THE LAW SOCIETY OF NEW SOUTH WALES
YOUNG LAWYERS

Environment and Planning Law Committee

Submission on the Draft Aquifer Interference Policy

22 April 2012

Attn: Draft NSW Aquifer Interference Policy comments
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About Us

NSW Young Lawyers is a Division of the Law Society of NSW and is made up of legal practitioners and law students who are under the age of 36 or in their first 5 years of practice. It is the largest body of young and newly practising lawyers, and law students in Australia, with a membership comprising of some 13,000 members. NSWYL supports practitioners in their early career development in numerous ways, including by encouraging involvement in its 15 separate committees, each dedicated to a particular area of practice. Membership is automatic for all NSW lawyers under the age of 36 and/or in their first five years of practice, as well as law students.

The NSW Young Lawyers Environment and Planning Law Committee (the Committee) brings together a network of the state's young practitioners to discuss a shared interest in our environment. The Committee focuses on environmental and planning issues, raising awareness in the profession and the community about developments in legislation, case law and policy. We also concentrate on international environment and climate change laws and their impact within Australia.

Introduction

The Committee welcomes the opportunity to make a submission in response to the NSW Government's call for submissions on the Draft NSW Aquifer Interference Policy.

This submission will focus on:

- The 'gateway' process, exemptions from the need to hold an aquifer interference approval, and minimal harm criteria;
- Requirements of proponents; and
- Coal seam gas – evaporation ponds or recharging aquifers.

The 'gateway' process[1] and exemptions from the need to hold an aquifer interference approval

The assessment of the need for an aquifer interference approval under the Draft NSW Aquifer Interference Policy is inconsistent with the 'gateway' process[2] prescribed for those activities exempted from the need to hold an aquifer interference approval.[3] Part 3.4 of the Draft NSW Aquifer Interference Policy lists exemptions from the need to hold an aquifer interference approval for water sources that underlie Biophysical Strategic Agricultural Land. These include State significant mining and coal seam gas activities. The Draft NSW Aquifer Interference Policy proposes that these activities will undergo a separate assessment process. According to the Draft NSW Aquifer Interference Policy:[4]

> 'The assessment of aquifer impacts will be brought forward in the overall assessment process as a specific criterion at the gateway stage, ensuring an early and comprehensive assessment.'

The assessment of State significant mining and coal seam gas activities on land mapped as Biophysical Strategic Agricultural Land in the Draft Strategic Regional Land Use Plans

[1] Draft Strategic Regional Land Use Plan – Upper Hunter and Draft Strategic Regional Land Use Plan – New England North West.

[2] Draft Strategic Regional Land Use Plan – Upper Hunter and Draft Strategic Regional Land Use Plan – New England North West.

[3] As listed in the Draft NSW Aquifer Interference Policy, 27.

[4] Draft NSW Aquifer Interference Policy, 27.

through the ‘gateway’ process, and the exemption of these projects from the process detailed in the Draft NSW Aquifer Interference Policy in the assessment of the requirement to hold an aquifer interference approval from the NSW Office of Water presents a potential weakening of the assessment of these developments.

State significant mining and coal seam gas activities should be subject to assessment requirements that are at least as stringent as those required under the Draft NSW Aquifer Interference Policy. The need for a stringent assessment process should reflect the scale and nature of these activities and the potential for these activities to negatively impact aquifers, as well as pose a risk to agricultural land and biodiversity conservation areas.

State significant mining and coal seam gas developments should not be exempt from a ‘robust and independent assessment’ of whether an aquifer interference approval is required, and the conditions that should be imposed on any such approval, to the satisfaction of the NSW Office of Water.[5]

Under the Draft Strategic Regional Land Use Plans, the Mining and Coal Seam Gas Gateway Panel is required to take into account impacts on ‘Highly Productive Groundwater’ in its assessment of these projects,[6] however the definition of ‘Highly Productive Groundwater’ does not appear to address the importance of maintaining groundwater for the purpose of encouraging positive environmental outcomes or maintaining ecological integrity. Groundwater is defined as ‘Highly Productive’ depending on its potential for human use. The environmental impact of interfering with aquifers should also be a consideration, even if the groundwater is not classified as ‘Highly Productive”.

Minimal Harm

The assessment criteria of the Draft Strategic Regional Land Use Plan requires the Mining and Coal Seam Gas Gateway Panel to take into account:

> ‘whether the proposal would significantly reduce the agricultural productivity of the land’.[7]

Additionally, in the assessment of Critical Industry Clusters the Mining and Coal Seam Gas Gateway Panel are not specifically required to take into account aquifer interference impacts under the Draft Strategic Regional Land Use Plans.

However, the Draft NSW Aquifer Interference Policy requires the assessor to determine whether the applicant of an activity not exempt from the need to hold an aquifer interference approval can prove that:

> ‘the proposal includes strategies to prevent any more than minimal harm occurring to any water source, their dependent ecosystems or other water users.’[8]

The assessment of State significant mining and coal seam gas and other activities exempt from the need to hold an aquifer interference approval should at least be brought in line with those activities not exempt, if not be subject to more stringent criteria that reflects the potential risk to existing industries, agricultural land, and biodiversity conservation areas. The requirement to include strategies to prevent ‘more than minimal harm occurring to any water source, their dependent ecosystems or other water users’ should be imposed on these exempt activities to bring their assessment in line with activities not exempt.

State significant mining and coal seam gas activities should be subject to the same, if not more stringent criteria for assessment as those activities not exempt. The potential impact of these activities on agricultural land, critical industry, public health, and biodiversity conservation areas should be reflected in stringent assessment criteria. The

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[5] Draft NSW Aquifer Interference Policy, 9.

[6] Draft Strategic Regional Land Use Plan – Upper Hunter, 83.

[7] Draft Strategic Regional Land Use Plan – Upper Hunter, 83.

[8] Draft NSW Aquifer Interference Policy, 17.

criteria detailed in the Draft Strategic Regional Land Use Plans should reflect the scale and nature of these activities and the potential for these activities to negatively impact aquifers, as well as pose a risk to agricultural land, critical industry, and biodiversity conservation areas.

Cost Benefit Consideration

The Draft Strategic Regional Land Use Plan 'gateway' process requires the Mining and Coal Seam Gas Gateway Panel to consider 'whether the activity would be in the public interest through a cost benefit analysis undertaken in accordance with the Government's published cost benefit methodology,'[9] and that 'a key focus of the Strategic Regional Land Use Plan is to resolve competition between the coal mining and coal seam gas industries and agriculture, biodiversity and other land uses and address the community concerns about the amenity, health, environmental and land use impacts.'[10]

The Committee commends the intention to consider the impacts of these activities on agriculture, biodiversity, health, and other existing industries, however clarification of the process behind this cost benefit analysis and how it is to be applied is required. With respect to possible negative impacts of these activities on human health, communities, and the environment, it should be noted that these factors are often not fully quantifiable from a cost benefit or economic perspective, and in a new industry such as coal seam gas, these negative impacts are potentially unknown.

While the intention to weigh the impact and contribution of particular activities is commended, this economic focus has the potential to result in the oversight of less quantifiable impacts on the public in favour of positive net economic benefits to a private proponent. The Committee recommends the costing of impacts on things such as health, agriculture and tourism, critical industries, and the environment should be included in this cost benefit analysis to show a true representation of whether an activity is in the public interest.

Exceptional Circumstance Project

The Committee is concerned by the proposal that:

> 'Cabinet may declare a project to be an exceptional circumstance project if the subject resource is of exceptional value to the State. For an exceptional circumstance project, the requirement for a new gateway certificate would not apply and the project would proceed to full merit assessment at the development application stage.'[11]

The Committee opposes this proposal. Given the aforementioned cost benefit analysis, which would itself include an analysis of any remarkable 'exceptional value' of a project, and the potential for the type of activities to impact on health, the environment, agriculture, tourism and critical industries, they should be subject to an assessment of whether an aquifer interference approval is required.

In the context of the 'gateway' assessment outside the Draft NSW Aquifer Interference Policy, this declaration represents a troubling gap in the assessment process would bypass the 'gateway' assessment requirements, including a consideration of groundwater impacts, as well as assessment detailed in the Draft NSW Aquifer Interference Policy.

Clarification is required as to whether Cabinet's declaration that a project is an 'exceptional circumstance project' would indeed bypass the assessment of whether an aquifer interference approval is required and rely solely on the advice of the Minister for Primary Industries.[12] The potential impact to groundwater of large-scale mining and coal seam gas activities of 'exceptional value' should be reflected in a stringent assessment of these potential impacts.

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[9] Draft Strategic Regional Land Use Plan – Upper Hunter, 84.

[10] Draft Strategic Regional Land Use Plan – Upper Hunter, 86.

[11] Draft Strategic Regional Land Use Plan – Upper Hunter, 85.

[12] Draft NSW Aquifer Interference Policy, 27.

Additional Criteria

While the ‘gateway’ assessment of State significant mining and coal seam gas activities exempt from the need to hold an aquifer interference approval addresses some of the minimum harm criteria of the Draft NSW Aquifer Interference Policy, it is unclear whether applications for petroleum exploration and production activities (including coal seam gas) assessable through or exempt from the ‘gateway’ assessment would be subject to the additional criteria listed in section 3.3.3 of the Draft NSW Aquifer Interference Policy.[13]

The Committee submits that these additional criteria form an essential assessment of petroleum exploration and production (including coal seam gas) as part of the Draft NSW Aquifer Interference Policy, and recommends that all petroleum exploration and production activities should be subject to these requirements.

Requirements of proponents

The Committee commends the Draft NSW Aquifer Interference Policy’s inclusion of the requirement for specific information to be submitted by proponents when applying for an aquifer interference approval. However, there are a number of uncertainties that arise from the current drafting of the section,[14] particularly in relation to remediation and security deposits, which the Committee recommends be given further consideration and clarification.

There appear to be inconsistencies between the amount and type of information required under proponents’ responsibilities in the Draft NSW Aquifer Interference Policy[15] and those likely to be required for approval under the ‘gateway’ process as detailed in the Strategic Regional Land Use Plans,[16] resulting in an assessment process that may not reflect the potential impact on aquifers of activities exempt from the requirement to hold an aquifer interference approval due to the ‘gateway’ assessment.

Level of detail required

The Draft NSW Aquifer Interference Policy provides that the NSW Office of Water will adopt a 'risk management approach' and that:

> ‘the level of detail required to be provided by the proponent is proportional to a combination of the likelihood of impacts occurring on water sources, users and dependent ecosystems and the potential consequences of these impacts.’[17]

The Draft NSW Aquifer Interference Policy does not provide any further detail about who will be responsible for determining the appropriate level of detail, or the manner and timing in which these requirements will be conveyed to the proponent. This creates uncertainty for proponents in preparing applications and may lengthen the assessment process. The Committee recommends that further details be incorporated into the Draft NSW Aquifer Interference Policy to assist proponents and assessors by establishing the level of detail to be provided in applications.

In this context, the Committee submits that further emphasis should be placed on the preparation of pre-feasibility studies as a possible method for the proponent and the NSW Office and Water to determine the required level of detail for individual applications.

Monitoring program

While the requirement for an 'effective and independently assessed (by the NSW Office of Water) groundwater/surface water level, flow and quality monitoring program'[18] is

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[13] Draft NSW Aquifer Interference Policy, 26.

[14] Draft NSW Aquifer Interference Policy, 31-32.

[15] Draft NSW Aquifer Interference Policy, 9.

[16] Draft Strategic Regional Land Use Plan – Upper Hunter, 83.

[17] Draft NSW Aquifer Interference Policy, 31.

commendable, it is unclear whether such a program is required to have been independently assessed prior to the submission of the licence application or whether this independent assessment will occur simultaneously as part of the assessment of the application generally.

The Committee recommends that this is clarified, and that guidance as to or definition of what constitutes a 'sufficient period of baseline conditions' is specified.

Remediation

Part 4 of the Draft NSW Aquifer Interference Policy does not provide sufficient detail regarding what is required from proponents in relation to possible remedial actions. This section provides that:

> 'proponents will also need to identify and commit to remediation mechanisms in the event of failure of the measures built into the design and approval of the activity to mitigate, prevent or avoid any significant impacts associated with the dot points above.'[19]

It is unclear why details regarding proposed remediation mechanisms are listed separately and not as one of the express 'requirements' which a proponent must provide to enable assessment of the application.

In addition, the Committee recommends that this part should include reference to the earlier discussions regarding remedial action in the Draft NSW Aquifer Interference Policy, set out at section 3.3.4 and section 3.3. In particular, section 3.3 includes strong language that:

> 'The remediation mechanism must be initiated as soon as monitoring shows that the actual impacts differ from those predicted as part of the approval process. The remediation mechanism is to remain in effect until the Minister is satisfied that it is no longer required to maintain the impacts at or below the predicted levels.'[20]

Given the importance of proponents providing sufficient detail regarding potential remedial actions, the Committee recommends that the requirements relating to remediation discussed at various points in the Draft NSW Aquifer Interference Policy be consolidated and that further information in relation to the assessment and determination of proposed remedial actions be provided to clarify these requirements. In particular, the Committee recommends that further information be provided in relation to:

- the manner in which the NSW Office of Water will assess whether particular proposed remedial actions are suitable;
- the manner in which it will be determined if remedial action (if required) has been adequately completed; and
- any exceptions to the requirement for an approval holder to cease the activity while remedial action is being completed (noting that the current drafting provides that cessation of the activity will 'generally' be required).

Security Deposits

Part 4 of the Draft NSW Aquifer Interference Policy provides that a security deposit 'may be required as an condition of an aquifer interference or development consent'.[21] The Committee recommends that further details should be provided what constitutes circumstances where such a security deposit will not be required, and sufficient justification in relation to these exceptions should also be provided.

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[18] Draft NSW Aquifer Interference Policy, 31.

[19] Draft NSW Aquifer Interference Policy, 32.

[20] Draft NSW Aquifer Interference Policy, 25.

[21] Draft NSW Aquifer Interference Policy, 32.

In addition, the Draft NSW Aquifer Interference Policy currently provides that the amount of a security deposit 'will be determined on a case by case basis'. The Committee recommends that further details should be provided, including minimum thresholds or particular criteria with reference to how the amount of a security deposit is to be determined.

Coal seam gas – evaporation ponds and recharging aquifers

It has been argued that the exploration and production of coal seam gas in NSW presents economic and social opportunities.[22] However, coal seam gas activities are marred by risks and consequences that without adequate precaution have the potential to not only undermine any potential economic and social benefits of coal seam gas, but also to permanently cause environmental, social, and economic harm to biodiversity conservation areas, agriculture, tourism, and other existing industries, as well as public health and communities.

Considering current land-use practices in NSW and the reliance of agriculture on healthy surface water and groundwater, the risks associated with the extraction, management, and disposal of large volumes of water extracted from aquifers in the process of coal seam gas activities are of particular concern. If not appropriately regulated, the coal seam gas industry risks having 'significant, long-term and adverse impacts on adjacent surface and groundwater systems.'[23]

In its attempt to strike a balance between the argued economic and social opportunities of the exploration and production of coal seam gas in NSW and the sustainable management of water sources along with the social and economic health of existing agriculture and other industries and public and environmental considerations, the Committee submits that aspects of the Draft NSW Aquifer Interference Policy falls short.

Evaporation Ponds

By implication the Draft NSW Aquifer Interference Policy rightly identifies the harms associated with the current use of evaporation ponds in the coal seam gas extraction process. Indeed, if inappropriately managed, water produced by coal seam gas can 'almost irreversibly damage soils, riparian vegetation and fish communities…[throughout the lifespan and beyond coal seam gas projects]'.[24]

The size of evaporation ponds, which can range from 1 to 100 hectares, and the sheer volume and poor quality of water they hold makes the task of managing evaporation ponds exceedingly difficult. Considering that the coal seam gas extraction process generates almost 35% more water per unit of energy than conventional petroleum,[25] it is evident that a systematic regulatory response is urgent. However, the Committee submits that the proposed response set out in the Draft NSW Aquifer Interference Policy to entirely phase out the use evaporation ponds in NSW and replace them with the practice of recharging aquifers is deficient because of the assumption on which it turns: that there is data enough on the use and management evaporation ponds and the viability aquifer recharging in NSW.

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[22] Sakmar S, "The Global Shale Gas Initiative: Will the United States Be the Role Model for the Development of Shale Gas Around the World" (2011) *Houston Journal of International Law*.

[23] National Water Commission, "Position Statement: Coal Seam Gas and Water" (December 2010, Australian Government).

[24] Taulis M, "Australia and New Zealand CBNG development and environmental implications" in Reddy, KJ (ed), *Coalbed Natural Gas: Energy and Environment* (2010).

[25] National Water Commission, "Position Statement: Coal Seam Gas and Water" (December 2010, Australian Government).

Cumulative Impacts

While the coal seam gas industry in Queensland has been touted to generate export and state revenue income as well as employment over the next 25 years,[26] these figures do not make take into account that the cumulative impacts of multiple coal seam gas projects, in particular on ground and surface water systems, are currently unknown or not well understood.[27] It is known that the current use of evaporation ponds can lead to legacies of salt and other contaminant residue in surrounding soils, however it is unknown whether the proper management, maintenance and operation of evaporation ponds could eliminate such concerns.

While aquifer recharging may be technically feasible, it is unknown whether this is a viable option in NSW at the scale required to replace evaporation ponds. The Draft NSW Aquifer Interference Policy appears to take account of these known unknowns by endorsing an 'adaptive management approach',[28] and therefore learns and responds by doing. But what in effect the Draft NSW Aquifer Interference Policy propounds is a blanket ban on evaporation ponds and a wholesale adoption of aquifer recharging – in other words the Draft NSW Aquifer Interference Policy chances on the known unknowns. The Committee submits that this appears to be the replacement of one imbalanced approach with another.

The Committee accordingly recommends the following:

- revision of the NSW statutory regime to allow for sufficient flexibility to enable changes to be made to the regulatory framework in response to improved knowledge and understanding of the management of coal seam gas activities – this may include the adoption of an exceptional circumstance criteria for the constructions and operation of evaporation ponds analogous to Section 310D(6) of the *Environmental Protection Act 1994* (QLD);
- establish an inter-jurisdictional work program to research the viability of managed coal seam gas water evaporation ponds;
- establish an inter-jurisdictional work program to research the viability of large scale aquifer recharging as a part of the coal seam gas extraction process;
- a mandate that all existing and proposed new evaporation ponds be made to comply with up to date environmental protection guidelines;
- revision of the *Petroleum (Onshore) Regulation 2007* (NSW) to establish a regulatory consultation framework for the expedition of reviews and the modernisation of evaporation ponds;
- establish better inter-jurisdictional networks by which information and practical experience can shared about aquifer recharge practises.

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[26] Premier and Minister for Reconstruction, The Honourable Anna Bligh, "Premier Heralds New 'Gas Age for Queensland'" (27 May 2011), http://www.cabinet.qld.gov.au/mms/StatementDisplaySingle.aspx?id+74946

[27] Swayne, N, "Regulating coal seam gas in Queensland: lessons in an adaptive environmental management approach?" (2012), *Environmental and Planning Law Journal*.

[28] Draft NSW Aquifer Interference Policy, 25.