but have not been approved; with extensive correspondence between the regulator and

<sup>14</sup> 75% of SOPEPSR-related requirements across the four titles were categorised as no evidence (N) or no evidence invoked (NEI), and may reflect both the age and initial focus (conventional petroleum) of the Schedule.

company over additional content that is deemed to be required; and appears to reflect a lack of 'front end' guidance on plan preparation generally.

- The Annual Environmental Performance Report (AEPR) for 2011-12 was lodged on 28/05/2013; 20 months after the previous annual report. No evidence was observed of a review of reports being undertaken.
- A letter from regulator to company 17 April 2014 was sighted requesting reports not previously lodged (refer to Table 4.2).
- In response to a request for advice, the Study was advised that the licence does not necessarily form the basis for compliance activities, and operating conditions would be reviewed as part of site visits.
- A review of the Mine Safety Branch's activity database (Common Mines Environment [COMET]) system for safety-related inspections and incidents (section 5.5.1) identified six occurrences, two of which occurred outside the defined study period.<sup>15</sup>
- A review of the Wollongong Environmental Sustainability Unit complaint and incident reporting spreadsheet (covering the period December 2011- February 2013 only) identified three incidents.<sup>16</sup>

As well as requirements set out in the leases/licences and SOPEPSR, additional requirements applicable to Petroleum Title A within the relevant period imposed solely from either the Act (the *Petroleum (Onshore) Act 1991*) or regulation (the *Petroleum (Onshore) Regulation 2007*) were reviewed.<sup>17</sup>

For Petroleum Title A there were 49 requirements potentially in scope during the relevant period. Approximately half (24) of these requirements pertain to a royalty, payment or fee that the titleholder could potentially have to pay either to the regulator, or as compensation to a third party. The Study found the largest groups were those where no evidence was able to be located indicating the requirement had been invoked (NEI 55%) and those where no evidence of their being met was found (N 33%). A small number were deemed to have been partially met (P 10%), one was deemed not met (NM 2%) and none were determined to have demonstrated evidence of being met (E).

**Table 3.2: Petroleum Title B: Summary evidence assessment for period 1/7/10 – 30/6/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Lease requirements		SOPEPSR requirements	
	Number	%	Number	%
Total for E - Evidence that requirement met	1	1%	5	3%
Total for P – Evidence requirement met in part	30	18%	39	22%
Total for N – No evidence requirement met	64	38%	52	30%
Total for NM – Evidence requirement not met	2	1%	0	0%
Total for NEI – No evidence invoked	73	43%	78	45%
<b>Total</b>	<b>170</b>	<b>101%</b>	<b>174</b>	<b>100%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

#### Observation notes

- Production lease granted 2003 but no evidence of an operations plan prior to 2013 (regulator stated plans are basis for review of annual reports).
- One annual report for period 2010-12; no evidence of more recent; no evidence of regulator review. Letter from company to regulator prior to Study period (12/03/2007) advised internal audit identified no annual

<sup>15</sup> Controls for the implementation of no go zones required (one occurrence), SOPEPSR Requirement 607(a) Instructions on the procedure and treatment of Electric Shock not displayed (one occurrence), serious injury (one occurrence), and potentially hazardous event (one occurrence). The two incidents outside the defined Study period related to potentially hazardous event (one occurrence) and fixed mechanical equipment failure (one occurrence).

<sup>16</sup> Failure to conduct continuous air emission monitoring as required by EPA licence; leak of up to 1000L of water from a gas well; bubbling occurring around a well site (noting inspection followed and monitoring undertaken).

<sup>17</sup> That is, the requirement is imposed on the titleholder but does not appear in the titleholder's licence/lease or any other schedule (e.g. SOPEPSR). Due to the large number of 'operating' type requirements found in the additional legislation and regulations reviewed (approximately 65%) which typically the Study would only be able to assess if a site visit or audit had been structured to target them, a decision was made after reviewing PPL A and PEL C to omit the legislative and regulatory requirements from the remaining study tools as they would not provide additional observations regarding the overall regulatory framework that were not already being addressed by the licence/lease condition assessment.

report lodged for four years and attaching four years of reports; no evidence of review; no evidence failure to lodge identified or was raised by regulator prior.

- No evidence five-yearly report lodged or sought by regulator.
- Letter from regulator to company dated 4 December 2013 requesting reports not previously lodged (refer to Table 4.2)
- A review of the COMET system for safety-related inspections and incidents (section 5.5.1) indicated no safety inspections were undertaken on this title during the relevant period.<sup>18</sup>
- A review of the Wollongong Environmental Sustainability Unit complaint and incident reporting spreadsheet (covering the period December 2011- February 2013 only) identified no complaints or incidents relating to this title.<sup>19</sup>

**Table 3.3: Petroleum Title C: Summary evidence assessment for period 1/7/10 – 30/6/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Licence requirements		SOPEPSR requirements	
	Number	%	Number	%
Total for E - Evidence that requirement met	1	1%	0	0%
Total for P – Evidence requirement met in part	22	29%	44	22%
Total for N – No evidence requirement met	11	15%	50	25%
Total for NM – Evidence requirement not met	5	7%	3	2%
Total for NEI – No evidence invoked	36	48%	102	51%
<b>Total</b>	<b>75</b>	<b>100%</b>	<b>199</b>	<b>100%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

#### Observation notes

- Review of Environmental Factors observed for the two seismic surveys but only one of the three boreholes.
- Well Completion Reports observed for all wells and Exploration Rehabilitation and Relinquishment Reports observed for two of the three wells drilled within the study period (the other well did not require this).
- No end of work program reports observed.
- Annual reports observed for two of the three years, but did not include the template sections *Proposed Program (for the next twelve month period)* or *Proposed Expenditure*.
- No end of title reports observed (title renewed 28/02/13).
- A review of the COMET system for safety-related inspections and incidents (section 5.5.1) indicated evidence of four occurrences. Three of these were noted to occur outside the study period.<sup>20</sup>
- A review of the Wollongong Environmental Sustainability Unit complaint and incident reporting spreadsheet (covering the period December 2011 – February 2013 only) identified five entries relating to three issues.<sup>21</sup>
- One direction (27/4/12) under Condition 25 requiring company to submit a Water Management Plan (WMP), including details of all water holding ponds and water movements; and issuing of two Penalty Infringement Notices.<sup>22</sup>
- Independent audit of company-held material undertaken in accordance with DRE direction made in August 2011. 2012 DRE report concluded no level 1 non-compliances identified (defined as “a total absence of planning or implementation of a required operations element which presents an immediate risk or an isolated lapse in control in the implementation of an operations element which will lead to a significant risk”),

<sup>18</sup> The Study found one fatality recorded in the COMET system which occurred prior to the Study period (1/08/2009) at the gathering system drilling project within approximately 7km of PPL B. The incident occurred when a sub-contractor was fatally injured while assisting to extract a pipeline following a failed attempt to lay the pipeline. The titleholder was issued investigation and improvement notices under Sections 89 and 91 respectively of the Occupational Health and Safety (OHS) Act 2000 (current at the time but now superseded by the *Work Health and Safety Act 2011*).

<sup>19</sup> Although the spreadsheet grouped 18 complaints and incidents relating to PPL B and other petroleum titles, subsequent analyses showed none of these were related to the PPL B specifically. Of the 18, seven were noted and no further action was deemed necessary by the agency, one resulted in a direction to immediately rectify, 10 were noted as pending further investigation and one was regarding spillage of produced water in 2011. The company was fined \$52,500 in January 2014 in the Land and Environment Court for the spill, failure to report that incident and other reporting inaccuracies in breach of its title under the *Petroleum (Onshore) Act 1991*. At the time of the January 2011 incident the company was not subject to an Environment Protection Licence.

<sup>20</sup> Incidents in 2009 and 2010 resulting in hand injuries (reported as partial severing of tip of finger in one and partial amputation of finger) associated with drilling and work-overs, inadequate site security (one occurrence), and unspecified serious injury (one occurrence).

<sup>21</sup> These relate to produced water management; allegation of torn holding pond liner; pond decommissioning.

<sup>22</sup> On 18/06/2012 and 17/07/2012, the titleholder was issued two Statutory Directions by the ESU (now the OCSG) under S.77 of the POA *Direction to comply with conditions of petroleum title* both described as, *Direction to give effect to Condition 8 of Title C to establish adequate freeboard in Temporary Holding Ponds*.

three level 2 non-compliances (defined as “an isolated lapse or absence of control in the implementation of an operations element which may not be of significant risk”), five observations and three conditions not assessed due to a lack of sufficient information and/or audit evidence (URS Australia, 2011a).

As well as requirements set out in the leases/licences and SOPEPSR, additional requirements applicable to Petroleum Title C within the relevant period imposed solely from either the Act (*the Petroleum (Onshore) Act 1991*) or regulation (*the Petroleum (Onshore) Regulation 2007*) were reviewed.

For Petroleum Title C there were 47 requirements potentially in scope during the relevant period. Of these, 28% were found to have no evidence of being met (N) or that there was no evidence that they had been invoked (NEI 49%). A slightly larger number compared with PPL A were judged to have been partially met (P 17%); one was judged to be not met (NM 2%); and two were considered to have had evidence of being met (E 4%).

**Table 3.4: Petroleum Title D: Summary evidence assessment for period 1/7/10 – 30/6/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Licence requirements		SOPEPSR requirements	
	Number	%	Number	%
Total for E - Evidence that requirement met	1	1%	3	2%
Total for P – Evidence requirement met in part	22	28%	39	20%
Total for N – No evidence requirement met	14	18%	42	21%
Total for NM – Evidence requirement not met	1	1%	6	3%
Total for NEI – No evidence invoked	40	51%	109	55%
<b>Total</b>	<b>78</b>	<b>99%</b>	<b>199</b>	<b>101%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

**Observation notes**

- Review of Environmental Factors observed for a seismic survey in 2011 and all of the four wells in scope.
- Exploration Rehabilitation and Relinquishment Reports were observed for two out of four wells in scope.
- One end of work program report for 2011 observed.
- Annual reports observed for all three years in scope.
- One incident observed as reported for the period in scope (11/8/10) involving the release of 120,000 litres of saline water onto land (stated as within licence conditions), the titleholder was directed by letter dated 23/8/10 under the conditions of Title D to undertake remediation of the site.
- A review of the COMET system for safety-related inspections and incidents (section 5.5.1) identified six issue types as being recorded.<sup>23</sup>
- A review of the Wollongong Environmental Sustainability Unit complaint and incident reporting spreadsheet (covering the period December 2011- February 2013 only) identified one incident.<sup>24</sup>
- Independent audit of company-held material undertaken in accordance with DRE direction made in August 2011. 2012 DRE report concluded no level 1 non-compliances identified (defined as “a total absence of planning or implementation of a required operations element which presents an immediate risk or an isolated lapse in control in the implementation of an operations element which will lead to a significant risk”), one level 2 non-compliance (defined as “an isolated lapse or absence of control in the implementation of an operations element which may not be of significant risk”), four observations and three conditions assessed as not applicable due to not being invoked (URS Australia, 2011b).

<sup>23</sup> SOPEPSR condition 607(a) Instructions on the procedure and treatment of Electric Shock not displayed (one occurrence); First aid supplies deficient (two occurrences); No/poor evidence of equipment certification (one occurrence); No/poor evidence of equipment maintenance (two occurrences); Poor equipment condition (two occurrences); No evidence of appropriate operator qualification (one occurrence, subsequently provided).

<sup>24</sup> Drowning of wildlife inadvertently trapped in a pond area prior to fencing.

### **3.3.4 Comparison of findings with the Audit of Coal and Petroleum Exploration Licences in NSW**

In 2011 and 2012, at the direction of Government, DRE undertook a State-wide two-phase audit of coal and petroleum exploration licences. Phase 1 involved a desktop audit of 187 coal exploration licences (ELs), and 49 petroleum exploration licences (PELs). Of these, 20 ELs and 22 PELs were selected for Phase 2, involving an audit of licence holder compliance with licence conditions. The audits were undertaken at the licence holders' expense by independent auditors, approved by DRE. A consultant was engaged to undertake an initial assessment of all the audit reports, and DRE then prepared a Phase 2 report (DTIRIS, 2012a).

The two PELs assessed by the Study were also audited as part of Phase 2 of the DRE audit, and the Study was provided with the relevant audit reports. The Study included evidence ratings for any documentary evidence of compliance identified through the audit reports that had not been available through other Departmental sources. The Study also included in its observations any non-compliance, enforcement action or other findings of note identified by the audit.

The results of this Study and the audit cannot be directly compared. Key differences in the methodologies employed by the two pieces of work include that:

- the Study used evidence available from regulators to inform a compliance rating, while the audit accessed evidence directly from industry
- different rating categories and criteria were adopted to assess evidence of compliance
- different approaches were taken to deconstructing compliance requirements, e.g. the Study examined SOPEPSR in its entirety while only parts of it were assessed in the audit
- different approaches to gathering and verifying evidence were applied, e.g. there were occurrences where the audit accepted verbal evidence of compliance, while the Study required primary documented evidence
- the Study and the audit assessed different periods in time.

Notwithstanding the differences in methodology, the Study and the audit reached consistent conclusions about the level of non-compliance. The Phase 2 report indicates a high rate of overall compliance with conditions across all titles (87%) that, on the surface, appears not to align with the findings of this Study. However, this is largely due to differences in methodology, particularly the high standards of documented evidence required by the Study to apply a rating confidently that requirements were fully met.

Importantly, the Phase 2 report made findings and recommendations consistent with the observations made during the Study about regulatory system deficiencies. The report made nine recommendations, including:

- review of licence conditions to ensure they are enforceable and represent best practice, noting that many are very general and/or outmoded or superseded; and a review of SOPEPSR in light of new requirements
- review of inter-agency referral and assessment processes, noting overlap of agency roles and inconsistency in assessment, and recommendation that a nominated determining agency protocol is established
- review of the category assessment system to improve industry understanding of requirements and review of reporting requirements to improve efficiency
- implementation of an audit program, and review of environmental incident reporting, investigation and enforcement practice
- support for improved linkages between multiple databases and information systems; standardised document management; and improvements to the online reporting system.

### 3.4 ENVIRONMENT PROTECTION LICENCE

Environment Protection Licences (EPLs) are granted under the *Protection of the Environment Operations Act 1997* by the Environment Protection Authority (EPA), following application. Not having an EPL for a “scheduled activity” is an offence (s49). Prior to 28 June 2013, CSG was incorporated into the petroleum and fuel production definition of scheduled activities and an EPL only required if there was a capacity to produce more than 5 petajoules of natural gas or methane per year. Under the 2013 amendments, CSG exploration, assessment and production is a stand-alone category and scheduled activities include the following:

- CSG assessment/production, i.e. prospecting for CSG for which a PEL, Petroleum Assessment Lease (PAL) or PPL is required under the *Petroleum (Onshore) Act 1991*, if that prospecting involves the extraction of groundwater; or the commercial production of CSG for which a PAL or PPL is required
- CSG exploration, i.e. prospecting for CSG for which a PEL is required under the *Petroleum (Onshore) Act 1991* (subject to certain exceptions), (s5 and Schedule 1, 9A).

Section 63 of the Act states that EPLs may be subject to conditions, or issued unconditionally. The Act contains 11 sections detailing examples of conditions that may be applied to licences (ss65-76) but none of them are mandatory. The examples cover such areas as monitoring and information; environmental audits; pollution studies; economic measure schemes (with more detail in Part 9.3 of the Act and clause 104 of the Regulation); financial assurances (with more detail in Part 9.4 of the Act and clause 105 of the Regulation); remediation; insurance; contingencies; and waste. The Act also has other requirements, for example, licence holders are required to prepare a “pollution incident response management plan” (s153A) – this is a direct requirement of the Act, not a condition of the licence. Unlike petroleum titles, the conditions of EPLs can be varied at any time (s58), on application of the licence holder or by the EPA, subject in some cases to a consultation period.

#### 3.4.1 Evidence rating Environment Protection Licence

One EPL relating to CSG extraction activities was in place during the relevant period.

Systemic features of note include:

- reports submitted to the regulator appear directly linked to licence conditions
- there is a well-structured auditing procedure, with auditors required to prepare checklists prior to visiting sites in accordance with the EPA’s compliance guide (*Compliance Audit Handbook, 2006*)
- compliance activities appear directly linked and targeted to licence requirements. Inspection reports appear well structured and are of a consistent format. In addition to formal audits, site visits appear structured and focused on licence conditions (including operational conditions), with the regulator utilising arranged meetings to conduct site audits, with different licence conditions audited on each visit
- review and feedback of Pollution Reduction Programs (PRP) was observed.
- an example of an internal review process provided by the EPA with the 2011/12 annual return.

- potential confusion arising from licence variations was avoided by issuing notices with variations, and attaching the new licence with amendments to the notice.<sup>25</sup>

Comparing evidence ratings, the number of requirements rated evidence met (E 33%) is considerably higher than all other licences reviewed. This appears due to the EPA regularly reviewing and revising EPLs and that the bulk of requirements (approximately 85%) can be relatively easily assessed as compliant or non-compliant in contrast to most of the other licences. Additionally, there are comparatively few conditions which can be invoked at the EPA's discretion (10%) and even fewer which can be invoked at the titleholder's discretion (5%).

**Table 3.5: Environment Protection Licence: Summary evidence assessment for period 16/2/12 – 13/5/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Licence requirements	
	Number	%
Total for E - Evidence that requirement met	20	33%
Total for P – Evidence requirement met in part	23	38%
Total for N – No evidence requirement met	3	5%
Total for NM – Evidence requirement not met	13	22%
Total for NEI – No evidence invoked	1	2%
<b>Total</b>	<b>60</b>	<b>100%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

#### Observation notes

- The scope of the EPL includes the Gas Plant premises, the gas gathering reticulation system, gas wells, trunk lines, and any associated effluent storages, temporary work areas and infrastructure associated with the production of CSG.
- Condition 78(1) of the Protection of the Environment Operations (PEO) Act 1997, states "*The appropriate regulatory authority [in this case the EPA] is required to review each licence at intervals not exceeding 5 years.*" The EPL was varied on 22/12/11, 16/02/12 and 13/05/13. The licence assessed by the Study was dated 16/02/12 since this was the licence in force for the majority of the study period. The newer 2013 licence, although renewed within the scope of the Study, was considered too recent for inclusion as the titleholder may not have had sufficient time to conform to any change of requirements.
- The new conditions in the 2013 licence included an increase in the well head maintenance area permitted, the addition of groundwater monitoring points and requirements, pollutant load limit test methods, Leak Detection and Repair Program (LDAR) reporting requirements, Groundwater Monitoring Report requirements and Spatial Information requirements. Conditions which were removed include the removal of three previous discharge points and completed Pollution Studies and Reduction Programs (PRPs) which were previously approved by the EPA.
- Correspondence from the regulator to the company sighted by the Study acknowledging that all Pollution Reduction Program (PRP) reports pertinent to the Study had been submitted, on time, had been reviewed by the regulator and were deemed adequate.
- On 9/7/12 the company informed the EPA that since October 2009, due to technical failures they had failed fully to undertake continuous emissions monitoring of air emissions on Compressor Engines 1, 2 and 3. The company advised this was not recognised until an amendment to Legislation called for monitoring data to be published. Incorrect information had therefore been provided in the Annual returns, Annual Environmental Performance Report/Annual Environmental Management Reports (AEPR/AEMRs), and the Independent Environmental Audit reports. The failure was not identified by the regulator. One outcome of the failure was a requirement for the company to change auditors. In addition, as part of an EPA accepted enforceable undertaking approved on 8 August 2013, the company was required to review their current system, with a report submitted to the EPA, conduct a trial on proposed monitoring methods, retrain staff, pay \$150,000 to a university run environmental project, pay \$10,000 of EPA costs relating to investigation of the incidents and notify the public of the event via a media release.<sup>26</sup> It is of note that this one incident resulted in the breaching of a number of licence requirements (see Table 3.5).

<sup>25</sup> Similarly, the complexity associated with following multiple Consent modifications is assisted by the DP&E system of colour-coding modifications all of which are publicly available on the Department's website.

<sup>26</sup> An Enforceable Undertaking (EU) under s.253A of the POEO Act is a public and legally binding written agreement to address poor conduct put forward by a Company to the regulator as an alternative to prosecution.

- Independent Environmental Audit report for period 2010-12 sighted by the Study and provided by OCSG in October 2013 – required every two years as a condition of the DP&E Consent. Concluded environmental performance *generally satisfactory and in accordance with statutory requirements. Control measures typically implemented and employees demonstrated understanding of environmental risks and controls. Three incidents during audit period, none of which resulted in actual or potential environmental harm.* Notes however that a number of independent audits not undertaken or submitted within requisite timeframe (e.g. three yearly hazard audits); and same with reporting (nine non-compliances in audit period). Recommendations made to address these and other non-compliances noted.
- On 17 and 19 July 2013, the EPA conducted a compliance audit at the associated Gas Plant to assess compliance with the requirements of the EPL. The report was publically released on the EPA website on 17 June 2014 and reviewed by the Study. The findings of the audit indicated that the licence holder was not compliant with all conditions. Six of these non-compliances were dealt with through the Enforceable Undertaking approved on 8 August 2013 as described above. The EPA assesses environmental risks through a risk analysis matrix which categorises each risk according to its probability and impact. Using this system, the report identified three Code Yellow non-compliances (of low or moderate risk) and three Code Blue (administrative, monitoring and reporting requirements that do not have a direct environmental significance). A further two Code Yellow relating to produced water and nine Code Blue non-compliances were also identified through the audit process and subject to an action program that included additional reporting and monitoring actions.
- Some conditions were assessed as compliant in the EPA audit report released 2014, but had no evidence recorded. For these conditions, the Study team assigned a rating in accordance with the stringent evidence rating outlined in Section 3.2.

### 3.5 GROUNDWATER LICENCE

Under the *Water Act 1912*, sinking a bore without a licence is an offence (s112). A bore means “any bore or well or any excavation or other work connected or proposed to be connected with sources of sub-surface water and used or proposed to be used or capable of being used to obtain supplies of such water whether the water flows naturally at all times or has to be raised either wholly or at times by pumping or other artificial means...” (s105).

While the Act does not use the term, these licences are known as groundwater licences. Licences are granted by the Minister (as the Water Administration Management Corporation), but this authority can be delegated, and it is understood (though the Instrument of Delegation has not been requested or sighted) that this authority is delegated to the NSW Office of Water (NOW). Limitations and conditions may be included as the granting authority “may think fit to make” (s116); they may also be imposed “from time to time after” the grant of the licence, subject to the licensee having an opportunity to comment (s116C).

According to NOW’s Guidelines on applying for a water licence under the *Water Act 1912*, commercial groundwater licences generally require a meter to be installed and have an annual extraction limit. They are normally renewable every five years. The *Water Act 1912* (WA) is being progressively phased out and replaced by the *Water Management Act 2000* (WMA); however, for the purposes of this exercise, groundwater licences under the *Water Act 1912* were reviewed.

#### 3.5.1 Evidence rating Groundwater Licence

There are some 16 standard conditions contained in the groundwater licences assessed. A single company with a number of identical licences with standard conditions in place during the relevant period was included in the analysis.

In its 2012-13 Annual Report, the Ombudsman commented on work undertaken with NOW to address concerns relating to approval processes and delays, and lack of investigation, compliance and enforcement capacity and actions.<sup>27</sup> Reported recommendations relate to training of investigation staff, allocation of resources, formulation of policies and reviews of water-related compliance legislation. Subsequent changes reported include progress with application backlogs, restructuring compliance functions to enhance enforcement capability

<sup>27</sup> This work was not CSG specific.

and ongoing reviews and policy development in key areas (NSW Ombudsman, 2013). As work progressed, the Study observed more systematic assessment and approval processes being applied, including a detailed pro forma for assessing applications from 2012 (introduced after the cohort of licences under study were granted).

In terms of compliance actions, NOW has approximately 180,000 water licences in NSW and audit a sample of 8,000–10,000 per year. Under the *National Framework for Compliance and Enforcement Systems for Water Resource Management* a risk-based approach to inspections is adopted, requiring that 10% of licences in the highest risk category are inspected annually. NOW advises that risk categories are determined on a water source basis, and it is unlikely that CSG activities would feature in the highest risk category although a complaint against a particular licence holder may trigger an inspection.

**Table 3.6: Groundwater Licence sample: Single company for period 1/7/10 – 30/6/13**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Evidence Rating	Licence requirements (grouped)	
	Number	%
Total for E - Evidence that requirement met	0	0%
Total for P – Evidence requirement met in part	23	59%
Total for N – No evidence requirement met	9	23%
Total for NM – Evidence requirement not met	0	0%
Total for NEI – No evidence invoked	7	18%
<b>Total</b>	<b>39</b>	<b>100%</b>

The total number of requirements may exceed actual number of clauses as broken down into component parts. Total percentages may add to more or less than 100% due to rounding.

Observations are grouped as the requirements across the licences are reported/ managed in common.

**Observation notes**

- Licensing: Planning Stage 1 wells applied for retrospectively as a group. It appears these were applied for in 2009, but not granted until 2011. Some Stage 2 drilling subsequently proceeded without licence as identified by the regulator (breach report sighted dated March 2011). Evidence sighted that licences were subsequently applied for.
- Reports appear directly linked to licence conditions; however, no evidence of review and feedback was provided and no evidence of compliance with 'operating' type conditions was observed. When checking with NOW for verification, the Study was advised that *"As this project has been ongoing for over a decade, involving a change in company, multiple Government restructures, and upgrades to the management of licence information, the detail requested in relation to things like inspections and reviews is not available without significant time and resources to examine a number of files and officer notebooks, many of which may have been archived."* However, on 4 July 2014, NOW sent the Study documentation which included a NOW Groundwater information bulletin, last modified 20 November 2013. The bulletin provides summary information about the project, volumes extracted and reviews of and comments on groundwater quality.
- A section in the GWL requires the licence holder to install groundwater monitoring bores if requested, to the satisfaction of NOW. It also states that they must be in place within 3 years of the commencement of the licence, and that groundwater levels are to be provided to NOW on an annual basis. The licence holder appears to have installed the monitoring bores without being requested by NOW; however it is unclear if the groundwater data is being provided. The licence holder summarises the groundwater monitoring in an annual report provided to NOW, although the level data is not included. The licence holder also provides groundwater monitoring updates on their website, but this appears to satisfy an EPL requirement regarding water quality. It is not clear if these bores were installed to satisfy the requirements in the GWL, EPL or address the groundwater management plan.
- Since 1 July 2011, with the introduction of the *Water Sharing Plan for the Greater Metropolitan Groundwater Sources 2011*, the licences issued for this project by NOW would no longer be required. The requirements imposed by the licences still remain going forward; however it is not clear where the requirements in the licences will be imposed for any new wells drilled. NOW advise that these could be managed through the access licence, or included in another state Government regulatory mechanism, such as a planning consent, but there does not appear to be a set approach. This is complicated further by the transition from the WA to the WMA. This is recognised by NOW who are in the process of reviewing some of the requirements imposed under the WA for clarity.

## 4 PLANS AND REPORTS

This Chapter looks in more detail at a subset of planning and reporting requirements that may flow from statutory instruments, licences or leases.<sup>28</sup>

Regulation of CSG in NSW turns primarily on the development and submission of plans and technical or activity reports prepared or commissioned by the company for the relevant approving authority and regulator. These are a requirement of consent or licence and inform permissible activities and methods. Licences and consent approvals include a range of subsequent approval, notification or reporting requirements (including non-compliance or incidents) which link back to or are underpinned by the plans and reports.

There may be a requirement for a plan or report to be prepared but not submitted; instead, the plan or report is to be held by the licence holder and made available to the regulator on request. The wording of some requirements is that they are prepared “to the satisfaction of” a regulating authority or by an individual with specific expertise.

Given advice from regulators that annual reports in particular provide a basis for performance assessment, and that these are reviewed against requisite plans, it is reasonable to anticipate that regulators either hold copies of reports and corresponding plans or have documented evidence of their review and assessment findings. Principles of efficiency, effectiveness and transparency suggest that this is best done to a template and specified criteria addressing key risks. Good practice would acknowledge receipt and provide feedback to those submitting.

The Study observed some good practices and some weak or absent practices. The weaknesses appear to relate primarily to a lack of:

- front-end articulation of the content that is required, in what format and how it will be assessed or used – some regulatory staff have expressed frustration at voluminous material being lodged; looking for information is like the proverbial “needle in a haystack”
- regulator review or testing of data provided
- a compliance strategy
- documentation of reviews and compliance activities.

These weaknesses appear inefficient for both regulators and companies and impede strategic focus on key issues and the ability to undertake cross-agency and cross-company comparisons and analyses.

Standard planning and reporting requirements for exploration licences have been updated and extended during the course of this Study and now include Groundwater Monitoring and Modelling plans; Produced Water Management plans; an annual report on community consultation; an Environmental Management report; an Environmental Incident and Complaints report; and abandoned well details and other reports as set out in the *Code of Practice for CSG Well Integrity* and *Code of Practice for CSG Hydraulic Fracture Stimulation* released in September 2012.

These developments address some of the key concerns expressed during the first part of the broader Review. The key to their value will be the extent to which the requirements are purposefully aligned and the contents are rigorously and strategically analysed and reported on.

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<sup>28</sup> As this report focuses on systems post authorisation or grant of title, plans and reports prepared as part of application and approval process are not included.

## 4.1 REVIEW OF A SUBSET OF PLANS

Table 4.1 summarises initial observations from a review of a sample of plans relating to operations and safety required as a condition of consent or title that has already been granted.

**Table 4.1: Observations on a sample of required plans**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Regulator	Plan	Observation
DRE PPL and PEL	PPL Operations Plans and PEL Work Programs (1)	<ul style="list-style-type: none"> <li>It is a requirement of operations to have an approved plan in place.</li> <li>Guidelines for preparation of plans were requested. The Study was advised there are currently no Director General Guidelines for the preparation of production lease plans (POPs) but that the <i>Guidelines to the Mining, Rehabilitation and Environmental Management Process 2006</i> (MOPs) are used in the absence of petroleum specific guidelines for preparation of the POPs and annual reports (AEMR) and that guidelines <i>EDG13 Exploration Licence Rehabilitation and Relinquishment Report 2012</i> are used for exploration licences (PELs). The Study was also advised there are no current guidelines for how the regulator reviews the plans.</li> <li>Illustration: <i>In 2008 a company POP was approved and had effect until 2015. Since 2008, company plans for expansion exceeded the original plan approval, requiring lodgement of an amended or further plan. Two draft amendments were lodged (September 2010 and July 2011) neither of which were approved at the time and were subject to ongoing correspondence over additional content that was deemed required. Notwithstanding the lack of POP approval, operations continued with drilling and other well-related activity proceeding on the basis of DP&amp;E consent. In November 2013 the Secretary Trade and Investment (then DG) approved the most recent plan for a period of 12 months while petroleum specific guidelines for such plans are developed.</i></li> </ul>
DP&E Consent	Safety Management Plans (SMPs) (2)	<ul style="list-style-type: none"> <li>SMPs are a requirement of DP&amp;E Consent; and are a requirement (through SOPEPSR) of DRE production leases, and under the DRE Code of Practice for Well Integrity 2012 all CSG wells.</li> <li>A request for a company SMP was made to OCSG, and the Study was advised that “the Safety Management Plans are not required to be lodged to either the OCSG or the Mineral Resources Division”, but “they must however be in place before commencement of operations at a well site and must be in accordance with the ‘Schedule of Onshore Petroleum Exploration and Production Requirements’ or the ‘Code of Practice for CSG Well Integrity’ as the case may be”. However, a different company SMP was provided as an example. The Study was subsequently advised “Details regarding compliance [for SMP] may be sourced from the company directly. The Department has checked during inspections. Typically inspections have been carried out on an as required basis should any deficiencies be reported” and reference made to an inspection in November 2013 as an example.</li> <li>The Study did not observe evidence of guidelines for or evidence of either systematic or periodic review of SMPs. However, the Study did observe evidence that safety issues were identified during DRE Mine Safety Unit site visits.</li> </ul>
DRE PPL and PEL		
DRE PEL & PPL	Emergency Response Plan (3)	<ul style="list-style-type: none"> <li>The titleholder is required to have an Emergency Response Plan (ERP) although the condition does not require the titleholder to submit the plan.</li> <li>Ten ERPs were sighted relating to the 58 wells across 17 titles that were reviewed from the three year period. This represents a 47% ERP observed submission rate for wells and 59% for titles. No evidence was sighted to indicate a systematic review of any ERPs.</li> </ul>

### NOTES

- All PPLs contain a condition requiring the titleholder to prepare an Operations Plan to the satisfaction of the Director General and all operations on the PPL titles must be conducted in accordance with these approved plans.
- SMPs are required under the planning development consents issued by DP&E. The Petroleum (Onshore) Regulation 2007 states “all exploration or other activity carried out under the authority of a petroleum title is to be carried out in conformity with the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR)”. One of the first conditions of SOPEPSR requires titleholders to maintain a SMP

to demonstrate the safety management system adopted by the titleholder is adequate to ensure that (a) the design and operation of any installation or site and its equipment are safe; (b) that the potential major hazards and the risks to personnel thereon, as well as those hazards which could be transferred off site to the general public, have been identified and appropriate controls provided; (c) planning has taken place to establish emergency response procedures. The SMP needs to set out the safety objectives, the system by which these objectives are to be achieved, the performance standards which are to be met and the means by which adherence to these standards is to be monitored. Requirements for SMPs under the Code of Practice for Coal Seam Gas Well Integrity 2012 (which post-dates licences reviewed in the Study) are included under Section 2.2 *Risk management planning* and set out more detailed requirements, including responsibilities for contractors, and a requirement to submit an annual safety report.

- (3) Clause 210(1) of SOPEPSR states that “the titleholder must ensure that operations are not carried out on any site for which the titleholder is responsible unless, there are approved Emergency Response Procedures which set out the procedures to be followed and actions to be taken”. Detailed provision for ERPs are provided in the Code of Practice for Coal Seam Gas Well Integrity 2012 (per Note 2 above).

## 4.2 REVIEW OF A SUBSET OF REPORTS

Table 4.2 summarises initial observations from a review of a sample of reports required as a condition of consent or title.<sup>29</sup>

**Table 4.2: Observations on a sample of reports**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Regulator	Report	Observation
DP&E Development Consent	Annual Environmental Performance Report (AEPR) (1)	<ul style="list-style-type: none"> <li>There are different reporting requirements for AEPR and AEMR but companies are permitted by regulators to combine the two in a single report as long as both sets of requirements are addressed.</li> <li>The Study has not sighted Guidelines for content assessment of reports. The absence of specific requirements and uniform presentation make them difficult to navigate or hone in on key issues.</li> </ul>
DRE PPL	Annual Environmental Management Report (AEMR) (2)	<ul style="list-style-type: none"> <li>No evidence was sighted indicating a consistent and regularised approach to or formal reviews of reports by either regulator, although it received the following advice. DRE/OCSG: verbally advised during a meeting that the environmental unit in DRE reviewed reports and provided advice to companies. Correspondence described an example of an annual report review and subsequent meeting between DRE/OCSG with the company in October 2013 (post study period). Further advice indicated that “Titleholder submitted annual AEMR [and] Inter-agency inspections conducted. The environmental inspections that have been documented appear to have been reactive”.</li> <li>DP&amp;E: advised documentation received is reviewed by planning officers against the relevant conditions of approval/consent.</li> <li>Of the six AEPR/AEMR reports expected within the study period four (67%) were identified. A single annual report covering five PPLs was accepted. For PPL B, a single report covering a two year period was sighted.</li> </ul>
DRE PEL	Annual (3)	<ul style="list-style-type: none"> <li>From February 2012 the <i>New Guidelines for Digital Data Submission and Reporting of Onshore Petroleum Exploration in NSW</i> applied (the Guidelines) and <i>Template 2. Annual Report Structure</i> headings include progress report, total expenditure, proposed program and proposed expenditure.</li> <li>For the 13 PEL titles reviewed as part of the well activity component of the Study, 24 <i>Annual Reports</i> were identified, providing an evidence submission rate of 61%.</li> </ul>
EPA EPL	Annual (4)	<ul style="list-style-type: none"> <li>The EPA sends companies an annual return form for completion with elements linked to licence conditions and a declaration form with criteria for authorisation to sign.</li> <li>Notable non-compliance not identified by regulator: in 2012 company advised EPA</li> </ul>

<sup>29</sup> This includes requirements for annual reports across regulators and additional reports required under PPL lease or PEL licence for the wells reviewed. It excludes reports the Study would not expect to see because of the nature of activities undertaken on the titles included in the relevant period; and other reports required only by exception. In addition, Well Completion Reports are excluded as they are dealt with at section 5.5 of this report.

Regulator	Report	Observation
		of failure from 2009 to undertake continuous emissions monitoring (CEMS) as required, and 2013 reported sampling position location non-compliances, thereby contravening sections 66(2) & 66(4) of the PEO Act. Four years of incorrect information supplied in AEPR (Consent requirement), with reports stating that continuous monitoring was being undertaken for the period, and further that <i>"Full results of the continuous emissions monitoring for the reporting period are kept on file"</i> . Two independent audits (requirement of Consent) also lodged incorrect information, one stating all relevant plant and equipment including continuous air monitoring devices on compressor engine exhaust is compliant; the other that continuous monitoring was undertaken for the period, and further that <i>"Full results of the continuous emissions monitoring for the reporting period are kept on file"</i> .
NOW GWL	Annual (5)	<ul style="list-style-type: none"> <li>Evidence sighted of lodgement of an annual report for the sample of licences reviewed for the period 2010-11 and 2011-12 (licences granted in 2011).</li> <li>NOW have advised that evidence of review of the Annual Report is currently unable to be provided.</li> </ul>
DRE PPL	Annual Geoscientific (6)	<ul style="list-style-type: none"> <li>No evidence sighted in relevant period of lodgement or review of reports. Advice received from OCSG confirmed that for the six PPLs in NSW the reports had never been provided by the titleholders and that OCSG had sought this information from companies in December 2013. Other outstanding reports requested included end of work program, end of title and title renewal reports.</li> </ul>
DRE PPL	Royalties (7)	<ul style="list-style-type: none"> <li>Study observed monthly gas amounts have been provided to the Mineral Resources branch of DRE covering the relevant period.</li> <li>The Study did not observe evidence that the figures were independently verified or assessed.</li> </ul>
DRE PEL	End of Work Program (8)	<ul style="list-style-type: none"> <li>Exploration licences are typically granted and renewed for periods of between two and five years. From the 13 PEL titles assessed as part of the well activity component of the Study, eight reports were identified. The Study expected 16, giving an estimated evidence rate of 50%.</li> <li>The quality of the reports appears to vary widely and to deviate considerably from the Guidelines. However one report dated 08/05/12 appeared to follow the Guideline precisely.</li> </ul>
DRE PEL	End of Title/Licence/A uthority/Renew al Report (9)	<ul style="list-style-type: none"> <li>From the 13 PEL titles assessed as part of the well activity component of the Study, three reports were identified. The Study expected 14, giving an estimated evidence rate of 21%.</li> <li>One report reviewed appeared to contain all the required information.</li> </ul>
DRE PEL	Seismic Survey Report (10)	<ul style="list-style-type: none"> <li>Reports required to be submitted within six months of the completion of any seismic survey.</li> <li>From the 13 PEL titles assessed as part of the well activity component of the Study, four reports were identified. The Study expected 13, giving an estimated evidence rate of 31%.</li> </ul>

#### NOTES

- (1)+(2) It is a condition of DP&E Consent and DRE PPL and development consent that a titleholder must produce and lodge an AEMR (PPL) and an AEPR (DC) within 12 months of the commencement of production operations and there after annually, with the respective Director Generals. DRE AEMR *"must be prepared in accordance with the Director-General's guidelines pertaining to petroleum production current at the time of reporting and contain a review and forecast of performance for the preceding and ensuing twelve months in terms of (a) the accepted Petroleum Production Operations Plan and (b) details of any variations to environmental approvals applicable to the lease area"* e.g. PPL A, condition 2Bii.
- (3) It is a condition of PEL title that an annual report is to be submitted (within one month of) each anniversary of the grant of Title.
- (4) Condition R1.1 states, *"Annual Return Documents - The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: a) a Statement of compliance; and b) a Monitoring and Complaints Summary"*.
- (5) It is a standard condition of licence (Condition 14) that an annual Interpreted Technical Groundwater Report be submitted.
- (6) POA 1991 Sections 131-132 and Part 3, Section 14 of the PO Regulation. There are also a number of conditions within a PPL and SOPEPSR that detail requirements imposed on the title holder relating to resource recovery and well production e.g. 7.B.i of PPL A, requires the reporting of gas flow rates and

- gas compositions for each well connected to the gas gathering system, and 707.8 of SOPEPSR requires a detailed report on the results of a production test to be provided to the Director General.
- (7) Section 85 of the POA requires the holder of a petroleum title to pay to the Minister a royalty in respect of all petroleum recovered by the holder of the title in the area comprised in the title. Regulations prescribe the annual rate of royalty as 10 per cent of the value at the well-head of the petroleum.
  - (8) 2012 Guidelines provide a template.
  - (9) The Guidelines list contents for inclusion. Report should be submitted prior to the expiry of Title, Licence, or Authority.
  - (10) The Guidelines provide specific directions to the titleholder in the preparation of this report.

## 5 WELL-RELATED ACTIVITIES

After sampling a range of petroleum titles, requirements for well-related activities (drilling, hydraulic fracture stimulation, suspension and abandonment) on a subset of wells were reviewed. The focus on well-related activities reflected expert advice that well integrity is fundamental to safe operations.

Government agencies were not able to provide a complete picture of the number of wells and their status, so the Study began by examining those known to have been drilled in the relevant three-year study period, and supplemented this to capture earlier activities or fracture stimulation. This sample represents approximately 10% of total wells drilled (identified as at 27 September 2013), i.e. 58 wells on 17 Titles. The sample encompasses production and exploration leases or licences; a mix of operators across geographic areas; and includes wells from the three-year study period supplemented by some wells drilled earlier. The same ratings were used to assess evidence of compliance for these well-related activities as were used in Chapter 3 (section 3.2) to assess the sample licences.

As seen at Table 5.1, well-related activity requirements are predominantly contained in exploration licences and production leases although some well-related activities are captured in environment licences (for example, noise and hours of operation conditions) and water licences (for example, provision of annual technical groundwater report including well-related activities). For this reason this Chapter focuses on exploration licence and production lease requirements as well as relevant requirements set out in SOPEPSR.

**Table 5.1: Snapshot of well-related requirements by exemplar licence type and activity type**

Licence example	Drilling	Fracking	Suspension	Abandonment	Rehabilitation
PPL A (2004)	15	5	0	14	6
PEL C (2006)	17	0	0	4	12
SOPEPSR (1992)	70	4	13	13	0
EPL (2012)	3	3	0	1	1
GWL standard conditions (2011)	1	0	1	2	1

The *Code of Practice for CSG Well Integrity* and the *Code of Practice for CSG Hydraulic Fracture Stimulation*, which provide guidance for exploration and production activities, were introduced in September 2012 and did not apply to any wells reviewed (DTIRIS, 2012b, 2012c). However, the Codes have since been included as a requirement of exploration licences issued since their release.<sup>30</sup> OCSG has advised these two Codes are under review and Codes for Safety Management Systems and Emergency Response are under development, and will apply to all petroleum activities and all stages of production. It is understood these and other changes will enable repeal of legacy regulations such as SOPEPSR.

<sup>30</sup> Additional protections under the Aquifer Interference Policy were also not in force during the timeframe covered by the Study.

In addition to the above requirements, detailed reporting requirements for Well Completion Reports are set out in Departmental guidelines, which at the time of publication were the February 2012 DRE *New Guidelines for Digital Submission and Reporting of Onshore Petroleum Exploration in New South Wales* (the Guidelines) (DTIRIS, 2012d).<sup>31</sup> After assessing the evidence in the available sources against licence requirements, the Study selected the 10 wells that were drilled, suspended or abandoned after the introduction of the new guidelines to assess evidence in the reports relative to the guidelines. These findings are set out in Section 5.5.

It should again be emphasised that the observations relate to evidence that could be located through the regulator.

## 5.1 DRILLED WELLS

A total of 761 requirements were assessed in relation to the drilling and workover of nine producing wells which were identified as drilled within the relevant study period (Table 5.2). These were drilled on three different petroleum leases.

No evidence was able to be located indicating that the requirements of any of these 761 conditions had been met in full, and evidence was located that eight (NM 1%) of the requirements pertaining to drilling and well workover were not met.

Evidence that the requirement had been met in part but not fully was demonstrated for 441 requirements (P 58%). This evidence rating was usually allocated for two reasons: firstly, that the content of much of the submitted documentation, for example Well Completion Reports, did not obviously address the production lease requirements; and secondly, that it was rarely possible to locate evidence to indicate that any submitted documentation had been reviewed by the regulator. Similarly, it was not possible to ascertain whether review of the documentation alone would be sufficient for the regulator to deem the titleholder compliant, or whether a site inspection, as occurred in some instances, was also necessary.

No documentation was able to be located to establish whether 93 (N 12%) of the 761 requirements relating to drilling had either been met or not met. Evidence was unable to be located to verify that the lease holder was required to meet 219 (NEI 29%) of the conditions.

A further 79 licence requirements were also assessed in relation to the drilling and workover of one non-producing well drilled in the relevant study period. Evidence was able to be located indicating that three (E 4%) of the requirements of these 79 conditions had been met in full and 12 (P 15%) in part. It was established that four requirements (NM 5%) relating to drilling and workover were not met.

For 44 requirements (N 56%), no documentation was able to be located to establish whether the conditions had either been met or not met and for 16 (NEI 20%) evidence was unable to be located to verify that the lease holder was required to meet the conditions.

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<sup>31</sup> The Guidelines address more than the exploration phase (e.g. Section 8.4 refers to requirements for a Well Completion Report for any well drilled) and were set as the reporting baseline in the 2012 Code of Practice for Well Integrity. Although not on the website, the Study was provided by OCSG (13/6/2014) with Guidelines dated 2014, but these do not appear to contain significant amendments.

**Table 5.2: Review of evidence for a sample of 10 drilled wells**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Review of evidence of compliance with petroleum licence and lease requirements for 10 wells known to have been drilled in the study period											
Well	Number of occurrences						% of occurrences				
Evidence rating	E	P	N	NM	NEI	Total	E	P	N	NM	NEI
<b>Producing</b>											
Well 45	0	49	13	0	19	81	0%	60%	16%	0%	23%
Well 54	0	48	9	2	28	87	0%	55%	10%	2%	32%
Well 55	0	48	9	2	28	87	0%	55%	10%	2%	32%
Well 56	0	48	9	2	28	87	0%	55%	10%	2%	32%
Well 57	0	48	9	2	28	87	0%	55%	10%	2%	32%
Well 48	0	50	11	0	22	83	0%	60%	13%	0%	27%
Well 49	0	50	11	0	22	83	0%	60%	13%	0%	27%
Well 50	0	50	11	0	22	83	0%	60%	13%	0%	27%
Well 51	0	50	11	0	22	83	0%	60%	13%	0%	27%
<b>Subtotal</b>	<b>0</b>	<b>441</b>	<b>93</b>	<b>8</b>	<b>219</b>	<b>761</b>					
	<b>0%</b>	<b>58%</b>	<b>12%</b>	<b>1%</b>	<b>29%</b>	<b>100%</b>					
<b>Non-Producing</b>											
Well 30	3	12	44	4	16	79	4%	15%	56%	5%	20%
<b>Subtotal</b>	<b>3</b>	<b>12</b>	<b>44</b>	<b>4</b>	<b>16</b>	<b>79</b>					
	<b>4%</b>	<b>15%</b>	<b>56%</b>	<b>5%</b>	<b>20%</b>	<b>100%</b>					
<b>Total</b>	<b>3</b>	<b>453</b>	<b>137</b>	<b>12</b>	<b>235</b>	<b>840</b>					
<b>%</b>	<b>1%</b>	<b>54%</b>	<b>16%</b>	<b>1%</b>	<b>28%</b>	<b>100%</b>					

The total number of requirements exceeds the original number due to the separation of requirements so that they could be assessed individually.

Total percentages may add to more or less than 100% due to rounding.

E = Evidence that requirement met; P = Evidence requirement met in part; N = No evidence requirement met; NEI = No evidence invoked; NM = Evidence requirement not met

## 5.2 SUSPENDED WELLS

A total of 210 requirements were assessed in relation to the suspension of 14 wells, which were drilled and suspended within the relevant study period (1/7/10-30/6/13). These were drilled on six different leases and licences (Table 5.3).

Evidence was located that 27 (E 13%) requirements had been met in full. No documentation was able to be located to establish whether 33 (N 16%) of the 210 conditions relating to suspension had either been met or not met.

For another 23 (P 11%), evidence that the requirement had been met in part but not fully was demonstrated. This evidence rating was usually allocated for two reasons: first, that the content of much of the submitted documentation, for example Well Completion Reports, did not obviously address the licence/lease conditions; and secondly, that it was rarely possible to locate evidence to indicate that any submitted documentation had been reviewed by the regulator. Similarly, it was not possible to ascertain whether review of the documentation alone would be sufficient for the regulator to deem the titleholder compliant or whether a site inspection, as occurred in some instances, was also necessary.

The most common finding (127 conditions, NEI 60%), was that evidence was unable to be located to verify that the licence/lease holder was required to meet those particular conditions. No evidence was located that any of the 210 requirements had not been met by the titleholder. As can be seen, the number of requirements that fell into each category varied between titles.

For comparison, a further 122 requirements were assessed in relation to the suspension of seven wells drilled and suspended from April 2006 to March 2010, prior to the main three-year study period. These wells were all drilled on a single title. In contrast to the first group of wells, there was no evidence able to be located indicating that any of the 122 licence conditions had been met, either fully or in part. In addition, 17 requirements (NM 14%) were rated not met on the basis of available documentation. It was not possible to verify whether the title holder was required to meet 87 of the 122 requirements (NEI 71%), and for 18 (N 15%) there was no evidence to indicate whether the requirement had been met or not.

**Table 5.3: Review of evidence for sample of 21 suspended wells**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

<b>Review of evidence of compliance with lease or licence requirements for 21 wells, 14 known to have been drilled in the study period</b>											
Well	Number of occurrences						% of occurrences				
Evidence rating	E	P	N	NM	NEI	Total	E	P	N	NM	NEI
<b>Drilled and suspended in study period (14 wells)</b>											
Well 11	1	3	1	0	9	14	7%	21%	7%	0%	64%
Well 3	3	0	3	0	8	14	21%	0%	21%	0%	57%
Well 4	3	0	3	0	8	14	21%	0%	21%	0%	57%
Well 5	3	0	3	0	8	14	21%	0%	21%	0%	57%
Well 6	3	0	3	0	8	14	21%	0%	21%	0%	57%
Well 53	0	1	3	0	9	13	0%	8%	23%	0%	69%
Well 47	0	5	3	0	5	13	0%	38%	23%	0%	38%
Well 32	2	2	0	0	10	14	14%	14%	0%	0%	71%
Well 35	2	2	0	0	10	14	14%	14%	0%	0%	71%
Well 36	2	2	0	0	10	14	14%	14%	0%	0%	71%
Well 37	2	2	0	0	10	14	14%	14%	0%	0%	71%
Well 38	2	2	0	0	10	14	14%	14%	0%	0%	71%
Well 29	2	2	7	0	11	22	9%	9%	32%	0%	50%
Well 31	2	2	7	0	11	22	9%	9%	32%	0%	50%
<b>Subtotal</b>	<b>27</b>	<b>23</b>	<b>33</b>	<b>0</b>	<b>127</b>	<b>210</b>					
<b>%</b>	<b>13%</b>	<b>11%</b>	<b>16%</b>	<b>0%</b>	<b>60%</b>	<b>100%</b>					
<b>Drilled and suspended prior to main study period (7 wells)</b>											
Well 24	0	0	3	2	12	17	0%	0%	18%	12%	71%
Well 25	0	0	3	2	12	17	0%	0%	18%	12%	71%
Well 26	0	0	3	2	12	17	0%	0%	18%	12%	71%
Well 14	0	0	2	3	13	18	0%	0%	11%	17%	72%
Well 15	0	0	2	3	13	18	0%	0%	11%	17%	72%
Well 16	0	0	2	3	13	18	0%	0%	11%	17%	72%
Well 22	0	0	3	2	12	17	0%	0%	18%	12%	71%
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>17</b>	<b>87</b>	<b>122</b>					
<b>%</b>	<b>0%</b>	<b>0%</b>	<b>15%</b>	<b>14%</b>	<b>71%</b>	<b>100%</b>					
<b>Total</b>	<b>27</b>	<b>23</b>	<b>51</b>	<b>17</b>	<b>214</b>	<b>332</b>					
<b>%</b>	<b>8%</b>	<b>7%</b>	<b>15%</b>	<b>5%</b>	<b>64%</b>	<b>100%</b>					

The total number of requirements exceeds the original number due to the separation of requirements so that they could be assessed individually.

Total percentages may add to more or less than 100% due to rounding.

### 5.3 ABANDONED WELLS

A total of 314 requirements were assessed in relation to the abandonment of 17 wells, which were drilled and then abandoned within the study period (1/7/10-30/6/13). These wells were drilled on 11 different leases and licences (Table 5.4).

Of these 314, evidence was located for 21 (E 7%) to indicate that the requirements were met in full. The most common finding (164 requirements, NEI 52%), was that evidence was unable to be located to verify that the title holder was required to meet those particular

conditions. Evidence was located that two of the 314 requirements had not been met by the titleholder (NM 0.6%). No documentation was able to be located to establish whether 53 (N 17%) of the 314 conditions relating to abandonment had either been met or not met.

For another 74 (P 24%), evidence that the requirement had been met in part but not fully was demonstrated. This evidence rating was usually allocated for two reasons: firstly, that the content of much of the submitted documentation, for example Well Completion Reports, did not obviously address the licence/lease requirements; and secondly, that it was rarely possible to locate evidence to indicate that any submitted documentation had been reviewed by the regulator. Similarly, it was not possible to ascertain whether review of the documentation alone would be sufficient for the regulator to deem the titleholder compliant or whether a site inspection, as occurred in some instances, was also necessary.

A notable exception to this finding was the licence requirements pertaining to plugging and abandonment for one well in the sample set. Of the 19 conditions relevant, there was evidence available to indicate that six had been met, and there was no evidence that the titleholder was required to meet the other 13. This was an unusual distribution of evidence findings in comparison with other titles reviewed. It was more common to find only partial evidence or no evidence at all to meet many conditions. The difference for this well was that both a *Rehabilitation Report* and a *Notification to Abandon* were located, in addition to correspondence from the DRE giving approval to *Plug and Abandon* in accordance with these applications. The application for approval to abandon also contained all the requisite information to meet the licence requirements.

For comparison, a further 181 lease and licence requirements were assessed in relation to the abandonment of 10 wells drilled and then abandoned between July 1998 and July 2009, prior to the main study period. These 10 wells were drilled over five titles. Of the 181 requirements, evidence was located for five (E 3%), indicating that the requirements had been met in full. For another 30 (P 17%), evidence that the requirement had been met in part but not fully was demonstrated. No documentation was able to be located to establish whether 43 (N 24%) of the 181 conditions relating to abandonment had either been met or not met. Once again, the most common finding (92 requirements, NEI 51%), was that evidence was unable to be located to verify that the licence holder was required to meet those particular conditions. Evidence was located that 11 (NM 6%) of the 181 licence requirements had not been met by the titleholder.

Condition 1 of Exploration Licence Conditions for the PEL titles studied, states that “*full rehabilitation in accordance with Departmental guidelines/standards is carried out after completion of the exploration activities*”. The relevant guideline, which has existed since at least 2006, is EDG13 *Exploration Licence Rehabilitation and Relinquishment Report* and its related forms ESB-F05 and ESB-F06 *Landowner/Occupier Rehabilitation Statement*.

Of the 58 wells in the main three-year review period, 14 were on PPLs and hence did not require an *Exploration Rehabilitation and Relinquishment Report*. Of the remaining 44 wells on PEL titles, the Study could locate Rehabilitation reports for 12 (21%) of the wells. Of these, three were submitted in the required format.

**Table 5.4: Review of evidence for a sample of 27 abandoned wells**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

<b>Review of evidence of compliance with licence/lease requirements for 27 abandoned wells, 17 known to have been drilled in the study period</b>											
<b>Well</b>	<b>Number of occurrences</b>					<b>% of occurrences</b>					
<b>Evidence rating</b>	<b>E</b>	<b>P</b>	<b>N</b>	<b>NM</b>	<b>NEI</b>	<b>Total</b>	<b>E</b>	<b>P</b>	<b>N</b>	<b>NM</b>	<b>NEI</b>
<b>Drilled and abandoned in study period (17 wells)</b>											
Well 58	0	19	4	0	4	27	0%	70%	15%	0%	15%
Well 1	3	3	3	0	7	16	19%	19%	19%	0%	44%
Well 2	3	3	3	0	7	16	19%	19%	19%	0%	44%
Well 10	0	3	3	1	9	16	0%	19%	19%	6%	56%
Well 12	1	2	4	0	9	16	6%	13%	25%	0%	56%
Well 20	1	4	2	0	11	18	6%	22%	11%	0%	61%
Well 21	1	4	2	0	11	18	6%	22%	11%	0%	61%
Well 23	1	4	2	0	11	18	6%	22%	11%	0%	61%
Well 27	1	3	3	0	11	18	6%	17%	17%	0%	61%
Well 28	2	3	6	1	10	22	9%	14%	27%	5%	45%
Well 39	0	4	2	0	10	16	0%	25%	13%	0%	63%
Well 40	0	7	2	0	10	19	0%	37%	11%	0%	53%
Well 41	2	5	0	0	9	16	13%	31%	0%	0%	56%
Well 42	0	2	4	0	13	19	0%	11%	21%	0%	68%
Well 43	0	3	3	0	10	16	0%	19%	19%	0%	63%
Well 44	6	0	0	0	13	19	32%	0%	0%	0%	68%
Well 52	0	5	10	0	9	24	0%	21%	42%	0%	38%
<b>Subtotal</b>	<b>21</b>	<b>74</b>	<b>53</b>	<b>2</b>	<b>164</b>	<b>314</b>					
<b>%</b>	<b>7%</b>	<b>24%</b>	<b>17%</b>	<b>0.6%</b>	<b>52%</b>	<b>100%</b>					
<b>Drilled and abandoned outside main study period (10 wells)</b>											
Well 46	2	6	5	4	4	21	10%	29%	24%	19%	19%
Well 7	0	4	6	2	8	20	0%	20%	30%	10%	40%
Well 8	0	4	6	2	8	20	0%	20%	30%	10%	40%
Well 9	0	2	6	0	8	16	0%	13%	38%	0%	50%
Well 13	1	3	2	1	11	18	6%	17%	11%	6%	61%
Well 17	1	3	3	0	11	18	6%	17%	17%	0%	61%
Well 18	1	3	3	0	11	18	6%	17%	17%	0%	61%
Well 19	0	1	4	2	11	18	0%	6%	22%	11%	61%
Well 33	0	2	4	0	10	16	0%	13%	25%	0%	63%
Well 34	0	2	4	0	10	16	0%	13%	25%	0%	63%
<b>Subtotal</b>	<b>5</b>	<b>30</b>	<b>43</b>	<b>11</b>	<b>92</b>	<b>181</b>					
<b>%</b>	<b>3%</b>	<b>17%</b>	<b>24%</b>	<b>6%</b>	<b>51%</b>	<b>100%</b>					
<b>Total</b>	<b>26</b>	<b>104</b>	<b>96</b>	<b>13</b>	<b>256</b>	<b>495</b>					
<b>%</b>	<b>5%</b>	<b>21%</b>	<b>19%</b>	<b>3%</b>	<b>52%</b>	<b>100%</b>					

The total number of requirements exceeds the original number due to the separation of requirements so that they could be assessed individually.

Total percentages may add to more or less than 100% due to rounding.

## 5.4 WELLS WHERE HYDRAULIC FRACTURE STIMULATION WAS USED

No wells were subject to hydraulic fracture stimulation in the relevant study period (1/7/10-30/6/13), so a cohort was selected from an earlier period for review. From September 2012, a standard condition of licence has been compliance with the *Code of Practice for Coal Seam Gas Fracture Stimulation Activities*.

A total of 48 requirements were assessed in relation to 12 wells, which were drilled and completed between July 1998 and October 2007. These were drilled on four different PELs (Table 5.5).

Of these 48 conditions, no evidence was located to indicate that the requirements of any had been met in full. No documentation was able to be located to establish whether 32 (N 67%) of the 48 conditions relating to fracturing had either been met or not met. No evidence was located that any of the 210 licence conditions had not been met by the titleholder.

For 16 requirements (P 33%), evidence that the requirement had been met in part, but not fully, was demonstrated. As with the wells reviewed that were suspended or abandoned, this evidence rating was allocated because the information located did not obviously meet the licence/schedule requirement and/or no information was able to be located to indicate that the regulator had reviewed any submitted documentation and deemed it both adequate and accurate.

**Table 5.5: Review of evidence for a sample of 12 wells where hydraulic fracture stimulation was used**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Review of evidence for compliance with requirements for hydraulic fracture stimulation for 12 wells outside the study period											
Well	Number of occurrences						% of occurrences				
	E	P	N	NM	NEI	Total	E	P	N	NM	NEI
Well 7	0	4	0	0	0	4	0%	100%	0%	0%	0%
Well 8	0	4	0	0	0	4	0%	100%	0%	0%	0%
Well 9	0	4	0	0	0	4	0%	100%	0%	0%	0%
Well 13	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 14	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 15	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 16	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 17	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 18	0	2	2	0	0	4	0%	50%	50%	0%	0%
Well 19	0	2	2	0	0	4	0%	50%	50%	0%	0%
Well 33	0	0	4	0	0	4	0%	0%	100%	0%	0%
Well 34	0	0	4	0	0	4	0%	0%	100%	0%	0%
<b>Total</b>	<b>0</b>	<b>16</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>48</b>					
<b>%</b>	<b>0</b>	<b>33%</b>	<b>67%</b>	<b>0</b>	<b>0</b>	<b>100%</b>					

The total number of requirements exceeds the original number due to the separation of requirements so that they could be assessed individually.

Total percentages may add to more or less than 100% due to rounding.

## 5.5 ADDITIONAL REVIEW ACTIVITIES

It became apparent that although a formal compliance program was not identified for the exploration and production titles, compliance activities were observed that may not have been captured because of the Study design and tools. Therefore, two additional exercises were undertaken.

The first involved a review of recorded inspections by safety inspectors. This became more feasible towards the end of the Study as information previously held in spreadsheets was transferred to a major data base. The second involved a review of Well Completion Reports (WCRs) to assess the extent to which activities complied with these reporting requirements as a WCR was sighted for all wells reviewed in the 10% sample. A sub-set of wells was selected that were known to have been drilled, suspended or abandoned after the introduction of new guidelines in 2012.<sup>32</sup>

<sup>32</sup> The 2012 *New Guidelines for Digital Submission and Reporting of Onshore Petroleum Exploration in New South Wales* address more than the exploration phase (e.g. Section 8.4 refers to requirements for a Well Completion Report for *any* well drilled) and were set as the reporting baseline under the 2012 Code of Practice for Well Integrity.

### 5.5.1 Inspections

The DRE Common Mines Environment (COMET) database was populated during 2013-14 with CSG-related information previously held on spreadsheets by the mine safety operations unit. It was anticipated that the updated data base might provide a picture of compliance activities that were undertaken during the study period that may not be captured by the Study methodology.

For the purposes of the review (undertaken in May 2014), any material on the COMET system that related to notifications, approvals or incidents was excluded on the basis that this was already included in assessment of well-related activities outlined in sections 5.1-5.4

This exercise identified 50 (pre-announced) inspections to CSG sites in the relevant study period. Fifteen of these site visits were undertaken in relation to 58 wells included in the study sample, with 14 undertaken on PELs and one on a PPL. The trend in inspections (both conventional and CSG-related) shows a marked increase in inspection activity in 2012-13 and again in 2013-14.

Identified issues (50 in total) related to lack of activity approvals; qualifications<sup>33</sup>; operating practices; documentation and safety signage and fencing.

In the absence of a centralised system, the Study was not able to undertake a similar exercise in relation to any inspections by environmental sustainability units within DRE.<sup>34</sup>

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<sup>33</sup> This followed an instance where an operator could not provide evidence of an appropriate qualification and Blow Out Prevention Ticket and was requested to be provided within seven days. The titleholder subsequently provided documentation. This was of particular interest to the Study as operator competencies had featured in Recommendation 4 of the Initial Report (CSE, 2013) and Recommendation 3 of the report *Comments on two of the draft Codes of Practice relating to coal seam gas extraction* (CSE, 2012). The relevant provisions in SOPEPSR, which pre-date the introduction of the two Codes, include the need for the titleholder to ensure personnel have the necessary competence, authorisation or qualification *if required*; and a general requirement for operations to be carried out in a workmanlike manner to ensure health and safety. Advice from the OCSG was that there was *No requirement to have a certificate of competence, an authorization or a qualification by a Statute* during the Study period but that OCSG has been developing a draft Code in conjunction with Queensland counterparts which was expected to be introduced by July 2014.

<sup>34</sup> On 27 June 2013, as part of a site visit to the Wollongong Environmental Sustainability Unit (ESU), the Study was provided with a copy of the Wollongong ESU complaint and incident reporting spreadsheet covering the period December 2011-February 2013. Information from the spreadsheet was an input to the licence review process. Subsequently detailed advice was sought on complaint and incident reporting and management. Following a request for clarification, advice was provided by OCSG (15/4/2014) that addressed OHS/safety but not environmental complaints and incidents, and additional advice was sought on environmental related complaints and incidents. From the material provided, the Study understands that prior to 2011 the ESU maintained a spreadsheet called the *Environmental Sustainability Reporting Spreadsheet* which encompassed activities undertaken by ESU including assessments of notices/plans, lease management, site risk assessments, complaint/incident investigations and enforcement actions at mining, conventional petroleum and CSG sites. Since 2011, ESU have maintained a separate spreadsheet dedicated to complaints and incidents only, called the *Complaint Incident and Tracking Spreadsheet*. The Study was provided with *Reporting Spreadsheets* covering three periods (2003-06, 2006-10 and 2010-14) in addition to the *Complaint Incident and Tracking Spreadsheet* covering the period 2011-14. Due to how the material is presented and variations in recording, the Study could not easily determine the number of distinct events or readily distinguish CSG from mining or conventional gas wells. However, the Study searched by petroleum titles and by known CSG title holders and identified four infringement notices (two of which fell within the Study period and one of which related to a title under study and was previously identified) and one direction issued for a title within the Study period but not reviewed as part of the Study. Otherwise, the material did not appear to add to that previously provided.

### 5.5.2 Well Completion Reports

WCRs are not specifically referred to in any statutory instruments. However, s131 of the POA and clauses 14-16 of the regulations make provision for reporting and data submission requirements. Further, a standard PEL title condition observed by the Study since 2006 states that *"The licence holder must lodge reports as required by Section 131 and Regulation 13 of the Petroleum (Onshore) Act 1991 to the satisfaction of the Minister detailing the operations conducted and the expenditures incurred. The reports must include all maps, plans and data necessary to satisfactorily interpret and evaluate the reports. All reports submitted should be in accordance with the Department's Digital Reporting Guidelines"*. More recent exploration licences refer to the 2012 guidelines in similar terms. It is these guidelines that dictate a WCR's contents and format, as well as a number of other types of reports.<sup>35</sup> The petroleum production leases do not contain this condition, but it appears standard practice to observe the guidelines irrespective of title type.

The style and structure of the report are left to the company, but these reports are expected to include well history and location; geology; drilling plans and data; formation sampling; logging and surveys; cementing; suspension or abandonment; expenditure for drilling program.

Unlike sections 5.1 – 5.4, the evidence ratings relate only to evidence of company adherence to guidelines for the preparation of the reports.

### 5.5.3 Observations

The Study observed that the WCRs in the sample follow the guidelines reasonably closely. Some follow the format stipulated in the guidelines very closely (Table 5.6).

In contrast to lease, licensing and other statutory conditions, it can be seen that the evidence ratings are significantly different. Of the 40 conditions, the most common finding was that evidence was generally sighted that 33 (E 83%) had been met in full.

There also appears to be a marked improvement in the quality of reports as time progresses. The more recent WCRs in the sample contain more information, and information that is more closely aligned to the requirements. Similarly, titleholders are increasingly noting requirements that are not strictly applicable to the well type (e.g. noting that there was no occurrence of the 'requirement' encountered, while earlier reports typically omit details if not relevant to the well in question).

One observation regarding a set of pilot wells was that the WCRs for each were almost identical, with the relevant dates and numbers changed to reflect the correct well. This is not unreasonable as the four wells were drilled together, with the majority of the information applicable to all four. However, the copy/paste nature of the reports is especially clear in one report as it contradicts itself, the executive summary stating that the well had permeability testing in five zones, while the body of the report states no well testing was done.

What remains unclear is the process for any regularised review and assessment of the WCRs. The Study observed a spreadsheet from Coal and Petroleum Geoscience in DRE indicating that four of the 10 wells drilled had been reviewed by that section, and two had been initially "rejected", with comments including inconsistent or missing drilling coordinates, missing appendices, missing expenditure and incomplete pages.

However, there is no documentation indicating that other relevant sections within DRE/OCSG either received or reviewed the reports' contents. Of particular note is that the

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<sup>35</sup> As previously noted, there appears to be a disconnect between the Guidelines and other requirements set out in lease, licences and SOPEPSR, although some WCRs may, but do not necessarily, address these other requirements.

Study could not find evidence that these technical reports were provided to or reviewed by the mine safety unit, when they appear to contain information fundamental to that unit's role.

**Table 5.6: Review of evidence for a sample of 10 well completion reports relative to the 2012 guidelines**

Note: Each Table reflects a summary of regulatory evidence sought through Government agencies. The tables do not represent industry compliance with the legislation.

Well	Number of occurrences					Total	% of occurrences				
	NA	E	P	N	NM		NA	E	P	N	NM
<b>Wells drilled post February 2012</b>											
Well 51	3	35	0	0	2	40	8%	88%	0%	0%	5%
Well 30	4	32	1	1	2	40	10%	80%	3%	3%	5%
<b>Wells suspended post February 2012</b>											
Well 32	4	32	1	1	2	40	10%	80%	3%	3%	5%
Well 35	4	33	1	1	1	40	10%	83%	3%	3%	3%
Well 36	4	33	1	1	1	40	10%	83%	3%	3%	3%
Well 37	4	32	2	1	1	40	10%	80%	5%	3%	3%
Well 38	4	33	1	1	1	40	10%	83%	3%	3%	3%
<b>Wells abandoned post February 2012</b>											
Well 28	2	37	1	0	0	40	5%	93%	3%	0%	0%
Well 42	3	31	2	2	2	40	8%	78%	5%	5%	5%
Well 31	3	35	2	0	0	40	8%	88%	5%	0%	0%
Not applicable includes conditions not invoked due to the nature of the individual well. Specific examples include later submission of an addendum due to later availability of data, a seismic survey name where a survey was not undertaken and a condition relating to horizontal well coordinates where the well was vertical.											

## 6 CONCLUSION & RECOMMENDATIONS

### 6.1 GENERAL CONCLUSION

This report presents the results of an examination of how compliance with regulatory requirements placed on CSG in NSW is managed. It is clear from this work that the compliance systems governing CSG extraction, and the legislation underpinning it, need improvement.

While some good practice examples were observed, issues identified include: compliance activities uncoordinated or absent; lack of alignment between requirements set out in licences and regulatory activity; limited regulatory capacity in some agencies; lack of documentation or records; and lack of management of legacy requirements, with introduction of new requirements without rescinding or aligning these with old.<sup>36</sup> In short, it is clear to the Review that there is no clearly articulated whole-of-Government regulatory approach.

These issues and complexities are:

- undermining public and industry confidence
- contrary to contemporary public sector principles, such as transparency and accountability
- inefficient
- allowing gaps to go unidentified and potentially poor performance to go unaddressed.

Also, complexity, fragmentation and a lack of clear direction and policies at the ‘front end’ of the regulatory system are impediments to effective exercise of ‘back end’ monitoring and compliance roles.

The identified issues appear to be structural, systemic and cultural in nature. While it is not possible to be definitive, it seems likely a number of factors have contributed to this.<sup>37</sup>

- the nature of the CSG industry – it is much more distributed than, say, coal mining, making oversight more challenging
- the perceived need not to over-regulate at the exploration point – this has led to an increased risk of ‘project creep’, i.e. the exploration expands in scale and turns into production without necessarily incurring strong regulatory oversight. This risk is compounded by the nature of current legislation – once a particular company has exploration approval, there is an implied expectation in the *Petroleum (Onshore) Act 1991* that that company will proceed to the production phase
- the level of resourcing and/or lack of authority to implement legislative requirements. This has been compounded by a failure by some regulators to articulate or specify planning and reporting requirements ‘up front’ with voluminous materials being lodged which don’t align with requirements and making assessment opaque and comparisons difficult
- the perceived low risk of CSG activities relative to other activities.

The CSG industry in NSW to date is small relative to state and international comparators. There is no evidence that the outcomes of mixed levels of regulatory oversight have been serious to date. However, it is clear that some regulators have not been checking that required data and reports are delivered; not reviewing or verifying the material that

<sup>36</sup> The extent to which these issues were observed varies across regulators.

<sup>37</sup> Many of these have also been identified in previous reports.

companies are obliged to provide; not checking operations; and not reviewing or managing conditions which have become outdated or problematic with the passing of time.<sup>38</sup>

The issues outlined in this report can be rectified. Government has already acknowledged many of them and there are changes already in place or underway.

Some of the key system reforms and changes that have been implemented or which regulatory agencies advise are in progress, together with observations from the review of agency websites, include:

- the *Protection of the Environment Operations Act 1997* and related regulations now apply specifically to CSG, and all companies have applied for Environment Protection Licences
- a memorandum of understanding between several Government agencies was executed in August 2014 to establish arrangements for some aspects of regulation such as information sharing, compliance and enforcement, including incident response and investigations
- a freeze on all new exploration applications was applied in March 2014 and extended in September 2014 until September 2015, and an audit of all existing PELs is underway
- OCSG has advised the Review that it has commenced work to inform a review of the *Petroleum (Onshore) Act 1991* and is reviewing or developing key Codes of Practice intending to make them applicable to all petroleum activities and stages of development – this is intended to enable repeal of the Schedule of Onshore Petroleum Exploration and Production Safety Requirements dating from 1992
- OCSG has advised the Review that it has commissioned a review of reporting obligations under the various relevant Acts to develop a comprehensive set of title/project audit criteria and provide a baseline for different regulators to streamline reporting obligations. It also initiated a Petroleum (Natural Gas) Regulatory Framework Risk Assessment project to address aspects of Recommendation 1 of the Initial Report (CSE, 2013)
- the *Protection of the Environment Operations (General) Amendment (Licensing Fees) Regulation 2014* took effect from 2 May 2014. The Amendment underpins the introduction of a risk-based licensing system which is scheduled to commence on 1 July 2015. This will include assessment and rating of licence holder performance in managing environmental risk, and, in turn, the level and fees associated with regulatory oversight.

There are also initiatives in train to improve regulatory capacity within agencies, including:

- OCSG establishing a compliance and enforcement unit in early 2014 that it has advised is now fully staffed. In addition OCSG has advised it is establishing a titles unit, increasing capacity in the safety and environmental units, and developing appropriate policies and tools
- OCSG establishing a compliance working group between agencies to develop training modules for staff
- NOW creating an additional two compliance positions to improve capacity
- EPA creating materials to provide staff with a strong understanding of the CSG industry.

In July 2013, the NSW Cabinet endorsed the implementation of a whole-of-Government Integrated Mining Policy, designed to provide a policy framework and streamline regulation of mining projects. While CSG is outside the scope of the first stage of this reform, the

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<sup>38</sup> The extent to which these issues were observed varies across regulators.

Department of Planning & Environment advised the Review that it is envisaged that it will be included at a later date.

However, while the initiatives underway by Government in the past two years are important, they do not yet represent a comprehensive, holistic and strategic approach to establishing an effective compliance regime, and are significantly hampered by the complexity of the legislative framework.

## **6.2 MOVING TO A MORE STRATEGIC LEGISLATIVE AND REGULATORY SYSTEM**

### **6.2.1 Addressing legislative complexity**

The legislative and regulatory environment relevant to CSG in NSW is complex. There are 14 Acts applying to CSG operations, four of which can be regarded as ‘major’ Acts, each with a different regulatory agency: the *Environmental Planning and Assessment Act 1979* (EPAA): Department of Planning & Environment; the *Petroleum (Onshore) Act 1991* (POA): Resources & Energy (including the Office of Coal Seam Gas) in NSW Trade & Investment; the *Water Management Act 2000* (WMA)/*Water Act 1912*: NSW Office of Water within Department of Primary Industries in NSW Trade & Investment; and the *Protection of the Environment Operations Act 1997* (PEOA): Environment Protection Authority.

Navigating each of these Acts, and the subordinate legislation associated with them, is complex in itself. In addition, tracking the regulatory process to implement the legislation’s requirements is also complex. The Review has found shortcomings in the management of compliance with regulatory requirements under these Acts, and that a contributing factor was the lack of a clearly articulated whole-of-Government regulatory approach to CSG.

This points to a need for holistic legislative reform to ensure the regulatory system in NSW reflects contemporary best practice. The main purpose of all legislation dealing with the State’s resources is to enable development of those resources for the benefit of NSW citizens in a safe and sustainable way. The key element, of course, is identifying the risks to safety and sustainability, and developing appropriate regulatory mechanisms that are clear, enforceable, and able nimbly to be updated as risks change and new technologies that may help manage the risks, or may create new risks, emerge.

Key reforms could include:

- giving the planning arm of Government a new, more strategic role to identify all areas of the State where CSG activity should be permitted, and where it should be prohibited
- creating a single Act for the onshore subsurface resources sector (excluding water), possibly extending to the offshore sector also
- separating the process for allocation of rights to exploit subsurface resources (excluding water) from the regulation of the activities required to give effect to that exploitation (i.e. exploration and production activities)
- creating a single regulator for the resources industry, so that all approvals for activities associated with resources, and the requirements for the ways those activities are conducted, are managed by a single regulatory agency, with appropriate interaction with other Government agencies
- moving to an outcome-focused regulatory system to manage the risks, with the benefit of not over-burdening operators with inappropriate administrative detail.

### **6.2.2 A different role for Planning**

CSG activity currently begins with the granting of a Petroleum Exploration Licence (PEL) by Resources & Energy (DRE) under the POA. This is a form of petroleum title, i.e. it gives its

holder the legal 'title' or right to access the 'petroleum' in the area covered by the title. It is also a regulatory instrument, which imposes conditions on how the title holder must conduct its activities, in respect of matters such as environmental impact and safety. These conditions are set by DRE.

However, the EPAA plays a vital role in regulating CSG exploration too. Because much exploration activity<sup>39</sup> does not require Development Consent, Part 5 of the EPAA applies. For activities associated with CSG, the EPAA puts an onus on DRE to "examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity" (s.111, EPAA). Little other guidance is provided in the EPAA as to how this responsibility must be exercised, though the DRE has set out its approach in ESG2 (Environmental Impact Assessment Guidelines, DRE, March 2012).

Once exploration moves to production, then a new petroleum title is required (a Petroleum Production Lease (PPL)), and Development Consent is required under the EPAA. (For certain exploration, Development Consent also is required<sup>40</sup>). The PPL cannot be granted unless the Development Consent is granted. When Development Consent is required, the environmental assessment is conducted as part of the Development Consent application by the Planning Assessment Commission (PAC) or the Department of Planning & Environment (DP&E), not DRE (though DRE has an obligation to do a limited form of environmental assessment under the POA). The EPA Regulation gives explicit authority to the "Director-General" (i.e. Secretary of DP&E) to determine all the matters that must be covered in an environmental impact statement that must be submitted by the operator. The Gateway Assessment and Site Verification Process, part of the NSW Government's Strategic Regional Land Use Policy, also is implemented under the EPAA, but only where the CSG activity requires Development Consent.

The involvement of DP&E in the assessment of CSG production (and some forms of exploration<sup>41</sup>) raises two issues. One is that Development Consent is based on the concept of the development being somewhat static: a development is initiated, constructed and completed. However, CSG development can involve ongoing activity, such as the drilling of large numbers of wells, and the terms of the Development Consent may not necessarily adapt and change as extraction technology changes.

The second is that, although a Development Consent application to produce CSG can be rejected under the EPAA, it is very difficult for DRE to reject an application for a PPL under the POA, because the POA specifically states that a PPL applicant is *entitled* to a lease if they have complied with the terms and conditions of previous licences; the granting of the licence would not contravene other Acts, including the EPAA; and the applicant accepts the conditions of lease.

A third issue, which relates to both exploration and production, is that, although the title granted under the POA may cover a designated area of land, the ability to actually undertake CSG development on that land may be limited by a statutory instrument under the EPAA (the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive*

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<sup>39</sup> The forms of exploration that specifically require Development Consent are: drilling or operating petroleum exploration wells, not including stratigraphic boreholes, or monitoring wells, or a set of 5 or fewer wells that is more than 3 kilometres from any other petroleum well (other than an abandoned petroleum well) in the same petroleum title; and drilling or operating petroleum exploration wells (not including stratigraphic boreholes or monitoring wells) that is carried out in an environmentally sensitive area of State significance (cl 7(2)(f) & (g) of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, made under the EPAA). By extrapolation, forms of exploration which don't meet this definition do not require Development Consent. The Review has not investigated how this distinction is applied in practice.

<sup>40</sup> See footnote 39.

<sup>41</sup> See footnote 39.

*Industries) 2007*), which prohibits CSG development on land within a CSG exclusion zone (i.e. residential zone or future residential growth area) or buffer zone.

As indicated above, the EPAA plays a significant role in regulating CSG, yet unpacking its application and impact is not easy for any lay person. This is one of the reasons for suggesting that there be one single regulator for CSG (see 6.2.4 below).

However, there is an important strategic role for State planning agencies.

With the broad resources at their disposal, the PAC or the DP&E might be charged with the more strategic responsibility of mapping those areas of the State in which CSG, and potentially other subsurface resource extraction, activity might be permitted or prohibited. This would take into account requirements for setbacks (see Chief Scientist & Engineer information paper *Key considerations for addressing conflicting land use interfaces*), water impacts (see Chief Scientist & Engineer reports *Environmental risk & responsibility and insurance arrangements for the NSW CSG industry*, *Placement of monitoring equipment for water resources in NSW*, and *On measuring the cumulative impacts of activities which impact ground and surface water in the Sydney Water Catchment*); and local hydrogeological complexities. Such a map might then be able to be used as the basis of more strategic allocation of rights to explore for or produce CSG, for example through competitive bidding on a cash or work-program basis (see Appendix 1 and section 6.2.4 below). It would not change the requirements for appropriate negotiations with, and compensation to, landholders, but would clearly delineate those areas of the State where CSG operations could occur. In determining designated areas for CSG/resource activity, the planning agencies would be required to draw on appropriate external expertise as necessary.

### **6.2.3 A single resources Act**

A single, overarching Act could be created for, at a minimum, all onshore subsurface resources (except water) to replace the two Acts that currently apply (the *POA* and the *Mining Act 1992*). It could possibly also encompass the two offshore Acts (the *Petroleum (Offshore) Act 1982* and the *Offshore Minerals Act 1999*), though the Review acknowledges there are Commonwealth and interstate issues associated with this. The focus would be on providing a consistent, clear and flexible framework for regulating resource development and activity in NSW over the complete lifecycle of the activity. The Review notes that Queensland is in the process, through the Modernising Queensland Resource Acts Program, of moving to a single resources Act.

Major advantages of a single Act include legislative clarity and consistency in like industries; simplicity in that all emerging resource industries can be covered with the same set of legislation in place of bespoke legislation designed reactively as new resources are exploited; ease of updating when new technologies become available; and regulatory efficiencies.

In light of the findings of this Study and identified limitations of the current POA, the Review recommends that consideration be given to including in revised resources legislation:

- stronger guidance on the criteria for making discretionary decisions
- separation of the process of granting of title (i.e. the exclusive right to explore for and/or produce minerals or petroleum in a specified area of land) from the regulation and approval (by way of licence or permit) of the activities required to conduct that exploration and production
- clear articulation of the matters to be included as conditions of an activity approval (which could include targets and outcomes as well as, or as an alternative to, prescriptive matters, such as compliance with specified codes)
- powers to make codes of practice by regulation and/or directive

- capacity to update conditions during the term of an approval (particularly for approvals of longer than five years' duration), while ensuring that any new conditions are consistent with current conditions.

#### **6.2.4 A single regulator**

A single Act for extractive industries would also provide Government with the framework and, as importantly, the sector scale to reconsider and streamline current regulatory roles and responsibilities.

The Review notes that the number of agencies with which operators must deal to obtain the approvals necessary for CSG activity makes it difficult for the community (and the industry) fully to understand and track the entire regulatory process as it applies to any individual operator. This was a significant factor in the historically confusing picture of regulatory activities in NSW identified in this Study. The Review has noted the 'lead regulator' model applied in Western Australia and the province of Alberta in Canada as a model worth examining by Government (see Appendix 1).

The Review is conscious of a community feeling that no one agency should be both 'the poacher and the gamekeeper', i.e. the approval authority encouraging resource development through the issue of rights or titles for exclusive resource exploration and production in a specified land area, and the regulator setting the conditions of approvals and monitoring compliance with the obligations that come with those approvals. In NSW, the two have been combined in petroleum titles, with further regulation occurring through Development Consents, Environment Protection Licences and Water Licences/Approvals, among others.

The Review notes that there are jurisdictions, such as Alberta, where the rights to explore, produce and profit from State-owned resources on specified land are allocated in a process that is quite separate from that for approval of the activities required to conduct exploration and production. The two processes are managed by two separate agencies, although both ultimately report to the Alberta Minister for Energy. Other jurisdictions also provide for rights to be purchased in a competitive bidding process, sometimes cash-based and sometimes based on the quality of the underlying proposed work plan (see Appendix 1). Most rights must be relinquished if no activity occurs within a designated time; or if the operator repeatedly breaches regulatory requirements.

The Review believes these separate processes have merit, but makes no further comment on the type of Government structure that might engage in the rights allocation process.

From the perspective of regulating activities that occur in pursuit of the rights given under a title, however, the Review believes there are significant advantages to having a single regulator in a whole-of-resource context. These include efficiencies, knowledge sharing and helping address historic role confusion and gaps identified in this report. Well-constructed, a single regulator would have the capacity to draw on expertise both from within and outside Government, while retaining the features of important safeguards already implemented by Government e.g. Environmental Protection Licences.

Having a single regulator means that all issues associated with environmental risks, health risks, water risks and pollution risks would be managed by one regulatory agency. Development Consent, as such, would not be required under the EPAA, but the regulator would take into account all the environmental and other criteria currently considered by the PAC/DP&E in granting resource activity approvals. Some flexibility may be required here. At the exploration level, there appears no reason why this approach would not work. At the production level – at least for CSG which, by definition in the POA, may involve "buildings, plant, waterways, roads, pipelines, dams, reservoirs, tanks, pumping stations, tramways, railways, telephone lines, electric powerlines and other structures and equipment as are necessary", i.e. a scale of infrastructure well beyond what is required for exploration – further

DP&E oversight may be warranted. But it is the activity – drilling a well, erecting a building, constructing a pipeline – which gains approval, not ‘exploration’ or ‘production’ as such.

Principles in developing the role of a single regulator should include simplicity (efficiency); practicality (able to be implemented); and public confidence (lack of conflicts; transparency).

Key characteristics for an effective single regulator would include:

- independence
- scientific and engineering expertise, including geological and geotechnical ability, environmental and water knowledge, and knowledge of ICT matters to do with data, monitoring and modelling
- access to comprehensive, up-to-date and well curated data
- capacity to draw on information and advice from Government agencies and other sources of expertise in making determinations
- mechanisms to build knowledge of risks, through experience and research, with a high level of understanding, in particular, of the evolving risk profiles of individual projects
- strong and experienced regulatory capacity
- transparency in all processes
- full funding from industry levies.

Figure 1 shows the activity approval process that might operate with a single regulator.

Figure 2 sets out the type of process a single regulator might adopt, its powers and responsibilities including:

- establishment and ongoing assessment of environmental and health impacts, safety targets and management plans, and ability regularly to review and optimise these in light of emerging technologies and knowledge, including project and cumulative impacts
- an annual review of risks with consideration given to whether some risks need to be legislated rather than regulated
- approvals
- coordination of compliance activities
- imposition of penalties for non-compliance which are appropriate and proportionate; civil and criminal
- engagement of industry and the community in discussions and negotiations around risk and targets, with appropriate information to inform the conversation.

The single regulator would require support and infrastructure, including access to expert advice, data, risk tools and a communication strategy.

It would also be established with a view to semi-automating approval and monitoring processes, using publicly accessible software and databases. This will help address the poor documentation and record-keeping identified by this report. It will also hold both regulators and the industry accountable to the public, and thereby do much to improve practices on both sides.

A single regulator approach – where the single regulator makes decisions on all activity approvals required – can only be implemented with legislative change to the various Acts involved, in particular the EPAA, the WMA and the PEOA. Thus the scale of legislative reform proposed goes beyond the resources Acts. The proposed approach does not mean that the single regulator makes decisions without advice from other agencies that have relevant expertise, such as the Ministry of Health. For a single regulator model to work, there would need to be a great deal of transparent cooperation between the different regulatory agencies. This could be achieved through a combination of updated legislation and

documented and published protocols establishing governance and agency interaction arrangements. These provisions would specify processes that apply at the approval, monitoring and enforcement stages. At a minimum, advice would have to be received – and published – from key agencies in respect of applications in their primary field of activity.

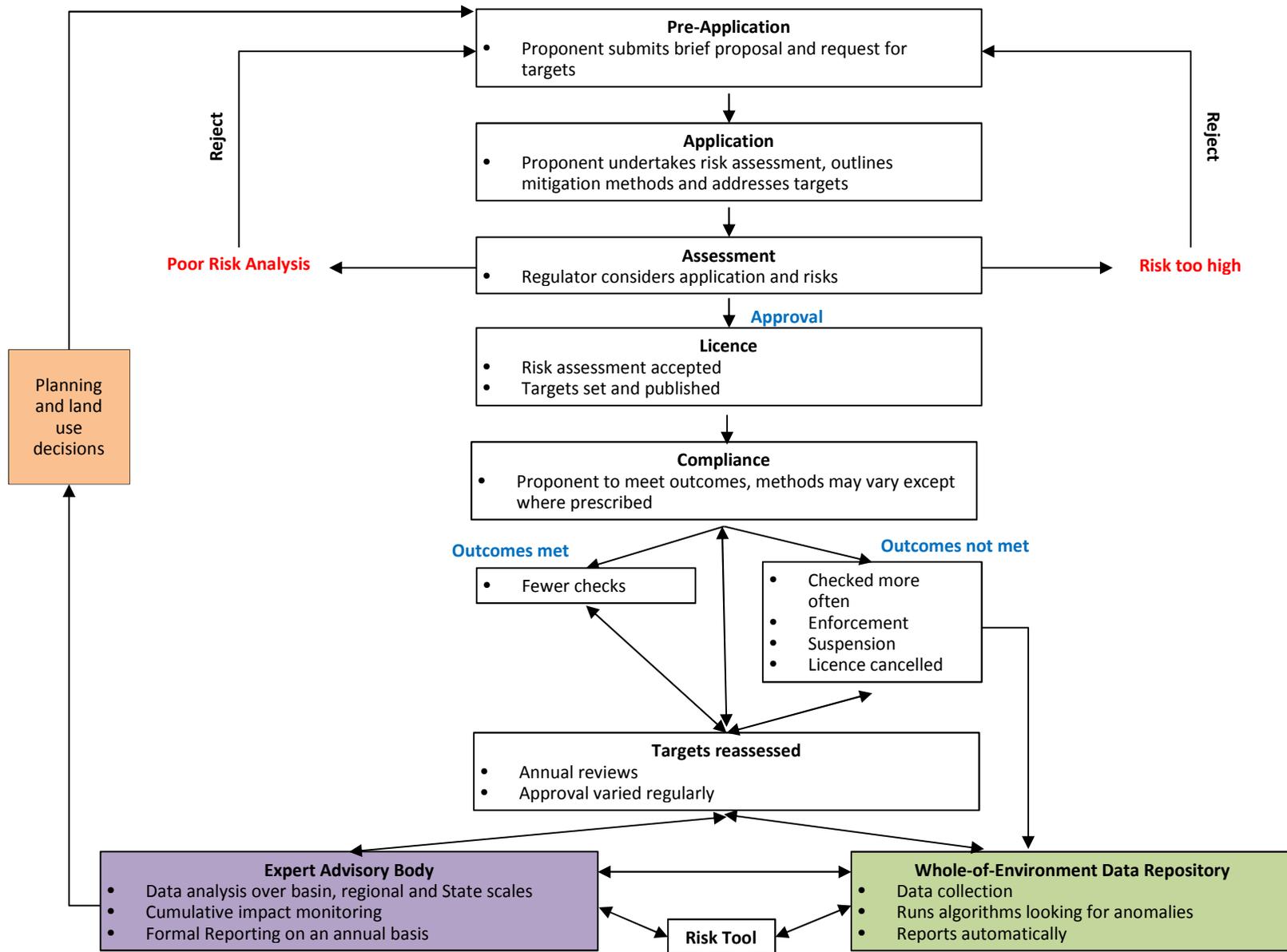


Figure 1: Exploration and Production Activity Application and Compliance Process

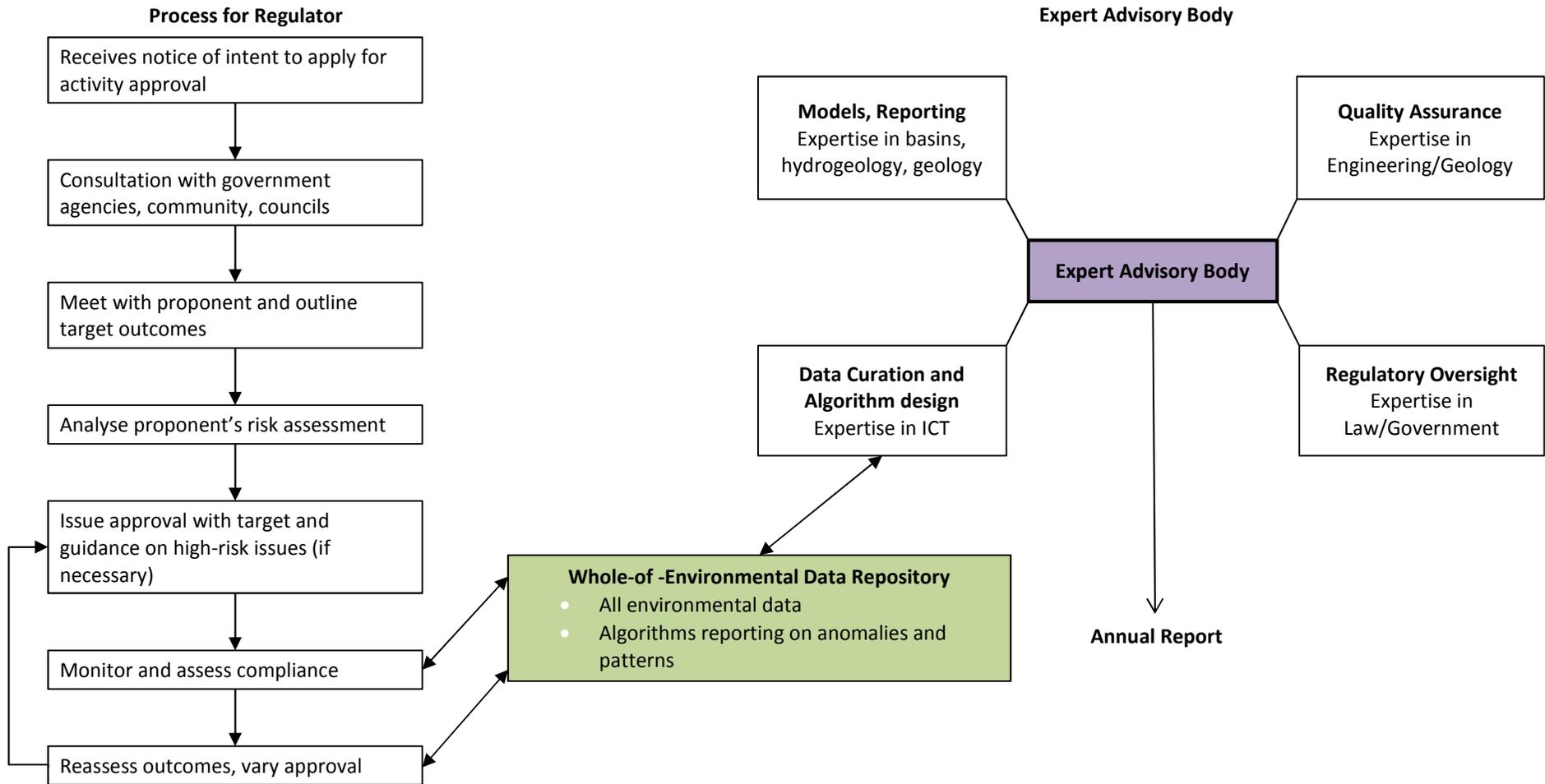


Figure 2: Single regulator process and relationship to expert advisory body

Transparency is also required about the terms and conditions of activity approvals, the reasons for their granting (or refusal), the monitoring processes in place to ensure approval conditions are met, and the content of reports and data submitted by operators. All these components need to be developed in parallel with new legislation, and themselves made legally mandatory.

A single regulator could also draw on the expertise of the State standing expert advisory body on CSG proposed in Recommendation 12 of the Final Report of this Review. This body would be empowered to draw on any knowledge source it deems relevant to provide best available advice, and might provide or commission reports to assist the regulator.

A single regulator would also require access to comprehensive, up to date and well curated data to execute its roles, including assessing risk, setting targets, making determinations on activity approvals and checking compliance. Recommendation 2 of the *Initial Report on the Independent Review of Coal Seam Gas Activities in NSW* recommended that Government commission the design and establishment of a Whole-of-Environment Data Repository (CSE, 2013). The single regulator could potentially be responsible for managing the data repository.

### **6.2.5 A focus on risks and outcomes**

The regulatory system needs to be able to assess and manage efficiently variable risks associated with different sites and allow for the swift uptake of new technologies that can be used to reduce them.

There is increasing interest in outcomes-based regulation for achieving this goal, i.e. a system oriented towards setting parameters (limits and targets) and outcomes for operators to achieve that is based on an assessment of risks, rather than prescriptive regulations that seek to outline all methods to be used to address risk (see Chief Scientist & Engineer Report *Managing environmental and human health risks from coal seam gas activities*). The Review sees merit in this approach for the resource extraction sector, provided the identified outcomes and targets are backed by robust assessment to give the community confidence that environmental and human impacts are identified, risks will be managed, and safety and sustainability achieved.

These approaches are being adopted for the extractive industry sector in various forms in other jurisdictions. For example, the UK employs a 'goal based approach' to managing health and safety risks. Goals are determined by the regulators and it is the operator's responsibility to identify how to achieve them (Royal Society & Royal Academy of Engineering, 2013). The goals may set a range, or lower or upper bound, for acceptable and unacceptable risks. The Queensland Government is moving towards a regulatory strategy that has a focus on outcomes, linked with a streamlined application process, targeted compliance activities, a more consistent application of strong but proportionate enforcement activities, and a specialist knowledge base (linked to industry and academic partners) for all major activities that potentially pollute (Queensland Government, 2014). In NSW, the EPA utilises an outcome-based approach for some Environmental Protection Licence conditions (e.g. noise), with the regulator setting outcomes for impacts, and the licensee demonstrating how these will be met. Although none have been established, the NSW POEA also makes provision for Protection of the Environment Policies (PEPs) to be made, specifying an environmental protection goal, standard, guideline or protocol.

The specific features of other systems, and their relative advantages, will need more detailed consideration. The important principle is to put emphasis not on *how* a proponent is to manage risks, but instead specify the *outcomes* which the proponent must attain.

The Review found that some identified risks arising from CSG activities can be managed by good engineering and regulatory control. Others risks are less well understood or may not be

conducive to set/optimal management and require an adaptive management approach. The Chief Scientist & Engineer's report on *Managing environmental and human health risks from CSG activities* proposes a centralised risk management knowledge base or register and prediction tool specific to the extractive industries to assist in the latter.

The register and tool would provide a dynamic capability, drawing on existing and emerging knowledge and data regularly updated from industry, the research sector and regulatory findings to inform the regulatory process itself, from setting standards, limits and targets; testing risk predictions against actual occurrences; assessing compliance; and updating lead practice.

### **6.2.6 Good communication and building trust**

Critical to a new regulatory regime must be absolute clarity and transparency about the entire regulatory process.

It is essential that the Whole-of-Environment Data Repository be set up as an open access facility, so that any member of the community can refer to and research the information it contains, and so develop trust that both the Government and industry are acting responsibly.

Also required is, in effect, an extractive resources regulatory communication plan which would encompass informative and user-friendly websites, with a wide range of readily accessible information, including process maps and guidelines to the legislative approvals required, encompassing all obligations/steps/possible outcomes under all applicable legislation and legislative subordinate instruments. Such maps should cross-reference whether the matter is from a legislative source (and, if so, which) or a departmental decision/practice (and if so, on what authority it was made) or an inter-agency protocol (and if so what and where it is published), so that the regulatory requirements can be clearly identified and understood by industry, the general community and the regulators.

These maps will aid industry, by stepping them through their obligations in a clear and coherent fashion; the general community, by providing information and enabling community members to understand the processes, see how they are applied and make suggestions for change on an informed basis; and the regulatory agencies, helping them ensure their administrative processes meet the needs of the legislation and the expectations of the community.

## **6.3 THE VALUE PROPOSITION**

To be accepted and effective, the proposed regulatory reforms need to demonstrate value for Government, industry and the broader community.

### **6.3.1 Government**

The proposed reforms are designed to address key systems weaknesses identified in this report, including a lack of cohesion, role confusion and in many cases, lack of articulated goals or requirements at the 'front end' of the system. They are also consistent with the NSW Government principles for better regulation ([http://www.dpc.nsw.gov.au/programs\\_and\\_services/better\\_regulation](http://www.dpc.nsw.gov.au/programs_and_services/better_regulation)) and the Government's Quality Regulatory Services initiative (Policy C2014-06) announced in 2014. The initiative requires regulators to focus on outcomes, including alignment with legislative objectives; and to adopt a risk-based approach to compliance and enforcement. Regulators also are required to report regularly on progress to the Department of Premier and Cabinet (DPC, 2014a).

Under the reforms, Government focus would be on: articulating objectives and targets, drawing on expertise available through Government agencies, the proposed State standing

expert advisory body on CSG, industry practice and the research sector; compliance effort to ensure targets are being met and enacting appropriate penalties where they are not; and applying data and emerging knowledge to improved standards and regulatory practice. Approval and review processes should be more streamlined, with greater compliance focus on poor performance or activities in areas of greater uncertainty and higher risk. Responsibility for performance and meeting targets lies directly with industry.

### **6.3.2 CSG operators**

A key concern expressed to the Review was a lack of clear and consistent direction from Government. In exchange for strict penalties and a compliance-focus, the reforms should provide operators with: much faster (and statutorily timed) approvals; the ability to set their own approaches to meeting targets; fewer compliance hurdles for operators with a track record of good behaviour; and a single point of entry to the system.

### **6.3.3 Community**

The proposed reforms are designed to provide the broader community with a transparent, simple and easy to follow system, with clear targets and plain language summaries of methods to meet targets. Open data, and publication of proposals, data, decisions and reasons for decisions should provide a platform for informed discussion about issues and their resolution. In addition, community input is explicitly welcome in setting targets (particularly where areas of local importance or heritage are to be protected) and in the land-use decisions.

## **6.4 RECOMMENDATIONS**

This report of regulatory compliance concludes that the complexities of the current regulatory system poses a risk, and that there is a need for a strong, well-structured and articulated regulatory and compliance regime. Such a regime would set the framework for safe and effective operations by companies.

The Review acknowledges that the issues associated with CSG regulation and resources regulation generally will remain complex. But this does not preclude coherence and clarity in the legislation, through having a clear vision of legislative objectives in a whole-of-Government framework, coupled with use of plain English and contemporary drafting techniques; in the regulatory process, through clear and documented allocation of responsibilities within and between agencies, proper training of regulatory staff, and thorough processes and timelines for action; and in communication to the wider community, through transparent and readily available process mapping, guidelines and regular updates on all aspects of regulatory activity from approvals through to compliance monitoring and enforcement.

### **Recommendation 1**

That Government use its planning powers and capability to designate those areas of the State in which CSG activity is permitted to occur, drawing on appropriate external expertise as necessary.

### **Recommendation 2**

That Government move to a single Act for all onshore subsurface resources (excluding water) in the State, constructed to allow for updating as technology advances. This will require a review of all major Acts applying to the resources sector.

### **Recommendation 3**

That Government separate the process for allocation of rights to exploit subsurface resources (excluding water) from the regulation of the activities required to give effect to that exploitation (i.e. exploration and production activities); and that it establish a single independent regulator. The regulator will require high levels of scientific and engineering expertise, including geological and geotechnical ability, environmental and water knowledge and information, and ICT capability including data, monitoring and modelling expertise; and will be required to consult – and publish details of its consultations – with other arms of Government and external agencies, as necessary. The regulator will also require appropriate compliance monitoring and enforcement capability.

### **Recommendation 4**

That Government move towards a target and outcome-focused regulatory system, with three key elements:

- regularly reviewed environmental impact and safety targets optimised to encourage uptake of new technologies and innovation
- appropriate and proportionate penalties for non-compliance
- automatic monitoring processes that can provide data (sent to and held in the openly accessible Whole-of-Environment Data Repository) which will help detect cumulative impacts at project, regional and sedimentary basin scales which can be used to inform the targets and the planning process.

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## Acronyms

<b>AEMR</b>	<b>Annual Environment Management Report</b>
<b>AEPR</b>	Annual Environmental Performance Report
<b>COMET</b>	Common Mines Environment
<b>CSE</b>	NSW Chief Scientist & Engineer
<b>CSG</b>	Coal seam gas
<b>DG</b>	Director General
<b>DP&amp;E</b>	NSW Department of Planning and Environment
<b>DRE</b>	NSW Trade & Investment – Division of Resources and Energy
<b>EL</b>	Exploration Licence
<b>EPA</b>	Environmental Protection Authority
<b>EPL</b>	Environment Protection Licence
<b>GWL</b>	Groundwater Licence
<b>MOP</b>	Mining Operations Plan
<b>NOW</b>	NSW Office of Water
<b>OCSE</b>	Office of the NSW Chief Scientist & Engineer
<b>OCSG</b>	Office of Coal Seam Gas
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OHS</b>	Occupational Health and Safety
<b>PAL</b>	Petroleum Assessment Lease
<b>PEL</b>	Petroleum Exploration Licence
<b>PPL</b>	Petroleum Production Lease
<b>POA</b>	Petroleum (Onshore ) Act 1991
<b>PEOA</b>	Protection of the Environment Operations Act
<b>POP</b>	Production Operations Plan
<b>RPC</b>	Regulatory Policy Committee (OECD)
<b>SMP</b>	Safety Management Plan
<b>SOPEPSR</b>	Schedule on Onshore Petroleum Exploration and Production Safety Requirements
<b>SSD</b>	State Significant Development
<b>WA</b>	Water Act 1912
<b>WCR</b>	Well Completion Report
<b>WMA</b>	Water Management Act 2000
<b>WMP</b>	Water Management Plan

## Explanatory notes: legislation and licences

### Petroleum (Onshore) Act 1991

Anyone prospecting for or mining petroleum requires a petroleum title. It is an offence to “prospect for or mine petroleum” except in accordance with a petroleum title, punishable by fine or imprisonment (s7).

Petroleum title (PT) means an:

- exploration licence (PEL),
  - assessment lease (PAL),
  - production lease (PPL) or
  - special prospecting authority (SPA)
- in force under the Act (s3(1)).

All petroleum titles are renewable, subject to application and approval.

A **PEL** confers the exclusive right to prospect for petroleum (s29). “Prospect” is defined as: to carry out works on, or to remove samples from, land for the purpose of testing the quality and quantity of petroleum in the land and the potential to recover petroleum from the land, but does not include any activity declared by the regulations not to constitute prospecting (s3(1)). [Note: The Petroleum (Onshore) Regulation 2007 does not declare any activity not to constitute prospecting.] Its term is a maximum of six years.

A **PAL** confers the exclusive right to “prospect for petroleum and to assess any petroleum deposit on the land comprised in the lease” (s33). As the Act states in a Note, a PAL is designed to “allow retention of rights over an area in which a significant petroleum deposit has been identified, if mining the deposit is not commercially viable in the short term but there is a reasonable prospect that it will be in the longer term. The holder is allowed to continue prospecting operations and to recover petroleum in the course of assessing the viability of commercial mining”. Its term is a maximum of six years.

A **PPL** confers the exclusive right to “conduct petroleum mining operations in and on the land included in the lease together with the right to construct and maintain on the land such works, buildings, plant, waterways, roads, pipelines, dams, reservoirs, tanks, pumping stations, tramways, railways, telephone lines, electric power lines and other structures and equipment as are necessary for the full enjoyment of the lease or to fulfil the lessee’s obligations under it” (s41). Its term is a maximum of 21 years.

A **SPA** confers the exclusive right to “conduct speculative geological, geophysical or geochemical surveys or scientific investigations on and in respect of the land comprised in the authority” (s38). Its term is a maximum of 12 months.

### Water Act 1912

The Water Act 1912 is being progressively phased out to be replaced by the Water Management Act 2000. Where the Water Act 1912 does not apply, the Water Management Act 2000 applies.

**Water Management Act 2000** The Water Management Act 2000 is being progressively phased in to replace the Water Act 1912. At present the new licensing and approvals system is in effect in those areas of NSW covered by operational water sharing plans. As water sharing plans are finalised and commenced for the rest of the state, the licensing provisions of the Act are introduced. Where the Water Management Act 2000 does not apply, the Water Act 1912 applies.

**Water Access Licence (WAL):** Anyone *taking* water from a water source requires a Water Access Licence. Taking water without a Water Access Licence is an offence (s60A(1)). The Act is specific about what constitutes taking water in the context of mining activity (which includes petroleum exploration and production): “A person who takes water in the course of carrying out a mining activity is taking water from a water source”. Water Access Licences are issued in perpetuity.

**Water Use Approval (WUA):** Anyone using water also requires a Water Use Approval. This confers a right to use water for a particular purpose at a particular location. Using water without an approval is an offence (ss89-91A). There are five different kinds of approval, in two categories:

<u>Water management work</u>	<u>Activity</u>
Water supply work	Controlled activity
Drainage work	Aquifer interference
Flood work	

The term of an approval is up to 10 years, but extensions must be granted unless the conditions have been breached or the relevant water management plan or the regulations provide for the request to be assessed as a new application (s105).

**Groundwater Licence (GWL):** Sinking a bore without a licence is an offence (s112). A bore means “any bore or well or any excavation or other work connected or proposed to be connected with sources of sub-surface water and used or proposed to be used or capable of being used to obtain supplies of such water whether the water flows naturally at all times or has to be raised either wholly or at times by pumping or other artificial means...” (s105). While the Act does not use the term, these licences are known as Groundwater Licences. According to NOW’s *Guidelines on applying for a water licence under the Water Act 1912* (<http://www.water.nsw.gov.au/Water-Licensing/About-licences/Water-Act-1912/default.aspx>), commercial groundwater licences generally require a meter to be installed and have an annual extraction limit. They are normally renewable every five years.

### **Protection of the Environment Operations Act 2000**

The Protection of the Environment Operations Act 1997 (PEO Act) is the key piece of environment protection legislation administered by the EPA. Environment Protection Licences are issued under the PEO Act.

**Environment Protection Licence (EPL):** Carrying out a scheduled activity without an Environment Protection Licence is an offence (s49). EPLs have no fixed end point. However, they must be reviewed at least every 5 years; and there must be a public notice of the review (s78).

### **Environmental Planning and Assessment Act 1979**

Planning and development is carried out under the Environmental Planning and Assessment Act 1979 (EP&A Act). Development Consents are issued under the EP&A Act.

**Development Consent (DC):** Carrying out a development without Development Consent is an offence, if an environmental planning instrument requires Development Consent for that development (s76A, s125). The State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) (an environmental planning instrument) states that Development Consent is required for some petroleum exploration and all petroleum production development (clause 7(2)).

## APPENDIX 1: NATIONAL AND INTERNATIONAL REGULATORY PRACTICE: SOME OBSERVATIONS

Throughout the Independent Review of Coal Seam Gas Activities in NSW being undertaken by the NSW Chief Scientist & Engineer, the Review has noted that the legislation and regulatory framework around CSG in NSW is complex and opaque.

The Review's Interim Report recommended that the NSW Government commit to "establishing a regime for extraction of coal seam gas that is world class", and pointed out that this involves a "clear, easy-to-navigate legislative, compliance and monitoring framework" and a "transparent and effective regulatory and monitoring system" (CSE, 2013).

To assist with identifying the features of a world class regulatory system, the Review undertook a desktop analysis of selected legislative and regulatory regimes in Australia and overseas applying to conventional and unconventional gas extraction industries, and the approaches taken to regulating and managing such industries.

For various reasons, the regulatory means and approaches vary, and no one jurisdiction can serve as a model for the entirety of NSW's particular needs and issues. However, the Review considers that aspects of some jurisdictions' practices are noteworthy, and deserving of further consideration by Government. This study's primary purpose is to highlight these practices, and suggest they be further considered for possible implementation in NSW.

### Consideration Points

- Base any new or revised regulatory framework for CSG in NSW on enunciated principles for regulatory practice, with a possible starting point those underpinning the South Australian framework as described in its *Roadmap* (section 3)
- Benchmark other jurisdictions and develop a resources regulation communication plan to enable a best-practice approach to the communication strategies, information and resources required to understand, apply and monitor the CSG regulatory framework and activities undertaken within it, including information to clearly identify regulatory agency structure and responsibilities and clarify reporting, compliance and enforcement rules and/or directives (section 4)
- Consider implementing mechanisms to ensure that legislation and regulations can evolve as needed to adequately manage a growing industry including: updating and clarifying legislation and subordinate instruments in light of both policy and technical changes; reviewing and updating agency roles and responsibilities; promoting and disseminating the changes (section 5.1)
- Consider an arm's length structure for oil and gas regulators in NSW that is funded by revenue directly from the industry (section 5.2)
- Examine how other jurisdictions manage the perceived conflict between the development approval role and the regulatory role in the regulating government agencies (section 5.3)
- Benchmark the processes for resource approval and regulation with the practices of other jurisdictions (section 5.3)
- Review the relationships between regulatory agencies and ensure there are publicly available, articulated arrangements in place (e.g. in Memorandums of Understanding pursuant to legislation) where responsibilities may overlap; and ensure that any such relationships govern responsibilities for monitoring, compliance and enforcement as well as approval processes (section 5.4)

- Distance the agency which collects royalties and fees from those which regulate operations and ensure compliance and enforcement (section 5.5)
- Ensure the royalty framework is strong, and that quantum of royalties is appropriately publicised (section 5.5)
- Investigate the introduction of clear and transparent work-program-based, competitive tendering processes in designated areas, with or without a cash bidding component (section 5.6)
- Establish online reporting and data collection systems that allow data exchange within and between government departments and the public (section 6.1)
- Consider whether processes are optimum for the general community to be encouraged to report issues, concerns, emergencies and possible incidents of noncompliance (section 6.2)
- Benchmark other jurisdictions, to ensure the compliance framework – including a plan with timelines for the nature and format of reports, and responsibilities and timelines for reviewing required information, monitoring that timelines are met, and auditing compliance – is best practice (section 6.3).

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## 1. Introduction

Since its commencement, the Review has been interested in the regulatory environment applying to CSG, and in the practices of other jurisdictions.

The Initial Report of the Review (CSE, 2013) recommended (Recommendation 1) “That the Government commits to establishing a regime for extraction of coal seam gas that is world class”. Identified elements of a world class regime included:

- a “clear, easy-to-navigate legislative, compliance and monitoring framework that evolves over time to incorporate new engineering and science developments”
- “a vigilant, transparent and effective regulatory and monitoring system to ensure the highest standards of compliance and performance by the CSG industry”
- “high levels of transparency” (CSE, 2013).

Recommendation 1 was based on submissions received from both sides of the CSG debate that “the legislation and regulations around CSG in NSW are complex and opaque. This situation can lead to considerable regulatory burden for those needing to comply and those judging compliance, and can conceivably lead to gaps, overlaps, contradictions, and wasted time in inefficient oversight” (CSE, 2013).

The more clarity there is in the regulatory instruments, the less complexity there is to navigate. The Review acknowledges that a level of regulatory complexity is unavoidable, given that the industry itself is complex, being distributed over different types of land with different usages and communities, with a highly technical set of activities occurring both above and below ground, and typically with several different agencies responsible for its regulation.

The findings of this study emphasise the need for regulatory agencies to provide comprehensive and clear guidelines and background information on the implementation of the requirements of the regulatory instruments.

Clear communication and transparency of the entire regulatory process, from approval through to compliance and enforcement, is of paramount importance.

## Approach

A desktop review was undertaken of selected legislative and regulatory regimes in Australia and overseas applying to conventional and unconventional gas extraction industries, and the approaches taken to regulating and managing such industries.

Six jurisdictions were examined, three in Australia (Queensland, South Australia and Western Australia), and one each in the United Kingdom (England), the USA (Colorado) and Canada (Alberta). Queensland has a significant unconventional gas industry in place and South Australia and Western Australia have significant onshore and offshore conventional gas extraction industries with growing levels of unconventional gas exploration. England has a developing shale gas industry. Alberta and Colorado are significant oil and gas producers, with both having substantial conventional natural gas and coalbed methane (CSG) industries and an emerging shale gas industry.

As with NSW, all the regulatory regimes are complex. All jurisdictions have in common a legislative regulatory framework, involving acts, regulations and various subordinate instruments, which is implemented by government agencies and involves:

- rights and approvals, with conditions and controls on a range of matters including safety and the environment
- monitoring, reporting, compliance and enforcement processes.

The actual regulatory means used are influenced by factors like the region's resource development history, existing legislation, and existing legal and administrative structures, and there are considerable differences in the actual approaches taken. Consequently direct comparisons are not necessarily enlightening or possible. However, the Review considers that aspects of some jurisdictions' practices are noteworthy, and deserving of further consideration by Government. This report's primary purpose is to highlight these practices, and suggest they be further considered for possible implementation in NSW.

## Structure of Paper

The remainder of this paper summarises and reports on findings from a review of practices in other jurisdictions relevant to regulatory issues identified during the course of the Review:

**Chapter 2** reports on good regulatory principles underpinning contemporary regulatory practice and associated practice guides

**Chapter 3** outlines communication strategies used to inform both industry and the general public about the legislative framework and regulatory processes

**Chapter 4** reports on governance and funding arrangements for managing the inherent complexity of regulating extractive industries

**Chapter 5** reports on monitoring, reporting, compliance and enforcement strategies utilised to efficiently and effectively oversee industry practice.

## 2. Good regulatory principles and practice guides

In conducting its examination of CSG regulatory environments, the Review was mindful of contemporary regulatory practice. A number of international guides are available, including the OECD's *Recommendation of the Council on Regulatory Policy and Governance* (OECD, 2012), and *The Governance of Regulators: OECD Best Practice Principles for Regulatory Policy* (OECD, 2014b). These are both referred to in the Australian National Audit Office's recent *Better Practice Guide: Administering Regulation, Achieving the Right Balance* (ANAO, 2014).

The Review has noted the recent production by the NSW Department of Premier and Cabinet of *Guidance for regulators to implement outcomes and risk-based regulation* (DPC, 2014b). It includes a short international bibliography of literature on risk-based compliance and enforcement, and outcomes-based reporting, though does not refer to the above reports.

There are also a number of Australian and international publications which discuss the regulation of petroleum and/or unconventional gas. These include the International Energy Agency's *Golden Rules for a Golden Age of Gas* (IEA, 2012); and the UK Department of Energy and Climate Change's (DECC) series on *Onshore oil and gas exploration in the UK: Regulation and best practice* – one for each country in the UK (DECC, n.d.). Within Australia, the South Australian Government's *Roadmap for Unconventional Gas Projects in South Australia* (DMITRE, 2012b) contains six principles for regulatory best practice, which were reproduced in a paper on *Regulatory Best Practice for Coal Seam Gas in Queensland – A Briefing Paper*, prepared by the University of Queensland's Centre for International Minerals and Energy Law (Hunter & Taylor, n.d.). These are:

1. **Certainty.** The regulatory objectives are uniform, clear, and predictable for all stakeholders.
2. **Openness.** Stakeholders are appropriately consulted on the establishment of the regulatory Objectives.
3. **Transparency.** The regulatory decision-making processes are visible and comprehensible to all stakeholders and industry performance in terms of compliance with the regulatory objectives is clear to all stakeholders.
4. **Flexibility.** The level of regulatory scrutiny, surveillance and enforcement needed to ensure compliance is determined on the basis of individual company compliance capability and the outcomes to be achieved.
5. **Practicality.** The regulatory objectives are achievable and measurable.
6. **Efficiency.** The compliance costs imposed on both government and the licensee by the regulatory requirements are minimised and justified. Negative impacts on communities are minimised, and licensees remain liable for the cost of their impacts. Furthermore, an appropriate rent (Royalty) is paid to the community from the value realised from the development and production of its natural resources (DMITRE, 2012c).

The current approaches to regulation of petroleum exploration and development in Western Australia have their genesis in the 2002 review of that state's project development approvals system by an Independent Review Committee chaired by Dr Michael Keating AC (Government of Western Australia, 2002). It found that

Each area of approvals has been found to serve a proper public purpose ... .  
However, the Committee did find ample proof that there are problems in the current system as a whole. The root of the problem is the complexity inherent in a system that has grown in response to demands of the day, rather than to a plan. Governments have continuously added new approvals through legislation without properly, if at all, considering how they fit together into a process.

The recommendations of the Keating report were in part implemented between 2003 and 2005, but further reviews since then (by the Auditor-General in 2008, an Industry Working Group in 2009, the Chamber of Minerals and Energy of Western Australia in 2011, the

Association of Mining and Exploration Companies and a Ministerial Advisory Panel in 2012 (DMP, 2012b)) have prompted a “reforming environmental regulation” project in Western Australia, which is under way (DMP, n.d.-b).

The Review observes that the statement in the Keating report extracted above could apply to many jurisdictions, including NSW.

All the reports referred to above have observations about the principles that should underpin approval practices. Notable is the Keating report’s emphasis on the need for a development approval system that is “better able to accommodate the emerging demands that resource development should be compatible with sustainability” (Government of Western Australia, 2002).

The NSW Independent Commission Against Corruption (ICAC) report *Reducing the Opportunities and Incentives for Corruption in the State’s Management of Coal Resources* (ICAC, 2013), has lessons in the unconventional gas space as well. Its Recommendations 1 and 2 call for the government to be clear about the principles underpinning the allocation of coal, and could equally well apply to CSG.

Recommendation 1: That the NSW Government sets out the objectives, priorities and outcomes it wants to achieve from the allocation of the state’s coal resources. These should demonstrate consistency and alignment with the goals of the NSW 2021 state plan and the ‘make NSW number one’ strategy.

Recommendation 2: That the NSW Government develops a set of predetermined factors to provide guidance in the release, allocation and development of NSW coal resources. These factors must be given consideration by all decision-making bodies involved in the process.

The ICAC cited the Initial Report of the Review (CSE, 2013) and its finding that “the rapid growth of the coal seam gas industry, together with complex and opaque legislation and processes, land use conflicts and poor communication with stakeholders, has led to deep community mistrust of both the industry and government” (ICAC, 2013).

The Productivity Commission also included discussion of best practice regulatory principles in its *Review of Regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector* (Productivity Commission, 2009), with particular reference to the “six principles of good regulatory practice” enunciated in *Rethinking Regulation: Report of the Taskforce on Reducing Regulatory Burdens on Business in 2006* (Regulation Taskforce, 2006).

Those six principles (as paraphrased by the Productivity Commission) are:

- Governments should not act to address ‘problems’ through regulation unless a case for action has been clearly established. This should include evaluating and explaining why existing measures are not sufficient to deal with an issue.
- A range of feasible policy options – including self-regulatory and co-regulatory approaches – needs to be assessed within a benefit–cost framework, including analysis of compliance costs and, where relevant, risk.
- Only the option that generates the greatest net benefit for the community, taking into account all the effects, should be adopted.
- Effective guidance should be provided to regulators and regulated parties to ensure that the policy intent of the regulation is clear, as well as what is needed to be compliant.
- Mechanisms such as sunset clauses or periodic reviews need to be built in to legislation to ensure that regulation remains relevant and effective over time.
- There needs to be effective consultation with regulated parties at the key stages of regulation-making and administration (*Productivity Commission, 2009*).

### Consideration point:

- Base any new or revised regulatory framework for CSG in NSW on enunciated principles for regulatory practice, with a possible starting point those underpinning the South Australian framework as described in its *Roadmap* (DMITRE, 2012b).

### 3. Communicating the regulatory framework

As stated above, regulatory regimes in the petroleum/conventional gas/unconventional gas space, no matter which jurisdiction applies, are complex. The more assistance provided by governments in communicating and unravelling these complexities the better. The need for comprehensive communication about the NSW regulatory framework has been consistently emphasised to the Review by both industry and the general community.

Complexity in itself is not a reason for limiting lay descriptions of the legislative framework. With the aid of sound process maps, comprehensive guidelines and step-by-step procedures, backed up by fact sheets and other information resources, governments can provide clear information, accessible to both industry and the general community, on all relevant regulatory requirements and processes. Modern technology, such as websites, databases, interactive applications and social media, mean that communication possibilities are almost unlimited.

The UK has an intricate regulatory system which incorporates European Commission legislation and is administered by multiple regulating authorities at both national and local levels. The UK has prepared ‘roadmaps’ for each of its four countries. The one for England is

intended as a first point of reference for anyone seeking to understand the permitting and permissions process for exploratory work in oil and gas development, onshore in the UK. ... It is intended to offer an introduction to and guidance on planning and permitting. ... Development of the roadmap has been coordinated by the Office of Unconventional Gas and Oil (OUGO), a new UK Government office that aims to promote the safe, responsible and environmentally sound recovery of the UK’s unconventional reserves of gas and oil. The roadmap has been developed through collaboration with other Government departments, Devolved Administrations and other interested parties in order to provide UK-wide guidance on onshore gas and oil development (*DECC, n.d.*).

The roadmaps are a comprehensive first step, clearly written (despite their subject matter being complex), and a useful model for other jurisdictions.

South Australia and Colorado also have extensive website-based information, including detailed flow charts (AER, 2011, 2014b; COGCC, n.d.-c; DECC, 2012, n.d.; DMITRE, 2013). (The presentation of the Colorado site is not an exemplar, but it has committed to a re-design in late 2014 (COGCC, 2014)). Colorado’s flow chart, which is limited to the “regulatory process for permitting and tracking an oil or gas well” includes the helpful offer that “If you wish, we can prepare a subsequent memorandum to summarize additional components of the OGCC’s [Colorado Oil and Gas Conservation Commission (COGCC)] regulatory program for oil and gas wells, which go beyond the submittal and review of these forms” (COGCC, n.d.-c). Western Australia is working to finalise a Regulatory Framework document for release this year.

Alberta also provides considerable information on approval requirements on its website (AER, 2011, 2014b). Its legislative framework is complex, but its website contains detailed information about how it works. There is also regular communication about updates to the regulatory environment through its weekly Regulatory Change Report, which provides information about planned, in progress or completed regulatory changes (AER, 2014e). In Colorado, rules and updates appear on the COGCC website as they occur, and so-called

Staff Reports, which function as newsletters on the commission's activities, 8-10 times per year. The COGCC and the Department of Public Health and the Environment allow interested parties to receive oil and gas regulatory updates via email (CDPHE, 2014; COGCC, n.d.-a).

During preparation of this report, the Review noted a steady improvement in the quantity, quality and type of information on petroleum and CSG published on the NSW Resources & Energy (DRE) website, including the recent consolidation of information on CSG (<http://www.resourcesandenergy.nsw.gov.au/>). However, there is still scope for more comprehensive information to be presented. It is understood that DRE is developing a web application for release this year that will enable easier public access to the processes associated with coal mining, petroleum, gas and mineral extraction, as well as maps of leases, gas well locations and links to some licence documentation.

The Review encourages clarity and transparency about the entire regulatory process. The piecemeal process currently in operation – a problem which the desktop review shows is not limited to NSW – suggests development of a resources regulation communication plan would be desirable. The goal would be comprehensive, clear websites, with a wide range of readily accessible information, including process maps and guidelines to the legislative approvals required encompassing *all* obligations/steps/possible outcomes under *all* applicable legislation and legislative subordinate instruments. In order for the regulatory requirements to be clearly identified and understood by industry, the general community and the regulators, such maps should cross-reference the following: whether the matter is from a legislative source (and if so, which), or is a departmental decision/practice (and if so, on what authority it was made), or is an inter-agency protocol (and if so, what and where it is published). This will aid industry, by stepping them through their obligations in a clear and coherent fashion; the general community, by providing information and enabling community members to understand the processes, see how they are applied and make suggestions for change on an informed basis; and the regulatory agencies, which can ensure their administrative processes meet the needs of the legislation and the expectations of the community.

#### **Consideration point:**

- Benchmark other jurisdictions and develop a resources regulation communication plan to enable a best-practice approach to the communication strategies, information and resources required to understand, apply and monitor the CSG regulatory framework and activities undertaken within it, including information to clearly identify regulatory agency structure and responsibilities and clarify reporting, compliance and enforcement rules and/or directives (Exemplars: Western Australia, Alberta, Colorado)

## **4. Rights and approvals, conditions and controls**

### **Regular review and updating of regulatory instruments**

A transparent system of information dispersal on regulatory review allows interested parties to have input into proceedings as they occur, or adapt existing business practices and expectations to reflect regulatory changes.

It appears that most jurisdictions take a generally *ad hoc* approach to regulatory review, although most, including Queensland, South Australia, Western Australia and Alberta, have recently undertaken or are currently undertaking reviews of their regulatory frameworks. In Alberta, there is a dedicated regulatory operations and economics section within the Alberta Energy Regulator (AER) which “implements practical operating procedures for regulatory development ...” (AER, 2014c).

In Queensland, the relatively new independent statutory authority, the GasFields Commission Queensland, has a number of functions, two of which are:

Making recommendations to the relevant Minister that regulatory frameworks and legislation relating to the onshore gas industry be reviewed or amended;

Making recommendations to the relevant Minister and onshore gas industry about leading practice or management relating to the onshore gas industry ... (Gasfields Commission Act 2013 (*Queensland*), s7(d),(e)).

The Commission's publications include a table of "legislation, standards and codes governing the onshore industry" as at April 2013 (GasFields Commission Queensland, 2013).

The Commission was the result of an election promise by the incumbent government (*Record of Proceedings*, 2013). Its seven members are appointed by the Government. There must be at least one commissioner respecting each of three specified interests, namely landholders, communities in which the onshore gas industry operates, and the onshore gas industry itself; and the commissioners must have qualifications and experience in any of "industry, science, legal, negotiations, land management and valuation, community development and the financial and business sector". These requirements have led to the Review hearing criticisms that the Commission has an in-built bias towards the gas industry. As it has only been in operation a short time, its effectiveness, both as a truly independent agency and as a regulatory review organisation, cannot yet be assessed.

OCSG has advised the Review that it has commenced work to inform a review of the *Petroleum (Onshore) Act 1991*. The Review encourages the provision of a consistent, clear and flexible framework for regulating CSG and petroleum. In fact the Review can see the benefit of a single coherent and coordinated approach to regulation of all resources in the State but emphasises the need for a whole-of-government approach to resource regulation. Also needed is an ongoing, clear review process spanning key legislative instruments, incorporating public feedback, so that operators and the community can keep up to date with intentions and new proposals and can provide feedback on current practices and suggestions for improvement.

To the extent that conditions form part of an approval to conduct a CSG activity, there also need to be mechanisms to enable those conditions to be updated in light of changing good practice standards, emerging technologies, and new policy imperatives. To this extent, target- and outcomes-based conditions have considerable merit, as being less likely to require change.

The Review has noted that oil and gas activities in Alberta are operated primarily by way of regulation and directive. A Regulatory Change Report is published weekly, with extensive information about planned, in progress, completed and suspended regulatory changes (AER, 2014e).

It is noteworthy that Alberta, Colorado and Queensland all have specific regulations which have featured in the International Energy Agency's (IEA) "Annex of Regulation and Best Practice for Developing Unconventional Gas" as part of its *Golden Rules for a Golden Age of Gas* (IEA, 2012).

#### **Consideration point:**

- Consider implementing mechanisms to ensure that legislation and regulations can evolve as needed to adequately manage a growing industry including: updating and clarifying legislation and subordinate instruments in light of both policy and technical changes; reviewing and updating agency roles and responsibilities; promoting and disseminating the changes (Exemplars: Alberta, Colorado).

## **Governance and funding of the regulator**

Oil and gas operations in Australia in the main are regulated by Government departments. However, related areas, such as environmental protection, are managed in South Australia and NSW through Environment Protection Authorities which are statutory authorities. The reasons for establishing these as independent authorities with their own boards warrant re-examination, with a view to possibly applying the model to other regulators.

One example of an independent entity regulating oil and gas is the AER. It is understood this model is quite common in North America. Whilst the Regulator reports directly to the Alberta Minister of Energy, it has a separate Board of Directors. The minimum Board membership is three, though currently it is seven. All members are appointed by the Government, which also determines their remuneration. The independent structure is intended to “place the regulator at arm’s-length from government, ensuring that individual decisions on applications are made independently” (Government of Alberta, 2011).

The Minister is, however, able to give directions to the Regulator for the purposes of:

- (a) providing priorities and guidelines for the Regulator to follow in the carrying out of its powers, duties and functions, and
- (b) ensuring the work of the Regulator is consistent with the programs, policies and work of the Government in respect of energy resource development, public land management, environmental management and water management (Responsible Energy Development Act, s.67(1)).

All regulators, of course, require funding to carry out their responsibilities. The primary source of revenue for the South Australian Environment Protection Authority (EPA) statutory authority is fees and charges (Government of South Australia, 2013), while the primary revenue source for the NSW EPA authority is grants and contributions from the NSW Government (NSW EPA, 2013a). However, with the 2013 introduction of indexed, load-based licence fees for environment protection licences in NSW, operators have a continuing incentive to reduce environmental emission. And, with the 2015 introduction of risk-based administrative fees, which will be calculated on the basis of the licence holder’s operational risks to the environment, as well as their history of environmental management, there is both a potential to obtain revenue that is proportionate to monitoring and controlling the impact caused by the licence holder, and an incentive for industry to reduce impacts.

The AER is funded entirely by industry through an administrative fee levied on oil and gas wells and facilities, oil sands projects and coal mines, following approval of the AER’s budget by the Government of Alberta (AER, 2014a). This funding is separate from the substantial royalty income received by the Province of Alberta.

### **Consideration point:**

- Consider an arm’s length structure for oil and gas regulators in NSW that is funded by revenue directly from the industry.

## **Lead agencies**

Oil and gas extraction operations typically require the obtaining of a title before they can commence. Titles go by various names, including lease, licence, permit, tenure, reservation, or estate. (This report uses the term ‘licence’.) Though exceptions exist, in nearly all jurisdictions, all or most of the oil and gas itself is owned by the State, even if the land overlying the rocks in which the oil and gas is located is owned privately. In NSW the title system both assigns the right to the oil and gas (subject to payment of a royalty to the State) and also controls the operational activities. However, in some jurisdictions, the assignment of the right is a first stage; and the approval to undertake exploration and extraction operations is a second stage. In all jurisdictions, the operational activities are assessed, and

approved or rejected (or recommended to a Minister for approval or rejection), by a resources-oriented government department. In many jurisdictions additional approvals by other agencies under other legislation, such as planning, environmental and water, are also required, and these may actually impose more conditions than the basic licence. Where there are multi-approval points, there are generally also distributed responsibilities for monitoring.

In all six examined jurisdictions the resource-oriented agency has a broader purview than CSG or unconventional gas; all include other forms of energy, hydrocarbons or petroleum in their remit; many also include minerals. Queensland and England have created offices or commissions within existing departments to focus on CSG or unconventional oil and gas development and/or compliance: the CSG Compliance Unit and the Office of Unconventional Gas and Oil respectively (as has NSW with the Office of Coal Seam Gas within NSW Trade & Investment).

The more types of approval required, and the more agencies involved, the more complex the overall approval and monitoring process is, leading to potential for contradictory requirements as well as confusion, misunderstanding and errors amongst the applicants, the regulators and the general community.

Sometimes the resources department is referred to as the 'lead agency'. In some jurisdictions this is simply the agency most closely aligned to operators' core business; in others the agency does in fact coordinate the entire approvals process, even where it involves other government agencies.

The Productivity Commission recommended in 2009 that

Where not already implemented, States and Territories should consider establishing a lead agency for petroleum projects. Such an agency would manage an integrated approval process and would require a clear mandate for all relevant areas (for example, resource management, environment and heritage) and clear decision making powers over these areas except in exceptional circumstances. With appropriate governance, experience in South Australia suggests that such an agency can achieve an appropriate balance between enforcing legislative provisions and expediting approvals (*Productivity Commission, 2009*).

Both South Australia and Western Australia tend towards this model, through the Mineral Resources Division in the Department of State Development (DSD), and the Department of Mines and Petroleum (DMP), respectively.

The South Australian agency is responsible for the overall regulation of the oil and gas industry under the *Petroleum and Geothermal Energy Act 2000*. There are three main approval stages: licensing, which authorises the licensee to carry out the specific activity to which the licence relates; environmental assessment and approval of environmental objectives; and location-specific activity notification and approvals. Each stage must be completed before activities can commence.

Western Australia's lead agency model is in accord with its whole-of-government Lead Agency Framework (DPC (WA), 2011) which requires that assistance with, or coordination of, approvals for a proposal is administered by one department, the lead agency. The lead agency is responsible for:

- *providing proponents with information on statutory requirements through agency guidelines and referrals;*
- *case-managing and coordinating approvals applications across government for proposals, where appropriate;*
- *assisting proponents to identify the potential impacts of the proposal on matters such as infrastructure, the environment and regional communities as well as the social considerations that arise from the proposal (DPC (WA), 2011).*

The Western Australia DMP is responsible under the *Petroleum and Geothermal Energy Resources Act 1967* for issuing titles, collecting royalties, promoting environmental best practice and issuing environmental approvals, and ensuring safety. It still interacts with environmental and water agencies which provide both advice and regulatory services depending on the type of activity being conducted.

In both South Australia and Western Australia, the primary environmental assessment is done under the aegis of the 'lead regulator', namely the relevant resources agency. In South Australia, this may be done in conjunction with the Department of Planning, Transport and Infrastructure; Department of Environment, Water and Natural Resources; and the EPA. Publicly available protocols have been established under various service agreements between the DSD and these agencies (DSD, 2014c). In Western Australia, the DMP can refer proposals to the EPA if there are significant environmental issues. The EPA can then advise the Environment Minister on whether to add conditions to the proposal approval. The Environment Minister then consults with the DMP in determining if the proposal should be approved and under what conditions (Government of Western Australia, 2012). However, if the Western Australia EPA does not feel the development will significantly impact the environment, the Western Australia EPA will send it back to the DMP to be assessed under usual protocols. The criteria for referral are specified in Memorandums of Understanding between the two government agencies (DMP, 2012a).

In both states the applicant only makes applications to one agency.

This compares with Queensland, where a company seeking to undertake oil and gas activities must also apply to the Department for Environment and Heritage Protection (DEHP) for an Environmental Authority, with the DEHP responsible for monitoring compliance with that authority; and NSW, where environmental assessments are undertaken in the context of Development Consent by agencies established under the *Environmental Assessment and Planning Act*, and in the context of Environment Protection Licences by the EPA.

Colorado also has a primary regulator in the COGCC, which administers the *Oil and Gas Conservation Act*.

As with South Australia and Western Australia, Colorado and Alberta's lead regulating bodies consult with environmental and health agencies and other key stakeholders as outlined in legislation, but primarily maintain environmental authority in resource matters.

Other jurisdictions, like Queensland and England, have triggers in place that transfer authority from the lead regulatory agency to an environmental or economic development government agency should the oil or gas project meet certain economic or sensitive environmental criteria. In NSW, if a CSG proposal requires development consent, the environmental assessment will be done by planning agencies under the *Planning and Environmental Assessment Act 1979*, following submission of a development or project application from the potential CSG operator. If development consent is not required, the environmental assessment is done by DRE/OCSG as part of the licence application.

In NSW, DRE/OCSG are responsible for exploration and production licences; planning agencies for development consent; and the NSW EPA for environment protection licences, each of which must be separately applied for. The EPA has been designated as "lead regulator of environmental and health impacts of CSG activities in NSW with responsibility for compliance and enforcement" (NSW EPA, 2014), but is not the authority which oversees prospecting or production licences or development/ project consent approvals.

In all jurisdictions, government resources agencies have the dual role of encouraging the development of the state's resources, as well as regulating it. This presumably reflects the

need for the state to be able to dictate the terms on which its resources are accessed. However, particularly when the rules for granting access to resources and the rules for controlling the way it is done are not readily transparent, this can lead to perceptions of a conflict of interest, with the economic benefits of resource development perceived to be taking precedence over environmental and other safety and sustainability issues. This perception may be exacerbated if one agency is established as a lead agency. The potential for corruption in granting access to resources, addressed most recently in the ICAC report on coal resources (ICAC, 2013), also needs to be addressed.

**Consideration point:**

- Examine how other jurisdictions manage the perceived conflict between the development approval role and the regulatory role in the regulating government agencies
- Benchmark the processes for resource approval and regulation with the practices of other jurisdictions (Exemplars: Alberta, Colorado)

**Inter-agency cooperation and coordination**

A key issue, regardless of whether there is one ‘lead regulator’ or several regulators, is the need for coordination and clarification of responsibilities between government agencies. Given that petroleum operations span a cross-section of activities that are regulated by government – from health & safety, to environmental protection, to planning – it is essential to have very clear understandings about which agency is responsible for what. The more this can be specified in legislation, the clearer the understandings will be. A number of agencies rely on memorandums of understanding or other administrative arrangements to specify the shared responsibilities. It is important that such documents are readily accessible by industry and the community, or there is no way to fully understand the regulatory environment that applies to any particular oil or gas activity.

South Australia’s legislation requires consultation at certain points of the environmental impact assessment process with other government agencies. Protocols have been established under various administrative arrangements between the DSD (or its forerunners) and these agencies, and copies can be downloaded from the DSD website ([http://www.pir.sa.gov.au/petroleum/legislation/regulation/admin\\_arrangements](http://www.pir.sa.gov.au/petroleum/legislation/regulation/admin_arrangements)). It is noted that, in respect of the arrangements between DSD and the South Australia EPA, for example, there is clear guidance on responsibilities in the case of approvals, and of reportable incidents, but not for ongoing compliance monitoring.

Western Australia’s DMP also has a series of “lead agency working arrangements and memorandums of understanding between DMP and relevant external agencies” available from its website (<http://www.dmp.wa.gov.au/9588.aspx#11476>). These include arrangements in respect of consultation, and arrangements in respect of legislatively mandated referrals, based on agreed criteria.

The approach taken in NSW is intended to ensure that all activities involved in CSG exploration and production are reviewed by agencies with appropriate skills and resources to do that, particularly where there is potential for environmental impact. This is, of course, laudable. However, although the EPA is the lead regulator on environmental matters, it is not the appropriate agency to rule on the overall impact of development (a planning matter) or the safety, completion and royalty elements associated with actual CSG operations (a DRE matter), and hence there is a very distributed process that is not easy to map.

It is understood by the Review that there is some attempt to ensure the environmental conditions of petroleum licences, development consents and environment protection

licences are the same or similar, but as yet there are no publicly available, formal agreements between the relevant government agencies to this effect.

A memorandum of understanding (MOU) between relevant government agencies went into effect 28 August 2014. The MOU establishes an advisory practice as part of the assessment process, sets out coordinated compliance and enforcement, including incident response and investigations, and includes a commitment to harmonise regulatory requirements to reduce duplication in the NSW regulatory regime. This MOU is not publicly available, but its announcement was made in July (DTIRIS, 2014). OCSG has also advised the Review that it has commissioned a review of reporting obligations under the various relevant Acts to develop a comprehensive set of title/project audit criteria and provide a baseline for different regulators to streamline reporting obligations.

It is essential that any inter-agency documents on cooperation contain clear responsibilities and accountabilities – and are more than a statement of in-principle commitments – and that they be publicly available.

### **Consideration point**

- Review the relationships between regulatory agencies and ensure there are publicly available, articulated arrangements in place (e.g. in MOU pursuant to legislation) where responsibilities may overlap (Exemplars: South Australia, Western Australia, Colorado); and ensure that any such relationships govern responsibilities for monitoring, compliance and enforcement as well as approval processes.

### **Royalty collection**

Some jurisdictions separate the royalty-collecting role from the regulatory role, with the aim of avoiding the possibility or perception of conflict of interest or collusion between fiscal and regulatory functions. The NSW Auditor-General, in 2010, recommended a review of the merits of transferring the (then) NSW Department of Industry and Investment (now NSW Trade & Investment) royalty collection function to the Office of State Revenue. The report stated that this would “achieve a desirable separation between [the department’s] roles as both regulator of the mining industry, and facilitator of increased investment in the industry” (DI&I, 2010).

In NSW, the responsibility for the collection of mineral royalties moved to the NSW Office of State Revenue as of 1 July 2014 (NSW Government, 2014; "Petroleum (Onshore) Act 1991," 2014). In Queensland royalties are also collected by the Office of State Revenue. In Alberta, royalties are not collected through the AER, but by the Department of Energy. In Western Australia, royalty collection remains within the DMP but is administered by the Strategic Planning and Royalties Branch which is separate from the branch responsible for licence approvals.

By contrast, in England royalties were abolished in 2003, and the UK Government derives the majority of its revenue from oil and gas through taxation.

Alberta, a very mature energy producer, regularly publishes details of the royalty income earned from its resources, which are a substantial contributor to that State’s budget (Alberta Energy, n.d.-b).

While CSG and other forms of petroleum currently form a very small proportion of the royalty income earned from extractive industries in NSW (most of which is from coal) (NSW Government, 2014), there is potential for it to grow as a source of revenue for the State.

### **Consideration point:**

- Ensure the royalty framework is strong, and that the quantum of royalties is appropriately publicised.

## **Bringing competitive principles to the licence allocation process**

Western Australia allows companies to apply for exploration licences over areas of land the companies have identified as prospective (as happens in NSW). However, it also periodically releases State acreage to a bidding process. The basic objective in awarding any petroleum exploration permit is to

select the work program bid most likely to achieve the fullest assessment of the petroleum potential within the permit area, recognising the essential role of wells in the discovery of petroleum. Work programs proposed in bids must significantly advance the exploration status of the area. Work program bids will be assessed taking account of the [specified] criteria ... (DMP, n.d.-a).

*There is no cash bidding. When determining which acreage to be released, the department will consider industry nominations. The process is described on the DMP website (<http://www.dmp.wa.gov.au/377.aspx>) (DMP, 2014).*

South Australia also allows work-program based competitive tendering or cash bidding for “competitive tender regions”, currently limited to the Cooper/Eromanga Basins in the north-east and the Otway Basin in the south-east of the State. According to its 2012 *Roadmap* (DMITRE, 2012b), there has been only one instance of cash bidding in South Australia, which failed to attract any bids. The criteria for ranking and selecting a winner from amongst competitive bids are readily available on the DSD website ([http://petroleum.dmitre.sa.gov.au/licensing/new\\_acreage\\_releases](http://petroleum.dmitre.sa.gov.au/licensing/new_acreage_releases)) (DSD, 2014b), as is a summary of the process and scoring methodology used to evaluate the quality and likely productive outcomes of the work program proposed. Work-program based competitive tendering helps ensure that “the maximum market price (i.e., best work program) is achieved for ... exploration rights”, but probably works best in “more mature [industries], likely to attract a significant number of applicants” (Alexander, Morton, & PIRSA, 2002).

Queensland’s Department of Natural Resources and Mines (DNRM) uses work program-based competitive tendering with an additional cash bidding component for “potentially highly prospective land” (DNRM, 2013c). The cash bidding component was introduced in January 2012; there were four cash bidding calls for tender in 2013, and one is currently open (DNRM, 2014).

As stated above, the ‘tenure’ process for energy licences in Alberta is separate from the environmental and water approval processes. In Alberta, industry clients submit requests to the Department of Energy for parcels of land to be included in the public offering process. Public offerings (or sales) of petroleum and natural gas rights are held every two weeks, with eight weeks public notice for each sale. After a sale, Crown petroleum and natural gas rights are issued in the form of licences or leases to the highest bidder on each parcel (Alberta Energy, n.d.-d). The successful bidder’s offer must include, at minimum, the standard application fee and first year rental, plus a “bonus amount” (as a total or a price per hectare) which itself has a minimum rate (Alberta Energy, n.d.-c). Industry clients may also make application for direct purchase of rights (i.e., without going through the sale process) if they meet the (very limited) specified requirements (Alberta Energy, n.d.-a). Licenses and leases typically have a five-year term during which productivity must be proven, after which unproven land reverts to the Crown and is available again for public offerings. Once a licence is obtained, no actual exploration or production activity can occur until approvals from the AER are also obtained.

The UK has just re-introduced a work-program based, competitive bidding process for onshore petroleum licences. As the licensing round overview states:

Licensing rounds yield better quality bids than other methods. Unlike auctions, for instance, licensing rounds do not divert significant sums of money away from exploration work and they give a much better expectation that a licence will be awarded to the bid that promises to optimise exploitation of the UK's petroleum resources (*UK Government, 2014*).

DECC has divided the UK's acreage into 'blocks'. Onshore blocks are 100km<sup>2</sup> in area. A map associated with each individual round shows the acreage available (DECC, 2014). The applicant must propose a work program,

which is the minimum amount of exploration work that the Applicant must carry out, if it should be awarded a licence, if the licence is not to expire at the end of its Initial Term. The agreed Work Programme will form an important part of the Licence itself, and the Licence will expire at the end of the Initial Term if the Work Programme has not been completed by then. Along with the technical work already carried out, it is one of the main factors that DECC will use to judge between competing applications.

...

Where two or more applicants who have applied for the same acreage all meet the Department's financial criteria and standards of operatorship, the Department's geoscientists will make a recommendation of award after evaluating the respective geotechnical submissions. ... The assessors will base their decisions on the technical understanding demonstrated by the Applicant, the generation of valid prospectivity derived from evaluation of available data, the quality of the work that it has already carried out, and the proposed Work Programme. Applications will be marked against these criteria according to a predefined Marks Scheme, and award will normally be made to the Applicant with the highest marks (*DECC, 2014*).

NSW's *Petroleum (Onshore) Act 1991* permits the Minister to "invite applications for petroleum titles" by notice in the Gazette (s8). However, there is no guidance on how areas should be chosen for invitation, or whether or what criteria should apply in assessing responses to the invitations. This is in contrast to the provisions in the NSW *Mining Act 1992*, which permits the Minister to invite tenders for an exploration licence for "allocated minerals in land within a mineral allocation area" (s14(1)). However, although the *Mining Act* requires certain information to be provided as part of the tender – and gives an option for the tenderer to "pay a specified amount in addition to the cash reserve price (if any) specified in the invitation for the tender" (s15(3)) – it is silent on the process and criteria for assessing the tender.

#### **Consideration point:**

- Investigate the introduction of clear and transparent work-program-based, competitive tendering processes in designated areas, with or without a cash bidding component (Exemplars: Queensland, Western Australia, South Australia, Alberta).

### **Transitioning from exploration to production**

One level of concern that was apparent throughout the Review, though not always clearly articulated, was the transition from gas exploration to gas production. There was wide acknowledgement that gas exploration is less 'invasive' than full scale production, both in the nature of the activity and its duration, given that exploration generally involves seismic surveying and limited drilling of wells, while production tends to involve substantially more wells, equipment, storage facilities, pipelines, roads, processing plants, people and related activities. These differences are recognised in the *Petroleum (Offshore) Act 1991*, which requires operators to have an exploration licence for exploration, but a separate production lease for production.

Production, and exploration which involves more than five wells, also requires development approval under the NSW *Environmental Planning and Assessment Act 1979*, presumably

because of the potential impact due to the scale of production activity. However, once development approval is obtained, there is a virtual automatic right to a production lease under s.42 of the *Petroleum (Offshore) Act 1991*.

This is of particular concern to landowners, as production has far greater potential to impact on their landholding than exploration. At the same time, not having levels of certainty about production will be a considerable disincentive to exploration. The issue is that early impact assessments are limited to the impacts of exploration when, if the exploration is successful, there is an expectation of production, despite all the potential impacts of that larger-scale, longer-duration activity not having been assessed at the beginning. Of course, making a full-scale assessment of production impacts when nothing might come of the exploration also has costs and drawbacks.

The desktop review of other jurisdictions showed that other Australian jurisdictions tend to take a similar approach, namely South Australia, Western Australia and Queensland. Colorado and Alberta, on the other hand, tend to approach the approval process on a well-by-well basis. It is understood that other infrastructure required for production is the subject of separate approval processes. As discussed above, the 'right' to a particular resource on an identified piece of land is obtained under one process. But the operations required to access that resource are approved on well-by-well activity basis, with a degree of semi-automation, and an exception-based management approach. This type of approach requires sophisticated record-keeping and data systems to track and monitor well development, but appears to work in those mature jurisdictions.

#### **Consideration point:**

- Review other models for licensing operators and activities in respect of exploration and production based on identified outcomes.

## **5. Monitoring, reporting, compliance and enforcement**

Monitoring, of both technical data and regulatory compliance, serves a number of purposes for both the regulator and regulated parties including:

- providing a performance measure relative to established limits, standards, and guidelines
- ensuring that all systems relating to energy resource activities are operating effectively
- assessing royalties
- providing an early warning system for potential issues (such as environmental contamination, resource overproduction, and wellbore integrity)
- helping regulated parties and the regulator see and take proactive approaches to prevent noncompliance (as advised to the Review by AER).

Of the submissions to the NSW Chief Scientist and Engineer's Independent Review into CSG in NSW, roughly half (44%) expressed concern about a lack of data enabling a scientific understanding of the effects of CSG on the environment, human health and water. The Review recommended that data "must be authoritative, reliable and up-to-date. And it must be comprehensively collected, effectively and expertly managed and readily shared, through a blend of automatic, semi-automated and human processes" (CSE, 2013).

Obtaining the necessary data requires specification of the types of data and information required, by way of legislative instrument or licence condition. This may extend from raw data or reports on a range of technical, scientific and health matters, including complaints and environmental incidents.

## Data collection – Online systems

To varying degrees, online databases or reporting systems used by regulatory agencies provide:

- industry with a portal to fulfil reporting obligations
- the regulating agency with a tool to collect data, ensure compliance and inform decisions on licence applications and future policy
- the public with an instrument to inquire about how industry functions and government departments oversee industry.

It is uncertain the degree to which regulating agencies in the examined jurisdictions use other agency databases, though it appears this practice may be uncommon. However, several joint strategic projects are used by resources departments across jurisdictions, including:

- PETRINEX in Alberta and Saskatchewan is a joint government/industry project in both provinces for exchanging petroleum-related information
- FracFocus.org in the US is managed by two non-profit organisations (the Ground Water Protection Council and Interstate Oil and Gas Compact Commission) and provides information about hydraulic fracturing and groundwater protection submitted voluntarily by participating companies. Ten US states, including Colorado, use the site “as a means of official state chemical disclosure” (FracFocus, 2014)
- FracFocus.ca, a project by the BC Oil & Gas Commission in British Columbia modelled after FracFocus.org and used by Alberta, British Columbia and Northwest Territories, provides information on hydraulic fracturing, fracturing fluids, groundwater and surface water protection and other oil and gas activities in Canada.

Four of the examined jurisdictions – South Australia, Western Australia, Alberta, and Colorado – provide updated, centralised information on their websites. There, the public, industry and government can view the regulatory agencies’ missions and/or goals; outlines of the regulatory process; forms; and/or databases.

Operators in Colorado file applications for proposed oil and gas activities as required, including required monthly operations reports. Activity applications and reporting occur throughout the life of the well until and after well abandonment.

The COGCC website, including the Colorado Oil and Gas Information System (COGIS), provides due dates and response times for COGCC and industry submittals as well as staff responsibilities for each form – such as financial assurance checks prior to operations and engineering staff verifications of well locations, casing depths and cement analyses after drilling completion (COGCC, n.d.-c). This permit tracking system is similar to Queensland’s MyMinesOnline.

While information on online systems in use in different jurisdictions is readily available, knowledge about how the regulators review and monitor the information provided is not so well publicised.

However, South Australia publishes petroleum exploration and petroleum production licence annual reports, which are required under Regulation 33 of the *Petroleum and Geothermal Energy Regulations 2013*, on its website, which states that “all annual reports posted on this register have been reviewed by the DSD for compliance with Regulation 33 ... , and any required follow-up action has been taken. Annual reports that have been submitted and are under review for compliance with the Act are noted” (DSD, 2014a).

In Alberta, data is the “foundation for success” (as advised to the review by AER). A major role of the AER is to provide access to energy industry data. The data that companies are required to submit to the AER includes tour reports, drilling data, geophysical logs, fluid

analysis, core analysis, pressure tests, flow tests as well as the physical submission of drill cuttings and cores (AER, 2014d). The AER then packages this data and sells it back to companies, deferring to relevant confidentiality periods. Data available for purchase, advertised in a “Products and Services Catalogue”, includes raw data, maps, shapefiles, licence information, physical access to cores and cuttings, along with numerous reports. Costs are minimal for a single report, such as would be requested by a member of the public, but are significant for bulk data and data subscriptions, as requested by industry. This additional ‘information, services and fees’ revenue stream accounted for \$7.4 million in the 2013/2014 Financial Statements (Alberta Government, 2013).

**Consideration point:**

- Establish online reporting and data collection systems that allow data exchange within and between government departments and the public (Alberta)

## Complaints

Public complaints are a significant trigger for the start of compliance investigations in Queensland, Alberta, England and Colorado – as they are in NSW. Most, including Alberta, Colorado and South Australia (AER, n.d.-a, n.d.-b; COGCC, n.d.-b; DMITRE, 2014) – as well as NSW – publish information on their websites or in online databases on what companies have been accused of compliance breaches and outcomes of resulting investigations.

In Alberta the public is encouraged to report issues, concerns, emergencies and possible incidents of noncompliance by calling the toll-free, 24-hour emergency response/public complaint number. Issues and concerns reported by the public include air quality, activities and diversions affecting surface and groundwater quality, soil contamination, reclamation, water well concerns, industrial and municipal discharges, and issues regarding wastes.

In NSW the DRE and EPA both have readily accessible websites which describe how to lodge complaints: the DRE site is focused on breaches of the *Mining Act* (not the *Petroleum (Onshore) Act*) (DTIRIS, n.d.); the EPA site is focused on “pollution” which does not necessarily capture all forms of environmental non-compliance (NSW EPA, 2013b).

**Consideration point:**

- Consider whether processes are optimum for the general community to be encouraged to report issues, concerns, emergencies and possible incidents of noncompliance (Exemplar: Alberta).

## Enforcement

The Initial Report recommended that Government send a “*clear message to industry that: CSG extraction high performance will be mandatory; compliance with legislation will be rigorously enforced; and transgressions will be punished with published high fines and revocation of licences as appropriate*” (Recommendation 1, CSE, 2013).

OCSG has advised the Review that it has initiated a Petroleum (Natural Gas) Regulatory Framework Risk Assessment project to address aspects of Recommendation 1.

The Review’s desktop study has found it more difficult to examine how effectively regulations in other jurisdictions are enforced than to examine the regulations themselves.

For the most part, jurisdictions base compliance activities on risk – including company history and track record, site-specific concerns, and technological methods.

Most of the regulators in the examined jurisdictions have published compliance policies; however, the detail in each varies. For some, the compliance plan simply describes the

process used when breaches are positively identified. There is little about any case-by-case approach to addressing more minor breaches or the pro-active steps taken by the regulator to monitor compliance. NSW comes into this latter category.

Risk classification systems are common and are used for assessing development activities and determining compliance, inspection and surveillance possibilities (AER, 2010; DEHP, 2012b; DMITRE, 2012a; ERCB, 2012). Companies with poor compliance records, representing a higher risk to the environment, face more frequent inspections (AER, 2013; DEHP, 2012a).

Through amendments to the Protection of the Environment Operations (General) Regulation 2009, the NSW EPA licensing regime has been updated to a risk-based licensing system, which includes consideration of licence-holder performance in managing environmental risk ("PEO (General) Amendment (Licensing Fees) Regulation 2013 "). This will become effective as at July 2015 (EPA, 2014).

Queensland regulatory departments (both the DNRM and DEHP) develop annual/biannual CSG compliance plans to provide frameworks that address priority issues (DEHP, 2012a; DNRM, 2013a). The DNRM compliance plan maintains a compliance framework designed to deter non-compliance and identifies specific goals for 17 separate activities. These comprise commitments across their mission, including numerical goals for undertaking audits and, for example, inspections of 250 CSG wells, 35-45% of drilling and work-over activities, 20-30% of all CSG pipelines and petroleum facilities, etc. (DNRM, 2013a). The DEHP's *CSG/LNG Compliance Plan* sets out strategies to ensure industry compliance by prioritising compliance issues and industry activities like "management of CSG dams and residual salt" and "management and monitoring of CSG impacts on bores, aquifers and springs" (DEHP, 2012a). More specifically, pipeline construction and water management were targeted for compliance in 2012-13. A key element of the plan is encouraging companies to comply with environmental obligations. Additionally, according to the *Code of Practice for Constructing and Abandoning CSG Wells and Associated Bores in Queensland*, the onus is on the tenure holder to ensure compliance with the Code (DNRM, 2013b).

In South Australia, DSD's *Petroleum and Geothermal Energy Act Compliance Policy* provides the regulator with tools to ensure companies obey obligations, licence conditions and Statement of Environmental Objectives; DSD undertakes compliance activities which are both passive (receiving licensee data submissions) and proactive (conducting field inspections, attending facility design and risk assessment workshops, seeking additional information from licensee to verify submitted reports) (DMITRE, 2012a). However, as with Queensland, the "key concept underlying ... enforcement ... is that the basic responsibility for detecting and rectifying non-compliance lies with the licensee or individual, not the regulator" (DMITRE, 2012a).

In Alberta, the AER monitors and investigates energy resource activities for compliance, as laid out in *Directive 017: Measurement Requirements for Oil and Gas Operations* and *Directive 019: Compliance Assurance*. Checks range from ticking boxes to calculations, field/site inspections, phone calls, and in-house company presentations or interviews. The priority and frequency of site inspections are prioritised by three key criteria: operator history, site sensitivity and inherent risk (AER, 2013). An important part of Alberta's management of energy resource development is compulsory monitoring and reporting, which covers a wide range of issues depending on the size, nature and complexity of the particular energy resource activity. Monitoring reports may analyse, summarise and/or include ambient air, water, groundwater, soil, source emissions, water metering information, structural integrity of the land, and solid and hazardous waste generation and disposal. Reports may also outline any problems that arose and corrective actions that were undertaken. Monitoring of source emissions; different aspects of well, facility and pipeline operations; resource production; well data and testing; tailings management; and ambient environmental surroundings each

provide essential information on compliance and performance, and on associated impacts on energy resource development.

England's multiple regulatory agencies have clearly defined compliance roles. DECC has compliance responsibility for seismic risk (review hydraulic fracturing plans, with operators self-enforcing on certain levels of induced seismicity), flaring/venting (joint with Environment Agency), providing consent to drill (review extended well tests data), and PEDL permit conditions. The Environment Agency has compliance/enforcement responsibility for the disposal of water, mining waste, radioactive materials, content of fracking fluid and the impact on water. Operators must submit an Environmental Risk Assessment with their environmental permit application for shale gas projects (UK Government, 2012). A compliance assessment plan is developed for each permit on a site-by-site basis to manage compliance and risks (UK Government, 2012). The compliance assessment process includes:

- Operational Risk Appraisal (Opra; a tool to assess activity risks). The Opra assessment provides a risk-rating, which is used as part of the compliance assessment process and determines business regulatory charges
- Compliance Assessment Plans (CAPs)
- Compliance Classification Scheme (CCS) - provides consistency across different regulatory regimes in the reporting of noncompliance with permit conditions (Environment Agency, n.d.).

The Health and Safety Executive has compliance/enforcement responsibility for well design, construction and integrity as well as health and safety of workers and sites. Local Mineral Planning Authorities have compliance/ enforcement responsibility for all planning issues related to the use of the site, including noise, visual, use of land, restoration and aftercare, etc.

All compliance plans for the jurisdictions examined include processes for investigating complaints or allegations of violations of rules/regulations/directives or permit or licence conditions.

### **Enforcement tools**

All examined jurisdictions have a graduated system of enforcement actions that considers the level of noncompliance, the risk for potential adverse effects and/or the operator's history. Enforcement actions include persuasive and educational measures, warnings or infringement notices, amendments to licence conditions, fines, suspension or revocation of licences, court orders or directions, and prosecutions. They may be applied singly or cumulatively to deter similar future behaviour. Prosecution is used by all examined jurisdictions as a last resort rather than as a primary focus of regulator activity. The Colorado regulating authority is on record that the ability to keep an offending operator's product from market would drastically increase compliance (COGCC, 2013).

In most jurisdictions a compliance process or policy is publicly available. These usually set out the risk assessment process used when compliance issues are identified. However, there is little information available about how pro-active agencies are in regularly monitoring and inspecting for compliance violations.

### **Fines**

All jurisdictions have financial penalties for regulatory violations. There was no discernible difference in the approach taken by different jurisdictions, though, of course, financial penalties in some areas were higher than in other areas or for different types of breaches. Most jurisdictions have a schedule of daily penalties that continue as long as the breach continued; but South Australia has a flat fine plus a daily penalty and Queensland provides maximum overall penalties only.

### **Consideration point**

- Benchmark other jurisdictions, to ensure the compliance framework – including a plan with timelines for the nature and format of reports, and responsibilities and timelines for reviewing required information, monitoring that timelines are met, and auditing compliance – is best practice.

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## Acronyms

<b>AER</b>	Alberta Energy Regulator
<b>CDPHE</b>	Colorado Department of Public Health & Environment
<b>COGCC</b>	Colorado Oil and Gas Conservation Commission
<b>COGIS</b>	Colorado Oil and Gas Information System
<b>DECC</b>	Department of Energy and Climate Change (England)
<b>DEHP</b>	Department of Environment and Heritage Protection (Queensland)
<b>DMITRE</b>	[former] Dept. of Manufacturing, Innovation, Trade, Resources and Energy (South Australia)
<b>DNRM</b>	Department of Natural Resources and Mines (Queensland)
<b>DMP</b>	Department of Mines and Petroleum (Western Australia)
<b>DSD</b>	Department of State Development (South Australia) (incorporates DMITRE)
<b>DSDIP</b>	Department of State Development, Infrastructure and Planning (Queensland)
<b>EPA</b>	Environment Protection Authority (New South Wales, South Australia or Western Australia)
<b>ERCB</b>	Energy Resources Conservation Board (Alberta, incorporated into AER)
<b>OUGO</b>	Office of Unconventional Gas & Oil (England)

## APPENDIX 2: LEGISLATIVE FRAMEWORK FOR CSG EXPLORATION AND PRODUCTION

**Paper commissioned for the Independent Review of Coal Seam Gas Activities in NSW.  
Prepared by Sue Graebner.**

### **Introduction**

As part of the NSW Chief Scientist & Engineer's independent review of CSG, this consultant was engaged to provide a comprehensive overview of the legislative and regulatory framework in NSW within which CSG industry participants must operate. The consultant was selected for her legislative analysis capacity and objectivity, having not previously been involved in CSG or any mining-related activity in any State.

A table of relevant legislation is attached. Those highlighted in green have been examined. Three reports have been prepared, each in tabular form. The approach has been to look at the legal requirements for exploring or producing CSG in more-or-less chronological order, broken into step by step form. Report 1 deals with exploration when development consent is not required; report 2 deals with exploration when development consent is required; and report 3 deals with production. Assessment leases which, as stated in a note at s33 of the Petroleum (Onshore) Act 1991 (POA), are 'designed to allow retention of rights over an area in which a significant petroleum deposit has been identified, if mining the deposit is not commercially viable in the short term but there is a reasonable prospect that it will be in the longer term' have not been examined specifically. There is considerable overlap between the reports, as many of the requirements of the POA apply to all forms of petroleum title; and the provisions in respect of development consent under the Environmental Planning & Assessment Act 1979 (EPAA) and associated instruments are the same for exploration licences (provided development consent is needed) and petroleum leases. However, each report provides a complete legislative picture in its own right.

### **Comments and observations**

Observations and comments related to specific sections of legislation are included throughout the analysis. However, some more substantive observations are made below.

#### **1. Legislative complexity**

The legislative framework is complex. Licences or approvals for CSG exploration and/or production are required under at least the EPAA, the POA, the Protection of the Environment (Operations) Act 1997 (POEA) and the Water Act 1912 / Water Management Act 2000. A number of these, notably the EPAA, have further subordinate instruments, such as state environmental planning policies, associated with them. There is a considerable amount of cross-referencing, layering, exceptions and variations, within and between legislative instruments, making mapping of the required legislative processes difficult. There are extensive legal obligations on potential and current CSG explorers and producers, both at application stage and through the course of their operations, whether exploratory or production. Many aspects of the legislation apply at a broad level (all development requiring consent; all petroleum exploration) and include CSG, and some aspects are very specifically restricted to CSG activities.

Requirements or obligations on CSG explorers and producers may be imposed by way of:

- direct requirement specified in legislation, with failure to observe the obligation an offence, or other breach of the Act
- a condition of the petroleum title, development consent or other form of approval, imposed by legislation, which may be way of reference to another document (for example, the *Schedule of Onshore Petroleum Exploration and Production Safety Requirements* is a mandatory condition of petroleum titles by virtue of the Petroleum (Onshore) Regulation)

- a condition of the petroleum title or development consent or other form of approval, at the discretion of the Minister (or approving body), which itself may be by way of reference to another document such as a Code of Practice. Some conditions may be imposed because they are ‘Government policy’, though there is no legislative underpinning of such policy – the approving authority simply applies the ‘Government policy’ of the day in all approval documentation; other conditions may be imposed on a case-by-case basis by the approving authority as a result of individual analysis and identified need.

The variety of mechanisms by which obligations can be imposed on the industry makes it difficult to map the obligations for any one explorer/producer, and complicates the processes for monitoring compliance with those obligations.

The POA itself, which is the primary means for regulating petroleum-related activities, does not define CSG. The special measures implemented in 2013 to regulate CSG on strategic agricultural land have been managed by way of the EPAA and environmental planning instruments made under that Act. The only legislation which specifically defines CSG is an environmental planning instrument made under the EPAA, namely the State Environmental Planning Policy (Mining, Petroleum Production & Extractive Industries) 2007 (SEPP MPPEI), and the PEOA.

## **2. Decision-making discretion**

When development consent is required, there is very little guidance in the EPAA or POA as to how the relevant Ministers’ (or their delegates’) discretions should be exercised.

The key criteria for consideration of a development consent are those spelled out in s79C EPAA, which requires the decision-maker to ‘consider’ the following: the provisions of any EPL, development control plan, regulations, or coastal zone management plan; the impacts, including environmental, social and economic; the suitability of the site; any submissions; and the public interest. These are quite broad-ranging: and there is considerable potential for conflict. For example, environmental impacts may conflict with economic impacts; submissions may conflict with each other; and the suitability of a site may conflict with the public interest – or different sections of the public interest.

The EPAA requires the applicant to prepare an EIS, the requirements for which are determined by the Director-General of Planning. This prompts the applicant to provide wide-ranging information on environmental matters to inform the decision-maker’s consideration. However, the scope of matters to be considered by the decision-maker, as set out in s79C EPAA, is broader than environmental. There are no criteria or standards specified in the legislation to assist the decision-makers in making their decisions; nor any legislative guidance on how conflicting impacts should be weighted and assessed.

When development consent is obtained, and the decision to grant a petroleum title then has to be exercised by the Minister for Resources & Energy under the POA, the criteria for that decision are also both minimal and general. There are some restricted environmental matters to be taken into account under s74 POA: the need to conserve and protect the flora, fauna, fish, fisheries and scenic attractions, and the features of Aboriginal, architectural, archaeological, historical or geological interest in or on land over which a petroleum title is sought. There are also some specified grounds on which title can be refused under s21 POA: if the application is not made in accordance with the Act or regulations or would contravene the Act; or the proposed work program does not meet the Minister’s minimum standards about the nature and extent of activities that should be carried on by the title holder; or the applicant does not meet the Minister’s minimum standards on technical and financial capability to carry out the proposed work program (see para 5 below for more on minimum standards); or the Minister decides, in the public interest, it would be better not to grant title or grant someone else title. As with the EPAA, the POA legislation contains no criteria or guidelines on how to exercise the decision-

making power; nor any guidance on how conflicting considerations should be weighted and assessed.

In the case of petroleum exploration licence applications which do not require development consent, the Minister for Resources & Energy's responsibility extends to making further assessments on environmental considerations, under Part 5 of the EPAA. [For applications which do require prior development consent, this is the responsibility of the Minister for Planning (or, in practice, his or her delegate.)] The environmental criteria to be taken into account by the Minister for Resources & Energy are brief, namely s74 of the POA as described above (which is relevant to the grant of the PEL), and s111 of the EPAA, which states that the decision-maker must examine and take into account to the fullest extent possible 'all matters affecting or likely to affect the environment by reason of that activity'. Some matters which must be considered under this s111 general duty are prescribed. (It was difficult to determine how this happens in practice, whether it's at the time of the PEL, or later when individual activities under the PEL are occurring.) If the effect of the proposed activity on the environment or threatened species is likely to be significant, the Minister must consider an EIS or species impact statement. But there is no legislative duty on the applicant to provide information relevant to this Part 5 assessment, although extensive guidelines (ESG2) have been prepared by DRE to assist applicants. The legislation does not state who determines, or how and when it is determined, that the effect of a proposed activity is likely to be significant.

By contrast, the ten criteria to be taken into account when the Director-General of Planning is considering whether to issue a Site Verification Certificate, under the SEPP MPPEI, that land is or is not biophysical strategic agricultural land, are specific and capable of objective determination.

### **3. Application of development consent requirement to petroleum exploration**

As mentioned in 2. above, when development consent is *not* required for petroleum exploration, the Minister for Resources & Energy is required to take into account broader environmental matters under s.111 of the EPAA. There is a lack of precision in the EPAA legislation and related subordinate instruments as to when exploration requires development consent and when it doesn't, though the line can be established to a point. The DRE has several categories of petroleum activity which it applies to exploration licences; however, these are not grounded in legislation and it is not clear how they apply at the application stage. Further legislative clarification of what activities constitute prospecting and/or exploration could be useful, as would consistent definitions across all relevant legislation. Clarification of how s.111 is intended to exploration licensing or exploration activity would also be useful.

### **4. Obligation to grant Production Lease**

There is a provision in s42 POA that a person is 'entitled' to a Production Lease (PPL) if the person already has held an Exploration Licence (PEL) or Assessment Lease (PAL) in respect of the same area, provided the applicant has complied with the terms of the previous leases, the granting of the lease would not contravene the EPAA or any other Act, and the person accepts the conditions of the lease. It is noted that a development consent under the EPAA would always be required for a production lease, and the POA prohibits the Minister for Resources & Energy from granting such a lease until development consent under the EPAA is obtained (s76 POA). This provides some reassurance that some important matters have been considered as part of the development consent process. However, the criteria for development consent do not completely overlap the criteria for granting a petroleum title. There are mandatory conditions that apply to petroleum titles that do not necessarily apply to development consents. And it can be expected that the Minister for Resources & Energy would pay more regard to matters related directly to petroleum exploration and production than decision-makers under the EPAA. It appears that, in respect of the Minister's responsibilities under the POA:

- a. the discretion to grant a PEL or PAL needs to be exercised with care, as once it is awarded, it is very difficult to restrict the production phase; and

- b. there will necessarily be heavy reliance on the conditions of the PPL to control and regulate production activities.

## **5. Minimum standards in POA**

The POA specifically gives the Minister authority to refuse an application if the applicant does not meet the Minister's minimum standards in relation to technical and financial capability to carry out the proposed work program. There is no reference to any minimum standards in the POA or any other statutory instrument, and the reviewer found no evidence of their existence at all. The application form for both PELs and PPLs does not specify any minimum technical capability other than that the technical manager 'be a qualified geoscientist with petroleum exploration experience'; and the applicant can self-assess their financial capability by way of a statutory declaration stating that they have 'sufficient financial resources at the time of lodgement to meet the financial commitments on all the applicant's titles and title applications'. The POA also requires applicants to provide evidence of 'the applicant's ability to comply with Act and regulations'. There is no specific duty to assess this, though it is probably relevant to all grounds on which the application can be refused. However, again, the application form permits applicants to self-assess their ability to comply with the Act and regulations by way of a 'statement of undertaking'. This does not preclude the Minister/department undertaking other enquiries, but it does not elicit much information from the applicant.

## **6. Condition-making power**

The power to impose conditions is important in regulating the activities related to CSG activity, both under the EPAA and the POA. Both Acts say very little about this power, or the types of conditions that could or should be imposed.

## **7. New conditions**

In general, the power to include conditions in a development consent or petroleum title can be exercised at the time of the granting of the consent or title, but not afterwards. So the conditions that apply at the start of a title (and production leases can have terms of 21 years) cannot be amended until the title comes up for renewal. However, s76 of the POA does permit the Minister to amend a title to include new or further conditions in respect of *protection of the environment*, if the title does not contain such conditions, or if the Minister considers they are inadequate. Any new conditions are limited to the specific environmental matters listed in ss75 and 76 of the POA. However, this provision does provide a precedent for broadening the power to add conditions to current petroleum titles.

## **8. Monitoring compliance by exploration and production companies with legislation and conditions of title or development consent**

There may be extensive requirements on exploration and production companies throughout the period in which they undertake exploration or production, either mandatory under the legislation or imposed as terms of the relevant approval/licence/title. Much detail is contained in instruments such as the Schedule of Onshore Petroleum Exploration and Production Safety Requirements, the NSW Code of Practice for Coal Seam Gas Well Integrity, and the NSW Code of Practice for Coal Seam Gas Fracture Stimulation Activity. The first is a legislative condition of petroleum titles, but the latter two only apply by way of their inclusion in the conditions of such titles.

The existence of the requirements implies a need for compliance with them to be monitored. There are few legislative obligations for the relevant Ministers and/or Departments to positively undertake monitoring activity. The extent to which they do undertake compliance monitoring is outside the scope of this exercise.

**13 December 2013**

**Summary of Legislation and other instruments regulating Coal Seam Gas**  
 Items highlighted in green have been reviewed by SG and included in the legislative analyses

<b>NSW</b>			
<b>Principal Act</b>	<b>Regulations</b>	<b>Statutory Instruments</b>	<b>Other</b>
Petroleum Onshore Act 1991	Petroleum Onshore Regulation 2007		Conditions of title issued by the Minister or imposed by regulation under s.23 of the POA.
			Schedule of Onshore Petroleum Exploration and Production Safety Requirements August 1992
			Code of Practice for Coal Seam Gas Well Integrity September 2012
			Code of Practice for Coal Seam Gas Fracture stimulation activities September 2012
			Environmental Impact Assessment Guidelines (ESG2)
			Guideline for Agricultural Impact Statements (State Significant Development) October 2012
			Guideline for Agricultural Impact Statements at the Exploration Stage (Part 5 EPAA), November 2012
			Rehabilitation Security Deposits (EDP 11). Rehabilitation cost estimate guidelines 2010 (ESG 1)
			Ban on use of BTEX compounds in CSG activities (Policy No TI-O-120) ( <i>internal NSW Trade &amp; Investment policy; the ban is referred to in the Code of Practice for CSG fracture stimulation activities</i> ).
Protection of the Environment Operations Act 1997	Protection of the Environment Operations (Clean Air) Regulation 2010		
	Protection of the Environment Operations (General) Regulation 2009		
	Protection of the Environment Operations (Waste) Regulation 2005		
Environmental Planning and Assessment Act 1979	Environmental Planning and Assessment Regulation 2000	State Environmental Planning Policy (Major Development) 2005	Strategic Regional Land Use Plan New England North West September 2012
		State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007	Strategic Regional Land Use Plan Upper Hunter September 2012

		State Environmental Planning Policy (State & Regional Development) 2011	
Water Management Act 2000	Water Management (General) Regulation 2011	Access Licence Dealing Principles Order 2002	Aquifer Interference Policy September 2012
Water Act 1912 <sup>42</sup>	Water (Part 5—Bore Licences) Regulation 1995		
Wilderness Act 1987			
Environmentally Hazardous Chemicals Act 1985			
Heritage Act 1977			NSW Heritage Manual
National Parks and Wildlife Act 1974	National Parks and Wildlife Regulation 2009		Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW, OEH (April 2011) Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, Dept Environment, Climate Change & Water (13 Sept 2010).
Threatened Species Conservation Act 1995			Threatened species assessment guidelines: The assessment of significance, Dept Environment & Climate Change (August 2007)
Pipelines Act 1967	Pipelines Regulation 2005		
Work Health and Safety Act 2011			
<b>Commonwealth</b>			
<b>Principal Act</b>	<b>Regulations</b>	<b>Statutory Instruments</b>	<b>Other</b>
Commonwealth Environment Protection and Biodiversity Conservation Act 1999			
National Greenhouse and Energy Reporting Act 2007 <sup>43</sup>		National Greenhouse and Energy Reporting (Measurement) Determination 2008	

### Cross-jurisdiction

National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development

<sup>42</sup> Applies to areas for which there is no Water Sharing Plan under the Water Management Act 2000.

<sup>43</sup> Makes registration and reporting mandatory for corporations whose energy production, energy use or greenhouse gas emissions meet specified thresholds

**REPORT 1**  
**CURRENT LEGISLATIVE REQUIREMENTS**  
for  
**COAL SEAM GAS**  
**EXPLORATION**  
**WHEN NO DEVELOPMENT CONSENT REQUIRED UNDER EPAA**

**ie WHEN EXPLORATION ACTIVITY ONLY INVOLVES:**  
**prospecting, or drilling or operating stratigraphic boreholes, or drilling or operating monitoring wells, or**  
**drilling or operating a set of 5 or fewer wells that is more than 3km from another well (except when the wells**  
**are in an environmentally sensitive area of State significance)**

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Disclaimer: Please note the wording of the Act and Regulations has been paraphrased for the purposes of this exercise, and no reliance should be placed on this wording without reference back to the source legislative instrument.

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#### **ACRONYMS**

CSCS	Commissioner of Soil Conservation Service
DA	Determining authority (as per Part 5 of the EPAA) – for CSG exploration, it is the Minister for Resources & Energy or delegate
DC	Development Consent under EPAA
DG	Director-General (of relevant department)
DRE	Division of Resources & Energy, within NSW Department of Trade and Investment
ECCW	Department of Environment, Climate Change and Water (referenced in POReg).
EIS	environmental impact statement
EPAA	Environmental Planning and Assessment Act 1979 (NSW)
EPAReg	Environmental Planning and Assessment Regulation 2000 (NSW)
EP	environment protection
EPA	Environment Protection Authority
EPI	environmental planning instrument (must be either a LEP, a REP or a SEPP)
ESASS	environmentally sensitive area of state significance: referred to in the SEPP MPPEI
ESG2	ESG2: Environmental Impact Assessment Guidelines, DRE, March 2012
GAIS ES	Guideline for Agricultural Impact Statements at the Exploration Stage, November 2012
GD	Government Department
ID	integrated development
LEC	Land and Environment Court
LEP	local environmental plan
LGA	local government area
NPWA	National Parks and Wildlife Act 1974 (NSW)
NPWReg	National Parks and Wildlife Regulation 2009 (NSW)
PAC	Planning Assessment Commission
PAL	Petroleum Assessment Lease (form of PT)
PEL	Petroleum Exploration Licence (form of PT)
POA	Petroleum (Onshore) Act 1991 (NSW)
PEOA	Protection of the Environment Operations Act 1997 (NSW)
POReg	Petroleum (Onshore) Regulation 2007 (NSW)
PP	petroleum production
PPL	Petroleum Production Lease (form of PT)
PT	Petroleum Title (includes exploration licence, assessment lease, production lease or special prospecting authority)
REF	Review of environmental factors (used by DAs to make environmental assessment under Part 5, EPAA)
REP	Regional Environmental Plan
SA	statutory authority
SEE	statement of environmental effects
SEPP	State Environmental Planning Policy
SEPP MPPEI	State Environmental Planning Policy (Mining, Petroleum Production & Extractive Industries) 2007
SEPP S&RD	State Environmental Planning Policy (State & Regional Development) 2011
SOPEPSR	Schedule of Onshore Petroleum Exploration and Production Safety Requirements
SSD	state significant development
TSCA	Threatened Species Conservation Act 1995 (NSW)
WHSa	Work Health and Safety Act 2011 (NSW)

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**ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 & PETROLEUM (ONSHORE) ACT 1991**

All discussion of PELs in this section excludes 'low-impact exploration licences' and 'low impact special prospecting authorities' (s45B POA) which may be granted by the Minister in line with s26A of the Commonwealth Native Title Act, ie land where the owners are registered native title bodies corporate or registered native title claimants. The key features are that the Minister is satisfied that the prospecting operations are unlikely to have a significant effect on the relevant land (s45C(1) POA), that notice is served on all registered native title holders, registered native title claimants and representative ATSI bodies; and that access arrangements are made in accordance with Part 4A of the POA (s45F(2) POA – note Part 4A also applies to ordinary PELs, PALs and SPAs).

The main responsible Minister is the Minister for Resources & Energy, not the Minister for Planning.

Row No	Legislative instrument	Type of PT	Paraphrase of legal requirements
<b>1. Is CSG exploration permitted on the land proposed?</b>			
1.	s76B EPAA  s125 EPAA		If an EPI provides that: (a) specified development is prohibited, or (b) development cannot be carried out with or without development consent (DC), a person must not carry out the development on the land. A person offending against a direction or prohibition of the Act is guilty of an offence.
2.	cl3(2), 9A SEPP MPPEI	All CSG PTs	SEPP MPPEI is an EPI made under the EPAA. It specifically prohibits 'CSG development' on or under: <ul style="list-style-type: none"> <li>land within a CSG exclusion zone (which is defined as land within a residential zone (ie Zones R1, R2, R3, R4 and RU5) or future residential growth area land (ie land identified as such on the SEPP MPPEI Future Residential Growth Areas Land Map, which currently includes only the North West Growth Centre and the South West Growth Centre under the SEPP (Sydney Region Growth Centres) 2006)).</li> <li>land within a buffer zone (which is defined as land not within a CSG exclusion zone but within 2km of any such zone).</li> </ul> CSG development is defined as development for the purposes of petroleum exploration, but only in relation to prospecting for CSG; or development for the purposes of petroleum production, but only in relation to the recovery, obtaining or removal of CSG. CSG is defined as petroleum that: (a) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane, and (b) is in a gaseous state at standard temperature and pressure, and (c) is extracted from coal beds. <i>(This is the same definition as in the PEOA. There are no definitions of CSG in the POA or EPAA.)</i>
<b>2. If CSG exploration is not prohibited under SEPP MPPEI, is a PT required?</b>			
3.	s7 POA  s3(1) POA		It is an offence to 'prospect for or mine petroleum' <i>except in accordance with</i> a petroleum title, punishable by fine or imprisonment. <u>Petroleum</u> is defined as 'any naturally occurring hydrocarbon' or mixture of hydrocarbons, so includes CSG. <u>Petroleum title (PT) means an:</u> <ul style="list-style-type: none"> <li>exploration licence (PEL),</li> <li>assessment lease (PAL),</li> <li>production lease (PPL) or</li> <li>special prospecting authority (SPA)</li> </ul> in force under Act.  This section deals with PELs.
<b>3. What does a PEL cover?</b>			
4.	s29 POA, s 3(1) POA	PEL only	The rights conferred by a PEL are 'to <u>prospect</u> for petroleum'. <u>Prospect</u> is defined as: to carry out works on, or to remove samples from, land for the purpose of testing the quality and quantity of petroleum in the land and the potential to recover petroleum from the land, but does not include any activity declared by the regulations not to constitute prospecting. <i>[Note: The PORegs do not declare any activity not to constitute prospecting.]</i>
5.	s28A POA	All PTs	There is also a right to carry on such operations as are necessary to ' <u>explore</u> ' the land 'for the existence and availability of <i>natural reservoirs</i> ' (not defined), subject to any order of Minister.



			<p><b>affecting or likely to affect the environment by reason of that activity’.</b>  <b>[Note:</b> The DA for a PEL is the Minister for Resources &amp; Energy. But Minister can delegate.]  The authority who determines the PT under the POA is also the one who makes the environmental assessment under the EPAA.  <i>[Note: It is not clear to me absolutely that this Part 5 assessment is done as part of the PEL assessment. It may be that it is done afterwards in respect of an activity or activities to be carried out under the PEL. If this is so, this step would not form part of the PEL process, but would have to be followed at some stage of the exploration activity approval process, so its inclusion here is useful.]</i></p>
13.			
14.			These environmental assessments are examined further below.
<b>6. POA Application process: PEL</b>			
15.	s11 POA	All PTs	Applications lodged with the DG.
16.	s8 POA	All PTs	The Minister may invite applications for PTs, by notice in Gazette.
17.	s11 POA	All PTs	An application for a petroleum title must be made in form approved by Minister.
18.		All PTs	An application must be accompanied by:
19.	s12 POA Schedule 1 POReg		<ul style="list-style-type: none"> <li>lodgement fee prescribed by <i>regulations</i> (regulations specify \$1000)</li> </ul>
20.	s13 POA cl4 POReg		<ul style="list-style-type: none"> <li>a map or plan, drawn in accordance with the <i>regulations</i>, and delineating area boundaries (regulation specifies type and scale of maps)  [see s20A too – Minister may in effect waive minor requirements]</li> </ul>
21.	s14 POA  cl5 POReg		<ul style="list-style-type: none"> <li>a proposed work program complying with <i>regulations</i>, indicating nature and extent of operations to be carried on under authority of title  Work program comprises: <ul style="list-style-type: none"> <li>a fixed agenda describing in detail the nature and extent of operations to be carried on during whole of term of title; OR</li> <li>a fixed agenda related to an initial period (at least first two years) and a summary of intended operations during remainder of term.</li> </ul> There are Regulations applying to PELs. And Minister can also impose conditions, including an approved work program: s23POA]</li> </ul>
22.	s15POA		<ul style="list-style-type: none"> <li>evidence of applicant’s financial standing, and their technical qualifications and the applicant’s ability to comply with Act and regulations. Also see row 39: Minister can refuse if applicant doesn’t meet ‘Minister’s minimum standards’.  <i>No minimum standards appear to be specified: see <a href="#">PEL Application Form</a> which requires only:</i>  <b>On financial standing:</b>  <i>a) a certificate issued by a member of CPA Australia or the Institute of Chartered Accountants in Australia (including membership number): or</i>  <i>b) a statutory declaration stating that the applicant has sufficient financial resources at the time of lodgement to meet the financial commitments on all the applicant’s titles and title applications.</i>  <b>On technical qualifications:</b>  <i>‘List details of persons or organisations providing technical advice. ... The qualifications and experience of the technical manager ... It is expected that the technical manager will be a qualified geoscientist with petroleum exploration experience.’</i>  <b>On ability to comply with Act and regulations:</b>  <i>‘A statement of undertaking will be acceptable.’</i></li> </ul>
<b>7. Mandatory POA requirements which can be checked at beginning of application process</b>			
23.	s9 POA	All PTs	PT can be granted over any onshore area within NSW <u>except</u> : <ul style="list-style-type: none"> <li>an area designated by the Minister by notification in Gazette as an area in respect of which a title is not to be granted</li> <li>an area in an existing petroleum title held by a person other than the applicant</li> <li>an area in another application for a petroleum title, made before the applicant’s application, and that has not been withdrawn or finally disposed of.</li> </ul> <i>So, if applicant area has been gazetted as area where no PT to be granted, or is located within another title holder’s area, or within prior PT applicant’s area, it can be refused at this stage.</i> Note also, that if the POA is for land within a CSG exclusion or buffer zone, it can also be rejected at this stage (see row 2).
24.	s10 POA	All PTs	An application for a petroleum title must relate to only one area. ‘Area’ is not defined. Applying common meaning, presume is single piece of land, ie with one single unbroken boundary. <i>If application covers more than one area, it can be refused at this stage.</i>
25.	S30(1) POA	PEL only	Area of PEL must be: <ol style="list-style-type: none"> <li>not more than 140 blocks, and</li> <li>not less than 1 block, unless Minister for special reasons considers a smaller area necessary or desirable.</li> </ol> <i>If application is for area larger than 140 blocks, it can be refused at this stage. If it for area smaller than 1 block, Minister would need to consider.</i>



	ESG2, p3	<p>unless:</p> <ul style="list-style-type: none"> <li>• it has received, examined and considered an <u>EIS</u> in the prescribed form</li> <li>• it has given public notice of the EIS and considered any public submissions made.</li> </ul> <p>In addition, a DA cannot approve an activity that is likely to <b>significantly</b> affect the environment, unless:</p> <ul style="list-style-type: none"> <li>• it has, if the land is part of a wilderness area, obtained consent required for the activity under the Wilderness Act [note: the consents required under the Wilderness Act relate only to development activities undertaken by statutory authorities: s15 Wilderness Act, so relevance to CSG activities seems unlikely]</li> <li>• it has, if Minister for Planning has requested the PAC to conduct a review with respect to the activity, considered that review (<i>note: it appears the Minister could request such a review at any time</i>)</li> <li>• it has, if the DG of Planning has decided that an examination be undertaken, considered that examination.</li> </ul> <p>The DA must provide a copy of the EIS to the DG of Planning when it is received and before public notice is given. [These latter provisions make it clear that the Planning portfolio can be involved in decisions that don't need DC, but where the environmental impact is likely to be significant.]</p> <p>ESG2 states that the EIS may be requested if, 'in reviewing the REF, the Government decision-maker forms the opinion that the impacts on the environment are likely to be significant'. ESG2 states that the EIS must be in the format specified by the EPAA and EPA Regs, and in accord with the Director-General's Requirements (DGR). See Schedule 2, EPA Regs. <i>Note that the EIS is only required if there is a likely <b>significant</b> effect on the environment. See row 30 for factors that go to determining whether an effect is significant.</i> <i>The Act does not actually specify who determines significance, but the implication is that it is the DA. The process is: DA receives application with information as per REF, decides on basis of evidence provided that likely effect is significant, and then can't make further decision without an EIS. At that point (if the applicant had not foreshadowed it) the applicant would then have to provide an EIS. The process is not clear-cut.</i></p>
<b>Threatened species etc</b>		
29.	s.112(1C), s112A, s112B, s112C, s112D EPAA	<p>In addition, a DA cannot approve an activity in respect of <b>land that is, or is a part of, critical habitat or is likely to significantly affect threatened species, populations or ecological communities, or their habitats</b>, unless a <u>species impact statement (SIS)</u>, or an environmental impact statement that includes an SIS, has been prepared (in each case) in accordance with the TSCA (the requirements of an SIS are specified in ss 109-113 TSCA). <i>Note that, if the activity is not likely to significantly affect the environment, except by way of an effect on critical habitat or threatened species, populations, communities or their habitats, an EIS is NOT required, but the SIS is.</i></p> <p>The DA must have regard to the terms of any recovery plan or threat abatement plan, when considering the SIS (these may be developed under the TSCA). A Minister who is a DA must also <i>consult</i> with the Minister administering the TSCA before granting an approval. That Minister must provide the DA Minister with any recommendations of the DG of DECCW (<i>not sure if this now the CE of OEH?</i>). The recommendations do not have to be accepted, but the reasons for not accepting must be in the determination. If the DA is <i>not</i> a Minister (see row 7 re delegations), then the DG of DECCW has to actually <i>concur</i> with the activity for the DA to approve it. The Minister administering the TSCA and the DG of DECCW also have to take into account a number of specified matters when being consulted, or when considering whether to concur.</p>
30.	s5A EPAA	<p>s5A specifies 7 specific factors that must be taken into account in determining whether there is a <i>significant effect</i> on threatened species, populations or ecological communities, or their habitats. These include factors such as the adverse effect on the species' life cycle or the extent and composition of the ecological community, such that there is a risk of extinction. It also specifies that 'any assessment guidelines' must be taken into account. 'Assessment guidelines' are defined as those issued under s94A of the TSCA. The <i>Threatened species assessment guidelines: The assessment of significance</i> (Dept of Environment &amp; Climate Change, August 2007) were issued under s94A. They extend to 12 pages and cover the 7 factors of assessment referred to above: <a href="http://www.environment.nsw.gov.au/threatenedspecies/legislation.htm">http://www.environment.nsw.gov.au/threatenedspecies/legislation.htm</a></p>
<b>9. Environmental conditions under Part 5 of EPAA</b>		
31.	s112(4) EPAA	<p>The DA may impose conditions on an activity to eliminate or reduce the detrimental effect of the activity on the environment, or threatened species etc; or it may disapprove the activity (and must provide reasons for the conditions or disapproval) (<i>but see note at end of row 12</i>).</p>
<b>Environmental review under PEOA</b>		
32.	s29(e) PEOA	<p>The PEOA provides for the making of Protection of the Environment Policies (PEPs), to include an EP goal, standard, guideline or protocol. They are drafted by the EPA and approved by the Governor on advice of the Minister for the Environment. There is no evidence on any EPA or other website that any PEPs are in place. However, should there be a PEP relevant to a PEL application, it is a requirement that the PEP be</p>

			taken into consideration during a review by a DA under Part 5 of the EPAA.
<b>10. Environmental review under POA</b>			
33.	s74 POA	All PTs	In deciding whether to grant a PT, Minister is to take into account the need to conserve and protect: <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land over which PT sought.</li> </ul> Minister may cause such studies (including EISs) to be carried out as Minister considers necessary to enable a decision to be made.
<b>11. Environmental conditions under POA</b>			
34.	s75POA	All PTs	Conditions of PT <i>may</i> include conditions relating to conservation and protection of: <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land subject to PT.</li> </ul> <p><i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i></p>
35.	s76POA	All PTs	Conditions of PT <i>may</i> include conditions relating to: <ul style="list-style-type: none"> <li>rehabilitation, levelling, re-grassing, reforestation or contouring any part of land that may have been adversely affected by operation, and</li> <li>filling in or sealing of excavations and drill holes</li> </ul> as may be prescribed by regulations or as Minister may determine. <p><i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i></p>
36.	s76POA	All PTs	Minister may amend a PT that does not contain conditions related to <i>protection of the environment</i> (ie as per ss75 or 76 – see previous 2 rows), or if Minister considers conditions inadequate, by including new conditions or further conditions. <p>Conditions relating to rehabilitation, levelling, re-grassing, reforestation or contouring (but not filling in or sealing excavations and drill holes) must be:</p> <ul style="list-style-type: none"> <li>in form approved by CSCS, and</li> <li>imposed only after consultation with DGNPW.</li> </ul> <p>This section has effect despite anything to contrary in s93 of EPAA. <i>[The reference to s93 of EPAA has effect of retaining Minister’s authority to include new or further conditions.]</i>  <i>This is the only provision that enables the Minister to add conditions AFTER a PT has been granted. The conditions must relate to protection of the environment, as narrowly construed in s75 and 76 of the POA only.</i></p>
37.	s28A POA	All PTs?	Right to explore land for natural reservoirs may be subject to an order from the Minister prohibiting, or directing title holder to desist from, carrying on operations of a kind specified in order. <p>Contravention is breach of conditions of title.</p>
<b>12. General review under POA</b>			
38.	s20A POA	All PTs	Minister may waive minor procedural matters even if applicant has failed to comply, provided Minister satisfied that failure unlikely to adversely affect any person’s rights under Act or regulations, or result in any person’s being deprived of information necessary for effective exercise of those rights.
39.	s21 POA	All PTs	Minister <i>may</i> refuse application if: <ul style="list-style-type: none"> <li>it not made in accordance with Act or regulations, or</li> <li>it would contravene Act, or</li> <li>proposed work program does not meet Minister’s minimum standards re nature and extent of activities (<i>note no minimum standards re PLs, see row 22 above</i>), or</li> <li>applicant does not meet Minister’s minimum standards re technical and financial capability to carry out proposed work program (<i>see row 22 above</i>), or</li> <li>Minister decides, in public interest, having regard to nature and extent of proposed activities, it would be better not to grant title or grant someone else title.</li> </ul> <p><i>Authority appears to be discretionary ... application does not have to be refused even if these grounds exist.</i>  <i>The power to refuse ‘in public interest’ is quite a broad power.</i></p>
<b>13. Conditions, either specified in POA or POREg, or which can be made by Minister (or delegate)</b>			
40.	s23(1) POA	All PTs	A PT is subject to: <p>(a) the conditions imposed by the Minister and specified in the title, and</p> <p>(b) any conditions prescribed by the regulations.</p> <p>If there is any inconsistency between conditions prescribed by the regulations and conditions imposed by the Minister, the latter prevail to the extent of the inconsistency.</p> <p><i>Some discretionary and mandatory conditions are included below. However, the extensive list of conditions that accompany most current PELs are primarily made under this general power of the Minister to impose conditions.</i></p>

<b>Conditions which may be made by Minister (or delegate)</b>			
<b>Work program condition</b>			
41.	s23(3), (4) POA	All PTs	Conditions imposed by Minister <i>may</i> include: <ul style="list-style-type: none"> <li>• conditions about work to be carried out by title holder during or after term of title, including approved work program and</li> <li>• amounts to be expended by title holder in carrying out any such work.</li> </ul> Conditions may apply to each year for term of title. <i>Given that the Minister has a general discretion to impose conditions under s23(1), this specific discretion is redundant. But presumably it was addressing a (then) current issue, for clarity.</i>
42.			<i>Note that the <b>Code of Practice CSG Well Integrity</b> and the <b>Code of Practice for Fracture Stimulation Activities</b> are not of themselves legally binding documents. They are given legal effect by their inclusion as conditions in PTs. These each have an extensive series of requirements which must be complied with. See more about these Codes in Reports 2 and 3.</i>
43.	cl5(4) POReg	PEL or PAL only	If work plan submitted in 2 parts (ie fixed agenda for first 2 years, then summary of intended operations for remainder), it is a condition that title holder provide progressive agendas for next period of two years or for remainder of term -- not later than 30 days before the end of the period covered by the fixed agenda
<b>Security deposit condition</b>			
44.	s106B, s106C, s106E, s106F, s106G, s106H POA cl24A POReg	All PTs	Minister <i>may</i> impose a condition requiring title holder to give and maintain a security deposit, in such form as Minister <i>may</i> determine, for fulfilment of holder's obligations under POA. Condition may be imposed at the time of granting of title, <i>or at any time later</i> . Granting of title can be made subject to the giving and maintaining of the security deposit.  Amount of security deposit is assessed by the DG, having regard to estimated cost of fulfilling any obligations under Act, and in accord with any Ministerial guidelines. The title holder can seek a review of a security deposit assessment. The minimum security deposit is now \$10,000.
45.	s106I	All PTs	Security deposit is forfeited to Crown if the title holder 'fails to fulfil the obligations under this Act', on written notice to title holder. Money forfeited must be applied for purpose of fulfilling obligations under the POA.
<b>Mandatory conditions</b>			
<b>Work Health and Safety conditions</b>			
46.	s128 POA	All PTs	It is a condition of every PT that title holder carry out all petroleum exploration operations and operations for the recovery of petroleum in the title area in accordance with the Work Health & Safety Act 2011.
47.	cl27 POReg 2007	All PTs	It is a condition of every PT that title holder comply with the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR). The SOPEPSR, as sourced from <a href="http://www.resources.nsw.gov.au/safety/legislation/petroleum">http://www.resources.nsw.gov.au/safety/legislation/petroleum</a> , is dated August 1992. <i>It covers more than what might be regarded as 'safety' issues.  Pages 13-21 of the Schedule refer specifically to Petroleum Production.  A separate section on the contents of the SOPEPSR is below.</i>
<b>Work program condition</b>			
48.	cl9 POReg	All PTs	It is a condition that title holder will carry out operations, and only the operations, described in the work program, for the time being in force. [cl10 provides for title holder to apply for variation to work program, which Minister <i>may</i> approve.]
<b>DG notice compliance condition</b>			
49.	cl26 POReg	All PTs	It is a condition that title holder complies with terms of any notice from DG requiring title holder to comply with provision of regulation.
50.	cl27A POReg	All PTs	It is a condition that title holder comply with any notice from DG requiring title holder to carry out an audit about any matter related to the title. <i>This enables the DG to require an audit at any time.</i>
<b>14. Term of title</b>			
51.		PEL	Term of licence is set by Minister and cannot exceed 6 years
<b>15. Minister's responsibility if petroleum title granted</b>			
52.	s9(5) POA	All PTs	Title must be published in the Gazette
53.	s9(6) POA	All PTs	If title relates to land that is a biobank site (see Part 7A of TSCA): Minister administering TSCA must be notified. (And see row 199).
<b>16. Title takes effect when?</b>			
54.	s9(4) POA	All PTs	On date signed by Minister, or on later date specified in title
55.	s25 POA	All PTs	Legal challenges to the grant of a title cannot commence later than 3 months after date of Gazette publication of grant of title
<b>17. Access of PEL holder to land for purposes of PROSPECTING</b>			
The access arrangements for prospecting titles (ie PELs, PALs and SPAs) are different from those for PPLs.			
56.	s3(1) POA		See row 3 for definition of prospecting
57.	s69C POA	PELs, PALs and SPAs	Title holder must not 'carry out prospecting operations' on any land except in accordance with an access arrangement that is either: <ul style="list-style-type: none"> <li>• agreed in writing between title holder and landholder, or</li> <li>• determined by an arbitrator under the Act.</li> </ul> <i>There are a range of provisions governing the process for establishing an access arrangement,</i>

			including arbitration arrangements, in Part 4A POA, ss 69A-69U. They are not discussed further here. [It is noted that a Bill to amend the provisions on access is currently before the NSW Parliament, and a new Code of Practice for Land Access has been released for public consultation.]
58.	s41, s47J, s54, s58O, s64 NPWA		Prospecting and exploring cannot occur in a national park, historic site, nature reserve, karst conservation reserve or Aboriginal area unless the Minister for Environment approves and the approval is laid before both houses of Parliament. But this does not apply to conservation reserves (see rows 189 and 190).
<b>18. Contravention of conditions of title</b>			
59.	s136A POA current	All PTs	Contravening or failing to comply with <i>any</i> conditions of a PT is an offence. Max penalty if condition relates to environmental management is 10,000 penalty units (corporation) or 2000 (individual). Max penalty for non-environmental conditions is 2000 penalty units.
60.	s137A POA current cl28 POReg Schedule 2 POReg	All PTs	Minister <i>may</i> serve a penalty notice on a title holder if it appears they have breached condition. Payment of penalty ends further court proceedings. Regulation prescribes amount of penalty, up to max of 100 penalty units. Penalty for breach of environmental condition is \$2500. Penalty for breach of non-environmental condition is \$1250.
<b>Direction to comply with rehabilitation conditions</b>			
61.	s77POA	All PTs	Minister <i>may</i> give written notice on current or former title holder directing person to take specified steps within specified time to give effect to conditions in PT related to rehabilitation of the land, as per s76 (see row 30). Failure to comply by title holder: maximum penalty 10000 penalty units (corporation) or 2000 penalty units (individual).
62.	s78POA	All PTs	If title holder fails to comply, Minister <i>may</i> cause to be taken any of the steps specified in the direction. Any costs or expenses incurred by Crown are a debt due to the Crown and are recoverable in appropriate court (whether or not title holder prosecuted or convicted).
<b>Suspension of conditions</b>			
63.	s24 POA	All PTs	On application by title holder, Minister <i>may</i> suspend any or all of conditions relating to working of land comprised in title. Suspension cannot exceed 6 months. In granting suspension of conditions, Minister <i>may</i> impose conditions: <ul style="list-style-type: none"> <li>• for protection of wells, equipment or works on land, or</li> <li>• for protection of petroleum deposits, water or minerals in land or in adjacent land, or</li> <li>• for any other purpose.</li> </ul> [Not clear whether this power to suspend extends to mandatory conditions that are specified in the POA or PORegs, eg s128 POA which makes compliance with WHSA a condition of the PT.]
<b>19. Obligations and liabilities of PEL holders (separate from obligations imposed through conditions on title)</b>			
<b>Payment of fees</b>			
64.	s94E POA Schedule 1, PO Reg	All PTs	Title fee payable to DG – one-off fee at time of grant. Fee is \$15000 where title is for term >3 years
<b>Information/notification-related obligations</b>			
65.	cl8 POReg	All PTs	Title holder must advise Minister of intention to commence work on any exploration borehole, seismic survey or other exploration within area of PT, not later than 14 days before starting work
66.	cl14 POReg	All PTs	After <i>completion</i> of ... any activity described in conditions of title as 'significant component of work program', title holder must forward to DG, in format specified in conditions of the title, a report on operations carried out in the activity concerned, together with all raw and processed data and main conclusions drawn from it. Within 6 months of completion. Max penalty: 100 penalty units
67.	cl14 POReg	All PTs	After the <i>end of period covered by a fixed agenda</i> , title holder must forward to DG: (a) a summary of operations carried out during the period covered by the agenda, within 30 days, and (b) a full report on operations carried out during that period, within 6 months. The minimum period for a fixed agenda is 2 years. Max penalty: 100 penalty units
68.	cl15 POReg	All PTs	Title holder must keep geological plans and records relating to work carried out, as directed by the DG. Max penalty: 100 penalty units
69.	s27, s28 POA	All PTs	If petroleum is discovered in land comprised in a title, the title holder must a) inform the Minister immediately of the discovery and b) furnish particulars in writing within 3 days. DG can direct title holder to furnish particulars of petroleum.
70.	s131 (1) POA cl16 POReg	All PTs	On every anniversary of grant of PT, title holder must provide Minister with record in prescribed form of: <ul style="list-style-type: none"> <li>• operations conducted and expenditure incurred</li> <li>• plan drawn to prescribed scale showing situation of wells; all development and other works and</li> </ul>

			improvements; and any ancillary rights acquired. Scale is 1:25,000, 1:100,000 or 1:250,000.
71.	s131(2) POA	All PTs	Every title holder must: <ul style="list-style-type: none"> <li>keep accurate geological plans, maps and records</li> <li>furnish to the Minister such plans and information as Minister requires.</li> </ul>
72.	s.132 POA	All PTs	Every title holder must: <ul style="list-style-type: none"> <li>collect, label and preserve all cores and characteristic samples of strata encountered in any well on land comprised in title, and samples of any petroleum or water discovered in any well</li> <li>make scientific examinations of those samples; and give the Minister reports of the examinations made;</li> <li>furnish to the Minister such data as the Minister may require.</li> </ul> <p>[Note: Ss 117-125 POA contain provisions relating to public release of data and samples. These are not given in detail here.] PELs that do not require DC are less likely to involve wells, so this of less relevance.</p>
73.	s133 POA	All PTs	Every title holder must, if called on, furnish such statistics, returns and other information as Minister may require. Max penalty: 200 penalty units
74.		All PTs	Any person who inserts false particulars or supplies false information is guilty of an offence. Max penalty: 200 penalty units. If false particulars supplied wilfully to evade royalty payment, may have to pay additional penalty of twice the royalty.
<b>Royalties and fee payments</b>			
<i>This section is unlikely actually to apply to PELs without DC, as they do not involve substantial wells. However, it is included for completeness.</i>			
<b>Royalties</b>			
75.	s85, 91, 92, 94 POA	All PTs	Title holder must pay to Minister a royalty in respect of 'all petroleum recovered' by title holder in area covered by title. Royalties are payable annually, but not due until last day of next royalty period. Late payment penalty of 1/3 of 1% per day, computed from time it became payable to when it paid. Royalties are a debt due.
76.	s85, 88, 89, 90 POA cl22 POReg	All PTs	<i>Royalty quantum:</i> Annual rate of royalty specified in POA and POReg: varies between 5 and 10% of value at well-head of the petroleum recovered, depending on number of years of commercial production. (From Jan 2013, it is all 10% - cl24 and 24AA of POReg 2007). <i>Well-head</i> is equipment used for recovery of petroleum 'as agreed between title holder and Minister' or, if no agreement within period allowed by Minister, as determined by Minister. <i>Value at well-head</i> is amount determined by Minister as being that value. <i>Quantity of petroleum recovered</i> is: <ul style="list-style-type: none"> <li>the quantity measured by a measuring device approved by the Minister and installed at well-head or other place approved by Minister, or</li> <li>if Minister not satisfied quantity properly or accurately measured by approved measuring device, the quantity determined by the Minister as being the quantity recovered</li> </ul> See 716 of SOPEPSR: DG has power to seal valve or meter on well or storage facility, for purposes of royalty payable.
77.	s86 POA	All PTs	<i>Royalty reduction:</i> Minister may reduce royalty rate if: <ul style="list-style-type: none"> <li>Minister satisfied that current rate of recovery makes recovery uneconomic, or</li> <li>petroleum is being recovered as consequence of requirement under POA, or</li> <li>other circumstances which Minister considers justify reduction.</li> </ul> Minister can revoke or vary a reduction.
<b>Fees</b>			
78.	s94C, 94H, 94I, 94L, 94N, 94O, 94P, 94Q, 94R POA Schedule 1, POReg	All PTs	Title holders must pay, in addition to royalty: <ul style="list-style-type: none"> <li>a title fee for PEL this is \$10,000</li> <li>an annual rental fee for PEL this is \$60 per block or \$2.40 per unit in 1st term of licence; \$104 per block or \$4.16 per unit in 2<sup>nd</sup> term of licence; \$187.50 per block or \$7.50 per unit in later licences. DGTI determines annual rental fee area.</li> <li>an administrative levy 1% of security deposit amount (see row 44), with minimum amount of \$100 (can be varied by POReg, but no provision to date). (Further detail where more than 1 PT involved not included here).</li> </ul> Late payment fees may be charged by DGTI: 15% of overdue amount per annum, compounded quarterly. Fees are a debt due; non-payment is a contravention of POA but not an offence. Fees are payable even if PT cancelled or suspended. Annual Rental Fee and Administrative Levy are payable annually, from 1 July 2012 on grant anniversary date.  <i>DGTI has obligation to assess liability of title holder for fees, and to serve notice on title holder of when title fee and annual rental fee payable.</i> <i>DGTI has discretion to charge late payment fee if fee overdue.</i>

			<i>DGTI has obligation to record annual rental fee area in records required by s95 POA.</i>
			<i>There are phasing in provisions in POReg for PTs granted before 1 July 2012. Not reviewed here: see cl22 POReg</i>
79.	cl22 POReg	All PTs	Fees may be remitted or waived in relation to a particular person or class of persons, if Minister satisfied there sufficient cause to do so
<b>Compensation to landholders</b>			
80.	s107 POA	All PTs	A title holder <i>is liable</i> to compensate 'every person having any estate or interest in any land injuriously affected', or likely to be affected, by operations in pursuance of the POA. But compensation is not payable if the operations do not affect 'any portion of the <i>surface</i> of any land'.
81.	s108 POA	All PTs	If title holder and parties unable to agree on amount of compensation, then LEC assesses. [Additional provisions on assessing and appealing compensation are included in POA and POReg (Regs 17-19), but not reviewed here.]
<b>Restrictions, and potential variations with consent of Minister</b>			
82.	s70(1)POA	All PTs	Title holder may not exercise any title rights over land in an <i>exempted area</i> , except with consent of Minister. <i>Exempted area</i> includes land: <ul style="list-style-type: none"> <li>• reserved for a public purpose</li> <li>• held under a lease for water supply</li> <li>• transferred, granted or vested in trust by Crown for purpose of a race-course, cricket-ground, recreation reserve, park or permanent common for any public purpose</li> <li>• prescribed by regulations for purposes of this definition (no prescription at present in POReg).</li> </ul>
83.	s72POA	All PTs	Title holder must not carry on mining operations or erect works on <i>surface</i> of any land: <ul style="list-style-type: none"> <li>• within 200 metres of dwelling-house that is principal place of residence of person occupying it, or</li> <li>• within 50 metres of any garden, vineyard or orchard, or</li> <li>• on which is situated any improvement (being a <i>substantial</i> building, dam, reservoir, contour bank or other <i>valuable</i> work or structure), other than an improvement for mining operations <i>except with consent of landholder/house occupant</i>.</li> </ul> Once given, consent is irrevocable.  'If need be', the Minister is to determine whether any improvement is <i>substantial</i> or <i>valuable</i> , and may define an area adjoining any such improvement on the surface of which no mining operations are to be carried out or works erected, <i>without the owner's consent</i> . Disputes go to LEC for determination. <i>I have not yet found any guidelines to assist the Minister in determining whether an improvement is substantial or valuable. On the face of it, it would seem to be based on the Minister's (or delegate's) personal opinion only.</i>
<b>20. Authority to cancel or suspend title</b>			
84.	s22 (1)POA	All PTs	Minister <i>may cancel</i> title if title holder: <ul style="list-style-type: none"> <li>• fails to fulfil or contravenes any title conditions, or</li> <li>• fails to use land comprised in title in good faith for purposes for which it granted, or</li> <li>• uses land for purpose other than that for which title granted, or</li> <li>• contravenes the Act or regulations.</li> </ul>
85.	s22(2) POA	All PTs	Minister <i>may also cancel</i> title, in whole or part, on written request of title holder, though Minister can refuse unless all data and reports due under regulations have been submitted and all data and operations reported on. <i>Effect of cancelling title would remove the obligation for reports, so this is a way of enforcing reports.</i>
86.	s22(2A) POA	All PTs	Minister <i>may cancel</i> part of title if part of land in title required for 'any public purpose', 'with or without restrictions as to depth'
87.	s22(3A) POA	All PTs	Minister <i>may suspend</i> all or some operations under a title 'until further notice' if title holder contravenes <ul style="list-style-type: none"> <li>• a requirement under the Act to pay a royalty or give or maintain a security, or</li> <li>• any condition of title 'that is identified as related to environmental management' (ie if identified in the title, or in any notice of condition given to title holder)</li> </ul>
88.	s22(6) POA	All PTs	Minister <i>must</i> give written notice of proposed cancellation or suspension, and the grounds, to title holder, and give title holder reasonable chance to make representations, and take representations into consideration.
89.	s22(5) POA	All PTs	No compensation payable by Crown when title cancelled or operations suspended.
90.	s94R POA	All PTs	Fees (title fee, annual rental fee, administrative levy) payable even if title cancelled or suspended (see 73)
91.	s22(4A)	All PTs	Notice of cancellation is to be published in Gazette, as soon as practicable after cancellation
<b>21. Title holder responsibilities if PT ceases</b>			
92.	s82POA	All PTs	Title holder may, within 6 months of title ceasing, or must, if directed by Minister within time specified, remove from land any petroleum plant brought on to or erected on the land 'in the course of drilling operations carried out under the PT'.
93.	s83POA	All PTs	If plant not duly removed, Minister <i>may</i> direct it be sold by public auction, then by private treaty. Act provides for disposal of proceeds.

<b>22. Varying the work</b>			
94.	cl10 POReg	All PTs	A title holder who wishes to vary the work program in force must lodge a submission with the Minister providing adequate details of the variation proposed to be made and setting out the reasons for making it
95.	cl10 POReg	All PTs	Minister may approve if satisfied that there is just and sufficient cause for making variation and if revised work program meets Minister's requirements
<b>23. Renewal of title application</b>			
96.	S19(2) POA	PEL & SPA	PEL or SPA holder may apply for renewal of title not earlier than 2 months and not later than 1 month before authority or licence ceases to have effect.
97.	s30(2) POA	PEL only	PEL can only be renewed over area that is not greater than 75% of the area over which first PEL granted, unless Minister satisfied of special circumstances, <i>Note that an exploration licence renewal has to be over less land area than original licence.</i>
<b>Minister's authority to renew title</b>			
98.	s19(2B), (3), (3A) POA	All PTs	Minister <i>may</i> renew or refuse renewal application. Refusal may be on any ground on which Minister might have refused title initially, or might have cancelled title (see rows 39 and 84). Minister may refuse renewal unless all data and reports due under regulations have been submitted
99.	s20 POA	All PTs	Original title continues in force while application for renewal is pending.
<b>24. Withdrawal of application</b>			
100.	s19A POA	All PTs	Application or renewal may be withdrawn in writing to Director-General. Application ceases to have effect on lodgement of withdrawal
101.	s95 POA cl12 POReg	All PTs	DG <i>must</i> keep records of: <ul style="list-style-type: none"> <li>every PT application, and</li> <li>every PT, and</li> <li>every matter required by POReg.</li> </ul> Records must be available for inspection free of charge by public. Records may be kept via computer. Particulars specified in cl12.
102.	s97 POA	All PTs	DG <i>must</i> keep register of legal and equitable interests in PTs
<b>25. Other authorities of Minister</b>			
103.	s96A POA	All PTs	Minister <i>may</i> approve application for transfer of PT, including amendment of conditions
<b>26. Inspection and control</b>			
104.	s98, 99, 100, 101, 103 POA	All PTs	DG and officers authorised by DG have access to land subject to a PT, and all buildings (except residential premises), structures, equipment and works, and all books, accounts, documents and other records relating to the land for the purpose of ascertaining whether requirements of the PT and the POA are being observed. There are also authorities related to surveys and sampling. Notice not required to title holder, but notice is required to <i>land holder</i> .
105.	s129 POA	All PTs	'Inspectors' may require dangerous or defective matters, things or practices, which threaten or tend to injure the health or body of any person, to be remedied by a specified period; and may direct that an operation cease or that persons withdraw, indefinitely or for specified period. <i>'Inspectors' not defined, but s113 POA makes provision for people to be employed as such.</i>
106.			And see SOPEPSR, re powers of inspectors, eg cl 209. <i>It's not absolutely clear, but it seems inspectors under the Act and the Schedule are probably the same.</i>
<b>27. Easements and rights of way</b>			
107.	s105 POA	All PTs	Minister may grant and revoke easements or right of way through, over or on the <i>land comprised in a PT</i> , as required for development or working of the land or any land in other PTs
108.	s106 POA	All PTs	Minister may grant and revoke 'temporary' rights of way through, on or in <i>any</i> land for construction of access road to PT land. If the land is within a NPWA state recreation area: <ul style="list-style-type: none"> <li>Water Administration Ministerial Corporation's concurrence needed <i>if lands are an irrigation area</i> under Crown Lands Act 1989, or</li> <li>Lands Administration Ministerial Corporation concurrence needed, or</li> <li>Minister administering NPWA concurrence needed '<i>in any other case</i>'.</li> </ul> <i>There is no circumstance specified when Lands Administration Ministerial Corporation approval is required. The 'in any other case' re Minister administering NPWA does not quite make sense. It appears that all 3 concurrences are needed if lands are under an irrigation area, and 2 concurrences needed if not.</i>

**NOTE re above table:**

I have not included every power or obligation on DG in POA, eg in respect of caveats (s96B), or registration of legal and equitable interests (s974).

I have not included every process in POA related to assessment of compensation by LEC (ss109-112A); nor jurisdiction of LEC (s115).

I have not looked at Crown developments, as have assumed Crown would not develop any CSG facility.

## SCHEDULE OF ONSHORE PETROLEUM EXPLORATION AND PRODUCTION SAFETY REQUIREMENTS (SOPEPSR)

[It is a condition of all PTs that title holder comply with the SOPEPSR: see row 48.]

	Para	Paraphrase of Schedule provisions
109.		<i>This Schedule was published in 1992, but is still applicable. The sections listed below apply to all PTs. Part 7 of the Schedule, not included here, applies only to PPLs. There are references to obligations to act 'in accordance with good oilfield practice'. It is not clear what the benchmark for 'good practice' is. DRE's webpage (<a href="http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csq-regulated/additional-information">http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csq-regulated/additional-information</a>) states that 'Good oilfield practice means in accordance with generally accepted standards such as those published by the <a href="#">American Petroleum Institute</a>'. The majority of provisions in the Schedule are compliance obligations on the title holder (noting that compliance with the SOPEPSR is a condition of a PT).</i>
110.		<b>All petroleum titles</b>
111.	201	<b>Safety Management Plan:</b> Title holder must maintain a safety management plan
112.	203	<b>Certificate of competence:</b> Title holder must ensure people have certificates of competence where their activities require one
113.	205	<b>Tests:</b> Title holder must ensure any test required by the Schedule is carried out ' <u>in accordance with good oilfield practice</u> '.
114.	206	<b>General duty to maintain site that is safe for employees, visitors and the public.</b>
115.	208	<b>Information availability:</b> Title holder must make readily available to all workers copies of SOPEPSR, plus "Code of Environmental Practice as required under Regulation 28", plus Emergency Response Procedures manual.
116.	209	<b>Powers of inspectors:</b> Inspectors have powers to stop operations that are dangerous or ' <u>not in accordance with good oilfield practice</u> '.
117.	210	<b>Emergency response:</b> Title holder must have approved Emergency Response Procedures.
118.	212	<b>Protective Clothing:</b> Title holder must ensure protective safety equipment is provided. <i>Persons provided with safety equipment must wear it.</i>
119.	213	<b>Notices and signs</b> must be compliant with AS 1319
120.	214	<b>Precautions against fire:</b> Use diesel engines where practicable; no naked flames etc within 30 metres of 'the hole'; requirement to use flare line if inflammable gas met in well.
121.	301-308	<b>Reports of death or serious injury or serious damage or hazardous event or escape or ignition of petroleum, and records of death or injury, to be made to Inspector and/or kept.</b>
122.	4.	<b>Explosives, radioactive and dangerous substances:</b> 9 very specific requirements in respect of explosives, eg transport in accord with applicable legislation; keep in locked storage magazine etc
123.	5. (501-525)	Under the heading <i>Notification to Drill</i> , there are a series of obligations in respect of equipment standards, casings, cementing of casings, blow-out prevention control and drills, pressure-testing blow-out prevention equipment, installing a mud monitoring system, penetration rate recorder, drilling fluid, protection of aquifers, venting flammable vapours, abandoning wells, completing wells, disposing of produced oil and gas, disposal of waste. <b>Note:</b> <i>The 'protection of aquifers' provision is a single sentence stating that 'titleholder must ensure that all reasonable steps are taken during operations on a well to prevent leakage or the pollution of aquifers'. The PEOA and WMA would go further than this.</i>
124.	6. (601-	<b>Electrical:</b> This sections contains specific provisions relating to the safety of electrical apparatus, including wiring rules, protection circuits, control of static electricity, welding, and electrical shock. There is reference to some Australian Standards.

## WATER MANAGEMENT ACT 2000

NOW NSW Office of Water  
WAL Water Access Licence  
WMA Water Management Act 2000

125.		There are two aspects to the Water Management Act: i. <i>accessing or taking water</i> , which requires a Water Access Licence ii. <i>using water or constructing a water supply work</i> , which requires a Water Approval.
<b>28. Who approves Water Access Licence or Water Approval</b>		
126.	s389 WMA	The Act provides that all consents and approvals are made by the Minister. However, the Act provides that the Minister may delegate any functions to any person. Each responsibility below assigned to the Minister may be delegated to someone else. It is not known if any authorities have been so delegated.
127.	s71A, s71B WMA	Licences and dealings do not take effect until they are registered on the Water Access Licence Register.
<b>29. Water licences</b>		
<b>Does the PEL holder need a water licence?</b>		
128.	s60A, s60I WMA	Taking water from a water source without a WAL is an offence. The Act is specific about what constitutes 'taking water' in respect of petroleum exploration: (1) A person who takes water in the course of carrying out a <i>mining activity</i> is taking water from a water source. (2) ... A person takes water in the course of carrying out a <i>mining activity</i> if ... water is removed or diverted from a water source (whether or not water is returned to that water source) or water is re-located from one part of an

		<p>aquifer to another part of an aquifer.</p> <p>(3) To avoid doubt, a person who takes water in the course of carrying out a <i>mining activity</i> under (2) is required to hold an access licence authorising the taking of that water.</p> <p><i>Mining activity</i> includes petroleum exploration. Petroleum exploration means prospecting pursuant to a PT under the POA (see row 3 for definition of prospecting).</p>
129.	cl18 & Schedule 5, Part 1, cl7, WM(G)Reg	<p><b>However ... water taken for prospecting for petroleum is exempt from the requirement to get a WAL, provided not more than 3 megalitres of water is taken in any one water year.</b></p> <p>The analysis below applies only to PEL holders who expect to take more than 3 megalitres of water in any one year.</p>
130.		<p>Companies may already own water licences under the Water Act 1912. These are being converted into WALs under the WMA, as per a process described at <a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx">http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx</a>.</p>
131.		<p>If the PEL holder has no WAL, or additional water is required outside an existing licence, then a WAL is required. If the water required is NOT in an area that is the subject of a Water Sharing Plan, then the licence is governed by the Water Act 1912.</p> <p>If the water IS in an area that is the subject of a Water Sharing Plan, the licence is applied for under the WMA. The following details the licence provisions of the Water Management Act. The Water Act has not been further examined.</p>
132.	s61(1)(b), (c), s65 WMA	<p>NOW's website indicates that 'Generally, new water access licences for commercial purposes (irrigation, industry and mining) with a share of the available water are no longer being granted. If you want to obtain a permanent share of water you will have to purchase an existing licence on the water market' (<a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence">http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence</a>).</p> <p>The Act specifies that the only licences which can be applied for are:</p> <ul style="list-style-type: none"> <li>• zero share WALs, which enable one to 'have a water allocation account and to buy or transfer allocation water on an annual basis or share component from another licence holder' (ibid) but does not give any allocation to water of itself. There are provision in the WMA governing 'water dealing', but these are not discussed further here.</li> <li>• a WAL following a controlled allocation order, under which 'the NSW Government may make licences available in a specific water source through a tender, auction or other means' (ibid). This process is not discussed further here.</li> </ul> <p>(There is also a specific purpose WAL, but its purposes do not include mining: s61(1)(a).)</p> <p><i>The consequence of these provisions is that, if a PEL holder requires more than 3 megalitres of water for their exploration activity, and doesn't already have a water licence, they will need to apply for a zero share WAL, and then source a supply from another WAL holder through a water 'dealing', and apply for that water allocation to be re-assigned to the PEL holder's own WAL.</i></p> <p><i>Note that a separate WAL is required for each individual source of water.</i></p> <p><i>The Aquifer Interference Policy, in para 2.1, lists a number of matters which a licence holder needs to take into account when determining the type and number of WALs they are likely to require. It is clear that the onus is on the taker of the water to be sure they can fully account for all water they intend to take.</i></p> <p><i>However, the Aquifer Interference Policy is primarily applied to activities which need Development Consent under the EPAA, so it is of limited application to those activities which are approved under Part 5 of the EPAA (see row 9).</i></p>
<b>Application process for a (zero-share) WAL</b>		
133.	s61 WMA	Applications are made to the Minister.
134.	cl9, WM(G)Reg	An application must be in the approved form, signed and accompanied by relevant fee.
<b>Requirements for review by Minister before approval of WAL</b>		
135.	s63(2) WMA	<p>The Minister has to be satisfied that the licence is within the 3 categories mentioned above (ie as per s61(1), row 132), and that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to any water source as a consequence of water being taken' from it'.</p> <p><i>Note that, for a zero-share WAL, no harm can occur, as no water is allocated to be taken.</i></p>
136.	s63(4) WMA	<p>An access licence must specify:</p> <p>(a) in relation to its share component, the water management area or water source to which it relates;</p> <p>(b) in relation to its extraction component, the times, rates or circumstances in which, and the areas or locations from which, water may be taken under the licence.</p> <p><i>Note that, for a zero-share WAL, this information will be minimal.</i></p>
137.	s57 WMA, Regs 4 & 6, WM(G)Reg	<p>There are 11 categories of access licence in the Act, one of which is an 'aquifer access licence'. Further categories are specified in the Regs, including 'aquifer (general security) access licence' and 'aquifer (higher security) access licence. Some licences have greater priority over others, for the purpose of diminishing water allocations, as specified in this section and the regulations. Aquifer access licences are not singled out for priority.</p>
<b>Conditions</b>		
138.	s66(1) WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.
139.	s67 WMA	Additional discretionary conditions can be imposed after the WAL is granted, but only if the Minister has notified the WAL holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.
140.	s78 WMA	The Minister may suspend or cancel an access licence for non-compliance with conditions, as well as other specified grounds.

30. Dealing' in (trading) water allocations under WALs		
141.		There are a number of provisions on water 'dealing'. The main ones are:
<b>Short term: Assigning a water allocation: process</b>		
142.	s71T, s71L, s71Y WMA	Water <u>allocations</u> may be assigned from one WAL to another. Both licence holders must apply to the Minister for consent. This only applies in respect of a specific allocation of a set amount of water, ie over the short term. Application is made to the Minister in the approved form, and with the required fee.
<b>Short term: Assigning a water allocation: review by Minister</b>		
143.	s71YWMA  s5(8) WMA  ALDP Order2002	Minister may grant consent only if the dealing complies with s 71Y, which requires the application for Minister's consent to be dealt with in accordance with: (a) the water management principles, and (b) the access licence dealing principles, and (c) the access licence dealing rules established by any relevant management plan. The <i>water management principles</i> are extensive. A particular principle related to aquifer interference activities is that: (a) the carrying out of aquifer interference activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and (b) the impacts of the carrying out of aquifer interference activities on other water users must be avoided or minimised. The <i>access licence dealing principles</i> are as set out by order published on the NSW legislation website (s71Z(1)). There are a variety of orders in place, and not all have been reviewed. However Access Licence Dealing Principles Order 2002 does specify a series of general principles, and principles for specific types of access dealings, including dealings under s71G (which has now been renumbered as s71T). The general principles relate to impacts on water sources, on indigenous, cultural, heritage or spiritual matters and on water users, and on maximizing social and economic benefits. The specific principles include, for example, prohibition on the dealing if there is no satisfactory measurement of the water extraction; or if the water sources in the WAL are different; or if relevant water management plans don't have provisions regarding water protection.  For longer term 'dealings', either a 'term transfer' is required, or the transfer (usually through purchase) of an actual WAL or share of a WAL.
<b>Long term: Assigning a term transfer: process</b>		
144.	s71N WMA	All entitlements under a WAL may be transferred for a specified term, provided it longer than 6 months. Usually this would involve consideration (eg, a 'rental-type' payment). The Act does not require Minister's consent for a term transfer. Provided the term transfer is registered, it is complete. [The effect is like a lease. The owner does not change but the 'lessee' is responsible for the asset and all outgoings.]
<b>Long term: Transferring a WAL: process</b>		
145.	s71M WMA	A WAL may be transferred fully to another person. Usually this would involve consideration (eg a sale). The Act does not require Minister's consent for a WAL transfer. Provided the transfer is registered, it is complete.
<b>31. Water use approvals</b>		
146.	s89(1), s90, s91, s91A WMA	A water use approval confers a right to use water for a particular purpose at a particular location. Using water without an approval is an offence. Approvals are divided into 2 categories, each with specific kinds:  <b>Water management work    Activity</b> Water supply work            Controlled activity Drainage work                Aquifer interference Flood work
147.	Dictionary, WMA; cl22, WM(G)Reg	<i>Aquifer interference activity</i> means an activity involving any of: (a) the penetration of an aquifer, (b) the interference with water in an aquifer, (c) the obstruction of the flow of water in an aquifer, (d) the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations, (the regulations prescribe sand extraction and road base material extraction) (e) the disposal of water taken from an aquifer as referred to in (d).  <i>Aquifer</i> means a 'geological structure or formation, or an artificial landfill, that is permeated with water or is capable of being permeated with water'.
148.	s91(3) WMA	An aquifer interference approval confers a right to carry out specified aquifer interference activities at a specified location, or in a specified area, in the course of carrying out specified activities.
149.	s91F, s91G WMA  s91A(1) WMA Regs 33, 35 WM(G)Reg	Carrying out an aquifer interference activity without an aquifer interference approval is an offence, as is contravening a term of the approval.  The Regulations enable aquifer interference approval holders to engage in activities outside those specified in their approval, and which would otherwise be an offence, if they are in connection with <u>mining</u> , and the water is used in accordance with the approval. Hence, they do not need, for example, to get a <i>water supply work approval</i> in relation to the construction or use of a water management work. In addition, any person, whether they have an aquifer interference approval or not, is exempt from the general ban

	cl34, WM(G)Reg	on construction of water supply works without approval, if the water supply works are constructed for the purpose of prospecting or fossicking for petroleum under the POA and for no other purpose (but not on various environmentally sensitive land, as specified).
<b>Application process</b>		
150.	s92 WMA	Any person may apply for an approval
151.	cl23, WM(G)Reg	An application must be in the approved form, and if required by the Minister, include an assessment of the likely impact of the activity and the fee.
152.	s94 WMA	If the Minister receives notice from the PAC that it is conducting a review of the application under the EPAA, the Minister must defer a decision on the approval until the PAC report is received. [See row 28 above. There is potential for the PAC to be involved by the Minister during the environmental assessment under Part 5 of the EPAA.]
<b>Requirements for review by Minister before approval</b>		
153.	s95, s96 WMA cl26, WMA	The Minister may grant an approval after considering the application and 'all matters relevant to it'. Approval cannot be granted 'in contravention of the provisions of any relevant management plan'. The Minister must take into account 'such matters as are prescribed by the regulations, and such other matters as the Minister considers to be relevant'. The Regs state that the Minister must consider 'whether the amount of water taken in the course of carrying out the aquifer interference activity to which the approval relates will exceed the total extraction limit for the aquifer set out in any relevant management plan'. <i>The NSW Government's Aquifer Interference Policy is primarily aimed at activities under Parts 4 or 5.1 of the EPAA, so is not entirely relevant to water approvals for the purpose of prospecting, and other exploration activities that do not require DC. However, the Policy does refer to the Aquifer Interference Assessment Framework, and this does include guidance on assessing aquifer interference activities that do not need the Gateway Process, are not SSDs or do not involve CSG production (eg see Table 3 of the framework).</i> <i>The review under Part 5 of the EPAA, which must be undertaken by the Minister for Energy &amp; Resources when considering whether to grant a PEL under the POA, also takes into account water-related matters. See ESG2, sections 3.2. 4.1 and 4.4: see heading 7 above. And the GAIS ES also refers to the impact of exploration on water resources.</i>
154.	s97(6) WMA	The Minister cannot grant an aquifer interference approval unless satisfied that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to the aquifer, or its dependent ecosystems, as a consequence of its being interfered with in the course of the activities to which the approval relates'.
<b>Conditions</b>		
155.	s100 WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.
156.	s105 WMA	The Minister can set the period of the approval, but not longer than 10 years. Extensions can be applied for, and must be granted unless the conditions have been breached or the relevant water management plan or the regulations provide for the request to be assessed as a new application.
157.	s102 WMA	Additional discretionary conditions can be imposed after the approval is granted, but only if the Minister has notified the approval holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.
158.	s109 WMA	The Minister may suspend or cancel an approval for non-compliance with conditions, as well as other specified grounds.
159.	s324 WMA	Even if there is a water approval, the Minister may temporarily prohibit or restrict the taking of water from an aquifer, or any other aquifer above, below or adjacent to it, for a specified period, if satisfied that it is necessary: (a) to maintain or protect water levels, or (b) to maintain, protect or improve the quality of water, or (c) to prevent land subsidence or compaction, or (d) to protect groundwater-dependent ecosystems, or (e) to maintain pressure, or to ensure pressure recovery.
160.	s328 WMA	The Minister can order that an aquifer interference activity be stopped, or carried out only as specified, if in the Minister's opinion, it is being carried out in contravention of the Act.
161.	s330 WMA	The Minister can temporarily prohibit or restrict the carrying out of an aquifer interference activity if satisfied the public interest requires it.
162.	s333 WMA	If the Minister is satisfied an aquifer interference activity is having an adverse effect on a water source or waterfront land, he/she can direct that a person take action to prevent, minimise or mitigate that effect.
163.	s345 WMA	It is an offence to intentionally or negligently harm an aquifer, but it is a defence to establish that the conduct that harmed the aquifer or waterfront land was essential for carrying out an activity in accordance with an approval of a DA under Part 5 of the EPAA if the DA has complied with that Part (i.e. see rows 26 to 28 above).

## PROTECTION OF ENVIRONMENT OPERATIONS ACT 1997

164.	s6(1) PEOA	The EPA is the regulatory authority for this Act.
<b>32. Does the PEL holder need an EPL?</b>		
165.	s49 PEOA  s169	Carrying out a scheduled activity without an EPL is an offence. Max penalty: Corporation: \$1m plus \$120,000 a day; Individual: \$250,000 plus \$60,000 a day. A director of a corporation may also be personally liable if a scheduled activity is carried out by a corporation without an EPL.
166.	s284 POEA	<i>Note:</i> There is provision for the EPA to exempt a person or class of persons from any provision of the Act, in an emergency; or where the EPA believes it is not practicable to comply, the activity won't have any significant adverse effect on public health, property or the environment, and the EPA Board approves. Exemptions take effect

		when published in the Gazette (except for emergencies). This power is not further examined in this report.
167.	s5, and Schedule 1, 9A, 50.	<p>Scheduled activities require an EPL. Scheduled activities include the following:</p> <p><b>CSG assessment/production</b>, meaning:</p> <p>(a) prospecting for CSG for which a PEL, PAL or PPL is required under the POA, if that prospecting involves the extraction of groundwater, or</p> <p>(b) the commercial production of CSG for which a PAL or PPL is required under the POA.</p> <p><b>coal seam gas exploration</b>, meaning prospecting for CSG for which a PEL is required under the POA, but not if the prospecting involves the extraction of groundwater (ie <i>if it involves groundwater extraction, it's CSG assessment/production</i>).</p> <p>The effect of the above is that any CSG exploration which requires a PEL must also obtain an EPL.</p> <p>[The reason for differentiating between CSG exploration and CSG assessment/production appears to go to the fees payable. CSG exploration has one flat administrative fee. CSG assessment/production has 3 administrative fees based on production levels; and also pollutant 'load' fees based on air and water pollutants: see Schedule 1, PEOGReg.]</p> <p>(The definition of CSG is the same as in SEPP MPPEI: see row 2.)</p> <p>However, the following activities are NOT a scheduled activity if carried out on land that is NOT within an ESASS (see row 11 for what constitutes an ESASS), and so do not need an EPL:</p> <p>(a) geological mapping and airborne surveying,</p> <p>(b) sampling and coring using hand-held equipment,</p> <p>(c) geophysical (including seismic) surveying and downhole logging,</p> <p>(d) accessing of areas by vehicle that does not involve the construction of an access way such as a track or road,</p> <p>(e) soil sampling by machinery,</p> <p>(f) the construction, maintenance or use of equipment for the monitoring of weather, noise, groundwater or subsidence,</p> <p>(g) the construction, maintenance or use of roads consistent with best practice industry standards,</p> <p>(h) the recovery, obtaining or removal of CSG in the course of coal mining.</p> <p>If these activities are in an ESASS, they DO require an EPL.</p>
<b>33. EPL Application Process</b>		
168.	s53, s60 PEOA	Application is made to EPA on form approved by EPA, with information required by EPA, and with fee prescribed by regulations. EPA can request further information at its discretion.
	s57 PEOA & cl9 & Schedule 1, PEOGReg	The fee prescribed for CSG exploration is the Administrative fee of 40 units. 1 unit = \$113
169.	s55 PEOA	EPA can grant or reject application, but must give notice and opportunity to applicant to respond if it intends to refuse application.
170.	s45 PEOA	<p>In exercising its licensing functions, the EPA must consider:</p> <p>(a) any PEPs (<i>there don't appear to be any: see row 32</i>),</p> <p>(b) the EPA's objectives as per s6 of Protection of the Environment Administration Act 1991</p> <p>(c) the pollution caused or likely to be caused by the activity and its likely impact on the environment,</p> <p>(d) the practical measures that could be taken:</p> <p>(i) to prevent, control, abate or mitigate that pollution, and</p> <p>(ii) to protect the environment from harm,</p> <p>(e) any relevant green offset scheme, green offset works or tradeable emission scheme,</p> <p>(f) whether the person concerned is a fit and proper person (see next row),</p> <p>(f1) in relation to an activity that causes, is likely to cause or has caused water pollution:</p> <p>(i) the environmental values of water affected by the activity or work, and</p> <p>(ii) the practical measures that could be taken to restore or maintain those environmental values,</p> <p>...</p> <p>(h) any documents accompanying the licence application,</p> <p>(i) any relevant EIS, or other statement of environmental effects, prepared or obtained by applicant under EPAA (see row 28),</p> <p>(j) any relevant SIS prepared or obtained by the applicant under the TCSA (see row 129)</p> <p>(k) any waste strategy in force under the Waste Avoidance and Resource Recovery Act 2001,</p> <p>(l) any <i>public submission</i> received by the EPA under the PEOA, or made under the EPAA and received by the EPA.</p>
171.	s83 PEOA	There are 15 matters specified that <i>may</i> be taken into account when determining whether an applicant is a fit and proper person, but none are mandatory. They include the applicant's previous history of compliance with the PEOA and 'other relevant legislation', their 'character, honesty and integrity', and their financial capacity and standing. 'Other relevant legislation' is defined in cl52 of the PEOGReg and includes the Clean Air Act, Noise Control Act, Pollution Control Act, etc.
<b>34. Conditions and related offences</b>		
172.	s63 PEOA	An EPL can be subject to conditions, or issued unconditionally.
173.	s64 PEOA	Failing to comply with an addition is an offence. Penalties same as row 144.
174.	Part 3.5, ss65-76 PEOA	The Act contains 11 sections detailing examples of conditions that <b>may</b> be applied to licences; but none of them are mandatory. The examples cover such areas as monitoring & information; environmental audits; pollution studies; economic measure schemes (with more detail in Part 9.3 & cl104 PEOGReg); financial assurances (with more detail in Part 9.4, and cl105 PEOGReg: see row 154); remediation; insurance; contingencies; and waste

175.	Part 9.4, ss296-307 PEOA	<b>Financial assurances:</b> Part 9.4 has more specific requirements about conditions related to financial assurances. The main provisions are that the EPA is only allowed to impose a financial assurance condition if it is satisfied that the condition is justified; and the amount of the financial assurance required cannot exceed the amount the EPA thinks would be necessary to carry out the work the financial assurance is intended to cover.
<b>Pollution incident response management plan</b>		
176.	s153A PEOA, cl98C, cl98D, cl98E PEOReg	The Act makes it an offence for an EPL holder not to prepare a 'pollution incident response management plan'. Penalties same as row 144. It is also an offence, with same penalties, not to keep the plan at the relevant activity location, not to test the plan, and not implement it if an incident occurs. The plan must include the matters specified in the PEOReg, which include information on hazard description, likelihood, early warning to people in vicinity, management, responsible officers, and so on. The parts of the plan relating to early warning for people in vicinity and contact details for responsible officers must be publicised on the EPL holder's website. The plan testing must be done at least every 12 months
<b>Mandatory environmental audit</b>		
177.	s174 PEOA  s180-182 PEOA	The Act enables the EPA to include a condition requiring a mandatory environmental audit, but only if the EPA reasonably believes that the EPL holder has previously contravened the Act or EPL conditions, and that the contravention has caused harm to the environment. (Note: there is provision for 'voluntary environmental audits' in the Act. These are given protected status, and cannot be inspected by the EPA – but only in the particular circumstances specified in the Act.)
<b>35. Public justification of EPL grant or refusal</b>		
178.	s61 PEOA & cl49 PEOReg	<b>Any</b> person can request reasons for grant or refusal from EPA. The EPA must respond, and must include: (a) the significant environmental or other issues that it took into account in making its decision, and (b) any significant environmental outcomes, standards or requirements (if relevant) that it considered applicable to the activity and took into account in making its decision.
<b>36. Variation of EPL</b>		
179.	s58 PEOA	EPA can vary a licence (including its conditions) at any time. If the variation authorises a significant increase in the environmental impact of the activity, and it hasn't been the subject of public consultation under EPAA, then public submissions must be invited and considered before the variation is made. The condition relating to mandatory environmental audit (see row 177) could be included under this provision.
<b>37. Suspension or revocation of EPL</b>		
180.	s79 PEOA	The EPA can suspend or revoke an EPL for a number of specified reasons, including contravening a condition, provided it has first given the EPL holder notice and taken into account any submissions.
<b>38. Term of EPL</b>		
181.	s78 PEOA	EPLs have no fixed end point. However, they must be reviewed at least every 5 years; and there must be a public notice of the review.
<b>39. Appeal on EPL decisions</b>		
182.	s287 PEOA	An EPL applicant or holder can appeal to the Land & Environment Court any EPA decision to refuse, vary, suspend or revoke an EPL, or to impose conditions.
<b>40. Monitoring and enforcement by EPA</b>		
183.	Chapter 4, PEOA	There is a wide variety of powers in the Act to enable the EPA to enforce EPL conditions. These include: clean-up notices; prevention notices; prohibition notices; and compliance cost notices.
184.	Chapter 5, PEOA	There is a wide variety of offences specified in the Act, relating to waste, water, air, noise and land pollution, littering, and notification of pollution incidents. These are offences whether committed by people with an EPL or not.
185.	Chapter 7, PEOA	There is a wide variety of enforcement powers to enable EPA officers to investigate potential breaches.
186.	Chapter 8, s252 PEOA	Chapter 8 of the Act contains provisions relating to criminal proceedings. However, part 8.4 covers civil proceedings also. Any person may bring proceedings in the Land and Environment Court for an order to remedy or restrain a breach of the Act or the regulations.
<b>41. Public register of EPLs</b>		
187.	s308 PEOA, cl136 PEOReg	The EPA is required to keep a public register of licence applications, decisions and variations, among other things.

## WILDERNESS ACT 1987

This Act has no direct relevance to CSG activities.

It sets out the process by which areas of wilderness are nominated, assessed, identified and declared.

There are no provisions in the Act of itself that apply directly to CSG activities.

Its application is only by way of reference in other Acts, in that whether the land on which CSG activities are to occur is already a wilderness area (as defined in the Wilderness Act) may be relevant to a decision under the EPAA or POA.

## NATIONAL PARKS AND WILDLIFE ACT 1974

188.		This Act is primarily to provide for the establishment, preservation and management of national parks and historic sites, state conservation areas, regional parks, nature reserves, karst conservation reserves, wild rivers, Aboriginal areas and wildlife refuges, and to protect certain fauna, native plants and Aboriginal objects. Plans of management must be established for each form of land reservation (ss71BO-82). Conservation agreements may also be established over land with the agreement of the land-owner (s69B-69KA). The Act contains a number of offences which apply to the public at large. Petroleum exploration is not permitted in most areas protected by the Act, but is permitted in state conservation areas.
<b>42. Mining banned in national parks, historic sites, nature reserves, karst conservation reserves and Aboriginal areas</b>		
189.	s41, s54, s58O, s64 NPWA	It is unlawful to prospect or mine for minerals in a national park, historic site, nature reserve, karst conservation reserve or Aboriginal area, except as expressly authorised by an Act of Parliament. However, the Minister can approve mineral prospecting, but notice of intention to grant the approval must be laid before both Houses of Parliament. 'Minerals' includes 'coal, shale or <b>petroleum</b> ' (s5(1) NPWA). The POA specifically does <b>not apply</b> to or in respect of lands within these areas. [Note: 'existing interests' (ie existing at the time land is reserved under the Act) are exempt from this provision.]
<b>43. Mining permitted in state conservation areas</b>		
190.	s47J NPWA	For this section only, <b>mining interest</b> includes: any lease under the POA ( <i>note use of term 'lease': exploration under the POA is governed by 'licence'</i> ). The POA specifically <b>applies</b> at any time to lands within a state conservation area. However, a mining interest cannot be granted within a state conservation area without the concurrence in writing of the Minister. Nothing in the provisions on state conservation areas affects the right, title or interest of any person in respect of minerals in any such lands. <i>Note s47MA:</i> Land that is designated a state conservation area, and which is the subject of a POA lease or licence, must <b>not</b> be reserved as a national park or nature reserve during the term of that authority, lease, licence or permit. <i>Note also s30D :</i> Land cannot be reserved as a state conservation area without the concurrence of the Minister administering the Mining Act 1992 (no mention of POA). <i>And note s47M:</i> State conservation areas must be reviewed every 5 years and reasons given as to why they should or should not be reserved as national parks or nature reserves.
<b>44. Offence of damaging Aboriginal objects or places and available defences</b>		
191.	s86, s87 NPWA, cl80A NPWReg	It is an offence to damage Aboriginal objects or places; but there are a number of defences. Not knowing an object or place was not Aboriginal is not in itself a defence. There is an obligation to undertake due diligence and/or obtain an Aboriginal heritage impact permit to have a defence in such circumstances. <i>This section could have direct relevance to CSG activities, and CSG companies would need to take the potential to contravene these provisions seriously, and ensure they had a defence in place.</i>
192.	s87(2), (3) NPWA & cl 80A NPWReg	One defence, if the harm is to an Aboriginal object (and the harmer did not know it was an Aboriginal object), is if the defendant can demonstrate that <b>due diligence</b> was exercised to determine whether an Aboriginal object would be harmed. The Act specifies that compliance with a code specified by the Regulations can be taken as due diligence. The NPWReg lists 6 codes. The most applicable to CSG is the <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW</i> (13 Sept 2010). There is also a Minerals Industry code prepared by the Minerals Council, the <i>NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects</i> but it appears to be related to minerals, not petroleum (though in general it looks like it would be applicable to petroleum/CSG, and is referred to in ESG2).
193.	s90, 90A, 90J, 90K NPWA, cl80C, cl80D NPWReg	It is also a defence if the harm was carried out under an <b>Aboriginal heritage impact permit</b> . Applications for impact permits are made to the DG ( <i>is that now CE, OEH?</i> ). It is a requirement to engage in an Aboriginal community consultation process <i>before</i> making an application for a permit. Extensive requirements for this process are set out in the NPWReg. It is also a requirement that the application be accompanied by a cultural heritage assessment report, with contents as specified in the NPWReg. There are a number of matters to be taken into account when determining whether to grant the permit, including any public submissions made under the EPAA. The permit can include conditions, and contravening the conditions is an offence. [OEH also advises that, if it is intended to undertake activities to determine if an Aboriginal object will be harmed by a planned activity, and it is not practicable to apply a Code of Practice, a permit should be obtained for the initial investigation and, if required, a further permit for later activities: see <i>Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants</i> : <a href="http://www.environment.nsw.gov.au/licences/applyforahip.htm">http://www.environment.nsw.gov.au/licences/applyforahip.htm</a> .]
194.	cl80B, NPWReg	It is also a defence if the harm was caused by: <ul style="list-style-type: none"> <li>• mining exploration work on land that has been disturbed of the following kind: costeaning, bulk sampling or drilling (<i>this probably relates more to minerals than petroleum</i>); or</li> <li>• work of the following kind: geological mapping; surface geophysical surveys (including gravity surveys, radiometric surveys, magnetic surveys and electrical surveys), but not including seismic surveys; sub-surface geophysical surveys that involve downhole logging; sampling and coring using hand-held equipment, except where carried out as part of an archaeological investigation; or</li> <li>• work of the following kind on land that has been disturbed: seismic surveying; the construction and maintenance of groundwater monitoring bores.</li> </ul> <i>Note:</i> 'disturbed' is defined in cl80B(4).
<b>45. Other offences</b>		
195.	Throughout	There are a variety of offences under the NPWA and the NPWReg. These are applicable to the general public,

	NPWA & NPWReg	which would include CSG companies. Orders can be made to remediate any damage arising out of the commission of offences under the NPWA.
<b>46. Licences</b>		
196.	Part 9 NPWA	The DG has authority to issue licences for a variety of purposes that might result in harm. Of possible relevance to a CSG activity in a state conservation reserve is a general licence which would permit harm 'to any protected fauna (other than a threatened species, population or ecological community) in the course of carrying out specified development or specified activities'. It seems likely these issues would be considered in the environmental assessment required to grant a PEL under the EPAA and POA; however, it is feasible that a licence might be required if harm to protected, but not threatened, species was envisaged by CSG exploration activity that was otherwise approved by the DG during the PEL licence process. (For more on licences to harm <i>threatened</i> species, etc, see the TSCA below.)

## THREATENED SPECIES CONSERVATION ACT 1995

197.	TSCA Parts 1-5	The early parts of the Act provides for the identification, and classification, of species, populations and ecological communities , and for the listing of: <ul style="list-style-type: none"> <li>• endangered species, endangered populations and ecological communities and species that are presumed to be extinct,</li> <li>• critically endangered species and ecological communities,</li> <li>• vulnerable species and vulnerable ecological communities, and</li> <li>• key threatening processes.</li> </ul> They also provide for the identification and declaration of critical habitat; the preparation of recovery plans for threatened species; and the preparation of threat abatement plans to manage threatening processes. They form the framework under which the impact of CSG on threatened species can be assessed under Part 5 of the EPAA (see row 29).
<b>47. Licences</b>		
198.	s91-94 TSCA	Part 6 gives the DG authority to grant a licence authorising a person to take action likely to result in: harm to any threatened animal; the picking of a threatened plant; damage to critical habitat; or damage to habitat of a threatened species. This may be of relevance to a CSG exploration activity which obtains a PEL licence but is nevertheless going to result in harm to threatened species. The procedure for applying for a licence and the matters to be taken into account when assessing it are provided for in the Act. If the action proposed is on land that is <i>critical habitat</i> , the application must be accompanied by an SIS. The format of the SIS is specified in ss 109-111. (This format also governs SISs produced for EPAA consideration – see row 29.) The factors to be taken into account when granting a licence are worded exactly the same as those specified in s5A of the EPAA, and which must be taken into account when making a Part 5 EPAA determination involving threatened species (see row 29) as part of a PEL consideration.
<b>48. Biobanking</b>		
199.	s127D(7), s127F(1)(f) , s127S, s127U, s127ZE	Part 7A provides for the establishment of a biodiversity banking and offsets scheme (biobank scheme), which is a market-based scheme that enables 'biodiversity credits' to be generated by landowners who commit to enhance and protect biodiversity values on their land through a biobanking agreement. These credits can then be sold, generating funds for the management of the site. How it works is not explored further here. However, it is noted that the Minister administering the POA must be consulted before any biobank scheme is created; and if there is a PEL over the land, the PEL holder must be consulted before the biobank scheme is created. The Act specifically states that nothing in the provisions related to biobanking prevents the grant of a PT in respect of a biobank site; or prevents the carrying out on a biobank site of any activity authorised by a PT. If a PT is granted over a biobank site, the Minister can terminate a biobanking agreement without the consent of the biobank site owner, if the Minister is of the opinion that the biodiversity will be adversely affected. However, the Minister may direct the titleholder to retire biodiversity credits. Not complying with a direction is an offence. There are also compensation provisions to a landowner if biobanking credits are cancelled by the DG because of activities authorised by a PT.

## HERITAGE ACT 1977

200.		This Act is only relevant if CSG activity is proposed on land that is the subject of an interim heritage order (IHO) or a listing on the State Heritage Register (SHR). IHOs can be made by the Heritage Minister, or by a local council if they are authorized to do so by the Minister. There are 3 main provisions in the Act with potential relevance to CSG exploration. Note that none of these provisions apply to SSD, because of s89J(1)&(2) of the EPAA. However, they do apply to development which is not SSD.
201.	s156, 157 HA	A person acting contrary to a direction or prohibition in the Act is guilty of an offence. Maximum penalty is fine of up to 10,000 penalty units, or up to 6 months' imprisonment.
202.	s57 HA	<b>Development on heritage-listed land:</b> The Heritage Council must approve any development in respect of any place, building, work, relic, moveable object, precinct, or land that is the subject of an IHO made by the Heritage Minister or a listing on the SHR. (Note, though, that Minister on advice of Heritage Council can grant an exemption to this prohibition.) Any activity which might damage or destroy a tree or other vegetation on land relating to a heritage item also requires approval.

		A local council must approve any development on land that is the subject of an interim heritage order (IHO) that was made by a council.
203.	s59 HA	Applications can only be made by owner or with owner's consent.
204.	s139 HA	<b>Excavation permits:</b> The HA states that a person must not disturb or excavate any land knowing or suspecting that it will result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit. Relic means any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, AND (b) is of State or local heritage significance.
205.	s79C HA	<b>Stop work orders:</b> The Minister or Heritage Council Chairperson also has authority to make a stop work order if of the opinion that a building, work, relic, moveable object or place the subject of an interim heritage order or listing on the State Heritage Register is being or is about to be harmed.
206.	s136 HA	A stop work order can also be made if there is no interim heritage order or State Heritage listing, but then Heritage Council has 40 days to provide advice on whether interim heritage order should be made.

**REPORT 2  
CURRENT LEGISLATIVE REQUIREMENTS  
for  
COAL SEAM GAS  
EXPLORATION  
WHEN DEVELOPMENT CONSENT IS REQUIRED UNDER EPAA**

**ie FOR ALL EXPLORATION ACTIVITY INVOLVING DRILLING OR OPERATING EXPLORATION WELLS  
EXCEPT :**

**drilling or operating stratigraphic boreholes; or drilling or operating monitoring wells; or drilling or operating a set of 5 or fewer wells that is more than 3km from another well (except when the wells are in an environmentally sensitive area of State significance)**

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Disclaimer: Please note the wording of the Act and Regulations has been paraphrased for the purposes of this exercise, and no reliance should be placed on this wording without reference back to the source legislative instrument.

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## ACRONYMS

BSAL	biophysical strategic agricultural land
DC	Development Consent under EPAA
DG	Director-General (of relevant department)
DGR	Director-General's Requirements (for preparation of an EIS)
DRE	Division of Resources & Energy, within NSW Department of Trade and Investment
ECCW	Department of Environment, Climate Change and Water (referenced in POReg).
EIS	environmental impact statement
EPAA	Environmental Planning and Assessment Act 1979 (NSW)
EPAReg	Environmental Planning and Assessment Regulation 2000 (NSW)
EP	environment protection
EPA	Environment Protection Authority
EPI	environmental planning instrument (must be either a LEP, a REP or a SEPP)
ESASS	environmentally sensitive area of state significance: referred to in the SEPP MPPEI
ESG2	ESG2: Environmental Impact Assessment Guidelines, DRE, March 2012
GAIS ES	Guideline for Agricultural Impact Statements at the Exploration Stage, November 2012
LEC	Land and Environment Court
LEP	local environmental plan
NOW	NSW Office of Water
NPWA	National Parks and Wildlife Act 1974 (NSW)
NPWReg	National Parks and Wildlife Regulation 2009 (NSW)
PAC	Planning Assessment Commission
PAL	Petroleum Assessment Lease (form of PT)
PE	petroleum exploration
PEL	Petroleum Exploration Licence (form of PT)
POA	Petroleum (Onshore) Act 1991 (NSW)
PEOA	Protection of the Environment Operations Act 1997 (NSW)
POReg	Petroleum (Onshore) Regulation 2007 (NSW)
PP	petroleum production
PPL	Petroleum Production Lease (form of PT)
PT	Petroleum Title (includes exploration licence, assessment lease, production lease or special prospecting authority)
REP	Regional Environmental Plan
SALM	Strategic Agricultural Land Map
SEPP	State Environmental Planning Policy
SEPP MPPEI	State Environmental Planning Policy (Mining, Petroleum Production & Extractive Industries) 2007
SEPP S&RD	State Environmental Planning Policy (State & Regional Development) 2011
SOPEPSR	Schedule of Onshore Petroleum Exploration and Production Safety Requirements
SSD	state significant development
TSCA	Threatened Species Conservation Act 1995 (NSW)
WAL	Water Access Licence
WHS Act	Work Health and Safety Act 2011 (NSW)
WMA	Water Management Act 2000

**ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

Row No	Legislative instrument	Paraphrase of legal requirements
<b>1. Is CSG exploration permitted on the land proposed?</b>		
1.	s76B EPAA  s125 EPAA	If an EPI provides that: (a) specified development is prohibited, or (b) development cannot be carried out with or without development consent, a person must not carry out the development on the land. A person offending against a direction or prohibition of the Act is guilty of an offence.
2.	cl3(2), 9A SEPP MPPEI  s3 POA	SEPP MPPEI is an EPI made under the EPAA. It specifically prohibits 'CSG development' on or under: <ul style="list-style-type: none"> <li>land within a CSG exclusion zone (which is defined as land within a residential zone (ie Zones R1, R2, R3, R4 and RU5) or future residential growth area land (ie land identified as such on the SEPP MPPEI Future Residential Growth Areas Land Map, which appears currently to include only the North West Growth Centre and the South West Growth Centre under the SEPP (Sydney Region Growth Centres) 2006)). (<i>I have not been able to locate a specific document called 'Future Residential Growth Areas Land Map'. The SEPP states that maps referred to in the SEPP are as approved by the Minister, and made available for public access under arrangements approved by the Minister. There is a note in the SEPP that they will be available on the NSW legislation website.</i>)</li> <li>land within a buffer zone (which is defined as land not within a CSG exclusion zone but within 2km of any such zone).</li> </ul> <p>[Note: a public consultation draft of changes to this part of the SEPP is currently on exhibition. It adds 'additional rural village land' and 'critical industry cluster land' to the definition of CSG exclusion zone; and, in effect, adds 'within 2km of additional rural village land' (but not critical industry cluster land) to the definition of buffer zone. The creation of an Additional Rural Village Land Map is envisaged.]</p> <p><b>CSG</b> is defined as petroleum that: (a) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane, and (b) is in a gaseous state at standard temperature and pressure, and (c) is extracted from coal beds. (<i>This is the same definition as in the PEOA. There are no definitions of CSG in the POA or EPAA.</i>)</p> <p><b>CSG development</b> is defined as development for the purposes of petroleum exploration, but only in relation to prospecting for CSG; or development for the purposes of petroleum production, but only in relation to the recovery, obtaining or removal of CSG. (Specifically excluded are CSG activities in the course of mining; and also low intensity activities associated with petroleum exploration: see row 4.)</p> <p><b>Petroleum exploration</b> is defined as prospecting pursuant to a PEL, PAL or PPL under the POA.</p> <p><b>Prospecting</b> is defined in the POA as to carry out works on, or to remove samples from, land for the purpose of testing the quality and quantity of petroleum in the land and the potential to recover petroleum from the land.</p>
<b>2. Does permitted CSG exploration require DC under the EPAA?</b>		
3.	s76A (1) EPAA  s125 EPAA	If an EPI provides that specified development requires DC, development must not be carried out unless DC obtained and in force, and development carried out in accordance with DC and EPI. A person offending against a direction or prohibition of the Act is guilty of an offence. There are 2 EPIs relevant to petroleum, the SEPP MPPEI and the SEPP (S&RD).
4.	cl10(2)(b) SEPP MPPEI  cl6(d), SEPP MPPEI  cl7(2)(f) & (g),  cl3 SEPP MPPEI	The SEPP MPPEI specifically <b>EXEMPTS</b> the following from the requirement to obtain DC (as well as exemption from the prohibition on CSG development in an exclusion zone: see row 2), provided it is not in an ESASS (except it is OK in a state conservation park) and is of minimal environmental impact. <ul style="list-style-type: none"> <li>low intensity activities associated with petroleum exploration, including: <ul style="list-style-type: none"> <li>(i) geological mapping and airborne surveying,</li> <li>(ii) sampling and coring using handheld equipment,</li> <li>(iii) geophysical (but not seismic) surveying and downhole logging,</li> <li>(iv) accessing of areas by vehicle that does not involve the construction of an access way such as a track or road.</li> </ul> </li> </ul> <p>The SEPP MPPEI also states that DC is <b>NOT</b> required for petroleum exploration (subject to the blanket prohibition on CSG exploration in CSG exclusion zones and buffer zones – see row 2).</p> <p>However, DC <b>IS</b> required for</p> <ul style="list-style-type: none"> <li>drilling or operating petroleum exploration wells, not including: <ul style="list-style-type: none"> <li>(i) stratigraphic boreholes, or</li> <li>(ii) monitoring wells, or</li> <li>(iii) a set of 5 or fewer wells that is more than 3 kilometres from any other petroleum well (other than an abandoned petroleum well) in the same petroleum title,</li> </ul> </li> <li>drilling or operating petroleum exploration wells (not including stratigraphic boreholes or monitoring wells) that is carried out in an ESASS.</li> </ul> <p><b>Note:</b> an ESASS is any of the following: (b) land to which SEPP No 14 Coastal Wetlands or SEPP No 26 Littoral Rainforests applies, or ... (d) land within a wetland of international significance ..., or (e) land identified in an EPI as being of high Aboriginal cultural significance or high biodiversity significance, or (f) land reserved as a state conservation area under the NPWA, or (g) land, places, buildings or structures listed on the State Heritage Register, or</p>

		(h) land reserved or dedicated under the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes, or (i) land identified as being critical habitat under the TCSA.  Extrapolating from the above, <b>DC is required</b> for all exploration activity involving drilling or operating exploration wells <u>except</u> : drilling or operating stratigraphic boreholes; or drilling or operating monitoring wells; or drilling or operating a set of 5 or fewer wells that is more than 3km from another well (except when the wells are in an ESASS).
5.	s89C(2) EPAA and SEPP(S&RD) cl8 & Schedule 1 cl5.	The SEPP S&RD provides that development for petroleum exploration of a kind that requires DC (ie mirroring the language used in SEPP MPPEI cl7(2)(f)&(g)) is State significant development (SSD). So the provisions related to SSD in the EPAA apply.
<b>3. How is Development Consent application made?</b>		
<b>First step: Is a Gateway or Site Verification Certificate needed?</b>		
<b>Is land a Critical Industry Cluster in a Strategic Agricultural Land Map? Or is land otherwise on a Strategic Agricultural Land Map or the subject of a site verification certificate?</b>		
6.	cl50A EAPReg  CI3(2) SEPP MPPEI	When an SSD involves mining or petroleum development on <b>land shown on the Strategic Agricultural Land Map (SALM) as critical industry cluster (CIC) land</b> , the DC application must also be accompanied by a gateway certificate. When an SSD involves mining or petroleum development on any <b>other land show on a SALM, or land that is the subject of a SVC</b> , it must be accompanied by a gateway certificate OR the SVC. <b>A site verification certificate (SVC)</b> is a certificate issued by the DG that certifies that land either is or is not 'biophysical strategic agricultural land' (BSAL) which is defined as either: <ul style="list-style-type: none"> <li>land identified on the Strategic Agricultural Land Map (SALM) as such, unless a SVC says its not; or</li> <li>any other land that is certified by a SVC as such.</li> </ul> [There is a presumption that all SALM land IS BSAL, however an SVC can be obtained to say otherwise. A landowner who has been served written notice of an intention to access land under the POA can apply for a SVC.]  <i>The Strategic Agricultural Land Map appears to be still in draft, and its implementation will require further amendment of the SEPP MPPEI: see <a href="http://www.planning.nsw.gov.au/biophysical-strategic-agricultural-land-mapping">http://www.planning.nsw.gov.au/biophysical-strategic-agricultural-land-mapping</a> . At the moment the 2012 Strategic Regional Land Use Plan – Upper Hunter and the 2012 Strategic Regional Land Use Plan – New England North West appear to comprise this map. (See discussion at row 2 above.) And see <a href="http://www.nsw.gov.au/strategicregionallanduse">http://www.nsw.gov.au/strategicregionallanduse</a> but I cannot see the legal evidence that these 2 plans have been approved by the Minister as a Strategic Agricultural Land Map for the purposes of the SEPP MPPEI. However, the Interim protocol for site verification and mapping of BSAL, gazetted on 12 April 2013, also refers to these two plans.</i> <b>A Gateway Certificate (GC)</b> is issued by the Gateway Panel.
<b>Obtaining a site verification certificate (SVC)</b>		
<b>Application Process</b>		
7.	cl17C SEPP MEI	If the DC applicant believes their petroleum exploration will be on land that is NOT BSAL, whether it is listed in a SALM or not, the applicant will need an SVC certifying it is not before further consideration of the DC application can be given.
8.	cl17C(3) SEPP MPPEI	The applicant has to give written notice to the owner of the land BEFORE the application is made, OR advertise it in a local newspaper 30 days before the application. Note that a landowner who has been served written notice of an intention to access land under the POA can also apply for a SVC. An SVC can state that land IS or IS NOT BSAL.
9.	cl17D SEPP MPPEI & cl262C EPAReg	Applications must be in the form approved by the DG, indicate whether the land is included on the SALM, and be accompanied by the relevant fee (\$3900).
<b>Application determination</b>		
10.	cl3, cl17D(2) SEPP MPPEI	The DG must have regard to the criteria set out in the Site Verification Protocol: defined as the document entitled <i>Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land</i> , published in the Gazette on 12 April 2013. See <a href="http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/interim_bsal_protocol.pdf">http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/interim_bsal_protocol.pdf</a> .
11.	cl17D(3), cl17E SEPP MPPEI	The DG must determine application within 21 days of it being made. The DG must publish the application and the SVC on the department's website; and give a copy of the SVC to the relevant council.
<b>Obtaining a gateway certificate</b>		
<b>Application process</b>		
12.		
13.	cl17F SEPP MPPEI	Application for a gateway certificate for development on strategic agricultural land must be made to Gateway Panel.
14.	cl17F(3) SEPP MPPEI	The applicant has to give written notice to the owner of the land BEFORE the application is made, OR advertise it in a local newspaper 30 days before the application.
15.		Application must indicate whether the land is biophysical strategic agricultural land or critical industry cluster land, or both, and be in the form (if any) approved by the Gateway Panel.

<b>Gateway Panel membership</b>		
16.	cl17N SEPP MPPEI	Chair and members appointed by Minister for Planning, for not more than 3 years, after consultation with Minister for Resources & Energy and Minister for Primary Industries.
17.	cl17P, 17Q, 17R SEPP MPPEI	Members must be people with expertise in agricultural science, hydrogeology or mining and petroleum development. Any one panel must consist of 3 members, but quorum is 2. Chair selects members for each panel.
<b>Gateway Panel functions</b>		
18.	cl17O	The Panel's main functions are to determine applications for gateway certificates. ( <i>The other advisory functions listed would only arise occasionally, in conjunction with gateway certificate processes.</i> )
<b>Application Determination</b>		
19.	cl17G(1) SEPP MPPEI	Gateway Panel must: i. refer application to the IES Committee and the Minister for Primary Industries for advice regarding the impact of the proposed development on water resources (the IES Committee is the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development established by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999). ii. take into account the advice received. In providing advice, the Minister for Primary Industries must have regard to (a) the minimal impact considerations set out in the Aquifer Interference Policy, and (b) the other provisions of that Policy.
20.	cl17H SEPP MPPEI	Gateway Panel must determine an application by issuing either a conditional or an unconditional GC, with a statement that the Panel is of the opinion that the development either meets the criteria or does not meet the criteria, with reasons. The criteria are: (a) in relation to <b>biophysical strategic agricultural land</b> — that the proposed development will not significantly reduce the agricultural productivity of any biophysical strategic agricultural land, based on a consideration of the following: (i) any impacts on the land through surface area disturbance and subsidence, (ii) any impacts on soil fertility, effective rooting depth or soil drainage, (iii) increases in land surface microrelief, soil salinity, rock outcrop, slope and surface rockiness or significant changes to soil pH, (iv) any impacts on highly productive groundwater (within the meaning of the Aquifer Interference Policy), (v) any fragmentation of agricultural land uses, (vi) any reduction in the area of biophysical strategic agricultural land, (b) in relation to <b>critical industry cluster land</b> —that the proposed development will not have a significant impact on the relevant critical industry based on a consideration of the following: (i) any impacts on the land through surface area disturbance and subsidence, (ii) reduced access to, or impacts on, water resources and agricultural resources, (iii) reduced access to support services and infrastructure, (iv) reduced access to transport routes, (v) the loss of scenic and landscape values. The Panel must have regard to the duration of any impacts, and any proposed avoidance, mitigation, offset or rehabilitation measures. <i>Assessing impacts for the purposes of a Gateway Certificate is necessarily more imprecise and subjective than assessing whether land is BSAL for the purposes of an SVC. Nevertheless, they are still more precise and measurable than the criteria for determining DCs under the EPAA and PTs under the POA.</i>
21.	cl17I, 17J SEPP MPPEI	The Panel has a maximum of 90 days to make its determination (and one request for further information is allowed). If Panel fails to issue GC within timeframe, DG can issue unconditional GC.
<b>Second step: Obtain the DG Requirements (DGR) for an EIS</b>		
22.	cl50 EPAREg	An SSD application must include an EIS.
<b>EIS application process - applicant</b>		
23.	Schedule 2, cl3(1),(2), (8) EPAREg	Before preparing an EIS, the applicant must <i>apply</i> in writing to the DG for the environmental assessment requirements, in the form approved by the DG.
<b>EIS application process - DG</b>		
24.	Schedule 2, cl3(4),(4A) EPAREg  Schedule 2, cl3(9)	In preparing the DGRs for SSDs, the DG must consult relevant public authorities and have regard to the need for the requirements to assess any key issues raised by those public authorities. The DG must also address any recommendations of the Gateway Panel set out in a Gateway Certificate.  <b>(Note: there are circumstances when a DG could waive the requirement to apply for the DGRs. It cannot be waived for petroleum production, but it possibly could be waived for petroleum exploration.)</b>
25.	Schedule 2, cl7 EPAREg  SRLUP	Specific requirements of the EIS are contained in the EPAREg. These include an analysis of the activity, including: full description; general description of environment likely to be affected and detailed description of environment aspects likely to be significantly affected; likely impact on environment; full description of mitigating measures proposed; list of approvals required under any other Act or law. Also, the NSW Govt's Strategic Regional Land Use Policy requires EISs to include an Agricultural Impact Statement, when the activity has potential to affect agricultural resources or industries. ( <i>I have not found any legislative reference to this requirement.</i> ) The DG has the discretion, subject to Schedule 2, cl7, to decide what matters should be considered for each individual application, ie to issue EIS guidelines unique to each application. The Guideline for AISs (see <a href="http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/CoalAndGas/AIS_Guideline_updated.pdf">http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/CoalAndGas/AIS_Guideline_updated.pdf</a> ) sets

		out the matters required to be considered, unless varied by the DGR.
<b>Third step: Lodge DC application</b>		
<b>Applicant process</b>		
26.	cl50 EAPReg	Applications are lodged with 'the principal office of the consent authority'. That is formally the Minister, even if the functions are delegated.
27.	cl49 EAPReg	Normally applicant must be landowner or have consent of land owner, but for petroleum development, applicant only needs to give notice to land owner before application; or place newspaper advertisement within 14 days of application – EXCEPT where the development is on land that is a state conservation area under the NPWA (when no notice required).
28.	cl50, Schedule 1, cl 1 & 2 EAPReg. Also s78A (8a) EPAA	Application must contain info and be accompanied by documents specified in Schedule 1 (including EIS), as well as the Gateway Certificate or Site Verification Certificate. The list of matters in the Schedule is comprehensive. Matters include: an indication whether land in critical habitat, whether development likely to affect threatened species or their habitats, estimated cost, & capital investment value. Documents required include: site plan, sketch of development, and an EIS. ( <b>Note:</b> an SIS not required for SSD.) The EIS must be in accord with the DG's Requirements (DGR).
29.	s78A (7) EPAA Reg50(2) EAPReg	If the development is on land that is part of a wilderness area, any consent required under the Wilderness Act must be obtained before the application is lodged [note: the consents required under the Wilderness Act relate only to development activities undertaken by statutory authorities: s15 Wilderness Act, so relevance to CSG activities seems unlikely]
<b>Obligation /discretion on receipt of application</b>		
30.	Reg50(3) EAPReg	DG must register it and notify applicant of receipt and registered number
31.	Reg50(5) EAPReg	DG must forward copy to relevant council
32.	Reg51	DG may reject it within 14 days if illegible or incomplete or unclear.
<b>Public consultation</b>		
33.	s89F EPAA Reg83 EAPReg Reg85B EAPReg	DG must place application and accompanying info on public exhibition for 30 days. If any submissions are received, the DG must provide them, or a summary of them, to the applicant. The DG <i>may</i> require the applicant to provide a written response to the issues raised in the submission. The DG must also place on the Department's website the environmental assessment requirements, the application, any submissions received, any response from the applicant, any environmental assessment report prepared by the DG.
<b>4. Who gives consent to a DC?</b>		
34.	s89D, 89E EPAA	The consent authority for SSDs is the Minister. Consent authority must either grant (with modifications or conditions) or refuse application. Cannot defer.
35.	s23 (1), (7) EPAA	The Minister, corporation or DG may, in writing, <i>delegate any of their functions</i> conferred or imposed by this or any other Act to: <ul style="list-style-type: none"> <li>• any officer of the department</li> <li>• any officer, employee or servant of whose services the DG makes use</li> <li>• a development corporation</li> <li>• any public authority or officer of that public authority</li> <li>• a council, or council officer</li> <li>• the Planning Assessment Commission, or</li> <li>• a joint regional planning panel.</li> </ul> DG shall cause delegations to be published in Gazette.
36.		The function of determining an application under s80 (ie for an SSD) is delegated to the PAC (except applications by a public authority); also to designated DPI staff where less than 25 objections and council doesn't object. See <a href="http://www.planning.nsw.gov.au/delegated-decisions">http://www.planning.nsw.gov.au/delegated-decisions</a> for more detail. Notwithstanding this delegation, the Minister may continue to exercise all or any of the functions delegated. <i>This delegation effectively makes the PAC responsible for determining applications where there are more than 25 objections, or local council objects, or there has been reportable political donation connected to application; and various officers of the DPI responsible for determining applications when less than 25 objections and council doesn't object.</i>
<b>5. Application Review – duty of consent authority</b>		
37.	s79C, s89H EPAA	Consent authority must consider: <ul style="list-style-type: none"> <li>• the provisions of any EPI, any development control plan, regulations, any coastal zone management plan</li> <li>• impacts, including environmental, social and economic</li> <li>• suitability of site</li> <li>• submissions</li> <li>• the public interest.</li> </ul> <i>The generality of the considerations gives the decision-maker considerable discretion to approve, set conditions, or reject the application. There are no other obligations on the Minister in respect of DC determinations.</i>
<b>6. Conditions of DC</b>		
38.	s80A EPAA	Consent authority may grant consent subject to conditions, including conditions which must be complied with before the consent takes effect. Consent may also be granted for part of development; and consent withheld for other parts. <i>There is little other mention of conditions in the EPAA, yet these are a major tool in the control and regulation</i>

		<i>of CSG developments, from an environmental perspective.</i>
39.	s89I EPAA	<b>Bio-banking:</b> Consent authority <i>may</i> grant consent subject to condition that requires applicant to acquire and retire specified number and class of biodiversity credits under TSCA (see row 229), including deferred retirement arrangement, or to comply with any biobanking statement obtained (this latter condition cannot be appealed)
40.	s122C EPAA	<b>Environmental audit:</b> The Minister may impose a condition requiring monitoring or an environmental audit at the time of approval for the project <i>or at any other time</i> by notice in writing. The condition may require: (a) the provision and maintenance of appropriate measuring and recording devices for the purposes of the monitoring, (b) the analysis, reporting and retention of monitoring data, and (c) certification of the monitoring data (including the extent to which the terms and conditions of any approval have or have not been complied with). The condition must specify the purpose of the audit and may require: (a) the conduct of the audit by the proponent or by an independent person or body approved by the Minister or the DG (either periodically or on particular occasions), (b) preparation of written documentation during the course of the audit, (c) preparation of an audit report, (d) certification of the accuracy and completeness of the audit report, and (e) production to the Minister of the audit report <i>This is the only provision in the EPAA where the Minister is able to impose a condition on the DC after the DC is given. This provision applies specifically to SSD.</i>
<b>7. Consent authority's responsibility if DC granted</b>		
41.	s81 EPAA	Notify applicant, and council, and those specified by regulations, and <i>notify those who made submissions of right to appeal (only if the development fits the criteria for designated development, even though, as SSD, it not designated development)</i>
42.	s83 EPAA	Consent takes effect on date endorsed on notice when applicant notified under s81(1) – see previous row; or, if appeal made, on date fixed by court of law.

## PETROLEUM (ONSHORE) ACT 1991

All discussion of PELs in this section excludes 'low-impact exploration licences' and 'low impact special prospecting authorities' (s45B POA) which may be granted by the Minister in line with s26A of the Commonwealth Native Title Act, ie land where the owners are registered native title bodies corporate or registered native title claimants. The key features are that the Minister is satisfied that the prospecting operations are unlikely to have a significant effect on the relevant land (s45C(1) POA), that notice is served on all registered native title holders, registered native title claimants and representative ATSI bodies; and that access arrangements are made in accordance with Part 4A of the POA (s45F(2) POA – note Part 4A also applies to ordinary PELs, PALs and SPAs).

<b>8. If CSG exploration is not prohibited under SEPP MPPEI, is a PT required?</b>		
43.	s7 POA  s3(1) POA	It is an offence to 'prospect for or mine petroleum' <i>except in accordance with</i> a petroleum title, punishable by fine or imprisonment. <u>Petroleum</u> is defined as 'any naturally occurring hydrocarbon' or mixture of hydrocarbons, so includes CSG. (CSG is not defined in the POA. The only legislative definitions are in the PEOA and in SEPP MPPEI – both definitions are the same.) <u>Petroleum title (PT) means an:</u> <ul style="list-style-type: none"> <li>• exploration licence (PEL),</li> <li>• assessment lease (PAL),</li> <li>• production lease (PPL) or</li> <li>• special prospecting authority (SPA)</li> </ul> in force under Act.  This section deals with PELs.
<b>9. What does a PEL cover?</b>		
44.	s29 POA, s 3(1) POA	PEL only The rights conferred by a PEL are 'to <u>prospect</u> for petroleum'. <u>Prospect</u> is defined as: to carry out works on, or to remove samples from, land for the purpose of testing the quality and quantity of petroleum in the land and the potential to recover petroleum from the land, but does not include any activity declared by the regulations not to constitute prospecting. <i>Note: The POREgs do not declare any activity not to constitute prospecting. The definition of prospecting is broad enough to encompass well drilling. There is no clear definition of when prospecting becomes production.</i> <i>There is also no specific definition of petroleum exploration.</i>
45.	s28A POA	All PTs There is also a right to carry on such operations as are necessary to 'explore' the land 'for the existence and availability of <i>natural reservoirs</i> ' (not defined), subject to any order of Minister.

10. Who approves PEL?			
46.	s9 POA	All PTs	Various authorities are given to the Minister and DG, but the Act specifies that the Minister may grant a PEL.
47.	s.126 POA	All PTs	The <i>Minister may delegate <b>any</b> of the Minister's powers, authorities, duties and functions under this Act (except this power of delegation) to the holder of any office.</i>  <i>[There is no publicly available information indicating whether the Minister has currently formally delegated his approval functions (cf DPI: <a href="http://www.planning.nsw.gov.au/en-au/developmentproposals/delegateddecisions.aspx">http://www.planning.nsw.gov.au/en-au/developmentproposals/delegateddecisions.aspx</a> . However, the current Minister has completed an Instrument of Delegation in respect of the POA, POReg and EPAA. While a great many of the Minister's functions have been delegated, the s9 function to approve a PT has not been. However the authority to set conditions under ss23 &amp; 74-76 has been delegated to 8 officers of DRE and QCSG.]</i>
48.	s126A POA		The <i>DGTI may delegate <b>any</b> of the DG's powers, authorities, duties and functions under this Act (except this power of delegation) to:</i> <ul style="list-style-type: none"> <li>any member of staff of the Department; or</li> <li>any person or class of persons authorised for the purposes by regulation.</li> </ul> <i>[The current DG has completed an Instrument of Delegation in respect of the POA, POReg and EPAA, and delegated many of his functions.]</i>
49.	s127 POA		A Minister or 'registrar, inspector or other officer charged with any judicial or official duties under this Act', may not hold any direct or indirect beneficial interest in a PT (other than a special prospecting authority). Breach is offence: 200 penalty units
11. POA Application process: PEL			
50.	s11 POA	All PTs	Applications lodged with the DG.
51.	s8 POA	All PTs	The Minister may invite applications for PTs, by notice in Gazette.
52.	s11 POA	All PTs	An application for a petroleum title must be made in form approved by Minister.
53.		All PTs	An application must be accompanied by:
54.	s12 POA Schedule 1 POReg		<ul style="list-style-type: none"> <li>lodgement fee prescribed by <i>regulations</i> (regulations specify \$1000)</li> </ul>
55.	s13 POA cl4 POReg		<ul style="list-style-type: none"> <li>a map or plan, drawn in accordance with the <i>regulations</i>, and delineating area boundaries (regulation specifies type and scale of maps)</li> </ul> <i>[see s20A too – Minister may in effect waive minor requirements]</i>
56.	s14 POA  cl5 POReg		<ul style="list-style-type: none"> <li>a proposed work program complying with <i>regulations</i>, indicating nature and extent of operations to be carried on under authority of title</li> </ul> Work program comprises: <ul style="list-style-type: none"> <li>a fixed agenda describing in detail the nature and extent of operations to be carried on during whole of term of title; OR</li> <li>a fixed agenda related to an initial period (at least first two years) and a summary of intended operations during remainder of term.</li> </ul> There are Regulations applying to PELs. And Minister can also impose conditions, including an approved work program: s23POA]
57.	s15POA		<ul style="list-style-type: none"> <li>evidence of applicant's financial standing, and their technical qualifications and the applicant's ability to comply with Act and regulations. Also see row 66: Minister can refuse if applicant doesn't meet 'Minister's minimum standards'.</li> </ul> <i>No minimum standards appear to be specified: see <a href="#">PEL Application Form</a> which requires only:</i> <p><b>On financial standing:</b></p> <p>a) a certificate issued by a member of CPA Australia or the Institute of Chartered Accountants in Australia (including membership number): or</p> <p>b) a statutory declaration stating that the applicant has sufficient financial resources at the time of lodgement to meet the financial commitments on all the applicant's titles and title applications.</p> <p><b>On technical qualifications:</b></p> <p>'List details of persons or organisations providing technical advice. ... The qualifications and experience of the technical manager ... It is expected that the technical manager will be a qualified geoscientist with petroleum exploration experience.'</p> <p><b>On ability to comply with Act and regulations:</b></p> <p>'A statement of undertaking will be acceptable.'</p>
12. Mandatory POA requirements which can be checked at beginning of application process			
58.	s9 POA	All PTs	PT can be granted over any onshore area within NSW <u>except</u> : <ul style="list-style-type: none"> <li>an area designated by the Minister by notification in Gazette as an area in respect of which a title is not to be granted</li> <li>an area in an existing petroleum title held by a person other than the applicant</li> <li>an area in another application for a petroleum title, made before the applicant's application, and that has not been withdrawn or finally disposed of.</li> </ul> <i>So, if applicant area has been gazetted as area where no PT to be granted, or is located within another title holder's area, or within prior PT applicant's area, it can be refused at this stage.</i>

59.	s10 POA	All PTs	An application for a petroleum title must relate to only one area. 'Area' is not defined. Applying common meaning, presume is single piece of land, ie with one single unbroken boundary. <i>If application covers more than one area, it can be refused at this stage.</i>
60.	S30(1) POA	PEL only	Area of PEL must be: (a) not more than 140 blocks, and (b) not less than 1 block, unless Minister for special reasons considers a smaller area necessary or desirable. <i>If application is for area larger than 140 blocks, it can be refused at this stage. If it for area smaller than 1 block, Minister would need to consider.</i>
<b>13. Environmental review under POA</b>			
61.	s74 POA	All PTs	In deciding whether to grant a PT, Minister is to take into account the need to conserve and protect: <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land over which PT sought.</li> </ul> Minister may cause such studies (including EISs) to be carried out as Minister considers necessary to enable a decision to be made.
<b>14. Environmental conditions under POA</b>			
62.	s75POA	All PTs	Conditions of PT <i>may</i> include conditions relating to conservation and protection of: <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land subject to PT.</li> </ul> <i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i>
63.	s76POA	All PTs	Conditions of PT <i>may</i> include conditions relating to: <ul style="list-style-type: none"> <li>rehabilitation, levelling, re-grassing, reforestation or contouring any part of land that may have been adversely affected by operation, and</li> <li>filling in or sealing of excavations and drill holes</li> </ul> as may be prescribed by regulations or as Minister may determine.  <i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i>
64.	s76POA	All PTs	Minister may amend a PT that does not contain conditions related to <i>protection of the environment</i> (ie only as per ss75 or 76 – see previous 2 rows), or if Minister considers conditions inadequate, by including <b>new</b> conditions or <b>further</b> conditions. Conditions relating to rehabilitation, levelling, re-grassing, reforestation or contouring (but not filling in or sealing excavations and drill holes) must be: <ul style="list-style-type: none"> <li>in form approved by CSCS, and</li> <li>imposed only after consultation with DGNPW.</li> </ul> This section has effect despite anything to contrary in s93 of EPAA. <i>[The reference to s93 of EPAA has effect of retaining Minister's authority to include new or further conditions.]</i> <i>This is the only provision that enables the Minister to add conditions AFTER a PT has been granted. The conditions must relate to protection of the environment, as narrowly construed in s75 and 76 of the POA only.</i>
65.	s28A POA	All PTs?	Right to explore land for natural reservoirs may be subject to an order from the Minister prohibiting, or directing title holder to desist from, carrying on operations of a kind specified in order. Contravention is breach of conditions of title.
<b>15. General review under POA</b>			
66.	s20A POA	All PTs	Minister may waive minor procedural matters even if applicant has failed to comply, provided Minister satisfied that failure unlikely to adversely affect any person's rights under Act or regulations, or result in any person's being deprived of information necessary for effective exercise of those rights.
67.	s21 POA	All PTs	Minister <i>may</i> refuse application if: <ul style="list-style-type: none"> <li>it not made in accordance with Act or regulations, or</li> <li>it would contravene Act, or</li> <li>proposed work program does not meet Minister's minimum standards re nature and extent of activities (<i>note no minimum standards re PLs, see row 56 above</i>), or</li> <li>applicant does not meet Minister's minimum standards re technical and financial capability to carry out proposed work program (<i>see row 56 above</i>), or</li> <li>Minister decides, in public interest, having regard to nature and extent of proposed activities, it would be better not to grant title or grant someone else title.</li> </ul> <i>Authority appears to be discretionary ... application does not have to be refused even if these grounds exist.</i> <i>The power to refuse 'in public interest' is quite a broad power.</i>

16. Conditions			
68.	s23(1) POA	All PTs	A PT is subject to: (a) the conditions imposed by the Minister and specified in the title, and (b) any conditions prescribed by the regulations. If there is any inconsistency between conditions prescribed by the regulations and conditions imposed by the Minister, the latter prevail to the extent of the inconsistency.  <i>Some discretionary and mandatory conditions are included below. However, the extensive list of conditions that accompany most current PELs are primarily made under this general power of the Minister to impose conditions.</i>
Conditions which may be made by Minister (or delegate)			
Work program condition			
69.	s23(3), (4) POA	All PTs	Conditions imposed by Minister <i>may</i> include: <ul style="list-style-type: none"> <li>• conditions about work to be carried out by title holder during or after term of title, including approved work program and</li> <li>• amounts to be expended by title holder in carrying out any such work.</li> </ul> Conditions may apply to each year for term of title. <i>Given that the Minister has a general discretion to impose conditions under s23(1), this specific discretion is redundant. But presumably it was addressing a (then) current issue, for clarity.</i>
70.			<i>Note that the <b>Code of Practice CSG Well Integrity</b> and the <b>Code of Practice for Fracture Stimulation Activities</b> are not of themselves legally binding documents. They are given legal effect by their inclusion as conditions in PTs. These each have an extensive series of requirements which must be complied with. See separate section below.</i>
71.	cl5(4) POReg	PEL or PAL only	If work plan submitted in 2 parts (ie fixed agenda for first 2 years, then summary of intended operations for remainder), it is a condition that title holder provide progressive agendas for next period of two years or for remainder of term -- not later than 30 days before the end of the period covered by the fixed agenda
Security deposit condition			
72.	s106B, s106C, s106E, s106F, s106G, s106H POA cl24A POReg	All PTs	Minister <i>may</i> impose a condition requiring title holder to give and maintain a security deposit, in such form as Minister <i>may</i> determine, for fulfilment of holder's obligations under POA. Condition may be imposed at the time of granting of title, <i>or at any time later</i> . Granting of title can be made subject to the giving and maintaining of the security deposit.  Amount of security deposit is assessed by the DG, having regard to estimated cost of fulfilling any obligations under Act, and in accord with any Ministerial guidelines. The title holder can seek a review of a security deposit assessment. The minimum security deposit is now \$10,000.
73.	s106I	All PTs	Security deposit is forfeited to Crown if the title holder 'fails to fulfil the obligations under this Act', on written notice to title holder. Money forfeited must be applied for purpose of fulfilling obligations under the POA.
Mandatory conditions			
Work Health and Safety conditions			
74.	s128 POA	All PTs	It is a condition of every PT that title holder carry out all petroleum exploration operations and operations for the recovery of petroleum in the title area in accordance with the Work Health & Safety Act 2011.
75.	cl27 POReg 2007	All PTs	It is a condition of every PT that title holder comply with the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR). The SOPEPSR, as sourced from <a href="http://www.resources.nsw.gov.au/safety/legislation/petroleum">http://www.resources.nsw.gov.au/safety/legislation/petroleum</a> , is dated August 1992. <i>It covers more than what might be regarded as 'safety' issues. Pages 13-21 of the Schedule refer specifically to Petroleum Production. A separate section on the contents of the SOPEPSR is below.</i>
Work program condition			
76.	cl9 POReg	All PTs	It is a condition that title holder will carry out operations, and only the operations, described in the work program, for the time being in force. [cl10 provides for title holder to apply for variation to work program, which Minister <i>may</i> approve.]
DG notice compliance condition			
77.	cl26 POReg	All PTs	It is a condition that title holder complies with terms of any notice from DG requiring title holder to comply with provision of regulation.
78.	cl27A POReg	All PTs	It is a condition that title holder comply with any notice from DG requiring title holder to carry out an audit about any matter related to the title. <i>This enables the DG to require an audit at any time.</i>
17. Contravention of conditions of title			
79.	s136A POA current		Contravening or failing to comply with <i>any</i> conditions of a PT is an offence. Max penalty if condition relates to environmental management is 10,000 penalty units (corporation) or 2000 (individual). Max penalty for non-environmental conditions is 2000 penalty units.
80.	s137A POA current cl28		Minister <i>may</i> serve a penalty notice on a title holder if it appears they have breached condition. Payment of penalty ends further court proceedings. Regulation prescribes amount of penalty, up to max of 100 penalty units. Penalty for breach of environmental condition is \$2500.

	POReg Schedule 2 POReg		Penalty for breach of non-environmental condition is \$1250.
<b>Direction to comply with rehabilitation conditions</b>			
81.	s77POA	All PTs	Minister <i>may</i> give written notice on current or former title holder directing person to take specified steps within specified time to give effect to conditions in PT related to rehabilitation of the land, as per s76 (see row 62). Failure to comply by title holder: maximum penalty 10000 penalty units (corporation) or 2000 penalty units (individual).
82.	s78POA		If title holder fails to comply, Minister <i>may</i> cause to be taken any of the steps specified in the direction. Any costs or expenses incurred by Crown are a debt due to the Crown and are recoverable in appropriate court (whether or not title holder prosecuted or convicted).
<b>Suspension of conditions</b>			
83.	s24 POA	All PTs	On application by title holder, Minister <i>may</i> suspend any or all of conditions relating to working of land comprised in title. Suspension cannot exceed 6 months. In granting suspension of conditions, Minister <i>may</i> impose conditions: <ul style="list-style-type: none"> <li>• for protection of wells, equipment or works on land, or</li> <li>• for protection of petroleum deposits, water or minerals in land or in adjacent land, or</li> <li>• for any other purpose.</li> </ul> <i>[Not clear whether this power to suspend extends to mandatory conditions that are specified in the POA or PORegs, eg s128 POA which makes compliance with WHSA a condition of the PT.]</i>
<b>18. Term of title</b>			
84.		PEL	Term of licence is set by Minister and cannot exceed 6 years
<b>19. Minister's responsibility if petroleum title granted</b>			
85.	s9(5) POA	All PTs	Title must be published in the Gazette
86.	s9(6) POA	All PTs	If title relates to land that is a biobank site (see Part 7A of TSCA): Minister administering TSCA must be notified. (And see row 229).
<b>20. Title takes effect when?</b>			
87.	s9(4) POA	All PTs	On date signed by Minister, or on later date specified in title
88.	s25 POA	All PTs	Legal challenges to the grant of a title cannot commence later than 3 months after date of Gazette publication of grant of title
<b>21. Access of PEL holder to land for purposes of PROSPECTING</b>			
<i>The access arrangements for prospecting titles (ie PELs, PALs and SPAs) are spelled out in considerable detail. Note that there are no equivalent provisions in respect of access for production. This puts more onus on the landholder to negotiate an agreement that foreshadows production at some future time.</i>			
89.	s3(1) POA		See row 2 for definition of prospecting
90.	s69C POA	PELs, PALs and SPAs	Title holder must not 'carry out prospecting operations' on any land except in accordance with an access arrangement that is either: <ul style="list-style-type: none"> <li>• agreed in writing between title holder and landholder, or</li> <li>• determined by an arbitrator under the Act.</li> </ul> <i>There are a range of provisions governing the process for establishing an access arrangement, including arbitration arrangements, in Part 4A POA, ss 69A-69U. They are not discussed further here.</i> <i>[It is noted that a Bill to amend the provisions on access is currently before the NSW Parliament, and a new Code of Practice for Land Access has been released for public consultation.]</i>
91.	s41, s47J, s54, s58O, s64 NPWA		Prospecting and exploring cannot occur in a national park, historic site, nature reserve, karst conservation reserve or Aboriginal area unless the Minister for Environment approves and the approval is laid before both houses of Parliament. But this does not apply to conservation reserves. (See rows 171 and 172)
<b>22. Obligations and liabilities of PEL holders (separate from obligations imposed through conditions on title)</b>			
<b>Payment of fees</b>			
92.	s94E POA Schedule 1, PO Reg	All PTs	Title fee payable to DG – one-off fee at time of grant. Fee is \$15000 where title is for term >3 years
<b>Information/notification-related obligations</b>			
93.	cl8 POReg	All PTs	Title holder must advise Minister of intention to commence work on any exploration borehole, seismic survey or other exploration within area of PT, not later than 14 days before starting work
94.	cl14 POReg	All PTs	After <i>completion</i> of ... any activity described in conditions of title as 'significant component of work program', title holder must forward to DG, in format specified in conditions of the title, a report on operations carried out in the activity concerned, together with all raw and processed data and main conclusions drawn from it. Within 6 months of completion. Max penalty: 100 penalty units
95.	cl14 POReg	All PTs	After the <i>end of period covered by a fixed agenda</i> , title holder must forward to DG: (a) a summary of operations carried out during the period covered by the agenda, within 30 days, and (b) a full report on operations carried out during that period, within 6 months.

			The minimum period for a fixed agenda is 2 years. Max penalty: 100 penalty units
96.	cl15 POReg	All PTs	Title holder must keep geological plans and records relating to work carried out, as directed by the DG. Max penalty: 100 penalty units
97.	s27, s28 POA  s32 POA	All PTs	If petroleum is discovered in land comprised in a title, the title holder must a) inform the Minister immediately of the discovery and b) furnish particulars in writing within 3 days. DG can direct title holder to furnish particulars of petroleum. <b>Note also:</b> If petroleum is discovered in land comprised in a PEL, the Minister may direct the PEL holder to apply for a PAL or PPL in respect of that land. If the PEL holder does not apply for a PAL or PPL as directed, the Minister may cancel the licence.
98.	s131 (1) POA cl16 POReg	All PTs	<i>On every anniversary of grant of PT</i> , title holder must provide Minister with record in prescribed form of: <ul style="list-style-type: none"> <li>operations conducted and expenditure incurred</li> <li>plan drawn to prescribed scale showing situation of wells; all development and other works and improvements; and any ancillary rights acquired.</li> </ul> Scale is 1:25,000, 1:100,000 or 1:250,000.
99.	s131(2) POA	All PTs	Every title holder must: <ul style="list-style-type: none"> <li>keep accurate geological plans, maps and records</li> <li>furnish to the Minister such plans and information as Minister requires.</li> </ul>
100.	s.132 POA	All PTs	Every title holder must: <ul style="list-style-type: none"> <li>collect, label and preserve all cores and characteristic samples of strata encountered in any well on land comprised in title, and samples of any petroleum or water discovered in any well</li> <li>make scientific examinations of those samples; and give the Minister reports of the examinations made;</li> <li>furnish to the Minister such data as the Minister may require.</li> </ul> <i>[Note: Ss 117-125 POA contain provisions relating to public release of data and samples. These are not given in detail here.]</i> <i>PELs that do not require DC are less likely to involve wells, so this of less relevance.</i>
101.	s133 POA	All PTs	Every title holder must, if called on, furnish such statistics, returns and other information as Minister may require. Max penalty: 200 penalty units
102.	s135 POA	All PTs	Any person who inserts false particulars or supplies false information is guilty of an offence. Max penalty: 200 penalty units. If false particulars supplied wilfully to evade royalty payment, may have to pay additional penalty of twice the royalty.
<b>Royalties and fee payments</b>			
<i>This section is unlikely actually to apply to PELs without DC, as they do not involve substantial wells. However, it is included for completeness.</i>			
<b>Royalties</b>			
103.	s85, 91, 92, 94 POA	All PTs	Title holder must pay to Minister a royalty in respect of 'all petroleum recovered' by title holder in area covered by title. Royalties are payable annually, but not due until last day of next royalty period. Late payment penalty of 1/3 of 1% per day, computed from time it became payable to when it paid. Royalties are a debt due.
104.	s85, 88, 89, 90 POA cl22 POReg	All PTs	<b>Royalty quantum:</b> Annual rate of royalty specified in POA and POReg: varies between 5 and 10% of value at well-head of the petroleum recovered, depending on number of years of commercial production. <i>(From Jan 2013, it is all 10% - cl24 and 24AA of POReg 2007).</i> <b>Well-head</b> is equipment used for recovery of petroleum 'as agreed between title holder and Minister' or, if no agreement within period allowed by Minister, as determined by Minister. <b>Value at well-head</b> is amount determined by Minister as being that value. <b>Quantity of petroleum recovered</b> is: <ul style="list-style-type: none"> <li>the quantity measured by a measuring device approved by the Minister and installed at well-head or other place approved by Minister, or</li> <li>if Minister not satisfied quantity properly or accurately measured by approved measuring device, the quantity determined by the Minister as being the quantity recovered</li> </ul> <i>See 716 of SOPEPSR: DG has power to seal valve or meter on well or storage facility, for purposes of royalty payable.</i>
105.	s86 POA	All PTs	<b>Royalty reduction:</b> Minister may reduce royalty rate if: <ul style="list-style-type: none"> <li>Minister satisfied that current rate of recovery makes recovery uneconomic, or</li> <li>petroleum is being recovered as consequence of requirement under POA, or</li> <li>other circumstances which Minister considers justify reduction.</li> </ul> Minister can revoke or vary a reduction.
<b>Fees</b>			
106.	s94C, 94H, 94I, 94L, 94N, 94O, 94P, 94Q, 94R POA	All PTs	Title holders must pay, in addition to royalty: <ul style="list-style-type: none"> <li>a title fee for PEL this is \$10,000</li> <li>an annual rental fee for PEL this is \$60 per block or \$2.40 per unit in 1st term of licence; \$104 per block or \$4.16 per</li> </ul>

	Schedule 1, POReg		<p>unit in 2<sup>nd</sup> term of licence; \$187.50 per block or \$7.50 per unit in later licences. DGTI determines annual rental fee area.</p> <ul style="list-style-type: none"> <li>an administrative levy</li> <li>1% of security deposit amount (see row 71), with minimum amount of \$100 (can be varied by POReg, but no provision to date). (Further detail where more than 1 PT involved not included here).</li> </ul> <p>Late payment fees may be charged by DGTI: 15% of overdue amount per annum, compounded quarterly.</p> <p>Fees are a debt due; non-payment is a contravention of POA but not an offence.</p> <p>Fees are payable even if PT cancelled or suspended.</p> <p>Annual Rental Fee and Administrative Levy are payable annually, from 1 July 2012 on grant anniversary date.</p> <p><i>DGTI has obligation to assess liability of title holder for fees, and to serve notice on title holder of when title fee and annual rental fee payable.</i></p> <p><i>DGTI has discretion to charge late payment fee if fee overdue.</i></p> <p><i>DGTI has obligation to record annual rental fee area in records required by s95 POA.</i></p> <p><i>There are phasing in provisions in POReg for PTs granted before 1 July 2012. Not reviewed here: see c122 POReg</i></p>
107.	c122 POReg	All PTs	Fees may be remitted or waived in relation to a particular person or class of persons, if Minister satisfied there sufficient cause to do so
<b>Compensation to landholders</b>			
108.	s107 POA	All PTs	A title holder <i>is liable</i> to compensate 'every person having any estate or interest in any land injuriously affected', or likely to be affected, by operations in pursuance of the POA. But compensation is not payable if the operations do not affect 'any portion of the <i>surface</i> of any land'.
109.	s108 POA	All PTs	If title holder and parties unable to agree on amount of compensation, then LEC assesses. [Additional provisions on assessing and appealing compensation are included in POA and POReg (Regs 17-19), but not reviewed here.]
<b>Restrictions, and potential variations with consent of Minister</b>			
110.	s70(1) POA	All PTs	Title holder may not exercise any title rights over land in an <i>exempted area</i> , except with consent of Minister. <i>Exempted area</i> includes land: <ul style="list-style-type: none"> <li>reserved for a public purpose</li> <li>held under a lease for water supply</li> <li>transferred, granted or vested in trust by Crown for purpose of a race-course, cricket-ground, recreation reserve, park or permanent common for any public purpose</li> <li>prescribed by regulations for purposes of this definition (no prescription at present in POReg).</li> </ul>
111.	s72 POA	All PTs	Title holder must not carry on mining operations or erect works on <i>surface</i> of any land: <ul style="list-style-type: none"> <li>within 200 metres of dwelling-house that is principal place of residence of person occupying it, or</li> <li>within 50 metres of any garden, vineyard or orchard, or</li> <li>on which is situated any improvement (being a <i>substantial</i> building, dam, reservoir, contour bank or other <i>valuable</i> work or structure), other than an improvement for mining operations <i>except with consent of landholder/house occupant</i>.</li> </ul> <p>Once given, consent is irrevocable.</p> <p>'If need be', the Minister is to determine whether any improvement is <i>substantial</i> or <i>valuable</i>, and may define an area adjoining any such improvement on the surface of which no mining operations are to be carried out or works erected, <i>without the owner's consent</i>. Disputes go to LEC for determination.</p> <p><i>I have not yet found any guidelines to assist the Minister in determining whether an improvement is substantial or valuable. On the face of it, it would seem to be based on the Minister's (or delegate's) personal opinion only.</i></p>
<b>23. Authority to cancel or suspend title</b>			
112.	s22 (1) POA	All PTs	Minister <i>may cancel</i> title if title holder: <ul style="list-style-type: none"> <li>fails to fulfil or contravenes any title conditions, or</li> <li>fails to use land comprised in title in good faith for purposes for which it granted, or</li> <li>uses land for purpose other than that for which title granted, or</li> <li>contravenes the Act or regulations.</li> </ul>
113.	s22(2) POA	All PTs	Minister <i>may also cancel</i> title, in whole or part, on written request of title holder, though Minister can refuse unless all data and reports due under regulations have been submitted and all data and operations reported on. <i>Effect of cancelling title would remove the obligation for reports, so this is a way of enforcing reports.</i>
114.	s22(2A) POA	All PTs	Minister <i>may cancel</i> part of title if part of land in title required for 'any public purpose', 'with or without restrictions as to depth'
115.	s22(3A) POA	All PTs	Minister <i>may suspend</i> all or some operations under a title 'until further notice' if title holder contravenes <ul style="list-style-type: none"> <li>a requirement under the Act to pay a royalty or give or maintain a security, or</li> <li>any condition of title 'that is identified as related to environmental management' (ie if identified in</li> </ul>

			the title, or in any notice of condition given to title holder)
116.	s22(6) POA	All PTs	Minister <i>must</i> give written notice of proposed cancellation or suspension, and the grounds, to title holder, and give title holder reasonable chance to make representations, and take representations into consideration.
117.	s22(5) POA	All PTs	No compensation payable by Crown when title cancelled or operations suspended.
118.	s94R POA	All PTs	Fees (title fee, annual rental fee, administrative levy) payable even if title cancelled or suspended (see 73)
119.	s22(4A)	All PTs	Notice of cancellation is to be published in Gazette, as soon as practicable after cancellation
<b>24. Title holder responsibilities if PT ceases</b>			
120.	s82 POA	All PTs	Title holder may, within 6 months of title ceasing, or must, if directed by Minister within time specified, remove from land any petroleum plant brought on to or erected on the land 'in the course of drilling operations carried out under the PT'.
121.	s83 POA	All PTs	If plant not duly removed, Minister <i>may</i> direct it be sold by public auction, then by private treaty. Act provides for disposal of proceeds.
<b>25. Varying the work</b>			
122.	cl10 POReg	All PTs	A title holder who wishes to vary the work program in force must lodge a submission with the Minister providing adequate details of the variation proposed to be made and setting out the reasons for making it
123.	cl10 POReg	All PTs	Minister may approve if satisfied that there is just and sufficient cause for making variation and if revised work program meets Minister's requirements
<b>26. Renewal of title application</b>			
124.	S19(2) POA	PEL & SPA	PEL or SPA holder may apply for renewal of title not earlier than 2 months and not later than 1 month before authority or licence ceases to have effect.
125.	s30(2) POA	PEL only	PEL can only be renewed over area that is not greater than 75% of the area over which first PEL granted, unless Minister satisfied of special circumstances, <i>Note that an exploration licence renewal has to be over less land area than original licence.</i>
<b>Minister's authority to renew title</b>			
126.	s19(2B), (3), (3A) POA	All PTs	Minister <i>may</i> renew or refuse renewal application. Refusal may be on any ground on which Minister might have refused title initially, or might have cancelled title. (see rows 34 and 79). Minister may refuse renewal unless all data and reports due under regulations have been submitted
127.	s20 POA	All PTs	Original title continues in force while application for renewal is pending.
<b>27. Withdrawal of application</b>			
128.	s19A POA	All PTs	Application or renewal may be withdrawn in writing to Director-General. Application ceases to have effect on lodgement of withdrawal
129.	s95 POA cl12 POReg	All PTs	DG <i>must</i> keep records of: <ul style="list-style-type: none"> <li>• every PT application, and</li> <li>• every PT, and</li> <li>• every matter required by POReg.</li> </ul> Records must be available for inspection free of charge by public. Records may be kept via computer. Particulars specified in cl12.
130.	s97 POA	All PTs	DG <i>must</i> keep register of legal and equitable interests in PTs
<b>28. Other authorities of Minister</b>			
131.	s96A POA	All PTs	Minister <i>may</i> approve application for transfer of PT, including amendment of conditions
<b>29. Inspection and control</b>			
132.	s98, 99, 100, 101, 103 POA	All PTs	DG and officers authorised by DG have access to land subject to a PT, and all buildings (except residential premises), structures, equipment and works, and all books, accounts, documents and other records relating to the land for the purpose of ascertaining whether requirements of the PT and the POA are being observed. There are also authorities related to surveys and sampling. Notice not required to title holder, but notice is required to <i>land holder</i> .
133.	s129 POA	All PTs	'Inspectors' may require dangerous or defective matters, things or practices, which threaten or tend to injure the health or body of any person, to be remedied by a specified period; and may direct that an operation cease or that persons withdraw, indefinitely or for specified period. <i>'Inspectors' not defined, but s113 POA makes provision for people to be employed as such.</i>
134.			And see SOPEPSR, re powers of inspectors, eg para 209. <i>It's not absolutely clear, but it seems inspectors under the Act and the Schedule are probably the same.</i>
<b>30. Easements and rights of way</b>			
135.	s105 POA	All PTs	Minister may grant and revoke easements or right of way through, over or on the <i>land comprised in a PT</i> , as required for development or working of the land or any land in other PTs
136.	s106 POA	All PTs	Minister may grant and revoke 'temporary' rights of way through, on or in <i>any</i> land for construction of access road to PT land. If the land is within a NPWA state recreation area: <ul style="list-style-type: none"> <li>• Water Administration Ministerial Corporation's concurrence needed <i>if lands are an irrigation area</i> under Crown Lands Act 1989, or</li> <li>• Lands Administration Ministerial Corporation concurrence needed, or</li> <li>• Minister administering NPWA concurrence needed '<i>in any other case</i>'.</li> </ul> <i>There is no circumstance specified when Lands Administration Ministerial Corporation approval is required. The 'in any other case' re Minister administering NPWA does not quite make sense.</i>

			<i>It appears that all 3 concurrences are needed if lands are under an irrigation area, and 2 concurrences needed if not.</i>
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**NOTE re above table:**

Have not included every power or obligation on DG in POA, eg in respect of registration of titles (Part 8).  
 Have not included every process in POA related to assessment of compensation by LEC (ss109-112A); nor jurisdiction of LEC (s115).  
 Have not looked at Crown developments, as have assumed Crown would not develop any CSG facility.

**SCHEDULE OF ONSHORE PETROLEUM EXPLORATION AND PRODUCTION SAFETY REQUIREMENTS (SOPEPSR)**

[It is a condition of all PTs that title holder comply with the SOPEPSR: see row 74.]

	<b>Clause</b>	<b>Paraphrase of Schedule provisions</b>
137.		<i>This Schedule was published in 1992, but is still applicable. The clauses listed below apply to all PTs. Part 7 of the Schedule, not included here, applies only to PPLs. There are references to obligations to act 'in accordance with good oilfield practice'. It is not clear what the benchmark for 'good practice' is. DRE's webpage (<a href="http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csg-regulated/additional-information">http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csg-regulated/additional-information</a>) states that 'Good oilfield practice means in accordance with generally accepted standards such as those published by the American Petroleum Institute'. The majority of provisions in the Schedule are compliance obligations on the title holder (noting that compliance with the SOPEPSR is a condition of a PT).</i>
138.		<b>All petroleum titles</b>
139.	201	<i>Safety Management Plan: Title holder must maintain a safety management plan</i>
140.	203	<i>Certificate of competence: Title holder must ensure people have certificates of competence where their activities require one</i>
141.	205	<i>Tests: Title holder must ensure any test required by the Schedule is carried out 'in accordance with good oilfield practice'.</i>
142.	206	<i>General duty to maintain site that is safe for employees, visitors and the public.</i>
143.	208	<i>Information availability: Title holder must make readily available to all workers copies of SOPEPSR, plus "Code of Environmental Practice as required under Regulation 28", plus Emergency Response Procedures manual.</i>
144.	209	<i>Powers of inspectors: Inspectors have powers to stop operations that are dangerous or 'not in accordance with good oilfield practice'.</i>
145.	210	<i>Emergency response: Title holder must have approved Emergency Response Procedures.</i>
146.	212	<i>Protective Clothing: Title holder must ensure protective safety equipment is provided. Persons provided with safety equipment must wear it.</i>
147.	213	<i>Notices and signs must be compliant with AS 1319</i>
148.	214	<i>Precautions against fire: Use diesel engines where practicable; no naked flames etc within 30 metres of 'the hole'; requirement to use flare line if inflammable gas met in well.</i>
149.	301-308	<i>Reports of death or serious injury or serious damage or hazardous event or escape or ignition of petroleum, and records of death or injury, to be made to Inspector and/or kept.</i>
150.	4.	<i>Explosives, radioactive and dangerous substances: 9 very specific requirements in respect of explosives, eg transport in accord with applicable legislation; keep in locked storage magazine etc</i>
151.	5. (501-525)	<i>Under the heading Notification to Drill, there are a series of obligations in respect of equipment standards, casings, cementing of casings, blow-out prevention control and drills, pressure-testing blow-out prevention equipment, installing a mud monitoring system, penetration rate recorder, drilling fluid, protection of aquifers, venting flammable vapours, abandoning wells, completing wells, disposing of produced oil and gas, disposal of waste. <b>Note:</b> The 'protection of aquifers' provision is a single sentence stating that 'titleholder must ensure that all reasonable steps are taken during operations on a well to prevent leakage or the pollution of aquifers'. The PEOA and WMA would go further than this.</i>
152.	6. (601-607)	<i>Electrical: This part contains specific provisions relating to the safety of electrical apparatus, including wiring rules, protection circuits, control of static electricity, welding, and electrical shock. There is reference to some Australian Standards.</i>
153.	7	<i>Part 7, clauses 701 to 733, relate only to PP.</i>

**WATER MANAGEMENT ACT 2000**

154.		There are two aspects to the Water Management Act: i. <i>accessing or taking water, which requires a Water Access Licence</i> ii. <i>using water or constructing a water supply work, which requires a Water Approval.</i>
<b>31. Who approves Water Access Licence or Water Approval</b>		
155.	s389 WMA	The Act provides that all consents and approvals are made by the Minister. However, the Act provides that the Minister may delegate any functions to any person. Each responsibility below assigned to the Minister may be delegated to someone else. It is not known if any authorities have been so delegated.
156.	s71A,	Licences and dealings do not take effect until they are registered on the Water Access Licence Register.

	s71B WMA	
<b>32. Water licences</b>		
<b>Does the PEL holder need a water licence?</b>		
157.	s60A, s60I WMA	<p>Taking water from a water source without a WAL is an offence.</p> <p>The Act is specific about what constitutes 'taking water' in respect of petroleum exploration:</p> <p>(1) A person who takes water in the course of carrying out a <i>mining activity</i> is taking water from a water source.</p> <p>(2) ... A person takes water in the course of carrying out a <i>mining activity</i> if ... water is removed or diverted from a water source (whether or not water is returned to that water source) or water is re-located from one part of an aquifer to another part of an aquifer.</p> <p>(3) To avoid doubt, a person who takes water in the course of carrying out a <i>mining activity</i> under (2) is required to hold an access licence authorising the taking of that water.</p> <p><i>Minning activity</i> includes petroleum exploration. Petroleum exploration means prospecting pursuant to a PT under the POA (see row 2 for definition of prospecting).</p>
158.	cl18 & Schedule 5, Part 1, cl7, WM(G)Reg	<p><b>However ... water taken for prospecting for petroleum is exempt from the requirement to get a WAL, provided not more than 3 megalitres of water is taken in any one water year.</b></p> <p>The analysis below applies only to PEL holders who expect to take more than 3 megalitres of water in any one year.</p>
159.		<p>Companies may already own water licences under the Water Act 1912. These are being converted into WALs under the WMA, as per a process described at <a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx">http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx</a>.</p>
160.		<p>If the PEL holder has no WAL, or additional water is required outside an existing licence, then a WAL is required. If the water required is NOT in an area that is the subject of a Water Sharing Plan, then the licence is governed by the Water Act 1912.</p> <p>If the water IS in an area that is the subject of a Water Sharing Plan, the licence is applied for under the WMA. The following details the licence provisions of the Water Management Act. The Water Act has not been further examined.</p>
161.	s61(1)(b), (c), s65 WMA	<p>NOW's website indicates that 'Generally, new water access licences for commercial purposes (irrigation, industry and mining) with a share of the available water are no longer being granted. If you want to obtain a permanent share of water you will have to purchase an existing licence on the water market' (<a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence">http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence</a>).</p> <p>The Act specifies that the only licences which can be applied for are:</p> <ul style="list-style-type: none"> <li>• zero share WALs, which enable one to 'have a water allocation account and to buy or transfer allocation water on an annual basis or share component from another licence holder' (ibid) but does not give any allocation to water of itself. There are provision in the WMA governing 'water dealing', but these are not discussed further here.</li> <li>• a WAL following a controlled allocation order, under which 'the NSW Government may make licences available in a specific water source through a tender, auction or other means' (ibid). This process is not discussed further here.</li> </ul> <p>(There is also a specific purpose WAL, but its purposes do not include mining: s61(1)(a).)</p> <p><i>The consequence of these provisions is that, if a PEL holder requires more than 3 megalitres of water for their exploration activity, and doesn't already have a water licence, they will need to apply for a zero share WAL, and then source a supply from another WAL holder through a water 'dealing', and apply for that water allocation to be re-assigned to the PEL holder's own WAL.</i></p> <p><i>Note that a separate WAL is required for each individual source of water.</i></p> <p><i>The Aquifer Interference Policy, in para 2.1, lists a number of matters which a licence holder needs to take into account when determining the type and number of WALs they are likely to require. It is clear that the onus is on the taker of the water to be sure they can fully account for all water they intend to take.</i></p>
<b>Application process for a (zero-share) WAL</b>		
162.	s61 WMA	Applications are made to the Minister.
163.	cl9, WM(G)Reg	An application must be in the approved form, signed and accompanied by relevant fee.
<b>Requirements for review by Minister before approval of WAL</b>		
164.	s63(2) WMA	<p>The Minister has to be satisfied that the licence is within the 3 categories mentioned above (ie as per s61(1), row 160), and that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to any water source as a consequence of water being taken' from it'.</p> <p><i>Note that, for a zero-share WAL, no harm can occur, as no water is allocated to be taken.</i></p>
165.	s63(4) WMA	<p>An access licence must specify:</p> <p>(a) in relation to its share component, the water management area or water source to which it relates;</p> <p>(b) in relation to its extraction component, the times, rates or circumstances in which, and the areas or locations from which, water may be taken under the licence.</p> <p><i>Note that, for a zero-share WAL, this information will be minimal.</i></p>
166.	s57 WMA, Regs 4 & 6, WM(G)Reg	<p>There are 11 categories of access licence in the Act, one of which is an 'aquifer access licence'. Further categories are specified in the Regs, including 'aquifer (general security) access licence' and 'aquifer (higher security) access licence. Some licences have greater priority over others, for the purpose of diminishing water allocations, as specified in this section and the regulations. Aquifer access licences are not singled out for priority.</p>

Conditions										
167.	s66(1) WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.								
168.	s67 WMA	Additional discretionary conditions can be imposed after the WAL is granted, but only if the Minister has notified the WAL holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.								
169.	s78 WMA	The Minister may suspend or cancel an access licence for non-compliance with conditions, as well as other specified grounds.								
33. Dealing' in (trading) water allocations under WALs										
170.		There are a number of provisions on water 'dealing'. The main ones are:								
Short term: Assigning a water allocation: process										
171.	s71T, s71L, s71Y WMA	Water <u>allocations</u> may be assigned from one WAL to another. Both licence holders must apply to the Minister for consent. This only applies in respect of a specific allocation of a set amount of water, ie over the short term. Application is made to the Minister in the approved form, and with the required fee.								
Short term: Assigning a water allocation: review by Minister										
172.	s71YWMA  s5(8) WMA  ALDP Order2002	<p>Minister may grant consent only if the dealing complies with s 71Y, which requires the application for Minister's consent to be dealt with in accordance with:</p> <p>(a) the water management principles, and  (b) the access licence dealing principles, and  (c) the access licence dealing rules established by any relevant management plan.</p> <p>The <i>water management principles</i> are extensive. A particular principle related to aquifer interference activities is that:</p> <p>(a) the carrying out of aquifer interference activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and (b) the impacts of the carrying out of aquifer interference activities on other water users must be avoided or minimised.</p> <p>The <i>access licence dealing principles</i> are as set out by order published on the NSW legislation website (s71Z(1)). There are a variety of orders in place, and not all have been reviewed. However Access Licence Dealing Principles Order 2002 does specify a series of general principles, and principles for specific types of access dealings, including dealings under s71G (which has now been renumbered as s71T). The general principles relate to impacts on water sources, on indigenous, cultural, heritage or spiritual matters and on water users, and on maximizing social and economic benefits. The specific principles include, for example, prohibition on the dealing if there is no satisfactory measurement of the water extraction; or if the water sources in the WAL are different; or if relevant water management plans don't have provisions regarding water protection.</p> <p>For longer term 'dealings', either a 'term transfer' is required, or the transfer (usually through purchase) of an actual WAL or share of a WAL.</p>								
Long term: Assigning a term transfer: process										
173.	s71N WMA	<p>All entitlements under a WAL may be transferred for a specified term, provided it longer than 6 months. Usually this would involve consideration (eg, a 'rental-type' payment).</p> <p>The Act does not require Minister's consent for a term transfer. Provided the term transfer is registered, it is complete.</p> <p>[The effect is like a lease. The owner does not change but the 'lessee' is responsible for the asset and all outgoings.]</p>								
Long term: Transferring a WAL: process										
174.	s71M WMA	<p>A WAL may be transferred fully to another person. Usually this would involve consideration (eg a sale).</p> <p>The Act does not require Minister's consent for a WAL transfer. Provided the transfer is registered, it is complete.</p>								
34. Water use approvals										
175.	s89(1), s90, s91, s91A WMA	<p>A water use approval confers a right to use water for a particular purpose at a particular location. Using water without an approval is an offence.</p> <p>Approvals are divided into 2 categories, each with specific kinds:</p> <table border="0"> <tr> <td><b>Water management work</b></td> <td><b>Activity</b></td> </tr> <tr> <td>Water supply work</td> <td>Controlled activity</td> </tr> <tr> <td>Drainage work</td> <td>Aquifer interference</td> </tr> <tr> <td>Flood work</td> <td></td> </tr> </table> <p><b>Note:</b> s89J(1)(g) EPAA states that a water approval is NOT required for SSD which obtains DC 'other than an aquifer interference approval'.  As most CSG activity potentially involves aquifer interference, these provisions still apply</p>	<b>Water management work</b>	<b>Activity</b>	Water supply work	Controlled activity	Drainage work	Aquifer interference	Flood work	
<b>Water management work</b>	<b>Activity</b>									
Water supply work	Controlled activity									
Drainage work	Aquifer interference									
Flood work										
176.	Dictionary, WMA; c122, WM(G)Reg	<p><i>Aquifer interference activity</i> means an activity involving any of:</p> <p>(a) the penetration of an aquifer,  (b) the interference with water in an aquifer,  (c) the obstruction of the flow of water in an aquifer,  (d) the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations, (the regulations prescribe sand extraction and road base material extraction)  (e) the disposal of water taken from an aquifer as referred to in (d).</p> <p><i>Aquifer</i> means a 'geological structure or formation, or an artificial landfill, that is permeated with water or is capable</p>								

		of being permeated with water'.
177.	s91(3) WMA	An aquifer interference approval confers a right to carry out specified aquifer interference activities at a specified location, or in a specified area, in the course of carrying out specified activities.
178.	s91F, s91G WMA  s91A(1) WMA Regs 33, 35 WM(G)Reg  cl34, WM(G)Reg	Carrying out an aquifer interference activity without an aquifer interference approval is an offence, as is contravening a term of the approval.  The Regulations enable aquifer interference approval holders to engage in activities outside those specified in their approval, and which would otherwise be an offence, if they are in connection with <u>mining</u> , and the water is used in accordance with the approval. Hence, they do not need, for example, to get a <i>water supply work approval</i> in relation to the construction or use of a water management work. In addition, any person, whether they have an aquifer interference approval or not, is exempt from the general ban on construction of water supply works without approval, if the water supply works are constructed for the purpose of prospecting or fossicking for petroleum under the POA and for no other purpose (but not on various environmentally sensitive land, as specified).
<b>Application process</b>		
179.	s92 WMA	Any person may apply for an approval
180.	cl23, WM(G)Reg	An application must be in the approved form, and if required by the Minister, include an assessment of the likely impact of the activity and the fee.
181.	s94 WMA	If the Minister receives notice from the PAC that it is conducting a review of the application under the EPAA, the Minister must defer a decision on the approval until the PAC report is received.
<b>Requirements for review by Minister before approval</b>		
182.	s95, s96 WMA cl26, WMA	The Minister may grant an approval after considering the application and 'all matters relevant to it'. Approval cannot be granted 'in contravention of the provisions of any relevant management plan'. The Minister must take into account 'such matters as are prescribed by the regulations, and such other matters as the Minister considers to be relevant'. The Regs state that the Minister must consider 'whether the amount of water taken in the course of carrying out the aquifer interference activity to which the approval relates will exceed the total extraction limit for the aquifer set out in any relevant management plan'. <i>The NSW Government's Aquifer Interference Policy is primarily aimed at activities under Parts 4 or 5.1 of the EPAA, so is not entirely relevant to water approvals for the purpose of prospecting, and other exploration activities that do not require DC. However, the Policy does refer to the Aquifer Interference Assessment Framework, and this does include guidance on assessing aquifer interference activities that do not need the Gateway Process, are not SSDs or do not involve CSG production (eg see Table 3 of the framework).</i> <i>The review under Part 5 of the EPAA, which must be undertaken by the Minister for Energy &amp; Resources when considering whether to grant a PEL under the POA, also takes into account water-related matters. See ESG2, sections 3.2. 4.1 and 4.4: see heading 7 above. And the GAIS ES also refers to the impact of exploration on water resources.</i>
183.	s97(6) WMA	The Minister cannot grant an aquifer interference approval unless satisfied that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to the aquifer, or its dependent ecosystems, as a consequence of its being interfered with in the course of the activities to which the approval relates'.
<b>Conditions</b>		
184.	s100 WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.
185.	s105 WMA	The Minister can set the period of the approval, but not longer than 10 years. Extensions can be applied for, and must be granted unless the conditions have been breached or the relevant water management plan or the regulations provide for the request to be assessed as a new application.
186.	s102 WMA	Additional discretionary conditions can be imposed after the approval is granted, but only if the Minister has notified the approval holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.
187.	s109 WMA	The Minister may suspend or cancel an approval for non-compliance with conditions, as well as other specified grounds.
188.	s324 WMA	Even if there is a water approval, the Minister may temporarily prohibit or restrict the taking of water from an aquifer, or any other aquifer above, below or adjacent to it, for a specified period, if satisfied that it is necessary: (a) to maintain or protect water levels, or (b) to maintain, protect or improve the quality of water, or (c) to prevent land subsidence or compaction, or (d) to protect groundwater-dependent ecosystems, or (e) to maintain pressure, or to ensure pressure recovery.
189.	s328 WMA	The Minister can order that an aquifer interference activity be stopped, or carried out only as specified, if in the Minister's opinion, it is being carried out in contravention of the Act.
190.	s330 WMA	The Minister can temporarily prohibit or restrict the carrying out of an aquifer interference activity if satisfied the public interest requires it.
191.	s333 WMA	If the Minister is satisfied an aquifer interference activity is having an adverse effect on a water source or waterfront land, he/she can direct that a person take action to prevent, minimise or mitigate that effect.
192.	s345 WMA	193. It is an offence to intentionally or negligently harm an aquifer, but it is a defence to establish that the conduct that harmed the aquifer or waterfront land was essential for carrying out an activity in accordance with a DC under the EPAA (i.e. see headings 2-4 above).

**PROTECTION OF ENVIRONMENT OPERATIONS ACT 1997**

194.	s6(1) PEOA	The EPA is the regulatory authority for this Act.
<b>35. Does the PEL holder need an EPL?</b>		
195.	s49 PEOA  s169	Carrying out a scheduled activity without an EPL is an offence. Max penalty: Corporation: \$1m plus \$120,000 a day; Individual: \$250,000 plus \$60,000 a day. A director of a corporation may also be personally liable if a scheduled activity is carried out by a corporation without an EPL.
196.	s284 PeOEA	<i>Note:</i> There is provision for the EPA to <i>exempt</i> a person or class of persons from any provision of the Act, in an emergency; or where the EPA believes it is not practicable to comply, the activity won't have any significant adverse effect on public health, property or the environment, and the EPA Board approves. Exemptions take effect when published in the Gazette (except for emergencies). This power is not further examined in this report.
197.	s5, and Schedule 1, 9A.	Scheduled activities require an EPL. Scheduled activities include the following: <b>CSG assessment/production</b> , meaning: (a) prospecting for CSG for which a PEL, PAL or PPL is required under the POA, if that prospecting involves the extraction of groundwater, or (b) the commercial production of CSG for which a PAL or PPL is required under the POA. <b>coal seam gas exploration</b> , meaning prospecting for CSG for which a PEL is required under the POA, but not if the prospecting involves the extraction of groundwater (ie <i>if it involves groundwater extraction, it's CSG assessment/production</i> ). The effect of the above is that any CSG exploration which requires a PEL must also obtain an EPL. [The reason for differentiating between CSG exploration and CSG assessment/production appears to go to the fees payable. CSG exploration has one flat administrative fee. CSG assessment/production has 3 administrative fees based on production levels; and also pollutant 'load' fees based on air and water pollutants: see Schedule 1, PEOGReg.]  However, the following activities are NOT a scheduled activity if carried out on land that is NOT within an ESASS (see row 4 for <i>what constitutes an ESASS</i> ), and so do not need an EPL: (a) geological mapping and airborne surveying, (b) sampling and coring using hand-held equipment, (c) geophysical (including seismic) surveying and downhole logging, (d) accessing of areas by vehicle that does not involve the construction of an access way such as a track or road, (e) soil sampling by machinery, (f) the construction, maintenance or use of equipment for the monitoring of weather, noise, groundwater or subsidence, (g) the construction, maintenance or use of roads consistent with best practice industry standards, (h) the recovery, obtaining or removal of CSG in the course of <i>coal mining</i> . If these activities are in an ESASS, they DO require an EPL.
<b>36. EPL Application Process</b>		
198.	s53, s60 PEOA  s57 PEOA & cl9 & Schedule 1, PEOGReg	Application is made to EPA on form approved by EPA, with information required by EPA, and with fee prescribed by regulations. EPA can request further information at its discretion.  The fee prescribed for CSG exploration is the Administrative fee of 40 units. 1 unit = \$113
<b>37. EPL Application Review and Decision</b>		
199.	s55 PEOA	EPA can grant or reject application, but must give notice and opportunity to applicant to respond if it intends to refuse application. <b>HOWEVER:</b> s89K(1)(e) EPAA states that an EPL <b>cannot be refused</b> if it is necessary for carrying out SSD that is authorised by a DC, and must be substantially consistent with the DC.
200.	s45 PEOA	In exercising its licensing functions, the EPA must consider: (a) any Protection of the Environment Policies (PEPs)(PEPs are drafted by the EPA, and there must be a public consultation component; they are approved by the Governor and must be published in the Gazette (see ss9-41 PEOA); there is no reference on the EPA page to any existing PEPs), (b) the EPA's objectives as per s6 of Protection of the Environment Administration Act 1991 (c) the pollution caused or likely to be caused by the activity and its likely impact on the environment, (d) the practical measures that could be taken: (i) to prevent, control, abate or mitigate that pollution, and (ii) to protect the environment from harm, (e) any relevant green offset scheme, green offset works or tradeable emission scheme, (f) whether the person concerned is a fit and proper person (see next row), (f1) in relation to an activity that causes, is likely to cause or has caused water pollution: (i) the environmental values of water affected by the activity or work, and (ii) the practical measures that could be taken to restore or maintain those environmental values, ... (h) any documents accompanying the licence application, (i) any relevant EIS, or other statement of environmental effects, prepared or obtained by applicant under EPAA (see row 22),

		(j) any relevant SIS prepared or obtained by the applicant under the TCSA (see row 228) (k) any waste strategy in force under the Waste Avoidance and Resource Recovery Act 2001, (l) any <i>public submission</i> received by the EPA under the PEOA, or made under the EPAA and received by the EPA.
201.	s83 PEOA	There are 15 matters specified that <i>may</i> be taken into account when determining whether an applicant is a fit and proper person, but none are mandatory. They include the applicant's previous history of compliance with the PeEOA and 'other relevant legislation'; their 'character, honesty and integrity', and their financial capacity and standing. 'Other relevant legislation' is defined in cl52 of the PEOGReg and includes the Clean Air Act, Noise Control Act, Pollution Control Act, etc.
<b>38. Conditions and related offences</b>		
202.	s63 PEOA	An EPL can be subject to conditions, or issued unconditionally.
203.	s64 PEOA	Failing to comply with an addition is an offence. Penalties same as row 195.
204.	Part 3.5, ss65-76 PEOA	The Act contains 11 sections detailing examples of conditions that <b>may</b> be applied to licences; but none of them are mandatory. The examples cover such areas as monitoring & information; environmental audits; pollution studies; economic measure schemes (with more detail in Part 9.3 & cl104 PEOGReg); financial assurances (with more detail in Part 9.4, and cl105 PEOGReg; see next row); remediation; insurance; contingencies; and waste
205.	Part 9.4, ss296-307 PEOA, cl 105 PEOGReg	<b>Financial assurances:</b> Part 9.4 has more specific requirements about conditions related to financial assurances. The main provisions are that the EPA is only allowed to impose a financial assurance condition if it is satisfied that the condition is justified; and the amount of the financial assurance required cannot exceed the amount the EPA thinks would be necessary to carry out the work the financial assurance is intended to cover. Cl105 PEOGReg states that the adequacy of financial assurances already provided to other public authorities in respect of the same work must also be considered.
<b>Pollution incident response management plan</b>		
206.	s153A PEOA, cl98C, cl98D, cl98E PEOGReg	The Act makes it an offence for an EPL holder not to prepare a 'pollution incident response management plan'. Penalties same as row 195. It is also an offence, with same penalties, not to keep the plan at the relevant activity location, not to test the plan, and not implement it if an incident occurs. The plan must include the matters specified in the PEOGReg, which include information on hazard description, likelihood, early warning to people in vicinity, management, responsible officers, and so on. The parts of the plan relating to early warning for people in vicinity and contact details for responsible officers must be publicised on the EPL holder's website. The plan testing must be done at least every 12 months
<b>Mandatory environmental audit</b>		
207.	s174 PEOA  s180-182 PEOA	The Act enables the EPA to include a condition requiring a mandatory environmental audit, but only if the EPA reasonably believes that the EPL holder has <i>previously</i> contravened the Act or EPL conditions, and that the contravention has caused harm to the environment. (Note: there is provision for 'voluntary environmental audits' in the Act. These are given protected status, and cannot be inspected by the EPA – but only in the particular circumstances specified in the Act.)
<b>39. Public justification of EPL grant or refusal</b>		
208.	s61 PEOA & cl49 PEOGReg	<b>Any</b> person can request reasons for grant or refusal from EPA. The EPA must respond, and must include: (a) the significant environmental or other issues that it took into account in making its decision, and (b) any significant environmental outcomes, standards or requirements (if relevant) that it considered applicable to the activity and took into account in making its decision.
<b>40. Variation of EPL</b>		
209.	s58 PEOA	EPA can vary a licence (including its conditions) at any time. If the variation authorises a significant increase in the environmental impact of the activity, and it hasn't been the subject of public consultation under EPAA, then public submissions must be invited and considered before the variation is made. The condition relating to mandatory environmental audit (see row 207) could be included under this provision.
<b>41. Suspension or revocation of EPL</b>		
210.	s79 PEOA	The EPA can suspend or revoke an EPL for a number of specified reasons, including contravening a condition, provided it has first given the EPL holder notice and taken into account any submissions.
<b>42. Term of EPL</b>		
211.	s78 PEOA	EPLs have no fixed end point. However, they must be reviewed at least every 5 years; and there must be a public notice of the review.
<b>43. Appeal on EPL decisions</b>		
212.	s287 PEOA	An EPL applicant or holder can appeal to the Land & Environment Court any EPA decision to refuse, vary, suspend or revoke an EPL, or to impose conditions.
<b>44. Monitoring and enforcement by EPA</b>		
213.	Chapter 4, PEOA	There is a wide variety of powers in the Act to enable the EPA to enforce EPL conditions. These include: clean-up notices; prevention notices; prohibition notices; and compliance cost notices.
214.	Chapter 5, PEOA	There is a wide variety of offences specified in the Act, relating to waste, water, air, noise and land pollution, littering, and notification of pollution incidents. These are offences whether committed by people with an EPL or not.
215.	Chapter 7, PEOA	There is a wide variety of enforcement powers to enable EPA officers to investigate potential breaches.
216.	Chapter 8, s252 PEOA	Chapter 8 of the Act contains provisions relating to criminal proceedings. However, part 8.4 covers civil proceedings also. Any person may bring proceedings in the Land and Environment Court for an order to remedy or restrain a breach of the Act or the regulations.

45. Public register of EPLs		
217.	s308 PEOA, cl136 PEOGRReg	The EPA is required to keep a public register of licence applications, decisions and variations, among other things.

## WILDERNESS ACT 1987

This Act has no direct relevance to CSG activities.

It sets out the process by which areas of wilderness are nominated, assessed, identified and declared.

There are no provisions in the Act of itself that apply directly to CSG activities.

Its application is only by way of reference in other Acts, in that whether the land on which CSG activities are to occur is already a wilderness area (as defined in the Wilderness Act) may be relevant to a decision under the EPAA or POA.

## NATIONAL PARKS AND WILDLIFE ACT 1974

218.		This Act is primarily to provide for the establishment, preservation and management of national parks and historic sites, state conservation areas, regional parks, nature reserves, karst conservation reserves, wild rivers, Aboriginal areas and wildlife refuges, and to protect certain fauna, native plants and Aboriginal objects. Plans of management must be established for each form of land reservation (ss71BO-82). Conservation agreements may also be established over land with the agreement of the land-owner (s69B-69KA). The Act contains a number of offences which apply to the public at large. Petroleum exploration is not permitted in most areas protected by the Act, but is permitted in state conservation areas.
46. Mining banned in national parks, historic sites, nature reserves, karst conservation reserves and Aboriginal areas		
219.	s41, s54, s58O, s64 NPWA	It is unlawful to prospect or mine for minerals in a national park, historic site, nature reserve, karst conservation reserve or Aboriginal area, except as expressly authorised by an Act of Parliament. However, the Minister can approve mineral prospecting, but notice of intention to grant the approval must be laid before both Houses of Parliament. 'Minerals' includes 'coal, shale or <b>petroleum</b> ' (s5(1) NPWA). The POA specifically does <b>not apply</b> to or in respect of lands within these areas. [Note: 'existing interests' (ie existing at the time land is reserved under the Act) are exempt from this provision.]
47. Mining permitted in state conservation areas		
220.	s47J NPWA	For this section only, <b>mining interest</b> includes: any lease under the POA ( <i>note use of term 'lease': exploration under the POA is governed by 'licence'</i> ). The POA specifically <b>applies</b> at any time to lands within a state conservation area. However, a mining interest cannot be granted within a state conservation area without the concurrence in writing of the Minister. Nothing in the provisions on state conservation areas affects the right, title or interest of any person in respect of minerals in any such lands. <i>Note s47MA:</i> Land that is designated a state conservation area, and which is the subject of a POA lease or licence, must <b>not</b> be reserved as a national park or nature reserve during the term of that authority, lease, licence or permit. <i>Note also s30D:</i> Land cannot be reserved as a state conservation area without the concurrence of the Minister administering the Mining Act 1992 (no mention of POA). <i>And note s47M:</i> State conservation areas must be reviewed every 5 years and reasons given as to why they should or should not be reserved as national parks or nature reserves.
48. Offence of damaging Aboriginal objects or places and available defences		
221.	s86, s87 NPWA, cl80A NPWReg	It is an offence to damage Aboriginal objects or places; but there are a number of defences. Not knowing an object or place was not Aboriginal is not in itself a defence. There is an obligation to undertake due diligence and/or obtain an Aboriginal heritage impact permit to have a defence in such circumstances. <i>This section could have direct relevance to CSG activities, and CSG companies would need to take the potential to contravene these provisions seriously, and ensure they had a defence in place.</i>
222.	s87(2), (3) NPWA & cl 80A NPWReg	One defence, if the harm is to an Aboriginal object (and the harmer did not know it was an Aboriginal object), is if the defendant can demonstrate that <b>due diligence</b> was exercised to determine whether an Aboriginal object would be harmed. The Act specifies that compliance with a code specified by the Regulations can be taken as due diligence. The NPWReg lists 6 codes. The most applicable to CSG is the <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW</i> (13 Sept 2010). There is also a Minerals Industry code prepared by the Minerals Council, the <i>NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects</i> but it appears to be related to minerals, not petroleum (though in general it looks like it would be applicable to petroleum/CSG, and is referred to in ESG2).
223.	s90, 90A, 90J, 90K NPWA, cl80C, cl80D NPWReg	It is also a defence if the harm was carried out under an <b>Aboriginal heritage impact permit</b> . Applications for impact permits are made to the DG ( <i>is that now CE, OEH?</i> ). It is a requirement to engage in an Aboriginal community consultation process <i>before</i> making an application for a permit. Extensive requirements for this process are set out in the NPWReg. It is also a requirement that the application be accompanied by a cultural heritage assessment report, with contents as specified in the NPWReg. There are a number of matters to be taken into account when determining whether to grant the permit, including any public submissions made under the EPAA. The permit can include conditions, and contravening the conditions is an offence.

		[OEH also advises that, if it is intended to undertake activities to determine if an Aboriginal object will be harmed by a planned activity, and it is not practicable to apply a Code of Practice, a permit should be obtained for the initial investigation and, if required, a further permit for later activities: see <i>Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants</i> : <a href="http://www.environment.nsw.gov.au/licences/applyforahip.htm">http://www.environment.nsw.gov.au/licences/applyforahip.htm</a> .] <b>Note:</b> s89J(1)(d) EPAA states that an Aboriginal heritage impact permit is NOT required for SSD that is authorised by a DC. However, permits are not needed of themselves. They form a defence to the offence of harming an Aboriginal object. So it is not clear what the effect of this provision in the EPAA is.
224.	cl80B, NPWReg	It is also a defence if the harm was caused by: <ul style="list-style-type: none"> <li>• mining exploration work on land that has been disturbed of the following kind: costeaning, bulk sampling or drilling (<i>this probably relates more to minerals than petroleum</i>); or</li> <li>• work of the following kind: geological mapping; surface geophysical surveys (including gravity surveys, radiometric surveys, magnetic surveys and electrical surveys), but not including seismic surveys; sub-surface geophysical surveys that involve downhole logging; sampling and coring using hand-held equipment, except where carried out as part of an archaeological investigation; or</li> <li>• work of the following kind on land that has been disturbed: seismic surveying; the construction and maintenance of groundwater monitoring bores.</li> </ul> Note: 'disturbed' is defined in cl80B(4).
<b>49. Other offences</b>		
225.	Throughout NPWA & NPWReg	There are a variety of offences under the NPWA and the NPWReg. These are applicable to the general public, which would include CSG companies. Orders can be made to remediate any damage arising out of the commission of offences under the NPWA.
<b>50. Licences</b>		
226.	Part 9 NPWA	The DG has authority to issue licences for a variety of purposes that might result in harm. Of possible relevance to a CSG activity in a state conservation reserve is a general licence which would permit harm 'to any protected fauna (other than a threatened species, population or ecological community) in the course of carrying out specified development or specified activities'. It seems likely these issues would be considered in the environmental assessment required to grant a PEL under the EPAA and POA; however, it is feasible that a licence might be required if harm to protected, but not threatened, species was envisaged by CSG exploration activity that was otherwise approved by the DG during the PEL licence process. (For more on licences to harm <i>threatened</i> species, etc, see the TSCA below.)

## THREATENED SPECIES CONSERVATION ACT 1995

227.	TSCA Parts 1-5	The early parts of the Act provides for the identification, and classification, of species, populations and ecological communities , and for the listing of: <ul style="list-style-type: none"> <li>• endangered species, endangered populations and ecological communities and species that are presumed to be extinct,</li> <li>• critically endangered species and ecological communities,</li> <li>• vulnerable species and vulnerable ecological communities, and</li> <li>• key threatening processes.</li> </ul> They also provide for the identification and declaration of critical habitat; the preparation of recovery plans for threatened species; and the preparation of threat abatement plans to manage threatening processes. They form the framework under which the impact of CSG on threatened species can be assessed under the EPAA (see Report 1).
<b>51. Licences</b>		
228.	s91-94 TSCA	Part 6 gives the DG authority to grant a licence authorising a person to take action likely to result in: harm to any threatened animal; the picking of a threatened plant; damage to critical habitat; or damage to habitat of a threatened species. This may be of relevance to a CSG exploration activity which obtains a DC and a PEL licence but is nevertheless going to result in harm to threatened species. The procedure for applying for a licence and the matters to be taken into account when assessing it are provided for in the Act. If the action proposed is on land that is <i>critical habitat</i> , the application must be accompanied by an SIS. The format of the SIS is specified in ss 109-111.
<b>52. Biobanking</b>		
229.	s127D(7), s127F(1)(f) , s127S, s127U, s127ZE	Part 7A provides for the establishment of a biodiversity banking and offsets scheme (biobank scheme), which is a market-based scheme that enables 'biodiversity credits' to be generated by landowners who commit to enhance and protect biodiversity values on their land through a biobanking agreement. These credits can then be sold, generating funds for the management of the site. How it works is not explored further here. However, it is noted that the Minister administering the POA must be consulted before any biobank scheme is created; and if there is a PEL over the land, the PEL holder must be consulted before the biobank scheme is created. The Act specifically states that nothing in the provisions related to biobanking prevents the grant of a PT in respect of a biobank site; or prevents the carrying out on a biobank site of any activity authorised by a PT. If a PT is granted over a biobank site, the Minister can terminate a biobanking agreement without the consent of the biobank site owner, if the Minister is of the opinion that the biodiversity will be adversely affected. However, the Minister may direct the titleholder to retire biodiversity credits. Not complying with a direction is an offence. There are also compensation provisions to a landowner if biobanking credits are cancelled by the DG because of activities authorised by a PT.

## HERITAGE ACT 1977

230.		While, on the face of it, this Act would apply to CSG exploration if it were on heritage-listed land, the three main
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		provisions of the Act do not apply to SSD that has DC, so they do not apply to PE of a kind that requires DC.
231.	s57 HA, s89J(1)(c) EPAA	<p><b>Development on heritage-listed land:</b> The HA specifies that the Heritage Council must approve any development in respect of any place, building, work, relic, moveable object, precinct, or land that is the subject of an interim heritage order (IHO) made by the Heritage Minister (but not an IHO made by a council) or a listing on the State Heritage Register (SHR). (Note, though, that Minister on advice of Heritage Council can grant an exemption to this prohibition.) Any activity which might damage or destroy a tree or other vegetation on land relating to a heritage item also requires approval. <b>HOWEVER</b>, the EPAA specifically excludes SSDs from the requirement to obtain approval under the HA. So this provision does not apply.</p>
232.	s139 HA, s89J(1)(c) EPAA	<p><b>Excavation permits:</b> The HA states that a person must not disturb or excavate any land knowing or suspecting that it will result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit. Relic means any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, AND (b) is of State or local heritage significance. <b>HOWEVER</b>, the EPAA specifically excludes SSDs from the requirement to obtain approval under the HA. So this provision does not apply.</p>
233.	s79C HA, s89J(2) EPAA	<p><b>Stop work orders:</b> The Minister or Heritage Council Chairperson also has authority to make a stop work order if of the opinion that a building, work, relic, moveable object or place the subject of an interim heritage order or listing on the State Heritage Register is being or is about to be harmed. <b>HOWEVER</b>, the EPAA specifically provides that this provision 'does not apply to prevent or interfere with the carrying out of SSD that is authorised by a DC'. So stop work order provisions cannot be made in respect of PE.</p>

**REPORT 3**  
**CURRENT LEGISLATIVE REQUIREMENTS**  
for  
**COAL SEAM GAS**  
**PRODUCTION**

Disclaimer: Please note the wording of Acts, Regulations and other legislative instruments has been paraphrased for the purposes of this exercise, and no reliance should be placed on this wording without reference back to the source legislative instrument.

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## ACRONYMS

ALDP	Access Licence Dealing Principles, under WMA
BSAL	biophysical strategic agricultural land
DC	Development Consent under EPAA
DG	Director-General (of relevant department)
DGR	Director-General's Requirements (for preparation of an EIS)
DRE	Division of Resources & Energy, within NSW Department of Trade and Investment
ECCW	Department of Environment, Climate Change and Water (referenced in POReg).
EIS	environmental impact statement
EPAA	Environmental Planning and Assessment Act 1979 (NSW)
EPAReg	Environmental Planning and Assessment Regulation 2000 (NSW)
EP	environment protection
EPA	Environment Protection Authority
EPI	environmental planning instrument (must be either a LEP, a REP or a SEPP)
ESASS	environmentally sensitive area of state significance: referred to in the SEPP MPPEI
ESG2	ESG2: Environmental Impact Assessment Guidelines, DRE, March 2012
GAIS ES	Guideline for Agricultural Impact Statements at the Exploration Stage, November 2012
LEC	Land and Environment Court
LEP	local environmental plan
NOW	NSW Office of Water
NPWA	National Parks and Wildlife Act 1974 (NSW)
NPWReg	National Parks and Wildlife Regulation 2009 (NSW)
PAC	Planning Assessment Commission
PAL	Petroleum Assessment Lease (form of PT)
PE	petroleum exploration
PEL	Petroleum Exploration Licence (form of PT)
POA	Petroleum (Onshore) Act 1991 (NSW)
PEOA	Protection of the Environment (Operations) Act 1997 (NSW)
POReg	Petroleum (Onshore) Regulation 2007 (NSW)
PP	petroleum production
PPL	Petroleum Production Lease (form of PT)
PT	Petroleum Title (includes exploration licence, assessment lease, production lease or special prospecting authority)
REP	Regional Environmental Plan
SALM	Strategic Agricultural Land Map
SEPP	State Environmental Planning Policy
SEPP MPPEI	State Environmental Planning Policy (Mining, Petroleum Production & Extractive Industries) 2007
SEPP S&RD	State Environmental Planning Policy (State & Regional Development) 2011
SOPEPSR	Schedule of Onshore Petroleum Exploration and Production Safety Requirements
SSD	state significant development
TSCA	Threatened Species Conservation Act 1995 (NSW)
WAL	Water Access Licence
WHS Act	Work Health and Safety Act 2011 (NSW)
WMA	Water Management Act 2000

**ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

Row No	Legislative instrument	Paraphrase of legal requirements
<b>1. Is CSG production permitted on the land proposed?</b>		
1.	s76B EPAA  s125 EPAA	If an EPI provides that: (a) specified development is prohibited, or (b) development cannot be carried out with or without development consent (DC), a person must not carry out the development on the land. A person offending against a direction or prohibition of the Act is guilty of an offence.
2.	cl3(2), 9A SEPP MPPEI	SEPP MPPEI is an EPI made under the EPAA. It specifically prohibits 'CSG development' on or under: <ul style="list-style-type: none"> <li>land within a CSG exclusion zone (which is defined as land within a residential zone (ie Zones R1, R2, R3, R4 and RU5) or future residential growth area land (ie land identified as such on the SEPP MPPEI Future Residential Growth Areas Land Map, which appears currently to include only the North West Growth Centre and the South West Growth Centre under the SEPP (Sydney Region Growth Centres) 2006)). (<i>I have not been able to locate a specific document called 'Future Residential Growth Areas Land Map'. The SEPP states that maps referred to in the SEPP are as approved by the Minister, and made available for public access under arrangements approved by the Minister. There is a note in the SEPP that they will be available on the NSW legislation website, which they don't appear to be.</i>)</li> <li>land within a buffer zone (which is defined as land not within a CSG exclusion zone but within 2km of any such zone).</li> </ul> <p>[<i>Note: a public consultation draft of changes to this part of the SEPP is currently on exhibition. It adds 'additional rural village land' and 'critical industry cluster land' to the definition of CSG exclusion zone; and, in effect, adds 'within 2km of additional rural village land' (but not critical industry cluster land) to the definition of buffer zone. The creation of an Additional Rural Village Land Map is envisaged.</i>]</p> <p><b>CSG</b> is defined as petroleum that: (a) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane, and (b) is in a gaseous state at standard temperature and pressure, and (c) is extracted from coal beds. (<i>This is the same definition as in the PEOA. There are no definitions of CSG in the POA or EPAA.</i>)</p> <p><b>CSG development</b> is defined as including development for the purposes of petroleum production, but only in relation to the recovery, obtaining or removal of CSG.</p> <p><b>Petroleum production</b> is defined as 'recovery, obtaining or removal of petroleum pursuant to a PPL' under the POA, and specifically includes:  <ul style="list-style-type: none"> <li>the construction, operation and decommissioning of associated petroleum related works</li> <li>drilling and operation of wells</li> <li>rehabilitation of land affected by PP.</li> </ul> <p><b>Petroleum related works</b> is defined as any works, structures or equipment that are ancillary or incidental to petroleum production and includes all works, structures and equipment that a PPL under the POA entitles the lease or licence holder to construct, maintain or execute.</p> </p>
<b>2. Does permitted CSG production require DC under the EPAA?</b>		
3.	s76A (1) EPAA  s125 EPAA	If an EPI provides that specified development requires DC, development must not be carried out unless DC obtained and in force, and development carried out in accordance with DC and EPI. A person offending against a direction or prohibition of the Act is guilty of an offence. Note also s67 POA: if DC is required for the use of land for the purpose of obtaining petroleum, the Minister must not grant a PPL unless a DC is in force. There are 2 state-level EPIs relevant to petroleum, the SEPP MPPEI and the SEPP (S&RD).
4.	cl7(2)(a)-(e) SEPP MPPEI  s59 POA	The SEPP MPPEI states that <b>DC IS REQUIRED</b> for (a) PP on land on which development for the purposes of agriculture or industry may be carried out (with or without DC), ... (c) PP in any part of a waterway, an estuary in the coastal zone or coastal waters of the State that is not in an environmental conservation zone, (d) facilities for the processing or transportation of petroleum on land on which PP may be carried out (with or without DC), but only if the petroleum being processed or transported was recovered from that land or adjoining land, (e) petroleum production on land that is reserved as a state conservation area under the NPWA. <i>This requirement seems to exclude the requirement for DC for PP on land which does not fall within cl7(2) of the SEPP MPPEI – though, if all land has the potential for development for the purposes of agriculture or industry, there would be no land falling outside the provision. If there were, such land may still be governed by a Local Environment Plan, which is also a form of EPI, and which could require DC. The existence of such EPIs has not been explored. However, when DC is not required, and before PPL can be granted, Minister for Resources &amp; Energy has to give affected government departments, and Minister for Planning, and local council opportunity to object, as part of assessment of PPL under POA: see ss48-61 POA. Also, the Part 5 processes referred to in Report 1 would apply.</i> <b>Note</b> that the POA states that, if no DC is required at time of granting of PPL, then title holder has 5 years to commence petroleum mining operations, even if land comes to be affected by an EPI within those 5 years.
<b>Exemptions and complying development for an already approved PP facility</b>		
5.	cl10(3) SEPP MPPEI cl11, 11(c)	Minor developments related to an already approved PP facility are <b>exempt</b> from the requirement to obtain DC, such as landscaping, lighting, car parking, sheds etc, if they are of minimal environmental impact. A range of types of development on site of an already approved PP facility are also categorised as

	SEPP MPPEI, s76A(2) EPAA	'complying development', including the building of gas storage tanks up to 50,000 litres, if they are not on ESASS land or related to Sydney water catchment. [This means that DC may be obtained by the issue of a complying development certificate. These are issued, following application, by a council or accredited certifier, in accord with ss84-87 EPAA.]
<b>State significant development (SSD)</b>		
6.	s89C(2) EPAA and SEPP(S&RD) cl8 & Schedule 1 cl6(1)&(4).	The SEPP S&RD provides that development for the purpose of PP is State significant development (SSD); as is development for the purpose of petroleum related work (including pipelines and processing plants) that (a) is ancillary to or an extension of another SSD project, or (b) has a capital investment value of more than \$30m. PP has the same meaning as in the SEPP MPEI (see 11 2). So the provisions related to SSD in the EPAA apply.
<b>3. How is Development Consent application made?</b>		
<b>First step: Is a Gateway or Site Verification Certificate needed?</b>		
<b>Is land a Critical Industry Cluster in a Strategic Agricultural Land Map? Or is land otherwise on a Strategic Agricultural Land Map or the subject of a site verification certificate?</b>		
7.	cl50A EAPReg  CI3(2) SEPP MPPEI	When an SSD involves mining or <b>petroleum</b> development on <b>land shown on the Strategic Agricultural Land Map (SALM) as critical industry cluster (CIC) land</b> , the DC application must also be accompanied by a gateway certificate. When an SSD involves mining or petroleum development on any <b>other land show on a SALM, or land that is the subject of a SVC</b> , it must be accompanied by a gateway certificate OR the SVC. <b>A site verification certificate (SVC)</b> is a certificate issued by the DG that certifies that land either is or is not 'biophysical strategic agricultural land' (BSAL) which is defined as either: <ul style="list-style-type: none"> <li>land identified on the Strategic Agricultural Land Map (SALM) as such, unless a SVC says its not; or</li> <li>any other land that is certified by a SVC as such.</li> </ul> [There is a presumption that all SALM land IS BSAL, however an SVC can be obtained to say otherwise. A landowner who has been served written notice of an intention to access land under the POA can apply for a SVC.] <i>The Strategic Agricultural Land Map appears to be still in draft, and its implementation will require further amendment of the SEPP MPPEI: see <a href="http://www.planning.nsw.gov.au/biophysical-strategic-agricultural-land-mapping">http://www.planning.nsw.gov.au/biophysical-strategic-agricultural-land-mapping</a>. At the moment the 2012 Strategic Regional Land Use Plan – Upper Hunter and the 2012 Strategic Regional Land Use Plan – New England North West appear to comprise this map. (See discussion at row 2 above.) And see <a href="http://www.nsw.gov.au/strategicregionallanduse">http://www.nsw.gov.au/strategicregionallanduse</a> but I cannot see the legal evidence that these 2 plans have been approved by the Minister as a Strategic Agricultural Land Map for the purposes of the SEPP MPPEI. However, the Interim protocol for site verification and mapping of BSAL, gazetted on 12 April 2013, also refers to these two plans.</i> A <b>Gateway Certificate (GC)</b> is issued by the Gateway Panel.
<b>Obtaining a site verification certificate (SVC)</b>		
<b>Application Process</b>		
8.	cl17C SEPP MPPEI	If the DC applicant believes their PP will be on land that is NOT BSAL, whether it is listed in a SALM or not, the applicant will need an SVC certifying it is not before further consideration of the DC application can be given.
9.	cl17C(3) SEPP MPPEI	The applicant has to give written notice to the owner of the land BEFORE the application is made, OR advertise it in a local newspaper 30 days before the application. Note that a landowner who has been served written notice of an intention to access land under the POA can also apply for a SVC. An SVC can state that land IS or IS NOT biophysical strategic agricultural land.
10.	cl17D SEPP MPPEI & cl262C EAPReg	Applications must be in the form approved by the DG, indicate whether the land is included on the SALM, and be accompanied by the relevant fee (\$3900). The DG makes the determination to issue an SVC.
<b>Application determination</b>		
11.	cl3, cl17D(2) SEPP MPPEI	The DG must have regard to the criteria set out in the DG Site Verification Protocol: defined as the document entitled <i>Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land</i> , published in the Gazette on 12 April 2013. See <a href="http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/interim_bsal_protocol.pdf">http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/interim_bsal_protocol.pdf</a> . There are 10 specific criteria, with the easiest to measure assessed first: slope; rock outcrop; surface rock fragments; gilgai; soil fertility (soil type); effective rooting depth to a physical barrier; soil drainage; soil pH; salinity; and effective rooting depth to a chemical barrier. Each criteria is capable of being measured objectively. If any one of the criteria is not met, the land is not BSAL. If all criteria are met, the land is BSAL. There is a useful flow chart on p6 of the Interim Protocol.
12.	cl17D(3), cl17E SEPP MPPEI	The DG must determine application within 21 days of it being made. The DG must publish the application and the SVC on the department's website; and give a copy of the SVC to the relevant council.
<b>Obtaining a gateway certificate</b>		
<b>Application process</b>		
14.	cl17F SEPP MPPEI	Application for a gateway certificate for development on strategic agricultural land must be made to Gateway Panel, which makes the determination.
15.	cl17F(3) SEPP MPPEI	The applicant has to give written notice to the owner of the land BEFORE the application is made, OR advertise it in a local newspaper 30 days before the application.
16.	cl17F(4) SEPP MPPEI	Application must indicate whether the land is biophysical strategic agricultural land or critical industry cluster land, or both, and be in the form (if any) approved by the Gateway Panel.

<b>Gateway Panel membership</b>		
17.	cl17N SEPP MPPEI	Chair and members appointed by Minister for Planning, for not more than 3 years, after consultation with Minister for Resources & Energy and Minister for Primary Industries.
18.	cl17P, 17Q, 17R SEPP MPPEI	Members must be people with expertise in agricultural science, hydrogeology or mining and petroleum development. Any one panel must consist of 3 members, but quorum is 2. Chair selects members for each panel.
<b>Gateway Panel functions</b>		
19.	cl17O SEPP MPPEI	The Panel's main functions are to determine applications for gateway certificates. ( <i>The other advisory functions listed would only arise occasionally, in conjunction with gateway certificate processes.</i> )
<b>Application Determination</b>		
20.	cl17G(1) SEPP MPPEI	Gateway Panel must: i. refer application to the IES Committee and the Minister for Primary Industries for advice regarding the impact of the proposed development on water resources (the IES Committee is the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development established by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999). ii. take into account the advice received. In providing advice, the Minister for Primary Industries must have regard to (a) the minimal impact considerations set out in the Aquifer Interference Policy, and (b) the other provisions of that Policy.
21.	cl17H SEPP MPPEI	Gateway Panel must determine an application by issuing either a conditional or an unconditional GC, with a statement that the Panel is of the opinion that the development either meets the criteria or does not meet the criteria, with reasons. The criteria are: (a) in relation to <b>biophysical strategic agricultural land (BSAL)</b> — that the proposed development will not significantly reduce the agricultural productivity of any biophysical strategic agricultural land, based on a consideration of the following: (i) any impacts on the land through surface area disturbance and subsidence, (ii) any impacts on soil fertility, effective rooting depth or soil drainage, (iii) increases in land surface microrelief, soil salinity, rock outcrop, slope and surface rockiness or significant changes to soil pH, (iv) any impacts on highly productive groundwater (within the meaning of the Aquifer Interference Policy), (v) any fragmentation of agricultural land uses, (vi) any reduction in the area of biophysical strategic agricultural land, (b) in relation to <b>critical industry cluster land</b> —that the proposed development will not have a significant impact on the relevant critical industry based on a consideration of the following: (i) any impacts on the land through surface area disturbance and subsidence, (ii) reduced access to, or impacts on, water resources and agricultural resources, (iii) reduced access to support services and infrastructure, (iv) reduced access to transport routes, (v) the loss of scenic and landscape values. The Panel must have regard to the duration of any impacts, and any proposed avoidance, mitigation, offset or rehabilitation measures. <i>Assessing impacts for the purposes of a Gateway Certificate is necessarily more imprecise and subjective than assessing whether land is BSAL for the purposes of an SVC. Nevertheless, they are still more precise and measurable than the criteria for determining DCs under the EPAA and PTs under the POA.</i>
22.	cl17I, 17J SEPP MPPEI	The Panel has a maximum of 90 days to make its determination (and one request for further information is allowed). If Panel fails to issue GC within timeframe, DG can issue unconditional GC.
<b>Second step: Obtain the DG Requirements (DGR) for an EIS</b>		
23.	cl50 EPAREg	An SSD application must include an EIS.
<b>EIS application process - applicant</b>		
24.	Schedule 2, cl3(1),(2), (8) EPAREg	Before preparing an EIS, the applicant must <i>apply</i> in writing to the DG for the environmental assessment requirements, in the form approved by the DG (known as the DGRs).
<b>EIS application process - DG</b>		
25.	Schedule 2, cl3(4),(4A) EPAREg	In preparing the DGRs for SSDs, the DG must consult relevant public authorities and have regard to the need for the requirements to assess any key issues raised by those public authorities. The DG must also address any recommendations of the Gateway Panel set out in a Gateway Certificate.
26.	Schedule 2, cl7 EPAREg  SRLUP	Specific requirements of the EIS are contained in the EPAREg. These include an analysis of the activity, including: full description; general description of environment likely to be affected and detailed description of environment aspects likely to be significantly affected; likely impact on environment; full description of mitigating measures proposed; list of approvals required under any other Act or law. Also, the NSW Govt's Strategic Regional Land Use Policy requires EISs to include an Agricultural Impact Statement, when the activity has potential to affect agricultural resources or industries. ( <i>I have not found any legislative reference to this requirement, so presume the DG includes it because its government policy.</i> ) The DG has the discretion, subject to Schedule 2, cl7, to decide what matters should be considered for each individual application, ie to issue EIS guidelines unique to each application. The Guideline for AISs (see <a href="http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/CoalAndGas/AIS_Guideline_updated.pdf">http://www.planning.nsw.gov.au/Portals/0/StrategicPlanning/CoalAndGas/AIS_Guideline_updated.pdf</a> ) sets out the matters required to be considered, unless varied by the DGR.
<b>Third step: Lodge DC application</b>		
<b>Applicant process</b>		

27.	cl50 EAPReg	Applications are lodged with 'the principal office of the consent authority'. That is formally the Minister, even if the functions are delegated.
28.	cl49 EAPReg	Normally applicant must be landowner or have consent of land owner, but for petroleum development, applicant only needs to give notice to land owner before application; or place newspaper advertisement within 14 days of application – EXCEPT where the development is on land that is a state conservation area under the NPWA (when no notice required).
29.	cl50, Schedule 1, cl 1 & 2 EAPReg. Also s78A (8a) EPAA	Application must contain info and be accompanied by documents specified in Schedule 1 (including EIS), as well as the Gateway Certificate or Site Verification Certificate. The list of matters in the Schedule is comprehensive. Matters include: an indication whether land in critical habitat, whether development likely to affect threatened species or their habitats, estimated cost, & capital investment value. Documents required include: site plan, sketch of development, and an EIS. ( <b>Note:</b> an SIS not required for SSD.) The EIS must be in accord with the DG's Requirements (DGR).
30.	s78A (7) EPAA Reg50(2) EAPReg	If the development is on land that is part of a wilderness area, any consent required under the Wilderness Act must be obtained before the application is lodged [note: the consents required under the Wilderness Act relate only to development activities undertaken by statutory authorities: s15 Wilderness Act, so relevance to CSG activities seems unlikely]
<b>Obligation /discretion on receipt of application</b>		
31.	Reg50(3) EAPReg	DG must register it and notify applicant of receipt and registered number
32.	Reg50(5) EAPReg	DG must forward copy to relevant council
33.	Reg51	DG may reject it within 14 days if illegible or incomplete or unclear.
<b>Public consultation</b>		
34.	s89F EPAA Reg83 EAPReg  Reg85B EAPReg	DG must place application and accompanying info on public exhibition for 30 days. If any submissions are received, the DG must provide them, or a summary of them, to the applicant. The DG <i>may</i> require the applicant to provide a written response to the issues raised in the submission. The DG must also place on the Department's website the environmental assessment requirements, the application, any submissions received, any response from the applicant, any environmental assessment report prepared by the DG.
<b>4. Who gives consent to a DC?</b>		
35.	s89D, 89E EPAA	The consent authority for SSDs is the Minister. Consent authority must either grant (with modifications or conditions) or refuse application. Cannot defer.
36.	s23 (1), (7) EPAA	The Minister, corporation or DG may, in writing, <i>delegate any of their functions</i> conferred or imposed by this or any other Act to: <ul style="list-style-type: none"> <li>• any officer of the department</li> <li>• any officer, employee or servant of whose services the DG makes use</li> <li>• a development corporation</li> <li>• any public authority or officer of that public authority</li> <li>• a council, or council officer</li> <li>• the Planning Assessment Commission, or</li> <li>• a joint regional planning panel.</li> </ul> DG shall cause delegations to be published in Gazette.
37.		The function of determining an application under s80 (ie for an SSD) is delegated to the PAC (except applications by a public authority); also to designated DPI staff where less than 25 objections and council doesn't object. See <a href="http://www.planning.nsw.gov.au/delegated-decisions">http://www.planning.nsw.gov.au/delegated-decisions</a> for more detail. Notwithstanding this delegation, the Minister may continue to exercise all or any of the functions delegated. <i>This delegation effectively makes the PAC responsible for determining applications where there are more than 25 objections, or local council objects, or there has been reportable political donation connected to application; and various officers of the DPI responsible for determining applications when less than 25 objections and council doesn't object.</i>
<b>5. Application Review – duty of consent authority re decision to grant DC</b>		
38.	s79C, s89H EPAA	Consent authority must consider: <ul style="list-style-type: none"> <li>• the provisions of: <ul style="list-style-type: none"> <li>○ any EPI (<i>this could include Local Environment Plans made by Councils, even though this is SSD</i>); any <i>proposed</i> instrument that has been the subject of public consultation under the EPAA; and any development control plan (<i>these provide guidance on giving effect to EPIs</i>); and</li> <li>○ the regulations (<i>there are no pertinent regulations on matters to be considered in this context</i>); and</li> <li>○ any coastal zone management plan</li> </ul> </li> <li>• impacts, including environmental, social and economic</li> <li>• suitability of site</li> <li>• submissions</li> <li>• the public interest.</li> </ul> <i>The generality of the considerations gives the decision-maker considerable discretion to approve, set conditions, or reject the application.</i>
39.	cl12 SEPP	In addition to the considerations required under the EPAA, the SEPP MPPEI also adds further matters that must be considered by the consent authority in respect of <i>applications for DC for PP</i> . <b>Existing uses:</b> Consent authority <i>must</i> consider.

	MPPEI	<ul style="list-style-type: none"> <li>existing uses and approved uses of land in vicinity of development, and</li> <li>whether development likely to have significant impact on the uses that consent authority thinks will be preferred uses, and</li> <li>any ways in which development may be incompatible with those uses</li> </ul> <p>and then evaluate and compare the respective public benefits of the development and those land uses, and evaluate any measures proposed by the applicant to avoid or minimise any incompatibility.</p>
40.	c15 SEPP MPPEI	<b>Resource recovery:</b> Before granting consent for DC for development for PP, consent authority must also consider efficiency of development in terms of resource recovery. It can refuse consent if not satisfied development will optimise efficiency of recovery of petroleum and minimise creation of waste.
41.	c13 SEPP MPPEI	<b>Note:</b> There is also a duty on the consent authority to think about the impact and compatibility of another activity on PP, when an application for another activity is made: on land that is in the vicinity of an existing PP facility; or on land that is identified on a map approved by the Minister as being the location of State or regionally significant resources of petroleum; or on land identified in an EPI as being the location of significant resources of petroleum. <i>The SEPP MPPEI indicates that there was no approved map when the SEPP MPPEI came into effect. There is no evidence of any LEP identifying the location of significant petroleum resources, but one may exist.</i>
<b>6. Application review – duty of consent authority to consider making DC subject to specific conditions</b>		
<i>The following conditions relate only to development for the purposes of PP (and mining and extractive industries)</i>		
42.	c14 SEPP MPPEI	<b>General environmental:</b> Consent authority <i>must consider</i> whether consent should be granted subject to conditions aimed at ensuring the development is undertaken in an environmentally responsible manner, including conditions to ensure that: <ul style="list-style-type: none"> <li>impacts on significant water resources are avoided or minimised</li> <li>impacts on threatened species and biodiversity are avoided or minimised</li> <li>greenhouse gas emissions are minimised (includes obligation to assess the greenhouse gas emissions with regard to any State or national policies)</li> </ul>
	c15(2) SEPP MPPEI	<b>Resource recovery:</b> Consent authority <i>must consider</i> whether consent should be issued subject to conditions aimed at optimising efficiency of resource recovery and reuse or recycling of material. And see row 40.
43.	c17 SEPP MPPEI	<b>Land rehabilitation:</b> Consent authority <i>must consider</i> whether consent should be issued subject to conditions aimed at ensuring rehabilitation of land, in particular whether to require preparation of plan identifying proposed end use and landform of land once rehabilitated, or to deal with waste, or to remedy soil contaminations, or to not jeopardize public safety during rehabilitation.
<b>7. Consent authority power to impose conditions on DC</b>		
44.	s80A EPAA	Consent authority may grant consent subject to conditions, including conditions which must be complied with before the consent takes effect. Consent may also be granted for part of development; and consent withheld for other parts. <i>There is little other mention of conditions in the EPAA, yet these are a major tool in the control and regulation of CSG developments, from an environmental perspective.</i>
45.	s89I EPAA	<b>Bio-banking:</b> Consent authority <i>may</i> grant consent subject to condition that requires applicant to acquire and retire specified number and class of biodiversity credits under TSCA (see row 266), including deferred retirement arrangement, or to comply with any biobanking statement obtained (this latter condition cannot be appealed).
46.	s122C EPAA	<b>Environmental audit:</b> The Minister may impose a condition requiring monitoring or an environmental audit at the time of approval for the project <i>or at any other time</i> by notice in writing. The condition may require: (a) the provision and maintenance of appropriate measuring and recording devices for the purposes of the monitoring, (b) the analysis, reporting and retention of monitoring data, and (c) certification of the monitoring data (including the extent to which the terms and conditions of any approval have or have not been complied with). The condition must specify the purpose of the audit and may require: (a) the conduct of the audit by the proponent or by an independent person or body approved by the Minister or the DG (either periodically or on particular occasions), (b) preparation of written documentation during the course of the audit, (c) preparation of an audit report, (d) certification of the accuracy and completeness of the audit report, and (e) production to the Minister of the audit report <i>This is the only provision in the EPAA where the Minister is able to impose a condition on the DC after the DC is given. This provision applies specifically to SSD.</i>
<b>8. Consent authority's responsibility if DC granted</b>		
47.	s81 EPAA	Notify applicant, and council, and those specified by regulations, and <i>notify those who made submissions of right to appeal (only if the development fits the criteria for designated development, even though, as SSD, it not designated development)</i>
48.	s83 EPAA	Consent takes effect on date endorsed on notice when applicant notified under s81(1) – see previous row; or, if appeal made, on date fixed by court of law.

## PETROLEUM (ONSHORE) ACT 1991

### 9. Petroleum ownership

49.	s6 POA	All PTs	All petroleum existing in a natural state on or below the surface of any land in the State is the property of the Crown.
<b>10. If CSG production is not prohibited under SEPP MPPEI, is a PT required?</b>			
50.	s7 POA  s3(1) POA		It is an offence to 'prospect for or mine petroleum' <i>except in accordance with</i> a petroleum title, punishable by fine or imprisonment. <u>Petroleum</u> is defined as 'any naturally occurring hydrocarbon' or mixture of hydrocarbons, so includes CSG. (CSG is not defined in the POA. The only legislative definitions are in the PEOA and in SEPP MPPEI – both definitions are the same.) <u>Petroleum title (PT) means an:</u> <ul style="list-style-type: none"> <li>• exploration licence (PEL),</li> <li>• assessment lease (PAL),</li> <li>• production lease (PPL) or</li> <li>• special prospecting authority (SPA)</li> </ul> in force under Act.  This section deals with PPLs. No separate analysis of PALs or SPAs has been undertaken.
51.	s26, s126B POA		PTs are personal property, not real estate. But PTs are not personal property for the purposes of the Personal Property Securities Act 2009 (Cth).
<b>11. What does a PPL cover?</b>			
52.	s29 POA, s 3(1) POA	PPL only	A PPL confers an exclusive right to conduct petroleum mining operations in and on land in lease, together with a right to construct and maintain on land such works, buildings, plant, waterways, roads, pipelines, dams, reservoirs, tanks, pumping stations, tramways, railways, telephone lines, electric powerlines and other structures and equipment as are necessary for full enjoyment of lease. <i>Petroleum mining is not defined.</i>
53.	s28A POA	All PTs	There is also a right to carry on such operations as are necessary to 'explore' the land 'for the existence and availability of <i>natural reservoirs</i> ' (not defined), subject to any order of Minister.
<b>12. Who approves PPL?</b>			
54.	s9 POA	All PTs	Various authorities are given to the Minister and DG, but the Act specifies that the Minister may grant a PPL.
55.	s67 POA	PPL only	If a DC is required for the use of land for the purpose of obtaining petroleum, the Minister must not grant a PPL unless a DC is in force. This would not restrict an application for a PPL being made, but it cannot be granted until the DC is obtained under EPAA (described above).
56.	s.126 POA	All PTs	The <i>Minister may delegate any of the Minister's powers</i> , authorities, duties and functions under this Act (except this power of delegation) to the holder of any office.  [There is no publicly available information indicating whether the Minister has currently formally delegated his approval functions (cf DPI: <a href="http://www.planning.nsw.gov.au/en-au/developmentproposals/delegateddecisions.aspx">http://www.planning.nsw.gov.au/en-au/developmentproposals/delegateddecisions.aspx</a> . However, the current Minister has completed an Instrument of Delegation in respect of the POA, POReg and EPAA. While a great many of the Minister's functions have been delegated, the s9 function to approve a PT has not been. However the authority to set conditions under ss23 & 74-76 has been delegated to 8 officers of DRE and OCSG.]
57.	s126A POA		The <i>DGTI may delegate any of the DG's powers</i> , authorities, duties and functions under this Act (except this power of delegation) to: <ul style="list-style-type: none"> <li>• any member of staff of the Department; or</li> <li>• any person or class of persons authorised for the purposes by regulation.</li> </ul> [The current DG has completed an Instrument of Delegation in respect of the POA, POReg and EPAA, and delegated many of his functions.]
58.	s127 POA		A Minister or 'registrar, inspector or other officer charged with any judicial or official duties under this Act', may not hold any direct or indirect beneficial interest in a PT (other than a special prospecting authority). Breach is offence: 200 penalty units
<b>13. POA Application process: PPL</b>			
59.	s11 POA	All PTs	Applications lodged with the DG.
60.	s8 POA	All PTs	The Minister may invite applications for PTs, by notice in Gazette.
61.	s11 POA	All PTs	An application for a PT must be made in form approved by Minister.
62.		All PTs	An application must be accompanied by:
63.	s12 POA, Schedule 1 POReg		<ul style="list-style-type: none"> <li>• lodgement fee prescribed by <i>regulations</i> (regulation specifies \$1000)</li> </ul>
64.	s13 POA, cl4 POReg		<ul style="list-style-type: none"> <li>• a map or plan, drawn in accordance with the <i>regulations</i>, and delineating area boundaries (regulation specifies type and scale of maps)</li> </ul> [see s20A too – Minister may in effect waive minor requirements]
65.	s14 POA		<ul style="list-style-type: none"> <li>• a proposed work program complying with <i>regulations</i>, indicating nature and extent of operations to be carried on under authority of title. [There are no regulations in respect of work programs for PPLs, only PELs.]</li> </ul> Minister can also impose provisions for carrying out an approved work program as a condition of PPL: s23 (4)POA.

66.	s15POA		<ul style="list-style-type: none"> <li>evidence of applicant's financial standing, and their technical qualifications and the applicant's ability to comply with Act and regulations. Also see row 78: Minister can refuse if applicant doesn't meet 'Minister's minimum standards'.</li> </ul> <p><i>No minimum standards appear to be specified: see <a href="#">PPL Application Form</a> which requires only:</i></p> <p><b>On financial standing:</b></p> <p>a) a certificate issued by a member of CPA Australia or the Institute of Chartered Accountants in Australia (including membership number): or</p> <p>b) a statutory declaration stating that the applicant has sufficient financial resources at the time of lodgement to meet the financial commitments on all the applicant's titles and title applications.</p> <p><b>On technical qualifications:</b></p> <p><i>'List details of persons or organisations providing technical advice. ... The qualifications and experience of the technical manager ... It is expected that the technical manager will be a qualified geoscientist with petroleum exploration experience.'</i></p> <p><b>On ability to comply with Act and regulations:</b></p> <p><i>'A statement of undertaking will be acceptable.'</i></p>
67.	s43 POA	PPL only	Applicant must, before lodging or within 21 days of lodging PPL application, publish in newspaper a notice of application, with information about the area of the lease.
<b>14. Mandatory POA requirements which can be checked at beginning of application process</b>			
68.	s9 POA	All PTs	<p>PT can be granted over any onshore area within NSW <u>except</u>:</p> <ul style="list-style-type: none"> <li>an area designated by the Minister by notification in Gazette as an area in respect of which a title is not to be granted</li> <li>an area in an existing petroleum title held by a person other than the applicant</li> <li>an area in another application for a petroleum title, made before the applicant's application, and that has not been withdrawn or finally disposed of.</li> </ul> <p><i>So, if applicant area has been gazetted as area where no PT to be granted, or is located within another title holder's area, or within prior PT applicant's area, it can be refused at this stage.</i></p>
69.	s10 POA	All PTs	<p>An application for a PT must relate to only one area.</p> <p>'Area' is not defined. Applying common meaning, presume is single piece of land, ie with one single unbroken boundary.</p> <p><i>If application covers more than one area, it can be refused at this stage.</i></p>
70.	s44 POA	PPL only	The area in a PPL must be not more than 4 blocks (ie 4 graticular sections, each 5min Long x 5 min Lat – see s4 POA).
71.	s42(1) POA	PPL only	PPL may only be granted to applicant who has held land concerned under a PEL or PAL, unless Minister, by notice published in Gazette, has invited applications for a PPL in respect of area concerned.
<b>15. Environmental review under POA – matters that must be taken into account</b>			
72.	s74 POA	All PTs	<p>In deciding whether to grant a PT, Minister is to take into account the need to conserve and protect:</p> <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land over which PT sought.</li> </ul> <p>Minister may cause such studies (including EISs) to be carried out as Minister considers necessary to enable a decision to be made.</p>
<b>16. Environmental conditions under POA – matters that may be included in conditions</b>			
73.	s75POA	All PTs	<p>Conditions of PT <i>may</i> include conditions relating to conservation and protection of:</p> <ul style="list-style-type: none"> <li>the flora, fauna, fish, fisheries and scenic attractions, and</li> <li>the features of Aboriginal, architectural, archaeological, historical or geological interest, in or on land subject to PT.</li> </ul> <p><i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i></p>
74.	s76POA	All PTs	<p>Conditions of PT <i>may</i> include conditions relating to:</p> <ul style="list-style-type: none"> <li>rehabilitation, levelling, re-grassing, reforestation or contouring any part of land that may have been adversely affected by operation, and</li> <li>filling in or sealing of excavations and drill holes</li> </ul> <p>as may be prescribed by regulations or as Minister may determine.</p> <p><i>Note: Schedule 6, s9 of the State Revenue and Other Legislation Amendment (Budget Measures) Act 2012 No 46 repeals and replaces s75 and 76 of POA, and extends the types of environmental conditions that may be imposed. These new provisions had not come into operation as at 22/11/13.</i></p>
75.	s76POA	All PTs	<p>Minister may amend a PT that does not contain conditions related to <i>protection of the environment</i> (ie as per ss75 or 76 – see rows 73-74), or if Minister considers conditions inadequate, by including new conditions or further conditions.</p> <p>Conditions relating to rehabilitation, levelling, re-grassing, reforestation or contouring (but not filling in or sealing excavations and drill holes) must be:</p> <ul style="list-style-type: none"> <li>in form approved by CSCS, and</li> <li>imposed only after consultation with DGNPW.</li> </ul> <p>This section has effect despite anything to contrary in s93 of EPAA. <i>[The reference to s93 of EPAA has effect of retaining Minister's authority to include new or further conditions.]</i></p> <p><i>This is the only provision that enables the Minister to add conditions AFTER a PT has been granted.</i></p>

			<i>The conditions must relate to protection of the environment, as narrowly construed in s75 and 76 of the Act only.</i>
76.	s28A POA	All PTs?	Right to explore land for natural reservoirs may be subject to an order from the Minister prohibiting, or directing title holder to desist from, carrying on operations of a kind specified in order. Contravention is breach of conditions of title.
<b>17. General review/decision under POA</b>			
77.	s20A POA	All PTs	Minister may waive minor procedural matters even if applicant has failed to comply, provided Minister satisfied that failure unlikely to adversely affect any person's rights under Act or regulations, or result in any person's being deprived of information necessary for effective exercise of those rights.
78.	s21 POA	All PTs	Minister <i>may</i> refuse application if: <ul style="list-style-type: none"> <li>• it not made in accordance with Act or regulations, or</li> <li>• it would contravene Act, or</li> <li>• proposed work program does not meet Minister's minimum standards re nature and extent of activities (<i>note no minimum standards re PLs, see row 65 above</i>), or</li> <li>• applicant does not meet Minister's minimum standards re technical and financial capability to carry out proposed work program (<i>see row 66 above</i>), or</li> <li>• Minister decides, in public interest, having regard to nature and extent of proposed activities, it would be better not to grant title or grant someone else title.</li> </ul> <p><i>Authority appears to be discretionary ... application does not have to be refused even if these grounds exist.</i></p> <p><i>The power to refuse 'in public interest' is quite a broad power.</i></p>
79.	s42(2) POA	PPL only	<b>HOWEVER</b> , an applicant who has held land under a PEL or PAL is 'entitled to be granted a PPL' if: <ul style="list-style-type: none"> <li>• they have complied with terms and conditions of PEL or PAL, and</li> <li>• granting PPL would not contravene EPAA or any other Act; and</li> <li>• applicant accepts conditions of lease.</li> </ul> <p><i>This entitlement appears to constrain the Minister's discretion. If the applicant has held land under a PEL or PAL, and complied with its terms and conditions, and accepts conditions of PPL, they are entitled to the PPL. Not sure how this sits with ss21 and 74 POA (see rows 71 and 78) and all the other matters that the Minister must take into account when determining whether to grant the PPL. The implication is that these other matters might lead to conditions, but not outright rejection. It suggests a high level of responsibility needs to be exercised at the PEL or PAL stage, because, once an PEL or PAL is granted, there is an entitlement to go on to a PPL.</i></p>
<b>18. Conditions</b>			
80.	s23(1) POA	All PTs	A PT is subject to: <p>(a) the conditions imposed by the Minister and specified in the title, and</p> <p>(b) any conditions prescribed by the regulations.</p> <p>If there is any inconsistency between conditions prescribed by the regulations and conditions imposed by the Minister, the latter prevail to the extent of the inconsistency.</p> <p><i>Some discretionary and mandatory conditions are included below. However, the extensive list of conditions that accompany most current PPLs are primarily made under this general power of the Minister to impose conditions.</i></p>
<b>Conditions which may be made by Minister (or delegate)</b>			
<b>Work program condition</b>			
81.	s23(3), (4) POA	All PTs	Conditions imposed by Minister <i>may</i> include: <ul style="list-style-type: none"> <li>• conditions about work to be carried out by title holder during or after term of title, including approved work program and</li> <li>• amounts to be expended by title holder in carrying out any such work.</li> </ul> <p>Conditions may apply to each year for term of title.</p> <p><i>Given that the Minister has a general discretion to impose conditons under s23(1), this specific discretion is redundant. But presumably it was addressing a (then) current issue, for clarity.</i></p>
<b>Security deposit condition</b>			
82.	s106B, s106C, s106E, s106F, s106G, s106H POA c124A POReg	All PTs	Minister <i>may</i> impose a condition requiring title holder to give and maintain a security deposit, in such form as Minister <i>may</i> determine, for fulfilment of holder's obligations under POA. Condition may be imposed at the time of granting of title, <i>or at any time later</i> . Granting of title can be made subject to the giving and maintaining of the security deposit.
			Amount of security deposit is assessed by the DG, having regard to estimated cost of fulfilling any obligations under Act, and in accord with any Ministerial guidelines. The title holder can seek a review of a security deposit assessment. The minimum security deposit is now \$10,000.
83.	s106I	All PTs	Security deposit is forfeited to Crown if the title holder 'fails to fulfil the obligations under this Act', on written notice to title holder. Money forfeited must be applied for purpose of fulfilling obligations under the POA.
84.			<i>Note that the <b>Code of Practice CSG Well Integrity</b> and the <b>Code of Practice for Fracture Stimulation Activities</b> are not of themselves legally binding documents. They are given legal effect by their inclusion as conditions in PTs. These each have an extensive series of requirements which must be complied with. See separate section below.</i>

<b>Mandatory conditions</b>			
<b>Work Health and Safety conditions</b>			
85.	s128 POA	All PTs	It is a condition of every PT that title holder carry out all petroleum exploration operations and operations for the recovery of petroleum in the title area in accordance with the Work Health & Safety Act 2011.
86.	cl27 POReg 2007	All PTs	It is a condition of every PT that title holder comply with the Schedule of Onshore Petroleum Exploration and Production Safety Requirements (SOPEPSR). The SOPEPSR, as sourced from <a href="http://www.resources.nsw.gov.au/safety/legislation/petroleum">http://www.resources.nsw.gov.au/safety/legislation/petroleum</a> , is dated August 1992. <i>It covers more than what might be regarded as 'safety' issues.</i> <i>Pages 13-21 of the Schedule refer specifically to Petroleum Production.</i> <i>A separate section on the contents of the SOPEPSR is below.</i>
<b>Work program condition</b>			
87.	cl9 POReg	All PTs	It is a condition that title holder will carry out operations, and only the operations, described in the work program, for the time being in force. [cl10 provides for title holder to apply for variation to work program, which Minister <i>may</i> approve.]
<b>Notification re production commencement condition</b>			
88.	cl25 POReg	PAL & PPL only	It is a condition that title holder notify DG in writing of date on which commercial production first commences, within 7 days.
<b>DG notice compliance condition</b>			
89.	cl26 POReg	All PTs	It is a condition that title holder complies with terms of any notice from DG requiring title holder to comply with provision of regulation.
90.	cl27A POReg	All PTs	It is a condition that title holder comply with any notice from DG requiring title holder to carry out an audit about any matter related to the title. <i>This enables the DG to require an audit at any time.</i>
<b>19. Contravention of conditions of title</b>			
91.	s136A POA	All PTs	Contravening or failing to comply with <i>any</i> conditions of a PT is an offence. Max penalty if condition relates to environmental management (ie identified as such in PT) is 10,000 penalty units (corporation) or 2000 (individual). Max penalty for non-environmental conditions is 2000 penalty units.
92.	s137A POA current cl28 POReg Schedule 2 POReg	All PTs	Minister <i>may</i> serve a penalty notice on a title holder if it appears they have breached condition. Payment of penalty ends further court proceedings. Regulation prescribes amount of penalty, up to max of 100 penalty units. Penalty for breach of environmental condition is \$2500. Penalty for breach of non-environmental condition is \$1250.
<b>Direction to comply with rehabilitation conditions</b>			
93.	s77POA	All PTs	Minister <i>may</i> give written notice on current or former title holder directing person to take specified steps within specified time to give effect to conditions in PT related to rehabilitation of the land, as per s76 (see row 75). Failure to comply by title holder: maximum penalty 10000 penalty units (corporation) or 2000 penalty units (individual).
94.	s78POA	All PTs	If title holder fails to comply, Minister <i>may</i> cause to be taken any of the steps specified in the direction. Any costs or expenses incurred by Crown are a debt due to the Crown and are recoverable in appropriate court (whether or not title holder prosecuted or convicted).
<b>Suspension of conditions</b>			
95.	s24 POA	All PTs	On application by title holder, Minister <i>may</i> suspend any or all of conditions relating to working of land comprised in title. Suspension cannot exceed 6 months. In granting suspension of conditions, Minister <i>may</i> impose conditions: <ul style="list-style-type: none"> <li>• for protection of wells, equipment or works on land, or</li> <li>• for protection of petroleum deposits, water or minerals in land or in adjacent land, or</li> <li>• for any other purpose.</li> </ul> <i>[Not clear whether this power to suspend extends to mandatory conditions that are specified in the POA or PORegs, eg s128 POA which makes compliance with WHSA a condition of the PT.]</i>
<b>20. Term of title</b>			
96.	s45 POA	PPL only	Term of PPL is fixed by Minister, and may not exceed 21 years.
<b>21. Minister's responsibility if PT granted</b>			
97.	s9(5) POA	All PTs	Title must be published in the Gazette
98.	s9(6) POA	All PTs	If title relates to land that is a biobank site (see Part 7A of TSCA): Minister administering TSCA must be notified. (And see row 266).
<b>22. Title takes effect when?</b>			
99.	s9(4) POA	All PTs	On date signed by Minister, or on later date specified in title
100.	s25 POA	All PTs	Legal challenges to the grant of a title cannot commence later than 3 months after date of Gazette publication of grant of title

**23. Access of PPL holder to land for PP**

While there are extensive provisions covering access arrangements for prospecting titles (ie PELs, PALs and SPAs), there are no provisions governing access to land for PP. This puts more onus on the landholder to negotiate access arrangements for future production as part of their access arrangements for exploration. It is also feasible for the Minister to include a condition in a PPL that the titleholder make an offer to purchase the land. Outside of any such arrangements, the landholder would have to rely on the provisions for compensation if their interest in the land is injuriously affected.

The proposed new Code of Practice for Land Access (currently in consultation phase) does not cover production. The only reference to production is an obligation on the explorer to outline to the landowner the 'potential for further activities, including production activities', upon completion of the work program (cl3.22).

**24. Compensation for injury to land**

101.	s107 POA	All PTs	The holder of a PT is liable to compensate every person who has an interest in land that is injuriously affected by operations taken under the PT.
102.	s108. s109 POA & cl17 POReg	All PTs	The compensation may be determined by agreement between the PT holder and the person entitled to compensation; if no agreement within 30 days, then on application of either party the LEC can assess the amount payable. The LEC must make the assessment based on the loss caused by: damage to the surface of the land, and damage to crops, trees & vegetation, or damage to buildings and improvements; deprivation of possession or use of the surface of land; severance of land from other land of the landholder; surface rights of way and easements; destruction, loss of or injury to stock, and damage consequential on any of those matters.

**25. Obligations and liabilities of PEL holders (separate from obligations imposed through conditions on title)****Information/notification-related obligations**

103.	cl8 POReg	All PTs	Title holder must advise Minister of intention to commence work on any exploration borehole, seismic survey or other exploration within area of PT, not later than 14 days before starting work.
104.	cl14 POReg	All PTs	After <i>completion</i> of ... any activity described in conditions of title as 'significant component of work program', title holder must forward to DG, in format specified in conditions of the title, a report on operations carried out in the activity concerned, together with all raw and processed data and main conclusions drawn from it. Within 6 months of completion. Max penalty: 100 penalty units
105.	cl14 POReg	All PTs	After the <i>end of period covered by a fixed agenda</i> , title holder must forward to DG: (a) a summary of operations carried out during the period covered by the agenda, within 30 days, and (b) a full report on operations carried out during that period, within 6 months. The minimum period for a fixed agenda is 2 years. Max penalty: 100 penalty units
106.	cl15 POReg	All PTs	Title holder must keep geological plans and records relating to work carried out, as directed by the DG. Max penalty: 100 penalty units
107.	s27, s28 POA	All PTs	If petroleum is discovered in land comprised in a title, the title holder must a) inform the Minister immediately of the discovery and b) furnish particulars in writing within 3 days. DG can direct title holder to furnish particulars of petroleum.
108.	s131 (1) POA cl16 POReg	All PTs	On every anniversary of grant of PT, title holder must provide Minister with record in prescribed form of: • operations conducted and expenditure incurred • plan drawn to prescribed scale showing situation of wells; all development and other works and improvements; and any ancillary rights acquired. Scale is 1:25,000, 1:100,000 or 1:250,000.
109.	s131(2) POA	All PTs	Every title holder must: • keep accurate geological plans, maps and records • furnish to the Minister such plans and information as Minister requires.
110.	s132 POA	All PTs	Every title holder must: • collect, label and preserve all cores and characteristic samples of strata encountered in any well on land comprised in title, and samples of any petroleum or water discovered in any well • make scientific examinations of those samples; and give the Minister reports of the examinations made; • furnish to the Minister such data as the Minister may require • make cores and samples available for examination. [Note: Ss 117-125 POA contain provisions relating to public release of data and samples. These are not given in detail here.]
111.	s133 POA	All PTs	Every title holder must, if called on, furnish such statistics, returns and other information as Minister may require. Max penalty: 200 penalty units
112.	s135 POA	All PTs	Any person who inserts false particulars or supplies false information is guilty of an offence. Max penalty: 200 penalty units. If false particulars supplied wilfully to evade royalty payment, may have to pay additional penalty of twice the royalty.

Royalties and fee payments			
Royalties			
113.	s85, 91, 92, 94 POA	All PTs	Title holder must pay to Minister a royalty in respect of 'all petroleum recovered' by title holder in area covered by title. Royalties are payable annually, but not due until last day of next royalty period. Late payment penalty of 1/3 of 1% per day, computed from time it became payable to when it paid. Royalties are a debt due.
114.	s85, 88, 89, 90 POA cl22 POReg	All PTs	<i>Royalty quantum:</i> Annual rate of royalty specified in POA and POReg: varies between 5 and 10% of value at well-head of the petroleum recovered, depending on number of years of commercial production. ( <i>From Jan 2013, it is all 10% - cl24 and 24AA of POReg 2007</i> ). <i>Well-head</i> is equipment used for recovery of petroleum 'as agreed between title holder and Minister' or, if no agreement within period allowed by Minister, as determined by Minister. <i>Value at well-head</i> is amount determined by Minister as being that value. <i>Quantity of petroleum recovered</i> is: <ul style="list-style-type: none"> <li>the quantity measured by a measuring device approved by the Minister and installed at well-head or other place approved by Minister, or</li> <li>if Minister not satisfied quantity properly or accurately measured by approved measuring device, the quantity determined by the Minister as being the quantity recovered</li> </ul> <i>See 716 of SOPEPSR: DG has power to seal valve or meter on well or storage facility, for purposes of royalty payable.</i>
115.	s86 POA	All PTs	<i>Royalty reduction:</i> Minister may reduce royalty rate if: <ul style="list-style-type: none"> <li>Minister satisfied that current rate of recovery makes recovery uneconomic, or</li> <li>petroleum is being recovered as consequence of requirement under POA, or</li> <li>other circumstances which Minister considers justify reduction.</li> </ul> Minister can revoke or vary a reduction.
Fees			
116.	s94C, 94H, 94I, 94L, 94N, 94O, 94P, 94Q, 94R POA Schedule 1, POReg	All PTs	Title holders must pay, in addition to royalty: <ul style="list-style-type: none"> <li>a one-off title fee for PPL this is \$40,000</li> <li>an annual rental fee for PPL this is \$10,000 per block or \$133.33 per sq km or \$1.33 per hectare</li> <li>an administrative levy 1% of security deposit amount (see row 85), with minimum amount of \$100 (can be varied by POReg, but no provision to date). (Further detail where more than 1 PT involved not included here).</li> </ul> Late payment fees may be charged by DGTI: 15% of overdue amount per annum, compounded quarterly. Fees are a debt due; non-payment is a contravention of POA but not an offence. Fees are payable even if PT cancelled or suspended. Annual Rental Fee and Administrative Levy are payable annually, from 1 July 2012 on grant anniversary date.  <i>DGTI has obligation to assess liability of title holder for fees, and to serve notice on title holder of when title fee and annual rental fee payable.</i> <i>DGTI has discretion to charge late payment fee if fee overdue.</i> <i>DGTI has obligation to record annual rental fee area in records required by s95 POA.</i>  <i>There are phasing in provisions in POReg for PTs granted before 1 July 2012. Not reviewed here: see cl22 POReg</i>
117.	cl22 POReg	All PTs	Fees may be remitted or waived in relation to a particular person or class of persons, if Minister satisfied there sufficient cause to do so.
Restrictions, and potential variations with consent of Minister			
118.	s70(1)POA	All PTs	Title holder may not exercise any title rights over land in an <i>exempted area</i> , except with consent of Minister. <i>Exempted area</i> includes land: <ul style="list-style-type: none"> <li>reserved for a public purpose</li> <li>held under a lease for water supply</li> <li>transferred, granted or vested in trust by Crown for purpose of a race-course, cricket-ground, recreation reserve, park or permanent common for any public purpose</li> <li>prescribed by regulations for purposes of this definition (no prescription at present in POReg).</li> </ul>
119.	s71 POA	PPL only	Title holder must not carry out any mining operations or erect any works on <i>surface</i> of land under cultivation, <i>except with consent of landholder</i> . Cultivation excludes cultivation for growth and spread of pasture grasses, unless, in Minister's opinion, circumstances warrant otherwise. Minister can authorise mining operations, despite lack of consent, in which case compensation is payable, either as agreed between landholder and title holder, or as determined by LEC. [Note: s134B makes provision for situation where landholder cannot be identified.]
120.	s72POA	All PTs	Title holder must not carry on mining operations or erect works on <i>surface</i> of any land: <ul style="list-style-type: none"> <li>within 200 metres of dwelling-house that is principal place of residence of person occupying it, or</li> <li>within 50 metres of any garden, vineyard or orchard, or</li> </ul>

			<ul style="list-style-type: none"> <li>on which is situated any improvement (being a <i>substantial</i> building, dam, reservoir, contour bank or other <i>valuable</i> work or structure), other than an improvement for mining operations <i>except with consent of landholder/house occupant</i>. Once given, consent is irrevocable.</li> </ul> <p>'If need be', the Minister is to determine whether any improvement is <i>substantial</i> or <i>valuable</i>, and may define an area adjoining any such improvement on the surface of which no mining operations are to be carried out or works erected, <i>without the owner's consent</i>. Disputes go to LEC for determination.</p> <p><i>I have not yet found any guidelines to assist the Minister in determining whether an improvement is substantial or valuable. On the face of it, it would seem to be based on the Minister's (or delegate's) personal opinion only.</i></p>
<b>26. Authority to cancel or suspend title</b>			
121.	s22 (1)POA	All PTs	Minister <i>may cancel</i> title if title holder: <ul style="list-style-type: none"> <li>fails to fulfil or contravenes any title conditions, or</li> <li>fails to use land comprised in title in good faith for purposes for which it granted, or</li> <li>uses land for purpose other than that for which title granted, or</li> <li>contravenes the Act or regulations.</li> </ul>
122.	s22(2) POA	All PTs	Minister <i>may also cancel</i> title, in whole or part, on written request of title holder, though Minister can refuse unless all data and reports due under regulations have been submitted and all data and operations reported on. <i>Effect of cancelling title would remove the obligation for reports, so this is a way of enforcing reports (see heading 25).</i>
123.	s22(2A) POA	All PTs	Minister <i>may cancel</i> part of title if part of land in title required for 'any public purpose', 'with or without restrictions as to depth'
124.	s22(3A) POA	All PTs	Minister <i>may suspend</i> all or some operations under a title 'until further notice' if title holder contravenes <ul style="list-style-type: none"> <li>a requirement under the Act to pay a royalty or give or maintain a security, or</li> <li>any condition of title 'that is identified as related to environmental management' (ie if identified in the title, or in any notice of condition given to title holder)</li> </ul>
125.	s22(6) POA	All PTs	Minister <i>must</i> give written notice of proposed cancellation or suspension, and the grounds, to title holder, and give title holder reasonable chance to make representations, and take representations into consideration.
126.	s22(5) POA	All PTs	No compensation payable by Crown when title cancelled or operations suspended.
127.	s94R POA	All PTs	Fees (title fee, annual rental fee, administrative levy) payable even if title cancelled or suspended (see row 116).
128.	s22(4A)	All PTs	Notice of cancellation is to be published in Gazette, as soon as practicable after cancellation
<b>27. Title holder responsibilities if PT ceases</b>			
129.	s82POA	All PTs	Title holder may, within 6 months of title ceasing, or must, if directed by Minister within time specified, remove from land any petroleum plant brought on to or erected on the land 'in the course of drilling operations carried out under the PT'.
130.	s83POA	All PTs	If plant not duly removed, Minister <i>may</i> direct it be sold by public auction, then by private treaty. Act provides for disposal of proceeds.
<b>28. Varying the work</b>			
131.	cl10 POReg	All PTs	A title holder who wishes to vary the work program in force must lodge a submission with the Minister providing adequate details of the variation proposed to be made and setting out the reasons for making it
132.	cl10 POReg	All PTs	Minister may approve if satisfied that there is just and sufficient cause for making variation and if revised work program meets Minister's requirements
<b>29. Renewal of title application</b>			
133.	S19(2) POA	PPL only	PPL holder may apply for renewal of title not earlier than 5 years and not later than 1 year before authority or licence ceases to have effect.
<b>Minister's authority to renew title</b>			
134.	s19(2B), (3), (3A) POA	All PTs	Minister <i>may</i> renew or refuse renewal application. Refusal may be on any ground on which Minister might have refused title initially, or might have cancelled title (see rows 78 and 121). Minister may refuse renewal unless all data and reports due under regulations have been submitted.
135.	s20 POA	All PTs	Original title continues in force while application for renewal is pending.
<b>30. Withdrawal of application</b>			
136.	s19A POA	All PTs	Application or renewal may be withdrawn in writing to Director-General. Application ceases to have effect on lodgement of withdrawal
137.	s95 POA cl12 POReg	All PTs	DG <i>must</i> keep records of: <ul style="list-style-type: none"> <li>every PT application, and</li> <li>every PT, and</li> <li>every matter required by POReg.</li> </ul> Records must be available for inspection free of charge by public. Records may be kept via computer. Particulars specified in cl12.
138.	s97 POA	All PTs	DG <i>must</i> keep register of legal and equitable interests in PTs.
<b>31. Other authorities of Minister</b>			
139.	s96A POA	All PTs	Minister <i>may</i> approve application for transfer of PT, including amendment of conditions.

32. Inspection and control			
140.	s98, 99, 100, 101, 103 POA	All PTs	DG and officers authorised by DG have access to land subject to a PT, and all buildings (except residential premises), structures, equipment and works, and all books, accounts, documents and other records relating to the land for the purpose of ascertaining whether requirements of the PT and the POA are being observed. There are also authorities related to surveys and sampling. Notice not required to title holder, but notice is required to <i>land holder</i> .
141.	s129 POA	All PTs	'Inspectors' may require dangerous or defective matters, things or practices, which threaten or tend to injure the health or body of any person, to be remedied by a specified period; and may direct that an operation cease or that persons withdraw, indefinitely or for specified period. <i>'Inspectors' not defined, but s113 POA makes provision for people to be employed as such.</i>
142.			And see SOPEPSR, re powers of inspectors, eg cl 209. <i>It's not absolutely clear, but it seems inspectors under the Act and the Schedule are probably the same.</i>
33. Easements and rights of way			
143.	s105 POA	All PTs	Minister may grant and revoke easements or right of way through, over or on the <i>land comprised in a PT</i> , as required for development or working of the land or any land in other PTs.
144.	s106 POA	All PTs	Minister may grant and revoke 'temporary' rights of way through, on or in <i>any land</i> for construction of access road to PT land. If the land is within a NPWA state recreation area: <ul style="list-style-type: none"> <li>• Water Administration Ministerial Corporation's concurrence needed <i>if lands are an irrigation area</i> under Crown Lands Act 1989, or</li> <li>• Lands Administration Ministerial Corporation concurrence needed, or</li> <li>• Minister administering NPWA concurrence needed '<i>in any other case</i>'.</li> </ul> <i>There is no circumstance specified when Lands Administration Ministerial Corporation approval is required. The 'in any other case' re Minister administering NPWA does not quite make sense. It appears that all 3 concurrences are needed if lands are under an irrigation area, and 2 concurrences needed if not.</i>

**NOTE re above table:**

I have not included every power or obligation on DG in POA, eg in respect of registration of titles (Part 8).

I have not included every process in POA related to assessment of compensation by LEC (ss109-112A); nor jurisdiction of LEC (s115).

I have not looked at Crown developments, as have assumed Crown would not develop any CSG facility.

### SCHEDULE OF ONSHORE PETROLEUM EXPLORATION AND PRODUCTION SAFETY REQUIREMENTS (SOPEPSR)

[It is a condition of all PTs that title holder comply with the SOPEPSR: see row 84.]

	Clause	Paraphrase
145.		<p><i>General comments:</i></p> <p>a. Some of the detail in this Schedule seems oddly piecemeal. Presumably health and safety standards have lifted significantly since the Schedule was published in 1992. For example, one would expect a more significant onus on title holders to ensure fire safety and electrical safety under the WHSA than is imposed by this Schedule. It would appear to need review, in light of the WHSA.</p> <p>b. There are quite frequent references to obligations to act 'in accordance with good <i>oilfield</i> practice' or 'good <i>oilfield</i> and environmental practice'. It is not clear what the benchmark for 'good practice' is. DRE's webpage (<a href="http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csg-regulated/additional-information">http://www.resources.nsw.gov.au/community-information/coal-seam-gas/how-is-csg-regulated/additional-information</a>) states that 'Good oilfield practice means in accordance with generally accepted standards such as those published by the <a href="#">American Petroleum Institute</a>'.</p> <p>c. The Schedule's name suggests it is mainly about safety, but there are other provisions in the Schedule that have broader ramifications than safety, particularly for PP. There are provisions related to determining the rate of petroleum recovery, and also to measure the gas production, which links to the determination of the royalty. The provisions specifically relating to PP include obligations to follow 'good oilfield practice' which may relate mainly to safety but could have a broader component. There is a requirement also to produce and comply with a reservoir management plan, which presumably extends beyond safety. There are some brief provisions on water pollution, working over wells and sampling petroleum streams which don't appear to be safety-oriented.</p> <p>d. The majority of provisions in the Schedule are compliance obligations on the title holder (noting that compliance with the SOPEPSR is a condition of a PT). However, a number of approvals by or notifications to either the DG or the Minister are also required. These are highlighted in <b>BOLD CAPS</b>.</p>
146.		<b>All petroleum titles</b>
147.	201	<i>Safety Management Plan:</i> Title holder must maintain a safety management plan
148.	203	<i>Certificate of competence:</i> Title holder must ensure people have certificates of competence where their activities require one
149.	205	<i>Tests:</i> Title holder must ensure any test required by the Schedule is carried out ' <b>in accordance with good oilfield practice</b> '.
150.	206	<i>General duty to maintain site that is safe for employees, visitors and the public.</i>
151.	208	<i>Information availability:</i> Title holder must make readily available to all workers copies of SOPEPSR, plus "Code of Environmental Practice as required under Regulation 28", plus Emergency Response Procedures manual. <i>Not sure what 'Reg 28' refers to, but suspect it a regulation in Petroleum (Onshore) Regulation prior to 2002 (not available</i>

		<i>online).</i>
152.	209	<i>Powers of inspectors:</i> Inspectors have powers to stop operations that are dangerous or ' <b>not in accordance with good oilfield practice</b> '.
153.	210	<i>Emergency response:</i> Title holder must have approved Emergency Response Procedures.
154.	212	<i>Protective Clothing:</i> Title holder must ensure protective safety equipment is provided. Persons provided with safety equipment must wear it.
155.	213	<i>Notices and signs</i> must be compliant with AS 1319.
156.	214	<i>Precautions against fire:</i> Use diesel engines where practicable; no naked flames etc within 30 metres of 'the hole'; requirement to use flare line if inflammable gas met in well.
157.	301-308	<i>Reports of death or serious injury or serious damage or hazardous event or escape or ignition of petroleum, and records of death or injury, to be made to Inspector and/or kept.</i>
158.	4.	<i>Explosives, radioactive and dangerous substances:</i> 9 very specific requirements in respect of explosives, eg transport in accord with applicable legislation; keep in locked storage magazine etc
159.	5. (501-525)	Under the heading <i>Notification to Drill</i> , there are a series of obligations in respect of equipment standards, casings, cementing of casings, blow-out prevention control and drills, pressure-testing blow-out prevention equipment, installing a mud monitoring system, penetration rate recorder, drilling fluid, protection of aquifers, venting flammable vapours, abandoning wells, completing wells, disposing of produced oil and gas, disposal of waste. There is overlap between this and the Code of Practice for CSG Well Integrity (see row 191).
160.	6. (601-	<i>Electrical:</i> This sections contains specific provisions relating to the safety of electrical apparatus, including wiring rules, protection circuits, control of static electricity, welding, and electrical shock. There is reference to some Australian Standards.
161.	7.	<b>Petroleum Production</b> -- The remainder of this schedule is specifically for PP, as set out below:
162.	701, 702	<i>Petroleum recovery; petroleum processing, storage or disposal; produced formation water disposal; and injection of petroleum or water into underground formation:</i> must all be in accordance with terms and conditions of PPL, and ' <b>in accordance with good oilfield practice</b> '.
163.	703	<i>Equipment</i> must be designed, constructed and operated ' <b>in accordance with good oilfield practice</b> '
164.	704	<b>Construction APPROVAL</b> must be obtained from the DG before construction commences; also approval for significant additions/modifications
165.	705	<i>Siting of production equipment</i> must be ' <b>in accordance with good oil-field practice</b> '
166.	706	<b>Progress REPORT</b> on construction and installation in previous month must be submitted to Inspector not later than 21 <sup>st</sup> day of each month
167.	707	<i>Testing:</i> New gas completion must be subject to 'multi-rate or other appropriate production test' to determine representative chemical analyses of fluids in reservoir and production capacity of well. Where a completion is to be subjected to a major stimulation procedure 'such as fracturing or acidizing', test must be carried out not more than 6 months before stimulation and not more than 6 months after completion of stimulation. This test must determine changes in fluid flowing, changes in producing capacity, and changes in formation characteristics, as result of stimulation DGDMMR must be notified of proposal to carry out production test; and provided with <b>REPORT</b> on results within 3 months. If extended production test, report must be submitted monthly.
168.	708	<i>Reservoir management plan:</i> Title holder must ensure a reservoir management plan is <b>APPROVED</b> before production commences. Minister may approve variations to reservoir management plan, and require revisions to plan to ensure it ' <b>consistent with good oilfield practice</b> '. Titleholder must comply with the reservoir management plan.
169.	709	Title holder must <i>evaluate possibility of retrograde condensation</i> occurring in reservoir, and report to DG.
170.	710 (1), (2)	<i>Rate of petroleum recovery:</i> Title holder must ensure that annual rate of recovery of petroleum is <b>APPROVED</b> . Application for approval must include: proposed rate, past performance, prediction of future performance, estimate of ultimate recovery.
171.	710 (3)	<i>Monitoring:</i> If Minister requests that a review of the reservoir description, production policy and current reservoir performance be submitted 'to demonstrate that it is being developed in a manner <b>consistent with sound reservoir management practices</b> and compatible with optimum long-term recovery', the title holder must do so.
172.	711	<i>Monitoring of rate of recovery:</i> Title holder must ensure that 'approved monitors and control mechanisms are used to control the rate of recovery of petroleum or water from a well'
173.	712	<i>Testing re rate of recovery:</i> Title holder must carry out monthly production test to estimate rate of petroleum recovery, unless it being monitored continuously or it not technically feasible.
174.	713	<i>Monitoring of gas reservoir and well performance:</i> Specific requirements for title holder to conduct various tests, at specified times, with input from DG and with discretion of DG to approve alternative methods of testing.
175.	715, 716, 720-21  733	<i>Production measurement:</i> Specific requirements for title holder to measure gas quantity. This clause also includes requirements on title holder to ensure that petroleum and water are not disposed of unless quantity and composition determined, using equipment and procedures in ' <b>accordance with good oilfield practice</b> '. The measuring device used must ' <b>conform with good oilfield practice</b> ' and must be proved and certified as to accuracy and at a frequency ' <b>consistent with good oilfield practice</b> '. Production from more than one reservoir and/or more than one well must not be commingled until petroleum and water pass point where production measured. <i>DG authority to seal re royalties:</i> DG has power to select and seal a valve or meter on a well, or receptacle used for storage of gas, 'for the purposes of a royalty payable'. 733: Title holder must ensure that DG <b>NOTIFIED</b> of 'an intention to sample a petroleum stream for royalty purposes'.
176.	717	<i>Concurrent gas/oil production:</i> If the DG believes a reservoir could be commercially productive of oil, the title holder must ensure that a completion is not produced as a gas completion unless it accords with a scheme for the concurrent production of gas and oil from the reservoir which is not detrimental to the ultimate recovery of

		hydrocarbons from the reservoir.
177.	722	<i>Segregation of zones</i> : provisions for ensuring and <b>REPORTING</b> to DG on segregation between completions of multiple completion wells. If DG not satisfied segregation achieved, DG may require well to be 'shut-in'.
178.	725	<i>Waste or contamination</i> : DG may require title holder to carry out tests to determine if waste or contamination of oil, gas or water is occurring. If waste or contamination is occurring, title holder must take steps to remedy.
179.	726	<i>Waste water and fluids</i> : Title holder must ensure that all formation water and all well waste fluids are disposed of ' <b>in accordance with good oilfield practice</b> ', and must allow disposal to 'constitute a risk to public health or safety, or to contaminate water or land not specifically designed for waste disposal'.
180.	727	<i>Disposition of gas</i> : Title holder must ensure gas under title holder's control is only used for recovery of petroleum from naturally occurring reservoirs; or as a fuel (provided DG given details that propose use or consumption is not wasteful).
181.	728	<i>Flaring and venting</i> : Except in an emergency, flaring or venting petroleum cannot be carried out without <b>APPROVAL</b> .
182.	729	<i>Control of water discharge quality</i> : DG must be <b>NOTIFIED</b> of means by which quality of water discharged will be controlled to ensure compliance with Clean Waters Act 1970 (now repealed and replaced by PEOA) and Regulation 28 . <i>Not sure what 'Reg 28' refers to, but suspect it a regulation in Petroleum (Onshore) Regulation prior to 2002 (not available online).</i>
183.	730	<i>Subsurface safety devices</i> : If well is capable of producing petroleum by natural flow, DG can require title holder to equip well with safety with specified features.
184.	731	<i>Well workovers</i> : Wells cannot be worked over without prior <b>APPROVAL</b> .
185.	732	<i>Wireline operations</i> : Title holder must give <b>NOTICE</b> of intention to undertake a non-routine wireline operation, or remove item of subsurface equipment in a well

### NSW CODE OF PRACTICE FOR COAL SEAM GAS WELL INTEGRITY

This Code is legally mandatory for all CSG activities **provided that** a requirement to comply with the Code is included in the conditions of a PT under the POA. It is not clear that it is mandatory on titles in effect before the Code was adopted but, depending on the precise wording of current conditions, it could be. Nothing prevents a title holder voluntarily abiding by it. And, presumably, abiding by the Code is evidence also of compliance with the conditions.

186.	p.iv	The Code does <b>NOT</b> apply to the following types of drilling: <ul style="list-style-type: none"> <li>• seismic shot holes</li> <li>• tiltmeter and monitoring bores</li> <li>• water monitoring bores</li> <li>• exploration holes demonstrated to be 'frontier exploration' holes.</li> </ul>
187.	s2.2.2 s2.2.3 s2.2.4 s2.2.5 s2.2.5	The Code seems to draw together a number of other legislative requirements, though does not specifically reference them all. For example, the Code requires: <ul style="list-style-type: none"> <li>• a Significant Hazard Risk Register, which reflects Work Health &amp; Safety legislative requirements</li> <li>• a Safety Management Plan, which is also required under the SOPEPSR. However the Code contains 16 dot points that must be included in the Safety Management Plan, which are not referred to in the SOPEPSR.</li> <li>• an Environmental Management Plan, which may be in the form of an REF, which reflects requirements under Part 5 of the EPA (though Part 5 does not apply to PP).</li> <li>• Pollution Incident Response Management Plans for each activity that has an EPL, as per the PEOA; and pollution incident notifications as per the PEOA.</li> <li>• an Emergency Response Plan and procedures, as per Work Health &amp; Safety legislation.</li> </ul>
188.	s2.2.3.1	Titleholder must submit an annual safety <b>REPORT</b> to DRE on the approved form, addressing a variety of specified matters.
189.	s.2.3	There are also some specific obligations on CSG operators, such as: <ul style="list-style-type: none"> <li>• considering any impact on coal mining</li> <li>• ensuring information is exchanged at shift changes</li> <li>• fencing</li> <li>• electrical engineering safety.</li> </ul>
190.	s3	Part 3 has extensive requirements on recording and <b>REPORTING</b> data. There are a number of obligations to notify or report to DRE. There is an obligation to record accurate information on drilling, completion, workover and well abandonment, and a series of examples of 'good industry practice' re record keeping. There is an obligation to record and <b>NOTIFY</b> DRE of a number of matters. Some of these are already included in the POReg, eg matters relating to annual reports and well completion reports. Others are required under Work Health & Safety legislation, eg incident reporting. Additional requirements include obligations to: <ul style="list-style-type: none"> <li>• <b>REPORT</b> to DRE within 6 months of a seismic program, drilling an exploration or production well, or a significant component of a work program.</li> <li>• lodge a <b>NOTIFICATION</b> of intention to drill, with required information, with both DRE and NOW.</li> <li>• <b>REPORT</b> to DRE on cementing, when submitting well completion reports.</li> </ul>

191.	s4	<p>Part 4 contains specific requirements under 9 headings.. Each section includes principles, mandatory requirements, and good industry practice. The mandatory requirements use the word 'must'; the good industry practice requirements use the word 'should'.</p> <p>The 9 headings are:</p> <ol style="list-style-type: none"> <li>1. well design</li> <li>2. casings</li> <li>3. cementing</li> <li>4. well heads</li> <li>5. drilling fluids</li> <li>6. evaluation, logging, testing, coring</li> <li>7. well monitoring/maintenance</li> <li>8. well suspension</li> <li>9. well abandonment.</li> </ol> <p>There is some overlap with the requirements of the SOPEPSR, but they do not coincide.</p> <p>There are only minor requirements to notify or obtain approval from DRE (eg if an alternative method to that specified is employed). However, prior <b>APPROVAL</b> is required from DRE before well suspension or well abandonment.</p>
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### NSW CODE OF PRACTICE FOR COAL SEAM GAS FRACTURE STIMULATION ACTIVITY

This Code is legally mandatory for all CSG activities **provided that** a requirement to comply with the Code is included in the conditions of a PT under the POA. It is not clear that it is mandatory on titles in effect before the Code was adopted but, depending on the precise wording of current conditions, it could be. Nothing prevents a title holder voluntarily abiding by it. And, presumably, abiding by the Code is evidence also of compliance with the conditions.

192.		<p>This Code sets out 16 requirements when fracture stimulation activity is to occur, broadly organised to correspond with the 'design, planning, operational and post-operational phases of a fracture stimulation activity'.</p> <p>Each of the 16 headings is divided into Principle, Mandatory Requirements and, for some headings only, Leading Practice (cf term used in Code for CSG Well Integrity, which is 'good industry practice'). The mandatory requirements use the word 'must'; the good industry practice requirements use the word 'should'.</p> <p>There is one obligation to notify DRE (see #13).</p> <p>The 16 requirements are, in summary, to:</p> <ol style="list-style-type: none"> <li>1. Have a Fracture Stimulation Management Plan (FSMP) in place</li> <li>2. Consult with Stakeholders</li> <li>3. Design fracture stimulation activity to avoid impacts on water resources, contain impacts in target areas and minimise chemical use</li> <li>4. Include a risk assessment in the FSMP</li> <li>5. Have a Safety Management Plan (not in FSMP)</li> <li>6. Include required information about chemicals to be used, in the FSMP [This is also where reference to BTEX compounds being banned in NSW is made. I am still not clear on the legislative underpinning of this ban, except as a condition of a PT.]</li> <li>7. Include water risk assessment, with specified inclusions, in the FSMP</li> <li>8. Include information on how water flow back will be managed, in the FSMP</li> <li>9. Include in the FSMP whether the fracture stimulation is adjacent to a mining lease, and whether there is a cooperation agreement in respect of potential impacts</li> <li>10. Include in the FSMP details of the specified monitoring required</li> <li>11. Prepare an Emergency Plan (not in FSMP) for the fracture stimulation activity</li> <li>12. Prepare a separate (not in FSMP) Environmental Incident Response Plan, and test it before commencing fracture stimulation</li> <li>13. Lodge a <b>NOTICE</b> of Intention to Carry out Fracture Stimulation on approved form with DRE, at least 10 business days before activity commences.</li> <li>14. Submit a Fracture Stimulation Completion <b>REPORT</b> with DRE, within 30 days of cessation of activity.</li> <li>15. Maintain records of all fracture stimulation activities.</li> <li>16. Comply with <i>AS/NZS ISO 31000:2009 Risk management - Principles and guidelines</i> and the Well Integrity Code.</li> </ol>
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### WATER MANAGEMENT ACT 2000

193.		<p>There are two aspects to the Water Management Act:</p> <ol style="list-style-type: none"> <li>i. <i>accessing</i> or <i>taking</i> water, which requires a Water Access Licence</li> <li>ii. <i>using</i> water or constructing a water supply work, which requires a Water Approval.</li> </ol>
<b>34. Who approves Water Access Licence or Water Approval</b>		
194.	s389 WMA	<p>The Act provides that all consents and approvals are made by the Minister. However, the Act provides that the Minister may delegate any functions to any person.</p> <p>Each responsibility below assigned to the Minister may be delegated to someone else. It is not known if any authorities have been so delegated.</p>
195.	s71A, s71B WMA	<p>Licences and dealings do not take effect until they are registered on the Water Access Licence Register.</p>
<b>35. Water licences</b>		

<b>Does the PPL holder need a water licence?</b>		
196.	s60A, s60I WMA	<p>Taking water from a water source without a WAL is an offence.</p> <p>The Act is specific about what constitutes 'taking water' in respect of petroleum exploration:</p> <p>(1) A person who takes water in the course of carrying out a <i>mining activity</i> is taking water from a water source.</p> <p>(2) ... A person takes water in the course of carrying out a <i>mining activity</i> if ... water is removed or diverted from a water source (whether or not water is returned to that water source) or water is re-located from one part of an aquifer to another part of an aquifer.</p> <p>(3) To avoid doubt, a person who takes water in the course of carrying out a <i>mining activity</i> under (2) is required to hold an access licence authorising the taking of that water.</p> <p><b>Mining activity</b> includes mining.</p> <p><b>Mining</b> means the winning or removal of materials by methods such as ... drilling ... for the purpose of obtaining ... petroleum, and includes: (a) the construction, commissioning, operation and decommissioning of associated works, and (b) the stockpiling, processing, treatment and transportation of materials extracted, and (c) the rehabilitation of land affected by mining.</p> <p><i>So it covers PP.</i></p>
197.		<p><i>Companies may already own water licences under the Water Act 1912. These are being converted into WALs under the WMA, as per a process described at <a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx">http://www.water.nsw.gov.au/Water-licensing/About-licences/Licence-conversion/default.aspx</a>.</i></p>
198.		<p>If the PPL holder has no WAL, or additional water is required outside an existing licence, then a WAL is required. If the water required is NOT in an area that is the subject of a Water Sharing Plan, then the licence is governed by the Water Act 1912.</p> <p>If the water IS in an area that is the subject of a Water Sharing Plan, the licence is applied for under the WMA. The following details the licence provisions of the Water Management Act. The Water Act has not been further examined.</p>
199.	s61(1)(b), (c), s65 WMA	<p>NOW's website indicates that 'Generally, new water access licences for commercial purposes (irrigation, industry and mining) with a share of the available water are no longer being granted. If you want to obtain a permanent share of water you will have to purchase an existing licence on the water market' (<a href="http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence">http://www.water.nsw.gov.au/Water-licensing/About-licences/Water-access-licences/New-water-access-licence</a>).</p> <p>The Act specifies that the only licences which can be applied for are:</p> <ul style="list-style-type: none"> <li>• zero share WALs, which enable one to 'have a water allocation account and to buy or transfer allocation water on an annual basis or share component from another licence holder' (ibid) but does not give any allocation to water of itself. There are provision in the WMA governing 'water dealing', but these are not discussed further here.</li> <li>• a WAL following a controlled allocation order, under which 'the NSW Government may make licences available in a specific water source through a tender, auction or other means' (ibid). This process is not discussed further here.</li> </ul> <p>(There is also a specific purpose WAL, but its purposes do not include mining: s61(1)(a).)</p> <p><i>The consequence of these provisions is that, if a PPL holder doesn't already have a water licence, they will need to apply for a zero share WAL, and then source a supply from another WAL holder through a water 'dealing', and apply for that water allocation to be re-assigned to the PPL holder's own WAL.</i></p> <p><i>Note that a separate WAL is required for each individual source of water.</i></p> <p><i>The Aquifer Interference Policy, in para 2.1, lists a number of matters which a licence holder needs to take into account when determining the type and number of WALs they are likely to require. It is clear that the onus is on the taker of the water to be sure they can fully account for all water they intend to take.</i></p>
<b>Application process for a (zero-share) WAL</b>		
200.	s61 WMA	Applications are made to the Minister.
201.	cl9, WM(G)Reg	An application must be in the approved form, signed and accompanied by relevant fee.
<b>Requirements for review by Minister before approval of WAL</b>		
202.	s63(2) WMA	<p>The Minister has to be satisfied that the licence is within the 3 categories mentioned above (ie as per s61(1), row 199), and that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to any water source as a consequence of water being taken' from it'.</p> <p><i>Note that, for a zero-share WAL, no harm can occur, as no water is allocated to be taken.</i></p>
203.	s63(4) WMA	<p>An access licence must specify:</p> <p>(a) in relation to its share component, the water management area or water source to which it relates;</p> <p>(b) in relation to its extraction component, the times, rates or circumstances in which, and the areas or locations from which, water may be taken under the licence.</p> <p><i>Note that, for a zero-share WAL, this information will be minimal.</i></p>
204.	s57 WMA, Regs 4 & 6, WM(G)Reg	There are 11 categories of access licence in the Act, one of which is an 'aquifer access licence'. Further categories are specified in the Regs, including 'aquifer (general security) access licence' and 'aquifer (higher security) access licence. Some licences have greater priority over others, for the purpose of diminishing water allocations, as specified in this section and the regulations. Aquifer access licences are not singled out for priority.
<b>Conditions</b>		
205.	s66(1) WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.
206.	s67 WMA	Additional discretionary conditions can be imposed after the WAL is granted, but only if the Minister has notified the WAL holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.
207.	s78 WMA	The Minister may suspend or cancel an access licence for non-compliance with conditions, as well as other

		specified grounds.
<b>36. Dealing' in (trading) water allocations under WALs</b>		
208.		There are a number of provisions on water 'dealing'. The main ones are:
<b>Short term: Assigning a water allocation: process</b>		
209.	s71T, s71L, s71Y WMA	Water <u>allocations</u> may be assigned from one WAL to another. Both licence holders must apply to the Minister for consent. This only applies in respect of a specific allocation of a set amount of water, ie over the short term. Application is made to the Minister in the approved form, and with the required fee.
<b>Short term: Assigning a water allocation: review by Minister</b>		
210.	s71YWMA  s5(8) WMA  ALDP Order 2002	Minister may grant consent only if the dealing complies with s 71Y, which requires the application for Minister's consent to be dealt with in accordance with: (a) the water management principles, and (b) the access licence dealing principles, and (c) the access licence dealing rules established by any relevant management plan. The <i>water management principles</i> are extensive. A particular principle related to aquifer interference activities is that: (a) the carrying out of aquifer interference activities must avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land must be rehabilitated, and (b) the impacts of the carrying out of aquifer interference activities on other water users must be avoided or minimised. The <i>access licence dealing principles</i> are as set out by order published on the NSW legislation website (s71Z(1)). There are a variety of orders in place, and not all have been reviewed. However Access Licence Dealing Principles Order 2002 does specify a series of general principles, and principles for specific types of access dealings, including dealings under s71G (which has now been renumbered as s71T). The general principles relate to impacts on water sources, on indigenous, cultural, heritage or spiritual matters and on water users, and on maximizing social and economic benefits. The specific principles include, for example, prohibition on the dealing if there is no satisfactory measurement of the water extraction; or if the water sources in the WAL are different; or if relevant water management plans don't have provisions regarding water protection.  For longer term 'dealings', either a 'term transfer' is required, or the transfer (usually through purchase) of an actual WAL or share of a WAL.
<b>Long term: Assigning a term transfer: process</b>		
211.	s71N WMA	All entitlements under a WAL may be transferred for a specified term, provided it longer than 6 months. Usually this would involve consideration (eg, a 'rental-type' payment). The Act does not require Minister's consent for a term transfer. Provided the term transfer is registered, it is complete. [The effect is like a lease. The owner does not change but the 'lessee' is responsible for the asset and all outgoings.]
<b>Long term: Transferring a WAL: process</b>		
212.	s71M WMA	A WAL may be transferred fully to another person. Usually this would involve consideration (eg a sale). The Act does not require Minister's consent for a WAL transfer. Provided the transfer is registered, it is complete.
<b>37. Water use approvals</b>		
213.	s89(1), s90, s91, s91A WMA	A water use approval confers a right to use water for a particular purpose at a particular location. Using water without an approval is an offence. Approvals are divided into 2 categories, each with specific kinds: <b>Water management work    Activity</b> Water supply work            Controlled activity Drainage work                Aquifer interference Flood work  <b>Note</b> that s89J(1)(g) EPAA states that a water approval is NOT required for SSD which obtains DC 'other than an aquifer interference approval'. <i>As most CSG activity potentially involves aquifer interference, these provisions still apply.</i>
214.	Dictionary, WMA; cl22, WM(G)Reg	<i>Aquifer interference activity</i> means an activity involving any of: (a) the penetration of an aquifer, (b) the interference with water in an aquifer, (c) the obstruction of the flow of water in an aquifer, (d) the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations, (the regulations prescribe sand extraction and road base material extraction) (e) the disposal of water taken from an aquifer as referred to in (d).  <i>Aquifer</i> means a 'geological structure or formation, or an artificial landfill, that is permeated with water or is capable of being permeated with water'.
215.	s91(3) WMA	An aquifer interference approval confers a right to carry out specified aquifer interference activities at a specified location, or in a specified area, in the course of carrying out specified activities.
216.	s91F, s91G WMA  s91A(1) WMA	Carrying out an aquifer interference activity without an aquifer interference approval is an offence, as is contravening a term of the approval.  The Regulations enable aquifer interference approval holders to engage in activities outside those specified in their approval, and which would otherwise be an offence, if they are in connection with mining, and the water is used in accordance with the approval.

	Regs 33, 35 WM(G)Reg	Hence, they do not need, for example, to get a <i>water supply work approval</i> in relation to the construction or use of a water management work.
<b>Application process</b>		
217.	s92 WMA	Any person may apply for an approval.
218.	cl23, WM(G)Reg	An application must be in the approved form, and if required by the Minister, include an assessment of the likely impact of the activity and the fee.
219.	s94 WMA	If the Minister receives notice from the PAC that it is conducting a review of the application under the EPAA, the Minister must defer a decision on the approval until the PAC report is received.
<b>Requirements for review by Minister before approval</b>		
220.	s95, s96 WMA cl26, WMA	The Minister may grant an approval after considering the application and 'all matters relevant to it'. Approval cannot be granted 'in contravention of the provisions of any relevant management plan'. The Minister must take into account 'such matters as are prescribed by the regulations, and such other matters as the Minister considers to be relevant'. The Regs state that the Minister must consider 'whether the amount of water taken in the course of carrying out the aquifer interference activity to which the approval relates will exceed the total extraction limit for the aquifer set out in any relevant management plan'.
221.	s97(6) WMA	The Minister cannot grant an aquifer interference approval unless satisfied that 'adequate arrangements are in force to ensure that no more than minimal harm will be done to the aquifer, or its dependent ecosystems, as a consequence of its being interfered with in the course of the activities to which the approval relates'.
<b>Conditions</b>		
222.	s100 WMA	The Minister may impose conditions, which must include those required by the Act or a management plan (mandatory conditions), and may include other (discretionary) conditions, including ones relating to the 'protection of the environment', if the Minister thinks fit.
223.	s105 WMA	The Minister can set the period of the approval, but not longer than 10 years. Extensions can be applied for, and must be granted unless the conditions have been breached or the relevant water management plan or the regulations provide for the request to be assessed as a new application.
224.	s102 WMA	Additional discretionary conditions can be imposed after the approval is granted, but only if the Minister has notified the approval holder, given them reasonable opportunity to make submissions, and taken the submissions into consideration.
225.	s109 WMA	The Minister may suspend or cancel an approval for non-compliance with conditions, as well as other specified grounds.
226.	s324 WMA	Even if there is a water approval, the Minister may temporarily prohibit or restrict the taking of water from an aquifer, or any other aquifer above, below or adjacent to it, for a specified period, if satisfied that it is necessary: (a) to maintain or protect water levels, or (b) to maintain, protect or improve the quality of water, or (c) to prevent land subsidence or compaction, or (d) to protect groundwater-dependent ecosystems, or (e) to maintain pressure, or to ensure pressure recovery.
227.	s328 WMA	The Minister can order that an aquifer interference activity be stopped, or carried out only as specified, if in the Minister's opinion, it is being carried out in contravention of the Act.
228.	s330 WMA	The Minister can temporarily prohibit or restrict the carrying out of an aquifer interference activity if satisfied the public interest requires it.
229.	s333 WMA	If the Minister is satisfied an aquifer interference activity is having an adverse effect on a water source or waterfront land, he/she can direct that a person take action to prevent, minimise or mitigate that effect.
230.	s345 WMA	It is an offence to intentionally or negligently harm an aquifer, but it is a defence to establish that the conduct that harmed the aquifer or waterfront land was essential for carrying out an activity in accordance with a DC under the EPAA (i.e. see headings 2-4 above).

## PROTECTION OF ENVIRONMENT OPERATIONS ACT 1997

231.	s6(1) PEOA	The EPA is the regulatory authority for this Act.
<b>38. Does the PPL holder need an EPL?</b>		
232.	s49 PEOA s169	Carrying out a scheduled activity without an EPL is an offence. Max penalty: Corporation: \$1m plus \$120,000 a day; Individual: \$250,000 plus \$60,000 a day. A director of a corporation may also be personally liable if a scheduled activity is carried out by a corporation without an EPL.
233.	s284 PEOA	<i>Note:</i> There is provision for the EPA to <i>exempt</i> a person or class of persons from any provision of the Act, in an emergency; or where the EPA believes it is not practicable to comply, the activity won't have any significant adverse effect on public health, property or the environment, and the EPA Board approves. Exemptions take effect when published in the Gazette (except for emergencies). This power is not further examined in this report.
234.	s5, and Schedule 1, 9A PEOA	Scheduled activities require an EPL. Scheduled activities include the following: <b>CSG assessment/production</b> , meaning: (a) prospecting for CSG for which a PEL, PAL or PPL is required under the POA, if that prospecting involves the extraction of groundwater, or (b) the commercial production of CSG for which a PAL or PPL is required under the POA. The effect of the above is that any CSG activity which requires a PPL must also obtain an EPL.
<b>39. EPL Application Process</b>		
235.	s53, s60	Application is made to EPA on form approved by EPA, with information required by EPA, and with fee prescribed

	PEOA  s57 PEOA & cl9 & Schedule 1, PEOGReg	by regulations. EPA can request further information at its discretion.  The fee prescribed for CSG production varies according to production levels, but is between 65 units and 660 units. 1 unit = \$113.
<b>40. EPL Application Review and Decision</b>		
236.	s55 PEOA	EPA can grant or reject application, but must give notice and opportunity to applicant to respond if it intends to refuse application. <b>HOWEVER:</b> s(1)(e) EPAA states that an EPL <b>cannot be refused</b> if it is necessary for carrying out SSD that is authorised by a DC, and must be substantially consistent with the DC.
237.	s45 PEOA	In exercising its licensing functions, the EPA must consider: (a) any Protection of the Environment Policies (PEPs)(PEPs are drafted by the EPA, and there must be a public consultation component; they are approved by the Governor and must be published in the Gazette (see ss9-41 PEOA); there is no reference on the EPA page to any existing PEPs), (b) the EPA's objectives as per s6 of Protection of the Environment Administration Act 1991 (c) the pollution caused or likely to be caused by the activity and its likely impact on the environment, (d) the practical measures that could be taken: (i) to prevent, control, abate or mitigate that pollution, and (ii) to protect the environment from harm, (e) any relevant green offset scheme, green offset works or tradeable emission scheme, (f) whether the person concerned is a fit and proper person (see next row), (f1) in relation to an activity that causes, is likely to cause or has caused water pollution: (i) the environmental values of water affected by the activity or work, and (ii) the practical measures that could be taken to restore or maintain those environmental values, ... (h) any documents accompanying the licence application, (i) any relevant EIS, or other statement of environmental effects, prepared or obtained by applicant under EPAA (see row 23), (j) any relevant SIS prepared or obtained by the applicant under the TCSA (see row 265) (k) any waste strategy in force under the Waste Avoidance and Resource Recovery Act 2001, (l) any <i>public submission</i> received by the EPA under the PEOA, or made under the EPAA and received by the EPA.
238.	s83 PEOA	There are 15 matters specified that <i>may</i> be taken into account when determining whether an applicant is a fit and proper person, but none are mandatory. They include the applicant's previous history of compliance with the PEOA and 'other relevant legislation;', their 'character, honesty and integrity', and their financial capacity and standing. 'Other relevant legislation' is defined in cl52 of the PEOGReg and includes the Clean Air Act, Noise Control Act, Pollution Control Act, etc.
<b>41. Conditions and related offences</b>		
239.	s63 PEOA	An EPL can be subject to conditions, or issued unconditionally.
240.	s64 PEOA	Failing to comply with an addition is an offence. Penalties same as row 232.
241.	Part 3.5, ss65-76 PEOA	The Act contains 11 sections detailing examples of conditions that <b>may</b> be applied to licences; but none of them are mandatory. The examples cover such areas as monitoring & information; environmental audits; pollution studies; economic measure schemes (with more detail in Part 9.3 & cl104 PEOGReg); financial assurances (with more detail in Part 9.4, and cl105 PEOGReg: see next row); remediation; insurance; contingencies; and waste.
242.	Part 9.4, ss296-307 PEOA	<b>Financial assurances:</b> Part 9.4 has more specific requirements about conditions related to financial assurances. The main provisions are that the EPA is only allowed to impose a financial assurance condition if it is satisfied that the condition is justified; and the amount of the financial assurance required cannot exceed the amount the EPA thinks would be necessary to carry out the work the financial assurance is intended to cover.
<b>Pollution incident response management plan</b>		
243.	s153A PEOA, cl98C, cl98D, cl98E PEOGReg	The Act makes it an offence for an EPL holder not to prepare a 'pollution incident response management plan'. Penalties same as row 232. It is also an offence, with same penalties, not to keep the plan at the relevant activity location, not to test the plan, and not implement it if an incident occurs. The plan must include the matters specified in the PEOGReg, which include information on hazard description, likelihood, early warning to people in vicinity, management, responsible officers, and so on. The parts of the plan relating to early warning for people in vicinity and contact details for responsible officers must be publicised on the EPL holder's website. The plan testing must be done at least every 12 months.
<b>Mandatory environmental audit</b>		
244.	s174 PEOA  s180-182 PEOA	The Act enables the EPA to include a condition requiring a mandatory environmental audit, but only if the EPA reasonably believes that the EPL holder has <i>previously</i> contravened the Act or EPL conditions, and that the contravention has caused harm to the environment. (Note: there is provision for 'voluntary environmental audits' in the Act. These are given protected status, and cannot be inspected by the EPA – but only in the particular circumstances specified in the Act.)
<b>42. Public justification of EPL grant or refusal</b>		
245.	s61 PEOA & cl49 PEOGReg	<b>Any</b> person can request reasons for grant or refusal from EPA. The EPA must respond, and must include: (a) the significant environmental or other issues that it took into account in making its decision, and (b) any significant environmental outcomes, standards or requirements (if relevant) that it considered applicable to the activity and took into account in making its decision.

<b>43. Variation of EPL</b>		
246.	s58 PEOA	EPA can vary a licence (including its conditions) at any time. If the variation authorises a significant increase in the environmental impact of the activity, and it hasn't been the subject of public consultation under EPAA, then public submissions must be invited and considered before the variation is made. The condition relating to mandatory environmental audit (see row 244) could be included under this provision.
<b>44. Suspension or revocation of EPL</b>		
247.	s79 PEOA	The EPA can suspend or revoke an EPL for a number of specified reasons, including contravening a condition, provided it has first given the EPL holder notice and taken into account any submissions.
<b>45. Term of EPL</b>		
248.	s78 PEOA	EPLs have no fixed end point. However, they must be reviewed at least every 5 years; and there must be a public notice of the review.
<b>46. Appeal on EPL decisions</b>		
249.	s287 PEOA	An EPL applicant or holder can appeal to the Land & Environment Court any EPA decision to refuse, vary, suspend or revoke an EPL, or to impose conditions.
<b>47. Monitoring and enforcement by EPA</b>		
250.	Chapter 4, PEOA	There is a wide variety of powers in the Act to enable the EPA to enforce EPL conditions. These include: clean-up notices; prevention notices; prohibition notices; and compliance cost notices.
251.	Chapter 5, PEOA	There is a wide variety of offences specified in the Act, relating to waste, water, air, noise and land pollution, littering, and notification of pollution incidents. These are offences whether committed by people with an EPL or not.
252.	Chapter 7, PEOA	There is a wide variety of enforcement powers to enable EPA officers to investigate potential breaches.
253.	Chapter 8, s252 PEOA	Chapter 8 of the Act contains provisions relating to criminal proceedings. However, part 8.4 covers civil proceedings also. Any person may bring proceedings in the Land and Environment Court for an order to remedy or restrain a breach of the Act or the regulations.
<b>48. Public register of EPLs</b>		
254.	s308 PEOA, cl136 PEOGReg	The EPA is required to keep a public register of licence applications, decisions and variations, among other things.

## WILDERNESS ACT 1987

This Act has no direct relevance to CSG activities.

It sets out the process by which areas of wilderness are nominated, assessed, identified and declared.

There are no provisions in the Act of itself that apply directly to CSG activities.

Its application is only by way of reference in other Acts, in that whether the land on which CSG activities are to occur is already a wilderness area (as defined in the Wilderness Act) may be relevant to a decision under the EPAA or POA.

## NATIONAL PARKS AND WILDLIFE ACT 1974

255.		This Act is primarily to provide for the establishment, preservation and management of national parks and historic sites, state conservation areas, regional parks, nature reserves, karst conservation reserves, wild rivers, Aboriginal areas and wildlife refuges, and to protect certain fauna, native plants and Aboriginal objects. Plans of management must be established for each form of land reservation (ss71BO-82). Conservation agreements may also be established over land with the agreement of the land-owner (s69B-69KA). The Act contains a number of offences which apply to the public at large. Petroleum exploration is not permitted in most areas protected by the Act, but is permitted in state conservation areas.
<b>49. Mining banned in national parks, historic sites, nature reserves, karst conservation reserves and Aboriginal areas</b>		
256.	s41, s54, s58O, s64 NPWA	It is unlawful to mine for minerals in a national park, historic site, nature reserve, karst conservation reserve or Aboriginal area, except as expressly authorised by an Act of Parliament. 'Minerals' includes 'coal, shale or <b>petroleum</b> ' (s5(1) NPWA). The POA specifically does <b>not apply</b> to or in respect of lands within these areas. [Note: 'existing interests' (ie existing at the time land is reserved under the Act) are exempt from this provision.]
<b>50. Mining permitted in state conservation areas</b>		
257.	s47J NPWA	For this section only, <b>mining interest</b> includes: any lease under the POA ( <i>note use of term 'lease': production under the POA is governed by 'lease'</i> ). The POA specifically <b>applies</b> at any time to lands within a state conservation area. However, a mining interest cannot be granted within a state conservation area without the concurrence in writing of the Minister. Nothing in the provisions on state conservation areas affects the right, title or interest of any person in respect of minerals in any such lands. <i>Note s47MA</i> : Land that is designated a state conservation area, and which is the subject of a POA lease or licence, must <b>not</b> be reserved as a national park or nature reserve during the term of that authority, lease, licence or permit. <i>Note also s30D</i> : Land cannot be reserved as a state conservation area without the concurrence of the Minister administering the Mining Act 1992 (no mention of POA). <i>And note s47M</i> : State conservation areas must be reviewed every 5 years and reasons given as to why they should or should not be reserved as national parks or nature reserves.

51. Offence of damaging Aboriginal objects or places and available defences		
258.	s86, s87 NPWA, cl80A NPWReg	It is an offence to damage Aboriginal objects or places; but there are a number of defences. Not knowing an object or place was not Aboriginal is not in itself a defence. There is an obligation to undertake due diligence and/or obtain an Aboriginal heritage impact permit to have a defence in such circumstances. <i>This section could have direct relevance to CSG activities, and CSG companies would need to take the potential to contravene these provisions seriously, and ensure they had a defence in place.</i> <i>It seems likely that, once a company had moved to production, they would be expected to know the likelihood of the area being an Aboriginal place or having Aboriginal objects.</i>
259.	s87(2), (3) NPWA & cl 80A NPWReg	One defence, if the harm is to an Aboriginal object (and the harmer did not know it was an Aboriginal object), is if the defendant can demonstrate that <b>due diligence</b> was exercised to determine whether an Aboriginal object would be harmed. The Act specifies that compliance with a code specified by the Regulations can be taken as due diligence. The NPWReg lists 6 codes. The most applicable to CSG is the <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW</i> (13 Sept 2010). There is also a Minerals Industry code prepared by the Minerals Council, the <i>NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects</i> but it appears to be related to minerals, not petroleum (though in general it looks like it would be applicable to petroleum/CSG, and is referred to in ESG2).
260.	s90, 90A, 90J, 90K NPWA, cl80C, cl80D NPWReg	It is also a defence if the harm was carried out under an <b>Aboriginal heritage impact permit</b> . Applications for impact permits are made to the DG ( <i>is that now CE, OEH?</i> ). It is a requirement to engage in an Aboriginal community consultation process <i>before</i> making an application for a permit. Extensive requirements for this process are set out in the NPWReg. It is also a requirement that the application be accompanied by a cultural heritage assessment report, with contents as specified in the NPWReg. There are a number of matters to be taken into account when determining whether to grant the permit, including any public submissions made under the EPAA. The permit can include conditions, and contravening the conditions is an offence. [OEH also advises that, if it is intended to undertake activities to determine if an Aboriginal object will be harmed by a planned activity, and it is not practicable to apply a Code of Practice, a permit should be obtained for the initial investigation and, if required, a further permit for later activities: see <i>Applying for an Aboriginal Heritage Impact Permit: Guide for Applicants</i> : <a href="http://www.environment.nsw.gov.au/licences/applyforahip.htm">http://www.environment.nsw.gov.au/licences/applyforahip.htm</a> .] <b>Note:</b> s89J(1)(d) EPAA states that an Aboriginal heritage impact permit is NOT required for SSD that is authorised by a DC. However, permits are not needed of themselves. They form a defence to the offence of harming an Aboriginal object. So it is not clear what the effect of this provision in the EPAA is.
261.	cl80B, NPWReg	It is also a defence if the harm was caused by: <ul style="list-style-type: none"> <li>• mining exploration work on land that has been disturbed of the following kind: costeaning, bulk sampling or drilling (<i>this probably relates more to minerals than petroleum</i>); or</li> <li>• work of the following kind: geological mapping; surface geophysical surveys (including gravity surveys, radiometric surveys, magnetic surveys and electrical surveys), but not including seismic surveys; sub-surface geophysical surveys that involve downhole logging; sampling and coring using hand-held equipment, except where carried out as part of an archaeological investigation; or</li> <li>• work of the following kind on land that has been disturbed: seismic surveying; the construction and maintenance of groundwater monitoring bores.</li> </ul> <i>Note:</i> 'disturbed' is defined in cl80B(4).
52. Other offences		
262.	Throughout NPWA & NPWReg	There are a variety of offences under the NPWA and the NPWReg. These are applicable to the general public, which would include CSG companies. Orders can be made to remediate any damage arising out of the commission of offences under the NPWA.
53. Licences		
263.	Part 9 NPWA	The DG has authority to issue licences for a variety of purposes that might result in harm. Of possible relevance to a CSG activity in a state conservation reserve is a general licence which would permit harm 'to any protected fauna (other than a threatened species, population or ecological community) in the course of carrying out specified development or specified activities'. It seems likely these issues would be considered in the environmental assessment required to grant a DC under the EPAA and a PPL under the POA; however, it is feasible that a licence might be required if harm to protected, but not threatened, species was envisaged by CSG production activity that was otherwise approved by the DG during the PPL licence process. (For more on licences to harm <i>threatened</i> species, etc, see the TSCA below.)

## THREATENED SPECIES CONSERVATION ACT 1995

264.	TSCA Parts 1-5	The early parts of the Act provides for the identification, and classification, of species, populations and ecological communities , and for the listing of: <ul style="list-style-type: none"> <li>• endangered species, endangered populations and ecological communities and species that are presumed to be extinct,</li> <li>• critically endangered species and ecological communities,</li> <li>• vulnerable species and vulnerable ecological communities, and</li> <li>• key threatening processes.</li> </ul> They also provide for the identification and declaration of critical habitat; the preparation of recovery plans for threatened species; and the preparation of threat abatement plans to manage threatening processes. They form the framework under which the impact of CSG on threatened species can be assessed under Part 5 of the EPAA (see Report 1).
54. Licences		
265.	s91-94 TSCA	Part 6 gives the DG authority to grant a licence authorising a person to take action likely to result in: harm to any threatened animal; the picking of a threatened plant; damage to critical habitat; or damage to habitat of a

		<p>threatened species. This may be of relevance to a CSG production activity which obtains a DC and a PPL but is nevertheless going to result in harm to threatened species. The procedure for applying for a licence and the matters to be taken into account when assessing it are provided for in the Act. If the action proposed is on land that is <i>critical habitat</i>, the application must be accompanied by an SIS. The format of the SIS is specified in ss 109-111.</p>
<b>55. Biobanking</b>		
266.	s127D(7), s127F(1)(e), s127S, s127U, s127ZE	<p>Part 7A provides for the establishment of a biodiversity banking and offsets scheme (biobank scheme), which is a market-based scheme that enables 'biodiversity credits' to be generated by landowners who commit to enhance and protect biodiversity values on their land through a biobanking agreement. These credits can then be sold, generating funds for the management of the site. How it works is not explored further here. However, it is noted that the Minister administering the POA must be consulted before any biobank scheme is created; and if there is a PPL over the land, the PPL holder must consent before the biobank scheme is created (as must the landowner). The Act specifically states that nothing in the provisions related to biobanking prevents the grant of a PT in respect of a biobank site; or prevents the carrying out on a biobank site of any activity authorised by a PT. If a PT is granted over a biobank site, the Minister can terminate a biobanking agreement without the consent of the biobank site owner, if the Minister is of the opinion that the biodiversity will be adversely affected. However, the Minister may direct the titleholder to retire biodiversity credits. Not complying with a direction is an offence. There are also compensation provisions to a landowner if biobanking credits are cancelled by the DG because of activities authorised by a PT.</p>

## HERITAGE ACT 1977

267.		<p>While, on the face of it, this Act would apply to CSG development if it were on heritage-listed land, the three main provisions of the Act do not apply to SSD that has DC, so they do not apply to PP.</p>
268.	s57 HA, s89J(1)(c) EPAA	<p><b>Development on heritage-listed land:</b> The HA specifies that the Heritage Council must approve any development in respect of any place, building, work, relic, moveable object, precinct, or land that is the subject of an interim heritage order (IHO) made by the Heritage Minister (but not an IHO made by a council) or a listing on the State Heritage Register (SHR). (Note, though, that Minister on advice of Heritage Council can grant an exemption to this prohibition.) Any activity which might damage or destroy a tree or other vegetation on land relating to a heritage item also requires approval. <b>HOWEVER</b>, the EPAA specifically excludes SSDs from the requirement to obtain approval under the HA. So this provision does not apply to PP.</p>
269.	s139 HA, s89J(1)(c) EPAA	<p><b>Excavation permits:</b> The HA states that a person must not disturb or excavate any land knowing or suspecting that it will result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit. Relic means any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, AND (b) is of State or local heritage significance. <b>HOWEVER</b>, the EPAA specifically excludes SSDs from the requirement to obtain approval under the HA. So this provision does not apply to PP.</p>
270.	s79C HA, s89J(2) EPAA	<p><b>Stop work orders:</b> The Minister or Heritage Council Chairperson also has authority to make a stop work order if of the opinion that a building, work, relic, moveable object or place the subject of an interim heritage order or listing on the State Heritage Register is being or is about to be harmed. <b>HOWEVER</b>, the EPAA specifically provides that this provision 'does not apply to prevent or interfere with the carrying out of SSD that is authorised by a DC'. So stop work order provisions cannot be made in respect of PP activity that has DC.</p>