



Regulation of the coal seam gas industry in NSW

by Lenny Roth

1. Introduction

In recent months there has been much debate about the growing coal seam gas industry in NSW. While the industry is seen as having significant economic potential, and is said to be capable of providing a cost-effective energy supply with lower greenhouse gas emissions than coal, there are concerns that the extraction of this resource will impact adversely on the environment and will threaten some of the State's prime agricultural land.¹

The main environmental concern is the potential impact of coal seam gas activities on surface and groundwater systems.² This issue has been raised by various stakeholders and it has also been recognised by the National Water Commission.³ One of the risks is that water supplies could be contaminated by chemicals used in a process known as hydraulic fracturing ('fracking'), which is sometimes used to enhance the flow of gas.⁴ The industry argues, however, that 'the risk of groundwater contamination is minimal'.⁵

During the recent debate, questions have been raised about the way in which the coal seam gas industry is regulated. In a [letter](#) to Premier

Keneally dated 12 November 2010, Cate Faehrmann MLC outlined three areas of concern.⁶ The first was that exploration activities did not appear to be subject to a rigorous environmental assessment, and that the Department of Environment, Climate Change and Water was not involved in the process. The other concerns were that 'there is insufficient transparency of licensing approvals for exploration drilling', and that 'there appears to be no strategic assessment of the cumulative environmental implications of the coal seam gas activities in NSW'.

On 6 December 2010, it was [reported](#) that Federal MP, Tony Windsor, would attempt to use his balance of power position to introduce changes at the federal level that would require region-wide water assessments to be carried out before new mining proceeds.⁷

On 19 December 2010, the NSW Government [announced](#) that it:

will introduce tough new rules for coal seam gas exploration licences – including rigorous community consultation and tighter environmental controls during the approval process.⁸

This e-brief provides an outline of the current regulatory framework for the

exploration and production of coal seam gas in NSW. The proposed changes in NSW are also described in more detail. The final section refers very briefly to the regulation of the industry in Queensland.

2. The coal seam gas industry

Coal seam gas (CSG), which is also known as coal seam methane or coal bed methane, is a naturally occurring methane gas in coal seams.⁹ It is similar to conventional natural gas and can be used for the same purposes: for example, power generation, or fuelling natural gas appliances.

While CSG has been produced in the United States since the 1970s, it is a relatively new industry in Australia. Production commenced in the Bowen Basin in Queensland in 1996. The growth of the CSG industry since then is described in the 2010 [Australian Energy Resource Assessment](#):

Australia's annual CSG production has increased from 1 PJ [Petajoule] in 1996 to 139 PJ in 2008, around 7 per cent of Australia's total gas production. In the five years to 2008 production increased by 32 per cent per year. Of the 2008 production of CSG, Queensland produced 133.2 PJ (or 96 per cent) from the Bowen (93 PJ) and Surat (40 PJ) basins. In New South Wales, 5.3 PJ was produced from the Sydney Basin.

In 2007-08, CSG accounted for around 10 per cent of total gas consumption in Australia and 80 per cent in Queensland. The rapid growth of the CSG industry has been underpinned by the strong demand growth in the Eastern gas market and the recent recognition of the large size of the [CSG] resource. The strong growth in CSG production reflects the Queensland Government's energy and greenhouse gas reduction

policies, in particular the requirement that 13 per cent of grid connected power generation in the State be gas fired...Recent improvements in extraction technology have also supported the [industry's] growth...¹⁰

The main CSG production project in NSW is the [Camden Gas Project](#) in the Southern Coalfields of the Sydney Basin. This AGL Energy Ltd project has been producing gas since 2001 and supplies around 6 per cent of the NSW gas market. There is currently a [proposal](#) to expand this project. Some other major CSG projects in NSW that are under development include:

- The [Gloucester Gas Project](#) in the Gloucester Basin;
- The [Richmond Valley Power Station and Casino Gas Project](#) in the Clarence-Moreton Basin;
- The [Narrabri Coal Seam Gas Project](#) in the Gunnedah Basin.

A number of other exploration activities are being undertaken in these regions. In addition, as recently reported, a company is proposing to explore for CSG in St Peters, Sydney.¹¹

3. Overview of regulation

CSG is a type of petroleum and is regulated in the same way as other onshore petroleum activity. The key elements of this regulation include:

- Exploration and production of petroleum can only take place in accordance with a petroleum title issued under the *Petroleum (Onshore) Act 1991* (NSW). The NSW Minister for Primary Industries is responsible for issuing petroleum titles.

- Most petroleum activities also need development approval, or approval from the NSW Department of Industry and Investment, before being carried out. As part of the approval process, the proposed activity will need to be subject to an environmental assessment in the form specified in the *Environmental Planning and Assessment Act 1979* (NSW).
- Petroleum projects may also need to be approved under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*;
- Approvals or licences may also be required under other State legislation such as the *Protection of the Environment Operations Act 1997*, or the *Water Management Act 2000*.

4. Petroleum (Onshore) Act 1991

Exploration for, or mining of, petroleum may only be carried out in accordance with a *petroleum title* issued under the *Petroleum (Onshore) Act 1991* (NSW).

Petroleum titles: There are three main types of petroleum titles:

- (i) Petroleum exploration licence;
- (ii) Petroleum assessment lease;
- (iii) Petroleum production lease

The holder of a *petroleum exploration licence* has the exclusive right to prospect for petroleum on the land comprised in the licence.¹²

The holder of a *petroleum assessment lease* has the exclusive right to prospect for petroleum and to assess any petroleum deposit on the land

comprised in the lease.¹³ An assessment lease:

is designed to allow retention of rights over an area in which a significant petroleum deposit has been identified, if mining the deposit is not commercially viable in the short term but there is a reasonable prospect that it will be in the longer term. The holder is allowed to continue prospecting operations and to recover petroleum in the course of assessing the viability of commercial mining.¹⁴

The holder of a *petroleum production lease* has the exclusive right to conduct petroleum mining operations on the land comprised in the lease and to construct works necessary for the full enjoyment of the lease.¹⁵

Applications for titles: Applications for petroleum titles need to be supported by plans showing the boundaries of the area to be covered by the title, by a proposed work program indicating the nature and extent of operations to be carried out, and by evidence of the applicant's financial standing.¹⁶

Determination of applications: The NSW Minister for Primary Industries is responsible for issuing petroleum titles. The Act lists a number of grounds on which an application may be refused.¹⁷ One ground is if, having regard to the nature and extent of the proposed activities, the Minister decides that in the public interest, it would be better not to grant the title or to grant someone else a title over the land.

Protection of the environment: The Act requires the Minister to have regard to certain environmental impacts before issuing a petroleum title. Specifically, section 74 of the Act states:

- (1) In deciding whether or not to grant a petroleum title, the Minister is to

take into account the need to conserve and protect:

- (a) the flora, fauna, fish, fisheries and scenic attractions, and
- (b) the features of Aboriginal, architectural, archaeological, historical or geological interest,

in or on the land over which the petroleum title is sought.

- (2) The Minister may cause such studies (including environmental impact studies) to be carried out as the Minister considers necessary to enable a decision whether or not to grant a petroleum title to be made.

In addition, section 75 states that a title may be subject to conditions relating to the conservation and protection of the matters identified in section 74. The title may also be subject to conditions relating to rehabilitation of the land that may have been damaged or adversely affected by operations.¹⁸

Production leases and development consent: If development consent is required (under the *Environmental Planning and Assessment Act 1979*) before land can be used to obtain petroleum, the Minister must not grant a petroleum production lease until the development consent is in force.¹⁹

Conditions of titles: The Minister may issue petroleum titles subject to conditions.²⁰ These conditions may include requiring certain work to be carried out by the title holder in relation to the land (during or after the term of the title) and specifying the amounts to be spent in carrying out such work. The title holder may also be required to provide security for the fulfilment of their obligations under the Act.²¹

Standard conditions of exploration licences and assessment leases require the title holder to obtain approval from the Department of

Industry and Investment before carrying out any exploration activities except for Category 1 (low intensity and reconnaissance) activities.²²

Standard conditions of petroleum production leases require the title holder to submit to the Department a petroleum operations plan prior to starting work, and to submit annual environmental management reports.²³

Statutory restrictions on titles: The Act also contains certain statutory restrictions on titles. One of these is that a title holder must not carry on any prospecting or erect any works on land which is within 200 metres of a person's principal place of residence – except with the written consent of the owner of the residence.²⁴ Another is that the holder of a production lease must not carry out mining on land which is under cultivation, except with the consent of the landholder, or with the approval of the Minister.²⁵

Access arrangements: The holder of an exploration licence, or an assessment lease, cannot carry out prospecting operations on any land otherwise than in accordance with an access arrangement agreed between the title holder and each landholder, or determined by an arbitrator.²⁶ An access arrangement may provide for a range of matters including the things that the title holder needs to do to protect the environment while carrying out prospecting operations.

Term of licence/lease: Exploration licences and assessment leases may be granted for a period of up to six years.²⁷ At the end of this period, the title holder may apply for renewal of the title, or may apply for a different type of title (e.g. a production lease). Production leases may be granted for a period of up to 21 years.²⁸

5. Environmental Planning and Assessment Act 1979 (NSW)

5.1 Overview

The NSW Department of Industry and Investment [explains](#) that:

All mining and petroleum [production] projects and most exploration activities require environmental assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act) before they can be carried out. There are three approval streams under the EP&A Act for development in NSW - these are regulated by Parts 3A, 4 and 5. Environmental planning instruments, predominately Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs)...dictate which of these three approval streams apply in any particular circumstance.²⁹

5.2 Which approval stream applies?

The Part 3A approval stream

As outlined in the [State Environmental Planning Policy \(Major Development\) 2005](#), the Part 3A approval stream in the EP&A Act applies to development for the purpose of drilling and operation of petroleum wells that:

- has a capital investment value of more than \$30 million or employs more than 100 people; or
- is in an environmentally sensitive area of State significance; or
- in the case of coal seam gas, is in one of the 16 local government areas listed in the SEPP: e.g. Camden, Newcastle City.³⁰

All projects undertaken under a petroleum production lease will involve the drilling and operation of petroleum

wells and most will also fall into one of these three categories. This means that most production projects will require approval under Part 3A.

The drilling and operation of petroleum wells can also take place under an exploration licence or assessment lease; and, in some cases, these activities will come within one of the three categories outlined above. If so, these exploration activities will also require approval under Part 3A.

The Part 4 approval stream

The Part 4 approval stream applies if the Part 3A stream does not apply and the development is only permissible with development consent.³¹ To determine whether development consent is required, it is necessary to consult the relevant environmental planning instruments (EPIs).

The most important EPI in this context is the [State Environmental Planning Policy \(Mining, Petroleum Production and Extractive Industries\) 2007](#). Importantly, clause 6(d) of this SEPP provides that development for the purpose of petroleum exploration is permissible *without* development consent. This means that Part 4 will not apply to exploration activities.

On the other hand, clause 7(2) of the SEPP provides that development for the purposes of petroleum production on certain types of land or in certain areas is only permissible with consent. Production projects that fall within these categories will therefore be assessed under Part 4. To determine whether production projects outside these categories are permissible with consent, it is necessary to consult the relevant local environmental plan (note that an LEP may prohibit petroleum production in certain zones).

The Part 5 assessment stream

Most *exploration activities* that do not need to be approved under Part 3A will still need to be approved by the Department of Industry and Investment as a condition of the petroleum title (as noted above Part 4 does not apply to exploration activities).³² As part of this approval process, the Department must comply with the environmental assessment provisions in Part 5.

5.3 Approval under Part 3A

The Minister for Planning decides whether or not to grant approval for a project to which Part 3A applies.³³ The Part 3A environmental assessment requirements are outlined below.³⁴

An environmental assessment process must be carried out but the matters to be addressed are not prescribed in legislation. Instead, the Director-General of the Department of Planning sets the environmental assessment requirements for each project.³⁵ Other public authorities, such as the Department of Environment, Climate Change and Water, and the Department of Industry and Investment, may be consulted in preparing these requirements.

The proponent is required to submit the environmental assessment (EA) to the Director-General.³⁶ If the EA meets the requirements and is accepted, the Director-General is required to exhibit the EA for a period of 30 days.³⁷ During this time any person or public authority can make submissions on the EA. The proponent of the project may be required to prepare a response to issues raised in submissions.³⁸

The Director-General must then provide the Minister with an environmental assessment report

which the Minister must consider in deciding whether to approve the project.³⁹ The report should include:

- the environmental assessment;
- any advice provided by public authorities on the project,
- any environmental assessment undertaken by the Director-General,
- any report of the Planning Assessment Commission
- a reference to the provisions of a SEPP that govern the carrying out of the project;
- any other matter that the Director-General considers appropriate.⁴⁰

An example of a CSG project approved under Part 3A is an expansion of [Stage 2](#) of the Camden Gas Project, which was approved in 2008. An [application](#) for approval of Stage 3 of the Camden Gas Project is currently subject to the Part 3A process (AGL Energy has submitted an environmental assessment).

5.4 Approval under Part 4

As noted above, petroleum *production* projects that do not require planning approval under Part 3A will need planning approval under Part 4 (unless prohibited under an LEP).

The local council will usually be the consent authority for applications made under Part 4. In determining an application, the consent authority is required to consider the likely impacts of the development including environmental impacts, and social and economic impacts in the locality.⁴¹ It must also consider the public interest.

The assessment process that must be followed under Part 4 differs according to whether or not the development is

designated development. Petroleum works fall into this category if they 'produce more than 5 petajoules per year of natural gas or methane', or if the works are located:

- within 40 metres of a natural waterbody or wetland, or
- in an area of high watertable or highly permeable soils, or
- within a drinking water catchment, or
- on a floodplain.⁴²

An application for designated development must be accompanied by an environmental impact statement (EIS).⁴³ The EIS must contain the matters set out in Schedule 2 of the regulations and the applicant must also consult with the Director-General of the Department of Planning as to the contents.⁴⁴ The application and the EIS must be publicly exhibited for a period of at least 30 days, and during this time, any person may make submissions to the consent authority.⁴⁵

If the development is not designated development, the applicant will not need to submit an EIS but will need to provide a statement of environmental effects in accordance with guidelines from the consent authority. In addition, there is no requirement for the development application to be publicly exhibited unless it is identified as *advertised development* in the regulations, in an environmental planning instrument (EPI), or in a local council's development control plan.⁴⁶

In all cases, if the development is on land that is critical habitat, or is likely to significantly affect threatened species, populations or ecological communities, or their habitats, the development application needs to be accompanied by a Species Impact Statement (SIS).⁴⁷ In addition, consent cannot be granted

for such development without the concurrence of the Director-General of the Department of Environment, Climate Change and Water.⁴⁸

It should also be noted that *SEPP (Mining, Petroleum Production and Extractive Industries) 2007* refers to a number of matters that must be considered before granting consent for development for the purposes of petroleum production.⁴⁹ In relation to the environment, clause 14(1) requires the consent authority to consider whether or not conditions should be imposed that are aimed at ensuring the development is undertaken in an environmentally responsible manner, including conditions to ensure:

- (a) that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable,
- (b) that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable.

5.5 Assessment under Part 5

As noted above, most exploration activities that are not required to be approved under Part 3A will need to be approved by the Department of Industry and Investment in accordance with the provisions in Part 5.⁵⁰ As outlined below, there are two levels of environmental assessment in Part 5.

Duty to consider environment: Section 111 requires a determining authority (in this case, the Department of Industry and Investment), in its consideration of an activity, to:

...examine and take into account to the fullest extent possible all possible

matters affecting or likely to affect the environment by reason of that activity.

Section 111 lists certain matters that must be considered as part of this requirement. In addition, clause 228 of the *EP&A Regulations 2000* contains a list of factors to be taken into account.

To enable compliance with this requirement, the Department may require the petroleum title holder to submit a Review of Environmental Factors (REF).⁵¹ For Category 2 exploration activities (e.g. non-intensive drilling), the title holder must submit a Surface Disturbance Notice (SDN) and the Department then determines whether a REF is required. For Category 3 exploration activities (e.g. intensive drilling), the title holder must submit a SDN and a REF.

The Department has issued [guidelines](#) on preparing a REF. The guidelines refer to a number of potential environmental impacts that should be considered. In relation to water, the guidelines state in part (para 4.2):

Potential impacts on both surface and groundwater, including quality and quantity, should be considered.

The Department has explained that REFs are assessed by staff in the Environmental Sustainability Unit, 'who are degree qualified environmental scientists with experience in the mining and exploration industries'.⁵² The Department publishes REFs on its website in [Notices of Determination](#).

An environmental impact statement is required for certain activities: Section 112 requires a determining authority to consider an environmental impact statement (EIS) prepared by the proponent if the activity:

is likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats.

In deciding whether the activity comes within this category, the authority must have regard to the factors outlined in clause 228 of the regulations.

A species impact statement (SIS) must also be prepared (or included in the EIS) if the activity is on land that is part of a critical habitat, or the activity is likely to significantly affect threatened species. In deciding whether an activity comes within this category, the factors listed in section 5A must be taken into account.

Requirements relating to EIS when it is required: The EIS must contain the matters specified in Schedule 2 of the regulations and in addition, the proponent of the activity must consult with the Director-General concerning the form and content of the EIS.⁵³

The EIS must be exhibited for a period of not less than 30 days and any person may make submissions to the determining authority in that time.⁵⁴ In addition to considering these submissions itself, the determining authority must forward a copy of the submissions to the Director-General of the Department of Planning.

The Director-General *may* examine the EIS and the submissions and, if so, the Director-General must forward to the determining authority a report with its findings and recommendations (and make this report public).⁵⁵ The only exception to this is if the Minister requests a review by the Planning Assessment Commission.⁵⁶

The determining authority must comply with an additional requirement in the

case of an activity on land that is part of a critical habitat, or that is likely to significantly affect threatened species, a population or ecological community. The authority is not to grant approval for such an activity without the concurrence of the Director-General of the Department of Environment, Climate Change and Water.⁵⁷

If an EIS has been prepared, the determining authority must prepare a report in relation to the activity as soon as practicable after a decision is made to approve or disapprove of the activity.⁵⁸ The Regulations outline what must be included in the report.⁵⁹

5.6 Consideration of ESD principles

The EP&A Act has several objects, one of which is to encourage ecologically sustainable development (ESD).⁶⁰ There are a number of principles of ESD including the 'precautionary principle', namely that:

...if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.⁶¹

In the application of this principle, decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- (ii) an assessment of the risk-weighted consequences of various options

Judicial decisions have held that, in determining a development application under Part 4, a consent authority must (as part of considering the public interest) have regard to the principles

of ESD in cases where issues relevant to those principles arise.⁶² The law is not so clear in relation to decisions by the Minister under Part 3A.⁶³ However, it is possible that a failure by the Minister to consider the ESD principles might result in a court declaring the Minister's decision to be void.⁶⁴ The position is also not entirely clear in relation to assessments under Part 5 of the Act although note that if an EIS is required under Part 5, the EIS needs to address the ESD principles.⁶⁵

6. Environment Protection and Biodiversity Conservation Act 1999

CSG activities will also need approval in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* if the activity is likely to have a significant impact on a matter of national environmental significance.⁶⁶ The Act lists eight such matters including nationally threatened species and ecological communities.⁶⁷

The Commonwealth Environment Minister is responsible for deciding whether or not to approve the activity. An environmental assessment must be carried out before this decision is made. However, under a [bilateral agreement](#) between NSW and the Commonwealth (permitted under the Act), the Minister may rely on an assessment carried out under Parts 3A, 4 or 5 of the NSW *Environmental Planning and Assessment Act 1979*.

In deciding whether or not to approve the activity/project, and whether any conditions should be attached to an approval, the Minister must have regard to the specific matters of national environmental significance, and to economic and social matters.⁶⁸ In considering these matters, the Minister must take into account a

number of factors including the principles of ecologically sustainable development, and any assessment report in relation to the activity.

On 22 October 2010, the Commonwealth Environment Minister [granted approval](#) under the Act for two coal seam gas projects in Queensland. These approvals were subject to over 300 conditions, including conditions to protect ground and surface water, and to protect certain threatened species and ecological communities.⁶⁹

7. Approvals under other legislation

Depending on the type of coal seam gas activity proposed, licences or approvals may also be required under other State legislation, such as:

- *Water Management Act 2000*;
- *Protection of the Environment Operations Act 1997*;
- *National Parks and Wildlife Act 1974*;
- *Heritage Act 1977*;
- *Native Vegetation Act 2003*;
- *Pipelines Act 1967*;
- *Fisheries Management Act 1994*.

However, approval of a project under Part 3A of the *EP&A Act* removes the need to obtain approvals/licences under several of these Acts.⁷⁰ In addition, if a project is approved under Part 3A, approvals/licences under certain other Acts cannot be refused, and the relevant approval must be consistent with the Part 3A approval.⁷¹

8. Proposed regulatory changes

As noted in the introduction, on 19 December 2010, the NSW Government [announced](#) that it will introduce 'tough new rules for coal seam gas exploration licences'. The Government stated that:

The new requirements will be subject to a staged implementation and will involve the Department of Environment, Climate Change and Water (DECCW), the Department of Planning (DoP) and Industry and Investment NSW (I&I)

The new requirements will include:

- Applicants will now have to submit forward work plans thoroughly detailing any expected environmental impacts. The plans will be reviewed by DECCW and DoP and made public before any drilling occurs;
- I&I will provide DECCW and DoP with the review of environmental factors, including detailed applications for any drilling or related activities such as hydraulic fracturing ('fracking') and must take their recommendations into consideration before approving any license to drill;
- All chemical additives used in the process of exploring for coal seam gas must be included as part of the review of environmental factors in title applications; and
- The following new community information and consultation conditions will be introduced, requiring licence holders to:
 - Provide detailed information about their activities to all affected councils and landholders;
 - Establish a hotline for community enquiries; and
 - Distribute I&I information on landholder rights in the process.

The Government's announcement did not state whether any legislative amendment would be required in order to implement any of these reforms.

The Government also said that it will examine banning the use of BTEX chemicals 'in situations which may pose a risk to groundwater'.⁷² However, it noted that these chemicals 'are not currently used in any hydraulic fracturing activities in NSW'.

The NSW Opposition welcomed the announcement about the reforms but [stated](#) that the Government was:

...totally silent on the major areas of concern about which routes the gas pipelines will take and what measures will be taken to protect aquifers.⁷³

For the NSW Greens, David Shoebridge MLC [said](#) that the reforms were a 'modest step forward' but that:

This package falls a long way short of giving DECCW the concurrent approval power that farmers and environmentalists have been calling for.⁷⁴

9. Regulation in Queensland

This section refers very briefly to the environmental assessment provisions that operate in Queensland, as well as to some recent regulatory reforms in that State. More information on the regulation of coal seam gas activities in Queensland can be obtained from the Department of the Environment and Resource Management's [website](#).

9.1 Environmental assessment

The Department of the Environment and Resource Management [explains](#) that, under the *Environment Protection Act 1994*, all CSG operators must obtain an Environmental Authority (EA) from the Department before operations can commence. The EA assessment process that must be followed depends on whether the activity is classified as level 1 or level 2. The

process is more comprehensive for level 1 (medium to high risk) activities.

In the case of large-scale CSG projects, a specialised Environmental Impact Statement (EIS) process may be carried out, and the EA process will only occur after the EIS is finalised.

The Department also notes that, as part of the assessment process for level 1 CSG activities, the applicant is required to submit an environmental management plan (EM Plan), which identifies the potential impacts on the environment and how these will be managed. Note also that the Department has developed a set of model environmental [conditions](#) to control level 1 CSG activities.

9.2 Recent regulatory reforms

Significant reforms were enacted in Queensland through the *Water and Other Legislation Amendment Act 2010* (Qld), which commenced on 1 December 2010. As [outlined](#) by the Department, there are two parts to the reforms. Both relate to the extraction of underground water, which is part of the process of extracting coal seam gas.

First, the amendments expand the existing regulatory framework for managing the impacts arising from the extraction of underground water on adjacent water supply bores and natural springs (particularly impacts on water levels but also on water quality). Second, the Act introduces a new regulatory framework for managing the release of coal seam gas water (i.e. water extracted from coal seams) to town drinking water supplies.

10. Conclusion

The potential environmental impacts of the emerging coal seam gas industry

have been the subject of recent debate. As outlined in this paper, the regulatory regime in NSW includes the *Petroleum (Onshore) Act 1991* and the three approval/ assessment streams in the *EP&A Act*. For some activities, approval will also be required under Commonwealth environmental laws. The NSW Government has announced reforms to strengthen the approval process for CSG exploration activities. Whether the regulatory framework, even with the proposed reforms, is adequate for managing the potential risks is a matter for further debate.

- ¹ As to threats to prime agricultural land, see D Jopson, 'Mining plan would "be end of farming"', *SMH*, 25 September 2010.
- ² See, for example, B Cubby, 'Mine threatens city water', *SMH*, 24 September 2010.
- ³ National Water Commission, [Coal Seam Gas and Water Position Statement](#), December 2010.
- ⁴ The Queensland Department of Employment, Economic Development and Innovation [states](#) that 'Queensland's CSG industry estimates that, in the future, between 10% and 40% of the vertical wells to be drilled to support the liquefied natural gas industry may be fraced'.
- ⁵ Australian Petroleum Production and Exploration Association, [CSG Facts – Fracking](#), [Online]
- ⁶ See also B Robbins, 'Gas drilling goes ahead without any checks', *SMH*, 15 November 2010.
- ⁷ L Taylor, 'Windsor plans new coal seam gas rules to protect water', *SMH*, 6 December 2010.
- ⁸ Premier of New South Wales, 'Tough new rules for coal seam gas exploration', [Media Release](#), 19 December 2010
- ⁹ Australian Atlas of Minerals Resources, [Coal Bed Methane – Fact Sheet](#), [online]
- ¹⁰ GeoScience Australia and ABARE, *Australian Energy Resource Assessment*, Chapter 4, 2010.
- ¹¹ See B Cubby, 'Gas drilling licence nabs most of the city', *SMH*, 16 November 2010
- ¹² Section 29.
- ¹³ Section 30.
- ¹⁴ Note to section 33.
- ¹⁵ Section 41.
- ¹⁶ Sections 13, 14 and 15.
- ¹⁷ Section 21.

- ¹⁸ Section 76.
- ¹⁹ Section 67.
- ²⁰ Section 23.
- ²¹ Section 16.
- ²² See Department of Industry and Investment, [Applying for Exploration Projects](#), [Online]. The activities that fall into Categories 1, 2 and 3 are outlined in Department of Industry and Investment, *EDG 10: Surface Disturbance Notice for Exploration Activities*, [Online].
- ²³ See Department of Industry and Investment, [Applying for Petroleum Projects](#), [Online]
- ²⁴ Section 72.
- ²⁵ Section 71.
- ²⁶ See Part 4A, and in particular section 69C.
- ²⁷ Sections 31 and 35.
- ²⁸ Section 45.
- ²⁹ Department of Industry and Investment, [Overview of environmental assessment for exploration, mining and petroleum](#), [Online]
- ³⁰ Clause 6, and Schedule 1, clause 6. The 16 areas listed are: Camden, Wollondilly, Campbelltown City, Wollongong City, Wingecarribee, Gosford City, Wyong, Lake Macquarie City, Newcastle City, Maitland City, Cessnock City, Singleton, Hawkesbury, Port Stephens, Upper Hunter, and Muswellbrook.
- ³¹ *EP&A Act*, sections 76A, 77.
- ³² Department of Industry and Investment, [Applying for Exploration Projects](#), [Online]. The only exploration activities that do not require approval are Category 1 (low intensity and reconnaissance) activities.
- ³³ Section 75D. Note that the Minister for Planning has [delegated](#) to the Director-General of the Department of Planning the power to approve project applications with less than 25 public submissions in the nature of objections to the proposal.
- ³⁴ For further information on Part 3A, see the Department of Planning, [The major projects assessments system](#), [Online]
- ³⁵ Section 75F
- ³⁶ Section 75H(1)
- ³⁷ Section 75H(3)
- ³⁸ Section 75H(6)
- ³⁹ Sections 75I, 75J
- ⁴⁰ Section 75I, and see also clause 8B of the *EP&A Regulations 2000*.
- ⁴¹ Section 79C(1)
- ⁴² *EP&A Regulations 2000*, Schedule 3, cl 27.
- ⁴³ Section 78A(8)
- ⁴⁴ *EP&A Regulations 2000*, clauses 72, 73.
- ⁴⁵ Section 79.
- ⁴⁶ Section 79A.

- ⁴⁷ Section 78A(8)(b) In deciding whether a SIS is required, regard must be had to the factors listed in section 5A.
- ⁴⁸ Section 79B(3)
- ⁴⁹ See Part 3
- ⁵⁰ The only exploration activities that do not require approval are Category 1 (low intensity and reconnaissance) activities.
- ⁵¹ See note 22
- ⁵² Department of Industry and Investment, 'Environmental checks for gas exploration', [Media Release](#), 15 November 2010.
- ⁵³ See *EP&A Regulations 2000*, clauses 230 and 231.
- ⁵⁴ Section 113.
- ⁵⁵ Section 113
- ⁵⁶ Section 114
- ⁵⁷ Section 112C
- ⁵⁸ *EP&A Regulations 2000*, clause 243.
- ⁵⁹ *EP&A Regulations 2000*, clause 243.
- ⁶⁰ See section 5.
- ⁶¹ See section 4, which refers to the definition in section 6(2) of the *Protection of the Environment Administration Act 1991*.
- ⁶² See *Minister for Planning v Walker* (2008) 161 LGERA 423 at paras. 42 and 43.
- ⁶³ See *Minister for Planning v Walker* (2008) 161 LGERA 423 at paras 39 to 56.
- ⁶⁴ See *Minister for Planning v Walker* (2008) 161 LGERA 423 at para 56.
- ⁶⁵ See *EP&A Regulations 2000*, clause 230, and Schedule 2 clause 6.
- ⁶⁶ See Part 3 of the Act
- ⁶⁷ See Part 3 of the Act.
- ⁶⁸ Section 136
- ⁶⁹ Department of Sustainability, Environment, Water, Population and Communities, [Coal seam gas projects for Southern Queensland: frequently asked questions](#). For a media report, see S Morris, 'Plans approved despite red flag', *AFR*, 23 November 2010.
- ⁷⁰ Section 75U
- ⁷¹ Section 75V
- ⁷² BTEX chemicals include Benzene, Toluene, Ethylbenzene and Xylene.
- ⁷³ Hon Duncan Gay MLC, 'Labor still playing catch up on Coal Seam Gas exploration rules', [Media Release](#), 18 December 2010.
- ⁷⁴ David Shoebridge MLC, 'Government reacts to community pressure on coal seam gas', [Media Release](#), 19 December 2010