



*saving the land, air and
water for the kiddies*



Independent Planning Commission
Panel for the Narrabri Gas Project
Level 3, 201 Elizabeth Street
Sydney NSW 2000

Submission Objecting to the Narrabri Gas Project

I am making this submission on behalf of the Knitting Nannas Lismore Loop, having done an oral presentation to the panel in Narrabri on Tuesday 21 July.

The Knitting Nannas Against Gas was founded in the Northern Rivers of NSW in June 2012 in response to a coal seam gas exploration license being granted to Metgasco.

Like many Knitting Nannas I am a mother and grandmother. My husband and I are small crop farmers, at Eltham in the Northern Rivers of NSW. As a Knitting Nanna I was involved with a close-knit community in stopping Metgasco from causing irreparable damage to land, air and water in the Glenugie, Doubtful Creek and Bentley blockades, back in 2013-2014. We remain vigilant as the licence bought back has not been cancelled.

We are deeply disturbed about the NSW State Government Planning Department's approval of the Narrabri Gas Project (NGP), and that NGP has been referred to the Independent Planning Commission (IPC), requesting a decision be made within twelve weeks.

The Knitting Nannas have experienced, first-hand, the impacts of coal seam gas exploration and production, having visited the Queensland and Pilliga, Coonabarabran and Narrabri gas fields five times. We have been in close communication with many families in Queensland and have 'monitored' activities in Queensland for over an 8-year period. We have seen that there is more than sufficient evidence of well leaks, flaring toxic chemicals, spills, water contamination and health impacts on both children (see photo 1) and adults as a direct result of the gas fields in those areas. We were distressed to see some of the children living in close proximity to wells suffering regular nose bleeds and headaches, and hearing of the daily stresses to parents and farmers, caused by the CSG industry being so invasive in the region.

We are committed to doing what we can to convey our concerns at the continuation of the coal seam gas industry. We will demonstrate our concerns until Santos can provide substantial independent evidence that it will not cause any detrimental impacts to land, air, water and human health.

We refer to the NSW Chief Scientist's Final Report of the Independent Review of Coal Seam Gas Activities, in NSW. Of the sixteen Chief Scientist's Recommendations, only two of those have been fully implemented. Another six partially. They have had five plus years to respond – to implement the sixteen recommendations - and they have not done so. There is a list of those recommendations, plus an added one (Recommendation 17, regarding Health), included with this submission.

The Government, in its reply to the Chief Scientists Report, has stated that it 'Supports all of the Recommendations', but in the NSW Gas Plan it refers to (i) an Environmental Data Portal for a *'single point of access for all data collected under legislative and regulatory requirements....'* and (ii) the Independent expert Gateway Panel.

As far as we can see, neither of these have been (fully) established.

Our question is - How can the government refer the NGP to the IPC when it has not put in place the 'bodies / regulations' to ensure all of the Chief Scientists' Recommendations are addressed? Based on this lack of response, we cannot condone the Department of Planning referring this project to the IPC.

The Knitting Nannas acknowledge the science behind the recommendations and will leave the scientific perspective to those experts in their fields of study. However, we are seriously concerned about specific issues and the impact of the NGP on them.

They are:

Water

- * Water is our most valuable resource. (Although we are not comfortable with water being lumped in with resources such as CSG, Iron Ore, Coal etc)
- * Water should be recognised as a utility, not a resource to be bought and sold to the highest bidder.
- * The NGP sits on top of the Great Artesian Basin, and based on the Queensland experience, Santos cannot guarantee that the water will not be contaminated during the drilling/fracking process. The GAB should not be risked.
- * During the recent/current drought there were massive fish kills in the Murray Darling, towns ran out of water, and farmers had to sell or kill their cattle as they could not feed or water them. Access to clean water is a human right, yet gas companies can access water at no cost when communities have to pay for water. No Water = No Life.

Environmental Degradation

- * The NGP will clear close to 1,000 hectares of the Pilliga Forest, fragmenting the largest temperate woodland in New South Wales, home to the endangered koala, black stripe wallaby and the Pilliga mouse, amongst many other unique species of flora and fauna.
- * Spill zones: There are more than 20 toxic spill zones, where, despite numerous attempts of rehabilitation, no flora grows and the air is toxic.

- * Air quality diminishes with flaring, pumping methane into the air which has a huge impact on human health.

Climate Change (Crisis)

- * At a time when reducing our CO2 emissions is critical to the future of the planet, this project will increase emissions, taking us well beyond the <1.5deg needed to sustain life. The science is irrefutable, climate change is real and the time for action is NOW.

Indigenous Cultural Impacts

- * The NGP will cause more trauma to the regional Aboriginal community, the Gamilaraay people. The whole area of the Pilliga Forest is vitally important to their spiritual, cultural and social life. Their connection to that land is who they are: it is their identity being destroyed by the NGP.

Economics

- * The NGP cannot be justified economically. Santos' QLD coal seam gas export activities have caused gas prices to rise and supply to become unpredictable. NSW should respond to this by investing in more reliable and ultimately cheaper renewable energy, not by letting Santos create more economic harm.
- * The NGP will cause economic upheaval in Narrabri, putting small industries at risk, plus causing light pollution, that will ruin the dark, night sky needed by the internationally renowned Siding Spring Observatory.
- * Refer to University of Technology Sydney' (UTS) Institute for Sustainable Futures Report 'RENEWABLE NARRABRI SHIRE: Solar and Wind versus Gas in North West New South Wales 2018' concluded that '*... income from exported electricity (renewable) from Narrabri Shire to the rest of NSW will benefit the community as long as the power plants are in operation, while the gas field will be exhausted after a limited period. Furthermore, employees who operate and maintain solar and wind power plants as well as the regional power grid will have sustainable long-term jobs.*'

[<https://d3n8a8pro7vhmx.cloudfront.net/lockthegate/pages/6447/attachments/original/1583288187/Renew_Narrabri_Report_Final.pdf?1583288187>]

Health and Social Impacts

- * Coal seam gas is harmful to physical and mental health. This fact can now be confirmed by the number of peer reviewed papers internationally. Dr GERALYN McCARRON, a GP in Queensland, has researched and surveyed residents in the Queensland gas fields, and published the paper 'Air Pollution and human health hazards: a compilation of air toxins acknowledged by the gas industry in Queensland's Darling Downs' -

[Dr GERALYN McCARRON - Air Pollution and human health hazards: a compilation of air toxins acknowledged by the gas industry in Queensland's Darling Downs -https://www.tandfonline.com/doi/full/10.1080/00207233.2017.1413221?fbclid=IwAR2THQCTFKfMmludj9G6YAdBxyUaFeQf_Eoz9c-uvv0x_84BwfRxV9jrnHc >]

We firmly believe that approval for Santos to drill upward of 850 wells in the ecologically sensitive environment of the Pilliga, would be akin to a license to destroy that environment. The Great Artesian Basin would be especially impacted.

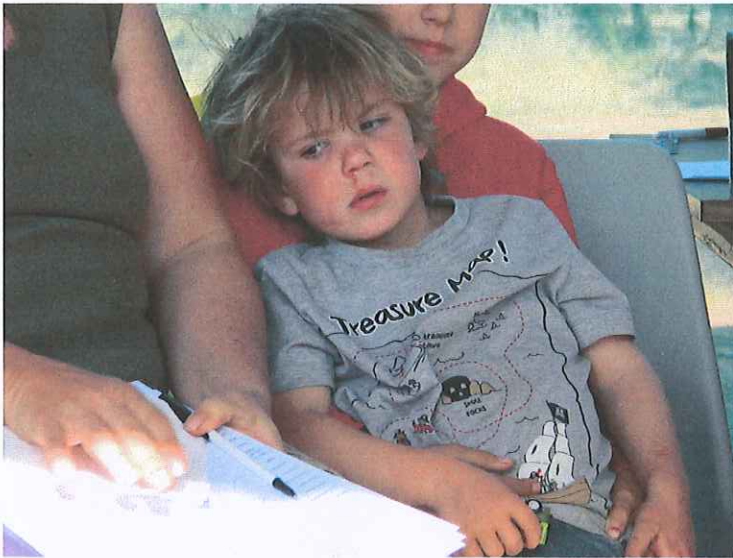
In summary, we believe that the NGP should not be approved. The land, air and water are at stake. The future generations of the Narrabri region have the right to inherit a healthy, balanced and sustainable environment.

We urge the Independent Planning Commission to reject this project and make the Great Artesian Basin recharge, and Pilliga Forest off-limits to gas mining.

**Mrs. Judi Summers
for Knitting Nannas Against Gas
(Founding Lismore loop)**

Note: The document 'Implementation of Recommendations' has been included with the hard copy of our submission which has been mailed.

Photos taken in 2012 - Tara QLD. Permission to use granted by parents



One child with a bloody nose, a regular occurrence for this poor child.

Photos of some of the children's reactions - bloody noses, skin welts and swelling, not to mention the headaches.



Dr GERALYN McCARRON Collecting Data For Her Health Study Back In 2012.

Photos - Santos Leewood Reverse Osmosis Plant in the Pilliga - 3 Knitting Nannas locked on and were arrested. Hearing dismissed all 3 of charges



Table 1 Level of compliance by the NSW Government, based upon the evidence before the committee, to the NSW Chief Scientists' recommendations

Recommendations		Recommendation Implemented/ Part Implemented/ Not Implemented
1. That Government make clear its intent to establish a world-class regime for extraction of CSG. This could be articulated in a clear public statement that covers:		Part Implemented
<ul style="list-style-type: none"> the rationale/ need for CSG extraction 		Part implemented
<ul style="list-style-type: none"> a clear signal to industry that high performance is mandatory, compliance will be rigorously enforced and transgressions punished 		X
<ul style="list-style-type: none"> a fair system for managing land access and compensation 		Arguably yes
<ul style="list-style-type: none"> a mechanism for developing a clear, easy-to-navigate legislative and regulatory framework that evolves over time to incorporate new technology developments 		X
<ul style="list-style-type: none"> mechanisms for working closely and continuously with the community, industry, and research organisations on this issue. 		X
2. That Government ensure clear and open communication on CSG matters is maintained at all times. This includes:		Part Implemented
<ul style="list-style-type: none"> simplicity and clarity in legislative and regulatory requirements 		X
<ul style="list-style-type: none"> ensuring openness about CSG processes in line with an open access approach; publishing all relevant approval requirements, decisions and responses, and compliance and enforcement outcomes on appropriate government websites and making CSG data from companies, Government and research organisations available through a centralised Government data repository 		In part, as the SEED portal exists but does not contain the information recommended by the Chief Scientist
<ul style="list-style-type: none"> measurable outcomes to track performance against commitments to reform. 		X
3. That Government investigate as a priority a range of practical measures for implementation (or extension of current measures) to allow affected communities to have strengthened protections and benefits including fair and appropriate:		Part Implemented
<ul style="list-style-type: none"> land access arrangements, including land valuation and compensation for landholders 		Yes
<ul style="list-style-type: none"> compensation for other local residents impacted (above threshold levels) by extraction activities 		X
<ul style="list-style-type: none"> funding (derived from the fees and levies paid by CSG companies) for local councils to enable them to fund, in a transparent manner, infrastructure and repairs required as a consequence of the CSG industry. 		X

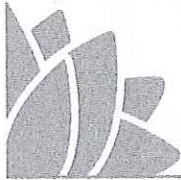
4. That the full cost to Government of the regulation and support of the CSG industry be covered by the fees, levies, royalties and taxes paid by industry, and an annual statement be made by Government on this matter as part of the Budget process.	Not Implemented
5. That Government use its planning powers and capability to designate those areas of the State in which CSG activity is permitted to occur, drawing on appropriate external expertise as necessary.	Not Implemented
6. 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.	Not Implemented
7. 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.	Part Implemented
8. That Government move towards a target and outcome-focused regulatory system, with three key elements: <ul style="list-style-type: none"> 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. 	Not Implemented
9. That Government consider a robust and comprehensive policy of appropriate insurance and environmental risk coverage of the CSG industry to ensure financial protection short and long term. Government should examine the potential adoption of a three-layered policy of security deposits, enhanced insurance coverage, and an environmental rehabilitation fund.	Not Implemented
10. That Government commission the design and establishment of a Whole-of-Environment Data Repository for all State environment data including all data collected according to legislative and regulatory requirements associated with water management, gas extraction, mining, manufacturing, and chemical processing activities. This repository, as a minimum, would have the characteristics that it: <ul style="list-style-type: none"> is accessible by all under open data provisions 	Part Implemented
	Yes

The implementation of the recommendations contained in the NSW Chief Scientist's Independent Review of Coal Seam Gas Activities in New South Wales

<ul style="list-style-type: none"> • has excellent curatorial and search systems 	X
<ul style="list-style-type: none"> • houses long-term data sets collected as part of compliance activities 	Part implemented
<ul style="list-style-type: none"> • can accept citizen data input 	Unclear
<ul style="list-style-type: none"> • can be searched in real time 	Unclear
<ul style="list-style-type: none"> • is spatially enabled 	Yes
<ul style="list-style-type: none"> • is able to hold data in many diverse formats including text, graphics, sound, photographs, video, satellite, mapping, electronic monitoring data, etc., with appropriate metadata 	Unclear
<ul style="list-style-type: none"> • is the repository of all research results pertaining to environmental matters in NSW along with full details of the related experimental design and any resulting scientific publications and comments 	X
<ul style="list-style-type: none"> • is the repository of historical resources data with appropriate metadata 	Yes
<ul style="list-style-type: none"> • various legislative amendments or other incentives will be needed to direct all environment data to the Repository. 	X
<p>11. That Government develop a centralised Risk Management and Prediction Tool for extractive industries in NSW. This would include a risk register, a database of event histories, and an archive of Trigger Action Response Plans. The tool would be updated annually based on Government and company reporting and would include information on risk management and control approaches and draw on data from the Whole-of-Environment Data Repository for the State. The risk tool would be reviewed and commented on by relevant expert and regulatory bodies. The risk tool would be used to assist with:</p> <ul style="list-style-type: none"> • assessing new proposals • assessing compliance • improving prediction capability for consequences of incidents in risk assessments • improving prediction capability of risk likelihoods • informing project design amendments to decrease risk levels (such as undertaken in the Dam Safety Committee) • informing the calculation of cumulative impacts • flagging issues or risks that require a higher level of regulatory protection such as inclusion in legislation. 	Not Implemented
<p>12. That Government establish a standing expert advisory body on CSG (possibly extended to all the extractive industries). This body should comprise experts from relevant disciplines, particularly ICT and the earth and environmental sciences and engineering, but drawing as needed on expertise from the biological sciences, medicine and the social sciences. The prime functions of this expert body would be to advise Government:</p>	Not Implemented

<ul style="list-style-type: none"> on the overall impact of CSG in NSW through a published Annual Statement which would draw on a detailed analysis of the data held in the Whole-of-Environment Data Repository to assess impacts, particularly cumulative impacts, at project, regional and sedimentary basin scales on processes for characterising and modelling the sedimentary basins of NSW on updating and refining the Risk Management and Prediction Tool on the implications of CSG impacts in NSW for planning where CSG activity is permitted to occur in the State on new science and technology developments relevant to managing CSG and when and whether these developments are sufficiently mature to be incorporated into its legislative and regulatory system on specific research that needs to be commissioned regarding CSG matters on how best to work with research and public sector bodies across Australia and internationally and with the private sector on joint research and harmonised approaches to data collection, modelling and scale issues such as subsidence on whether or not other unconventional gas extraction (shale gas, tight gas) industries should be allowed to proceed in NSW and, if so, under what conditions. 	
13. That Government establish a formal mechanism consisting of five parallel but interacting steps. The five steps are given below:	
<ul style="list-style-type: none"> Companies or organisations seeking to mine, extract CSG or irrigate as part of their initial and ongoing approvals processes should, in concert with the regulator, identify impacts to water resources, their pathways, their consequence and their likelihood, as well as the baseline conditions and their risk trigger thresholds before activities start. These analyses and systems should be incorporated in project management plans to meet regulator-agreed targets. Appropriate monitoring and characterisation systems would be developed as part of these project management plans and then installed. The monitors would measure baseline conditions and detect changes to these, as well as providing data on impacts and triggered risk thresholds. Data from the monitors should be deposited (either automatically or in as close to real time as possible) in the State Whole-of-Environment Data Repository by all the extractive industries. Increasingly automated tools to interrogate data in the Repository should be developed, and these used to search data for discontinuities and compliance alerts. As a separate process, the expert advisory body would examine on a frequent basis all data relevant to a region or a sedimentary basin. This data would come from a range of sources (the companies' monitoring data along with triangulation/crossvalidation data such as that from satellites, reports from local councils, seismic data, subsidence maps, information from cores, etc.). The expert body would use this data review to check for any factors signalling problems in that region and, if any 	<p>Part Implemented</p> <p>Arguably implemented in part</p> <p>X</p> <p>X</p>

are found, recommend to Government the appropriate action to be taken with regard to the relevant parties.	
<ul style="list-style-type: none"> In a parallel process, the Government should commission, construct and maintain a variety of models of each region and in particular one that seeks to address cumulative impacts. These models should feed into the land use planning process and the activity approvals processes, and should assist in target setting for new projects. Government, working with other appropriate Australian governments, should commission formal scientific characterisation of sedimentary basins starting with the East Coast basins, and concentrating initially on integration of groundwater with the geological, geophysical and hydrological context. Viewing these integrated systems in models and in interpretation could be described as a 'Glass Earth' approach to understanding the dynamics of activities and impacts in the basins. 	Part implemented
	X
14. That Government ensure that all CSG industry personnel, including subcontractors working in operational roles, be subject to ongoing mandatory training and certification requirements. Similarly, public sector staff working in compliance, inspections and audits should be given suitable training and, where appropriate, accreditation.	Implemented
15. That Government develop a plan to manage legacy matters associated with CSG. This would need to cover abandoned wells, past incomplete compliance checking, and the collection of data that was not yet supplied as required under licences and regulations. There will also need to be a formal mechanism to transition existing projects to any new regulatory system.	Implemented
16. That Government consider whether there needs to be alignment of legislation and regulation governing extraction of methane as part of coal mining and the application of buffer zones for gas production other than CSG with the relevant legislation and regulation provisions governing CSG production.	Not Implemented



Introduction

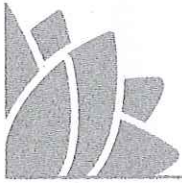
On 30 September 2014, NSW Chief Scientist and Engineer, Professor Mary O'Kane, published her Final Report of the Independent Review of Coal Seam Gas (CSG) Activities in NSW, including 16 recommendations to the NSW Government.

This report outlines the NSW Government's progress in implementing each of the Chief Scientist and Engineer's recommendations as of October 2015. In total, seven of the 16 recommendations have been completed. An additional three recommendations will be implemented by mid-2016, and good progress has been made against the remaining six recommendations.

The Chief Scientist and Engineer's final recommendations were wide-ranging and provided a clear roadmap for the development of a world class gas industry that is safe and sustainable. The complex and thorough nature of the recommendations means that implementation will take time.

The Chief Scientist and Engineer's Final Report was welcomed by the NSW Government and all of its recommendations were supported. To implement these recommendations, a significant program has been outlined in the NSW Gas Plan.

The NSW Gas Plan is a clear, strategic framework to deliver world's best practice regulation of the gas industry while securing vital gas supplies for the State. The NSW Gas Plan uses the evidence and analysis provided by the Chief Scientist and Engineer to build a better scientific base for policy and regulation for the coal seam gas sector in NSW. More information about the NSW Gas Plan can be found here www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0005/534830/NSW-Gas-Plan.pdf



Intent, communication, transparency and fairness

Recommendation 1

That Government make clear its intent to establish a world-class regime for extraction of CSG. This could be articulated in a clear public statement that covers:

- » the rationale/need for CSG extraction
- » a clear signal to industry that high performance is mandatory, compliance will be rigorously enforced and transgressions punished
- » a fair system for managing land access and compensation
- » a mechanism for developing a clear, easy-to-navigate legislative and regulatory framework that evolves over time to incorporate new technology developments
- » mechanisms for working closely and continuously with the community, industry, and research organisations on this issue.

Government Response

The Government is committed to making sure that any gas extraction in NSW is undertaken under a world-class regime. The NSW Gas Plan is the Government's public statement of intent to deliver a high performing industry, with a clearer and improved regulatory framework that is rigorously enforced. It also outlines the Government's support for strong engagement with all stakeholders and a fair system for managing land access and compensation for individuals and communities.

Action/s	Progress
NSW Gas Plan The NSW Gas Plan was released on 13 November 2014, providing a clear, strategic framework to deliver world's best practice standards and regulation for the CSG industry, while securing vital gas supplies for the State.	Complete

Recommendation 2

That Government ensure clear and open communication on CSG matters is maintained at all times. This includes:

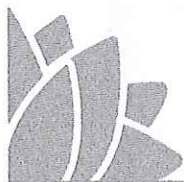
- » simplicity and clarity in legislative and regulatory requirements
- » ensuring openness about CSG processes in line with an open access approach; publishing all relevant approval requirements, decisions and responses, and compliance and enforcement outcomes on appropriate government websites and making CSG data from companies, Government and research organisations available through a centralised Government data repository
- » measurable outcomes to track performance against commitments to reform.

Government Response

Clear and open communication is vital to ensure constructive, informed and collaborative discussion on gas activities into the future. The Government intends to play its part by reforming legislative and regulatory requirements and using an open access approach to information.

We are currently scoping a whole-of-government environmental data portal, which will become the centrepiece of a new and open approach to data on gas activities. A community website will also be established to allow the community to interact with information on all titles and applications for gas and other resources titles through a state wide map.

Action/s	Progress
<p>Whole-of-government environmental data portal</p> <p>The NSW Government is developing a whole-of-government environmental data portal, which will become the centrepiece of a new and open approach to data on gas activities.</p> <p>The Environmental Data Portal will be an authoritative source and single point of access for all data collected under legislative and regulatory requirements associated with water management, gas extraction, mining, manufacturing and chemical processing activities.</p> <p>Stage 1 of development is currently underway. This stage includes market analysis and the development of user requirements which will inform the build of the Portal and ensure that it is fit for purpose.</p> <p>It is expected that the first release of the Portal will go live in July 2016.</p> <p>A number of other measures are also being implemented to ensure clear and open communication on CSG matters is maintained at all times, including:</p> <p>Common Ground website:</p> <p>The Common Ground website provides free community access to a single source of information about exploration and mining activity in NSW.</p> <p>Digital Imaging of Geological System (DIGS):</p> <p>The DIGS database is a public, online archive that provides access to non-confidential reports and other important documentary material held by DRE. This information includes title instruments, title conditions, title renewal information, title transfer, variation and change of name information.</p>	<p>Complete but work continues</p> <p>The first stage of the Portal will go live in mid 2016</p>



Intent, communication, transparency and fairness

Recommendation 3

That Government investigate as a priority a range of practical measures for implementation (or extension of current measures) to allow affected communities to have strengthened protections and benefits including fair and appropriate:

- » land access arrangements, including land valuation and compensation for landholders
- » compensation for other local residents impacted (above threshold levels) by extraction activities
- » funding (derived from the fees and levies paid by CSG companies) for local councils to enable them to fund, in a transparent manner, infrastructure and repairs required as a consequence of the CSG industry.

Government Response

The Government's Gas Plan outlines the practical measures it will take to strengthen protections and share benefits. The Government will require gas companies to negotiate a land access arrangement with landholders at both exploration and production stages, and make compensation a mandatory component of the negotiation. We will commission the Independent Pricing and Regulatory Tribunal to benchmark compensation rates annually to provide a guide for landholders. The Tribunal will be asked to consider both fixed rate compensation and compensation that takes into account the economic benefits of exploration and production over the expected life of the wells.

The Government will also establish a Community Benefits Fund, with voluntary contributions from both gas companies and the Government, to fund local projects in communities where gas exploration and production occurs. The Land and Water Commissioner will continue to provide support to local councils, landholders and members of the community on land access issues.

Action/s	Progress
Land access arrangements and compensation Legislation that implements 31 of the 32 recommendations made in the Walker Review into Land Access Arbitration was passed by NSW Parliament in October 2015. The central aim of the legislation is to restore industry and landholders' confidence in the arbitration process through balancing the rights of industry with the rights of landholders. The legislation provides that explorers must pay the reasonable costs of landholders of the mediation and arbitration process up to the amounts set out in an Order made by the Minister. The NSW Government has also commissioned IPART to provide advice on benchmark compensation rates for gas exploration and production. Their draft report was released in September 2015, with a final report to be delivered by November 2015.	Complete
Community Benefits Fund Legislation to support this measure was passed by NSW Parliament in October 2015. Following consultation mid-year, stakeholder feedback has generally been supportive of the Fund and the Government is now working towards finalising the design of the fund (or multiple funds), which is expected to be operational by mid-2016.	In progress To be completed by mid-2016

Recommendation 4

That the full cost to Government of the regulation and support of the CSG industry be covered by the fees, levies, royalties and taxes paid by industry, and an annual statement be made by Government on this matter as part of the Budget process.

Government Response

The Government agrees that regulation of the gas industry should be undertaken on a full cost recovery basis, and will aim for this over time. We will include an annual statement on this matter as part of the Budget process.

Action/s	Progress
<p>A whole of government review of cost recovery will be progressed in 2016, after the current reform program is implemented and bedded down.</p> <p>The review will consider current regulatory costs across government, the current extent of cost recovery and the potential impacts of further cost recovery on industry.</p> <p>An independent review of NSW gas royalties has also been undertaken.</p>	<p>To be progressed in 2016</p>



Legislative and regulatory reform and appropriate financial arrangements

Recommendation 5

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.

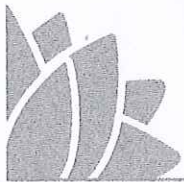
Government Response

The NSW Gas Plan outlines the strategic approach the Government intends to take in designating areas of NSW in which gas activity will be permitted to occur. We will ensure that a thorough assessment of economic, environmental and social factors has been undertaken before the allocation of any new exploration titles.

Action/s	Progress
Strategic Release Framework for Coal and Petroleum With the adoption of the Strategic Release Framework, the NSW Government is introducing a more strategic and transparent approach to releasing land for coal and gas exploration. Legislation was passed by NSW Parliament in October 2015 to give the Government greater strategic control over release of areas for exploration in NSW. The new approach includes identifying areas for release only after environmental, social and economic factors have been considered and the community has had an opportunity to identify what it sees as the issues. Further information on Strategic Release is available at: http://www.resourcesandenergy.nsw.gov.au/miners-and-explorers/programs-and-initiatives/strategic-release-framework-for-coal-and-petroleum-exploration DPE's Preliminary Regional Issues Assessment is available at: http://www.planning.nsw.gov.au/regionalissuesassessment The Government has also:	Complete
Extinguished PEL applications On 20 November 2014, Parliament passed the Petroleum (Onshore) Amendment (NSW Gas Plan) Bill 2014 to extinguish 16 applications for PELs and Petroleum Special Prospecting Authorities. The NSW Government has also modified existing PELs to remove areas that have been granted over National Parks. Legislation to support this was passed by NSW Parliament in October 2015.	Complete
Placed a freeze on new PEL applications The NSW Minister for Industry, Resources and Energy has issued a freeze on NSW Petroleum Exploration Licence Applications and Petroleum Special Prospecting Authority applications until 31 December 2015, allowing the NSW Government sufficient time to establish a Strategic Release Framework for Coal and Petroleum.	Complete

Recommendation 5 cont.

Action/s	Progress
<p>Buy-back PELs</p> <p>The Government established a buy-back of PELs offer for titleholders across the state. This provided an opportunity for holders of PELs to surrender their titles.</p> <p>The buy-back scheme closed on 30 September 2015, resulting in the voluntary surrender of 16 PELs. Further PEL buy-backs from titleholders will be negotiated on a case-by-case basis. Under the Gas Plan the footprint of CSG has reduced from more than 60 per cent of the state to less than 8 per cent.</p>	<p>Complete</p>
<p>‘Use it or Lose it’</p> <p>As a first step towards harmonisation of the Onshore Resources Acts, a ‘Use it or Lose it’ policy has been implemented through the Minimum Standards and Merit Assessment procedure, requiring titleholders to commit to developing the state’s resources or risk using their title.</p>	<p>Complete</p>



Legislative and regulatory reform and appropriate financial arrangements

Recommendation 6

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.

Government Response

The Government will move to establish a single Act for all onshore legislative subsurface resources (excluding water). This will require a number of legislative steps and involve working closely with industry and the broader community to get approach right and make it happen.

Action/s	Progress
<p>Amendments to Onshore Resource Acts</p> <p>Legislation was passed by NSW Parliament in October 2015 to harmonise titles administration (renewal, grant, transfer, suspension and cancellation) across mineral and petroleum titles. It also improves the compliance and enforcement tools available to the regulator. This provides both industry and the community with greater clarity about the rights and obligations associated with operating in the NSW resources sector.</p> <p>The amendments were developed following substantial consultation and opportunities for stakeholder input on a range of projects. This includes the work of the independently chaired Coal Exploration Steering Group, which undertook targeted workshops and public consultation on key elements of the strategic release package. Consultation on harmonisation was also undertaken in the context of the Improved Mining Exploration Regulation project (see Recommendation 8).</p> <p>The land access package outlined under Recommendation 3, implements the Walker Review's <i>Examination of the Land Access Arbitration Framework</i>. The development of this Framework included public consultation.</p> <p>The harmonisation of the onshore resources Acts is the first stage in the move towards a single legislative and regulatory framework for NSW's subsurface resources.</p>	<p>In progress</p>

Recommendation 7

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.

Government Response

The Government supports the separation of the process of the allocation of petroleum rights from the regulation of petroleum activities. As an immediate action under the Gas Plan, the Environment Protection Authority (EPA) will become the lead regulator for compliance and enforcement of conditions of approval for gas activities, including consent conditions and activity approvals. Over time, NSW will move to establish a single Act for all onshore subsurface resources with a single independent regulator.

Action/s	Progress
EPA as lead regulator The EPA commenced as the lead regulator for compliance and enforcement of all conditions relating to gas (with the exception of work health and safety) from 1 July 2015. Legislation to support the EPA's new role was passed by NSW Parliament in October 2015.	Complete



Legislative and regulatory reform and appropriate financial arrangements

Recommendation 8

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.

Government Response

The Government supports the use of targeted and outcomes focused regulation to establish clear standards and enable industry to have flexibility and be able to introduce new technical innovations in choosing how it will meet the requirements of the regulation. The Government will work with the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development and other scientific and technical experts in building an understanding of cumulative impacts, and will make monitoring data accessible through the whole-of-government environmental data portal.

Action/s	Progress
<p>Improved Management of Exploration Regulation</p> <p>The Government has reviewed all the codes and conditions which regulate the onshore petroleum industry and as a result, a series of reforms to exploration regulation for coal and gas, called the Improved Management of Exploration Regulation (IMER), is underway.</p> <p>Under IMER, strict rules have been introduced, covering all types of exploration activities, and the regulation of exploration for coal and gas has been simplified and strengthened. These reforms have been supported in legislation and are being phased in incrementally from 1 July 2015 and will be reviewed after 12 months.</p> <p>Under IMER, Codes of Practice outline mandatory requirements for explorers in the exploration of resources. Codes have been introduced for Environmental Management, Produced Water, and Rehabilitation. Codes on Drilling and Community Consultation are currently being developed. Minimum Standards and a Merit Assessment Procedure have also been introduced, to ensure the optimum discovery and development of the State's potential petroleum resources under the 'Use it or Lose It' Policy.</p> <p>The implementation of IMER represents a wholesale overhaul of the exploration regime. These reforms are being implemented in response to industry and community demands for significant change to the status quo. The Codes of Practice provide clear standards which will enable the industry to introduce new technical innovations to meet regulatory requirements. A less complicated, risk-based system provides more opportunities for explorers to innovate and adopt best practice.</p> <p>DRE has undertaken significant consultation with industry on the IMER reforms, and continues to do so.</p> <p>Penalties for non-compliance</p> <p>The legislation passed in October 2015 includes a broader range of compliance and enforcement tools, including new Penalty Infringement Notices and the ability for companies to enter into enforceable undertakings.</p>	Complete

Recommendation 9

That Government consider a robust and comprehensive policy of appropriate insurance and environmental risk coverage of the CSG industry to ensure financial protection short and long term. Government should examine the potential adoption of a three-layered policy of security deposits, enhanced insurance coverage, and an environmental rehabilitation fund.

Government Response

The NSW Government agrees with the need for a comprehensive system to provide financial protections to cover potential coal seam gas related environmental risk. While the Petroleum (Onshore) Act 1991 already includes a comprehensive security fund framework, we will further consider whether there are additional benefits that could be gained from adoption of a three layered policy of security deposits, industry insurance coverage and potential environmental rehabilitation funds.

Action/s	Progress
<p>The NSW Government is considering adopting a three-layered policy and is in the early stages of mapping current financial arrangements with respect to environmental risk management of the CSG industry. In doing this, we will consider the risk approaches adopted by other jurisdictions and identify any policy gaps where further work is needed in NSW. The review will also consider the utility of adopting a harmonised insurance and environmental risk coverage framework across the gas industry.</p> <p>A security deposit framework is already in place. Legislation passed by NSW Parliament in October 2015 further improves the operation of this framework by clarifying how deposits can be collected for flow-on impacts to the surrounding land.</p> <p>Management Framework for Environmental Liabilities</p> <p>The EPA has commenced a project to realign financial incentives for improved management of environmental liabilities arising from industry. This will operationalise the polluter-pays principle by requiring industry to internalise remediation and clean-up costs so that:</p> <ul style="list-style-type: none">» industry will be incentivised to adjust its behaviour towards cleaner production processes and better risk management;» polluters will be responsible for the costs of remediation and clean-ups instead of these costs potentially being borne by the community; and» stakeholders, including investors, will have improved transparency on environmental liabilities. <p>The framework will address financial and corporate risks arising from environmental liabilities associated with:</p> <ul style="list-style-type: none">» schedule and routine operations» foreseeable incidents and adverse events» planned decommissioning and rehabilitation, and» legacy contamination, long-term liabilities and unforeseeable events.	<p>In progress</p>



Managing risk by harnessing data and expertise

Recommendation 10

That Government commission the design and establishment of a Whole-of-Environment Data Repository for all State environment data including all data collected according to legislative and regulatory requirements associated with water management, gas extraction, mining, manufacturing, and chemical processing activities. This repository, as a minimum, would have the characteristics that it:

- » is accessible by all under open data provisions
- » has excellent curatorial and search systems
- » houses long-term data sets collected as part of compliance activities
- » can accept citizen data input
- » can be searched in real time
- » is spatially enabled
- » is able to hold data in many diverse formats including text, graphics, sound, photographs, video, satellite, mapping, electronic monitoring data, etc., with appropriate metadata
- » is the repository of all research results pertaining to environmental matters in NSW along with full details of the related experimental design and any resulting scientific publications and comments
- » is the repository of historical resources data with appropriate metadata

Various legislative amendments or other incentives will be needed to direct all environment data to the Repository.

Government Response

The NSW Government is currently developing a whole-of-government environmental data portal which will become the centrepiece of a new and open approach to data on gas activities. The portal will provide a consolidated source of information for stakeholders on the impacts of resource development, using data collected by NSW regulators, private companies, research and academic institutions and the public.

We are seeking to provide this service for the whole State so that communities, farmers, industry and Government have open, transparent access to information. Furthermore, we are driving these initiatives on a national level. The Council of Australian Governments Energy Council has agreed to consider options for a national environmental data repository.

Action/s	Progress
Whole-of-government environmental data portal The NSW Government is developing a whole-of-government environmental data portal, which will become the centrepiece of a new and open approach to data on gas activities. Stage 1 of this project is currently underway and the first release of the Portal will go live in July 2016. The fully operational portal will publish environmental data gathered by government, industry and other sources, will improve the evidence base for government decision making, allow for better informed. This debate around gas development and empower the community to hold the NSW Government and gas companies accountable for their performance	In progress Stage 1 to be completed by mid-2016

Recommendation 11

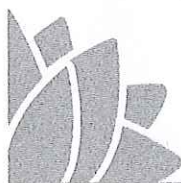
That Government develop a centralised Risk Management and Prediction Tool for extractive industries in NSW. This would include a risk register, a database of event histories, and an archive of Trigger Action Response Plans. The tool would be updated annually based on Government and company reporting and would include information on risk management and control approaches and draw on data from the Whole-of-Environment Data Repository for the State. The risk tool would be reviewed and commented on by relevant expert and regulatory bodies. The risk tool would be used to assist with:

- » assessing new proposals
- » assessing compliance
- » improving prediction capability for consequences of incidents in risk assessments
- » improving prediction capability of risk likelihoods
- » informing project design amendments to decrease risk levels (such as undertaken in the Dam Safety Committee)
- » informing the calculation of cumulative impacts
- » flagging issues or risks that require a higher level of regulatory protection such as inclusion in legislation.

Government Response

The Government will investigate risk based approaches and tools to assist with assessing proposals, informing compliance activities and analysing risks.

Action/s	Progress
<p>There are already a number of Risk Management and Prediction Tools being used by agencies in NSW to assess proposals, analyse risk and inform compliance activities. These include risk based codes of practice, risk based licencing and planning assessment processes which require applicants to prepare Trigger Action Responses.</p> <p>The Government is also in the process of developing an Environmental Data Portal, which will bring together all data collected under legislative and regulatory requirements associated with water management, gas extraction, mining, manufacturing and chemical processing activities. This portal will provide a consolidated and authoritative point of access for stakeholders. Because of this work, a centralised tool may not be warranted at this time. The Government will investigate further once the Environmental Data Portal is up and running to confirm if the need actually exists.</p>	Complete



Managing risk by harnessing data and expertise

Recommendation 12

That Government establish a standing expert advisory body on CSG (possibly extended to all the extractive industries). This body should comprise experts from relevant disciplines, particularly ICT and the earth and environmental sciences and engineering, but drawing as needed on expertise from the biological sciences, medicine and the social sciences. The prime functions of this expert body would be to advise Government:

- » on the overall impact of CSG in NSW through a published Annual Statement which would draw on a detailed analysis of the data held in the Whole-of-Environment Data Repository to assess impacts, particularly cumulative impacts, at project, regional and sedimentary basin scales
- » on processes for characterising and modelling the sedimentary basins of NSW
- » on updating and refining the Risk Management and Prediction Tool
- » on the implications of CSG impacts in NSW for planning where CSG activity is permitted to occur in the State
- » on new science and technology developments relevant to managing CSG and when and whether these developments are sufficiently mature to be incorporated into its legislative and regulatory system

- » on specific research that needs to be commissioned regarding CSG matters
- » on how best to work with research and public sector bodies across Australia and internationally and with the private sector on joint research and harmonised approaches to data collection, modelling and scale issues such as subsidence
- » on whether or not other unconventional gas extraction (shale gas, tight gas) industries should be allowed to proceed in NSW and, if so, under what conditions.

Government Response

Given the pace of science and technology changes, the Government agrees there is need for expert advice on gas activities to ensure that our legislative and regulatory system is informed about the potential impacts associated with gas development, and that decisions are based on the best available science. The Government will consider the best way to harness this advice and notes that it will need to work closely with the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development, established in 2012 by the Australian Government, which undertakes a similar function.

Action/s	Progress
<p>The NSW Government has considered the best way to source advice on CSG broadly and CSG activities in NSW. We will continue to work closely with the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development, rather than duplicate these functions in NSW.</p> <p>The NSW Government has also contributed \$1.5 million in funding over the next 3 years to the Gas Industry Social and Environmental Research Alliance (GISERA) for independent scientific research into NSWs gas industry. GISERA's NSW research program is overseen by a Research Advisory Committee with membership from Government, industry and the community, ensuring that projects are conducted in a balanced way. This structure protects the independence of GISERA's research and has worked effectively in Queensland.</p>	Complete

Recommendation 13

That Government establish a formal mechanism consisting of five parallel but interacting steps. The five steps are given below.

- » Companies or organisations seeking to mine, extract CSG or irrigate as part of their initial and ongoing approvals processes should, in concert with the regulator, identify impacts to water resources, their pathways, their consequence and their likelihood, as well as the baseline conditions and their risk trigger thresholds before activities start. These analyses and systems should be incorporated in project management plans to meet regulator-agreed targets. Appropriate monitoring and characterisation systems would be developed as part of these project management plans and then installed. The monitors would measure baseline conditions and detect changes to these, as well as providing data on impacts and triggered risk thresholds.
- » Data from the monitors should be deposited (either automatically or in as close to real time as possible) in the State Whole-of-Environment Data Repository by all the extractive industries. Increasingly automated tools to interrogate data in the Repository should be developed, and these used to search data for discontinuities and compliance alerts.
- » As a separate process, the expert advisory body would examine on a frequent basis all data relevant to a region or a sedimentary basin. This data would come from a range of sources (the companies' monitoring data along with triangulation/crossvalidation data such as that from satellites, reports from local councils, seismic data, subsidence maps, information from cores, etc.). The expert body would use this data review to check for any factors signalling problems in that region and, if any are found, recommend to Government the appropriate action to be taken with regard to the relevant parties.

- » In a parallel process, the Government should commission, construct and maintain a variety of models of each region and in particular one that seeks to address cumulative impacts. These models should feed into the land use planning process and the activity approvals processes, and should assist in target setting for new projects.
- » Government, working with other appropriate Australian governments, should commission formal scientific characterisation of sedimentary basins starting with the East Coast basins, and concentrating initially on integration of groundwater with the geological, geophysical and hydrological context. Viewing these integrated systems in models and in interpretation could be described as a 'Glass Earth' approach to understanding the dynamics of activities and impacts in the basins.

Government Response

The Government will improve governance and accountability of water data and water management, as well as enhance data monitoring and real time reporting to provide greater confidence to the community about impacts on water from various extractive industries. The Department of Primary Industries, Water (DPI Water) is using groundwater baseline data from its network of 3,500 monitoring bores to map NSW's underground water resources and how they are used by different industries, including agriculture and mining. This project started with the Gunnedah, Gloucester and Clarence Moreton basin and is now being rolled out across the state. The mapping results are available online and will support Government, industry and the community to quickly identify and respond to pressure on our water resources. The environmental data portal will provide open access to broader information relevant to gas extraction.