

Peer Comment on Paper 1 – Insurance and Environmental Securities

1. Commentary on the Background Paper (Paper) focussing on the overall themes and recommendations of the Paper

1.1 The stated objectives of the Paper are to:

- (a) give an overview of the various risk management techniques and financial assurances available to protect each of Government, land holders and the broader public from risks arising from operator default in the CSG industry in New South Wales; and
- (b) consider existing practices and arrangements for insurance coverage in the CSG Industry in New South Wales and also consider some ways in which that coverage could be improved.

1.2 The Paper reaches the conclusions that:

- (a) existing insurances carried by CSG operators in New South Wales are inadequate and that risks identified in the Paper are underinsured;
- (b) recommends greater use of comprehensive pollution liability insurance now available and in particular suggests that such insurance be procured by CSG operators to cover potential long term loss and damage (for example to ground water and to aquifers used beneficially by other parties) outside the boundaries of the land for which the CSG operator holds a petroleum title;
- (c) the existing security deposits mechanism operating under the PO Act be extended to cover both offsite as well as onsite remediation requirements;
- (d) a new special purpose fidelity fund should be established in New South Wales by progressively requiring contributions from operators, as the most cost effective and long term means of covering remediation and rehabilitation environmental exposures extending beyond the site for each particular petroleum title; and
- (e) That fund would provide an ongoing source of funds to remediate environmental damage caused by CSG operations, in circumstances where the fund would be available state-wide rather than be confined to the particular petroleum title or wells for which the security deposit under the PO Act was established.

1.3 This peer review comment paper questions in particular whether:

- (a) before legislative and regulatory changes are finalised environmental risks in the CSG industry in New South Wales may need to be more closely considered and evaluated separately as to their likely incidence and consequences of occurrence within rational and practical levels of assessment;
- (b) more diligent environmental investigation and assessment of CSG proposals at time of application, and a thorough and robust application of conditional determination procedures should be used as suitable primary protective

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measure to reduce the incidence of claims likely to be made on the financial assurance instruments proposed in the Paper, which will also inform and assure communities of the unlikelihood of environmental damage;

- (c) the existing security deposit mechanism should be replaced by the fidelity fund more expeditiously than is contemplated by the Paper, which seems to contemplate both mechanisms continuing in place for a significant period. At the time of the establishment of the fund, consideration might be given to weighting contributions at a higher level as amounts of security deposits are progressively reduced, so as to accelerate the growth of the fund in the early years of its operation; and
- (d) as behaviour of aquifers and risks associated with possible adverse communication between aquifers varies considerably between relevant locations and geological basins (in other words the risk varies significantly) an assessment of same should be a precondition prior to evaluating the types and levels of financial assurances required to provide potential means of recourse should such an event occur as the result of default by the CSG Operator or act of God.

2. Critique of the Paper, highlighting areas of agreement or disagreement including differences in perspective and emphasis

- 2.1 The Paper assumes that unremediated environmental problems currently exist in the CSG industry in NSW which are not being adequately addressed by existing environmental control measures – for example:
- (a) reference is made on page 3 to orphaned or abandoned CSG wells being left unremediated and that the cost of such remediation is not covered by existing security deposits established under the PO Act ;
 - (b) the Paper assumes (also on page 3) that offsite ground water contamination has occurred and is likely to occur (perhaps over the long term) and that ongoing damage to farmland and waterways caused by produced water will occur;
 - (c) that because knowledge is incomplete and prediction of harm is presently uncertain it is appropriate to create additional or alternative levels of financial assurance to be provided by CSG operators (pages 4 and 5 of the Paper) ;
 - (d) the Paper focusses largely on a limited number of environmental risks associated with the CSG activity in New South Wales, and in particular the risks of contamination outside the area of the petroleum title and failure to make good or remediate areas said to require rectification after damage has occurred.
- 2.2 As is pointed out on page 4 of the Paper, it is evident that good engineering practices (which should include detailed environmental assessment and good oil field practice requirements) can substantially reduce environmental risk and the likelihood of that risk occurring.
- 2.3 In the view of the peer reviewer, greater levels of comfort may be able to be taken both by Government and the broader public where soundly scientifically based robust risk assessments are carried out and appropriate preventative control measures are implemented, before hazardous or risky activities are allowed to proceed. (This, and section 2 generally, assumes that sufficient expertise to undertake the robust risk assessment is available, and that current risk assessment methodologies are sufficient to reliably accurate preventive control measures. See paragraph 3.7 and following.)
- 2.4 In the view of the peer reviewer a different starting point for the Paper might be the identification and separate analysis of each of the risks of an environmental nature involved in the CSG industry, with prevention clearly being identified as better risk management strategy superior to cure of damage occurring. That would also allow consideration of the efficacy of particular regulatory options in particular relevant cases.
- 2.5 To illustrate the different approaches taken by the Paper and this peer review a table is attached setting out a number of environmental risks, (most of which were identified and described by parties who have lodged submissions to the Review being conducted by the OCSE), and in accordance with conventional risk analysis and management techniques an attempt is made in the attached table to give each of those identified risks an indication of the likelihood of the risk manifesting itself and secondly an estimate of what the consequence of that occurrence might be, in terms

of severity. The table is for discussion purposes and does not purport to contain definitive factual, scientific or legal judgements.

- 2.6 By reference to that table each of the risks identified can in the view of the peer reviewer be materially reduced and/or managed by appropriate levels of environmental impact assessment and the imposition of controls or conditions on operations such as to reduce or eliminate those potential impacts.
- 2.7 Areas of agreement between the peer reviewer and the findings in the Paper are as follows:
- (a) a distinction should be made (as is made in paragraph (b) on page 5 of the Paper), affecting differing levels of risk and hence need for liability insurance, between CSG exploration and CSG production activities. By extension the peer reviewer suggests that the extent or scale of the activity for which approval is sought should also materially affect the levels firstly of impact assessment carried out and secondly the appropriate levels of financial assurances required. Failure to observe and consistently apply those distinctions may result in temporary or preparatory CSG exploration work becoming uneconomic in New South Wales.
 - (b) the Paper in paragraph (e) on page 6 does not recommend the retention of the current security deposit system on its own for a number of reasons identified in the Paper namely:
 - (1) The amount secured generally applies to cover rehabilitation costs incurred in relation to the area of responsibility described by the relevant petroleum title or approved wells; the quantum of that security is not directly linked to the level of activity (and hence risk being undertaken) with the amount of the security imposed being somewhat inflexible and once established tending to be left in place at original level until such time as required remediation is in each case made good;
 - (2) The amount of the security does not appear related to the financial record and backing of the operator, their operational and environmental risk management record and whether or not the activities conducted on the petroleum title are of lower or higher environmental risk.

The peer reviewer respectfully agrees with the conclusion in the Paper that the existing security system in operation under the PO Act is inadequate and should be overhauled with a view to its progressive replacement, as is suggested in the Paper.

- 2.8 The peer reviewer generally supports the view taken in the Paper that the establishment of a special purpose fidelity fund similar to the Mining Rehabilitation Fund in Western Australia (the MRF-WA) where that fund will in future:
- (a) be available to meet rehabilitation or remediation requirements in the CSG industry across the whole State; and
 - (b) be greeted with widespread industry support similar to that reported in paragraph 6.2 on page 13 of the Paper.

- 2.9 One area of disagreement is however with the conclusion reached on page 14 of the Paper that:

"There is a more compelling case for CSG Rehabilitation Fund than a Mine Rehabilitation Fund having regard to the identified risk of long term cumulative adverse effects on water management aquifer interference from ground water contamination".

Given the vastly different surface disruption and loss of agricultural productivity between surface mining and CSG exploration and production areas, the peer reviewer suggests a more detailed analysis as to the nature and extent of the "long term cumulative effects" is required before that conclusion can be safely reached.

- 2.10 Whilst it is clear that a number of submissions to the OCSG Review quite clearly identify those risks, the occurrence of those risks either manifesting themselves in practice as adverse effects or being shown (by scientific evidence) to be sufficiently probable to be of concern is not demonstrated in Australia nor is the extent of their occurrence quantified.
- 2.11 For example, a proper evaluation and assessment of the likelihood or possibility of such ground water contamination or aquifer interference occurring as being the basis for either an approval to proceed or a rejection of a required consent (assuming such an assessment is available – see paragraph 2.3 and 3.7) may provide a greater level of comfort to those objecting to CSG operations in areas of New South Wales.
- 2.12 In the view of the peer reviewer, the better and more rigorous use of the approvals mechanism as the primary control method of reducing or eliminating environment risk, with the fidelity fund and/or pollution insurance operating to cover residual liabilities, may achieve a more balanced result both for the industry and those affected by it.
- 2.13 The Paper does not really make a distinction between perceptions of environmental risk as opposed to identification of examples where occurrence of the risk has occurred or can with a reasonable degree of probability be predicted to occur.
- 2.14 One area not covered by the Paper is the possibility that greater industry funding of independent objective and scientific evaluation (in which all relevant stakeholders are involved) may assist in a more accurate forecast of the occurrence of the relevant risks being made, and the most appropriate strategies employed to eliminate reduce or manage that risk.
- 2.15 In that connection, and as part of the risk assessment recommended, the peer reviewer agrees with the view taken in the Paper (at pages 4 and 15) that the precautionary principle, being an integral part of the legislatively adopted objective for ecological substantial development, should be utilised as part of the initial environmental investigation and assessment of CSG proposals in considering assessing and recommending measures to avoid or manage risks arising from CSG operations in NSW.
- 2.16 The peer reviewer does however suggest that a rigorous and thorough application of the precautionary principle needs to be applied to CSG operations, using for example the approach of the present Chief Justice of the Land and Environment Court of NSW

in the *Telstra v Hornsby Shire Council* decision,¹ being a particularly clear and practical example of how the principle should be applied.

- 2.17 Examples given in that judgement of the necessary process that has to initially be undertaken to determine whether the precautionary principle will have application in this context are as follows:
- (a) “rationality dictates that the precautionary principle and any preventative measure cannot be based on a purely hypothetical approach to the risk, founded on near conjecture which has not been scientifically verified” [at 159];
 - (b) “rather, a preventative measure maybe taken only if the risk, although the reality and extent of the risk have not been fully demonstrated by conclusive scientific evidence, appears nevertheless to be adequately backed up by scientific data available at the time when the measure was taken” [at 159];
 - (c) determining the existence of a threat of serious or irreversible environmental damage does not involve, an evaluation of the scientific uncertainty of the threat; that evaluation comes [at a later stage] [at 137];
 - (d) “the assessment [of whether the threats of environmental harm are serious or irreversible] involves ascertaining whether scientifically reasonably (that is, based on scientifically plausible reasoning) scenarios or models or possible harm that may result have been formulated. The threat of environmental damage must be adequately sustained by scientific evidence” [at 133 and 134].
- 2.18 In the view of the peer reviewer, consideration of the scientific assessment of the relevant risks is an inherently necessary requirement that should be taken into account in determining the proper and proportioned response to the particular identified risk involved during the initial environmental investigation and assessment process – see generally in that regard paragraph [167] of the decision referred to which states in part:

“In applying the precautionary principle, measures should be adopted that are proportionate to the potential threats. A reasonable balance must be struck between the stringency of the precautionary measures, which may have associated costs, such as financial, livelihood and opportunity costs, and the seriousness and irreversibility of the potential threat.”

¹ [2006] NSWLEC 133

3. Identification of remaining knowledge gaps, and recommendations for future work to be undertaken to address those gaps

- 3.1 The Paper in a number of places recognises the need for the provision and examination of additional information and in particular:
- (a) no data seems to have been provided to the author of the Paper on the number, extent and likely cost of remediation of “orphaned” or abandoned” wells in NSW (page 4 of the Paper).
 - (b) the Paper acknowledges that knowledge is incomplete and that prediction (of environmental harm) is uncertain in areas such as groundwater connectivity, chemical contamination and fugitive emissions (page 4 of the Paper).
 - (c) no data is quoted in the Paper of the likely cost to CSG Operators, nor as to the effect on the viability of their operations of the cost of obtaining comprehensive pollution insurance and renewing it for the period of operations plus six years as recommended in paragraph (b) on page 5 of the Paper.
 - (d) the Paper does not provide any background to the assertion on page 1 of the Paper that “as a rule, CSG operators in NSW are under insured.” From the peer reviewer’s experience, that generalisation may require examination as:
 - (1) the practice in the petroleum industry (of which CSG operations is a subset) is for operators to effect and maintain control of well insurance, which often includes seepage, pollution clean up and contamination insurance;
 - (2) in addition where CSG drilling operations are contracted out, the standard practice is for the drilling contractor as one of the preconditions required prior to commencing operations to demonstrate it has the benefit of a current and acceptable policy indemnifying both the contractor and the CSG Operator from compensable loss or damage suffered by third parties and potentially extending beyond the site of the CSG Operations.

While the new comprehensive liability policy proposed may well offer additional protection for stakeholders, further information would be useful as to:

- (3) whether a single Government required policy of insurance might be used to overcome what may be a fragmented and piece meal approach to insurances and reduce overall costs to the industry; and
- (4) what the cost of the industry relative to the risk of harm occurring compensable under the policy will be? The Paper acknowledges (at page 7) that the **actual** level of CSG environmental risk remains to be assessed, and that more knowledge data and information need to be obtained.
- (e) The Paper acknowledges (at page 7) that in recommending the new comprehensive pollution liability insurances, there has been no examination or information considered about the level or types of insurances CSG participants actually do currently have.

- 3.2 The Paper notes that further investigation and information is required from the OSCG as to where the existing security deposit system does or does not cover the rehabilitation of land outside the area covered by the petroleum title (page 11, paragraph 5 of the Paper).
- 3.3 Given the conditions under which petroleum titles are normally issued (requiring the making good of damage to land or property wherever occurring) and the licensing and remediation requirements of the POEO Act, in practice that deficiency may not be of major concern, particularly as the Paper also asserts (on page 14) that "most mining companies fulfil their rehabilitation and closure obligations, and in the usual case deposits are fully refunded."
- 3.4 It would be of relevance to ascertain whether that practice observed in the mining industry (of rehabilitating as required) extends to the CSG industry.
- 3.5 One of the peer reviewer's greatest concerns as to lack of information is the lack of a fully evaluated risk assessment which identifies the types of risks that in reality do occur in CSG operations, and assesses the likelihood and the seriousness of their occurrence. (Also see previous paragraph 2.3).
- 3.6 Whilst CSG operations in NSW have been and continue to be relatively limited, overseas and interstate experience and research is available to fill some of those knowledge gaps and should in the view of the peer reviewer be considered.
- 3.7 In the view of the peer reviewer:
- (a) there appears to be a dearth of available knowledge on the behaviour of groundwater in and between aquifers and aquitards generally in Australia, into which further uncertainty as to effect on those aquifers is introduced by the carrying out of CSG operations;
 - (b) distinction needs to be made between the possibilities of:
 - (1) chemical contamination of aquifers occurring by the introduction of drilling or fracking fluids, which can be controlled by prior approval mechanisms eliminating or limiting toxicity to mandated levels; and
 - (2) physical communications between aquifers occurring adverse to the interests of agricultural licensee users (typically higher level users) or to aquifers required for environmental flows.

Whilst considerable knowledge and experience exists in relation to reducing toxicity in fluids, the acquisition and dissemination of information from hydrological geologists and similar specialists may assist in evaluating and assessing the real risk of such potentially adverse communication between aquifers.

4. Comment on unidentified risks, Government implementation and legal implications

- 4.1 One risk area not explored in the Paper is the possibility that there may be a cumulative failure of all of the following risk management steps (assuming some or all of the recommendations in the Paper are implemented):
- (a) in the application process for a petroleum title under Division 1, Part 3 of the PO Act, inadequate consideration is given to the financial standing of the applicant for that title to fulfil all of the obligations likely to arise under that title as contemplated by section 15 of the PO Act.
 - (b) in imposing conditions on the grant of a petroleum title for CSG operations under section 23 of the PO Act, either insufficient or inadequate conditions are imposed on the holder of the title, or if adequately imposed, those conditions are ignored or not complied with.
 - (c) in obtaining the approvals required for CSG exploration or production being:
 - (1) approvals under Part 4 or Part 5 of the EP&A Act as controlled by the recently amended State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007; and
 - (2) obtaining the licence now required for coal seam gas exploration assessment or production as a Scheduled Activity under clause 9A of Schedule 1 to the POEO Act,

an insufficiently adequate environmental assessment is made of the environmental risks arising for the activity for which an approval or licence is sought, or the science on which the assessment is based turns out to be deficient or wrong.
 - (d) the holder of a petroleum title fails to comply with a direction issued under section 77 of the PO Act to comply with a condition of title originally imposed or subsequently imposed on renewal of the title;
 - (e) in requiring the provision of security under Part 10A of the PO Act an inadequate security to meet the cost of satisfying or remedying a breach of a condition of a petroleum title is required or the security is inadequate to be used to meet the full cost of that satisfaction;
 - (f) insurances available to the title holder directly or through an insured contractor, (or if the proposal contained in the Paper is adopted, through a new form of comprehensive pollution control insurance) are either inadequate or do not respond adequately to meet the cost of remediating or making environmental damage caused by CSG Operations;
 - (g) the CSG Operator and other parties legally liable to make good the damage which has occurred default in their obligations or become insolvent.
- 4.2 Given the extensive nature of the risk management and allocation measures as summarised in the steps proposed in the preceding paragraph, the Government may wish to limit any residual legal exposure that it may have or acquire by a prospective exclusionary provision to be contained in amended legislation.

- 4.3 Prior to implementation of some or all of the measures contained in the Paper, it is clearly desirable that input be sought from operators in the industry and other involved regulators as to:
- (a) providing input and commentary on existing practices and procedures, particularly in relation to insurances and risk assessments carried out by agencies having regulatory and approval functions for CSG projects;
 - (b) impacts on the industry of the range of measures proposed in the Paper, making this respective costs and likely effects;
 - (c) whether relevant agencies in NSW presently have sufficient levels of technical skill and expertise to deal with and be adequately versed in the new and perhaps unfamiliar levels of environmental exposure as may arise as new applications for approval are submitted under new guidelines and policies not in place on NSW;
 - (d) experience gained in other states and overseas that may have relevance and application in NSW.



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