



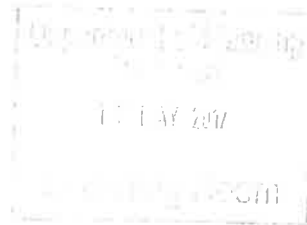
PCU070822

Submission to the Santos EIS

Attn: Executive Director, Resource Assessments

Dept of Planning and Environment
GPO Box 39
Sydney NSW 2001

From Stuart Murray
PO Box 371
Narrabri
NSW 2390



To: the NSW Department of Planning and Environment.
This is a Submission to the Narrabri Gas EIS.

I object to the Narrabri Gas Project (NGP) and recommend that it should not be approved. There are many reasons why the NGP should not be approved, for example, the adverse environmental impacts in the Pilliga Forest, the threat to underground water supplies such as the Great Artesian Basin, adverse social impacts, fugitive methane emissions, and the disposal of produced water and the salt.

This submission will give a small sample of why Santos is not a fit and proper identity to hold a Production Licence.

I have called it: **Trinkets and Fairy Tales.**

The coal seam gas (CSG) industry has snuck up on us in Narrabri, having got away to a running start in Queensland, cheered on by their government. The CSG industry has developed a reputation that is so bad it has caught up with them in Narrabri and resulted in the NGP being embroiled in controversy. This bad reputation now precedes the CSG industry across most of Australia. The disgusting reputation is a result of the destructive nature of the industry and the bad behaviour of the companies that promote the CSG industry and the unwavering support given to them by our State and Federal Governments. We have seen community opposition in the Northern Rivers and Gloucester fend off the advances of the CSG industry. The NGP has generated demonstrations, marches and blockades sometimes involving hundreds of people with many being charged or arrested. Police from Narrabri and surrounding towns as well as riot police from Sydney have been involved. This controversy is being covered regularly by the local, regional and national press. Several of the merchant banks have visited Narrabri for briefings on the situation, and several of the government Departments have sent representatives to get a first hand feeling for the level of opposition and essentially to find out how to settle the natives down. Their solution so far has been to increase the fines from \$500 to \$5500 for protesters while at the same time decrease the maximum penalty that could be imposed on a CSG company from \$1.1 million to \$5000 when they break the rules.

The fact that there is so much opposition to the CSG industry is proof that there is something drastically wrong with this industry. In an attempt to overcome the bad reputation the CSG industry has, Santos resorts to handing out **Trinkets** and telling **Fairy Tales**.

There are large trinkets for our major political parties in the form of political donations, and everyone knows they don't give these, out of the goodness of their heart.

The handing out of **Trinkets** to the local community is roughly in proportion to the severity of the reputation the CSG companies bring with them, and again they don't do this out of the goodness of their hearts. It is calculated to purchase community support, and it works, particularly for those who accept these **Trinkets**. Unfortunately there is a side effect as it has an adverse social impact driving a wedge through the fabric of the community, as there are some who would not accept the **Trinkets**.

In my opinion the level of **Trinket** giving is extraordinary, made up by material gifts, monetary gifts, and sponsorship.

Ref 1. Is a list of some of these gifts, sponsorships and donations.

Ref.1 Is a list of some of the organisations that have been recipients of Santos gifts, donations and sponsorships.

Narrabri Shire Council.

Santos shopper weekly \$100 vouchers, two of these per week, (while they were being run).

Narrabri junior cricket under 12s.

Narrabri junior cricket under 14s.

Aboriginal X1 cricket team.

Narrabri women's cricket team.

Narrabri picnic races, Santos Narrabri Cup.

Harness Racing Narrabri, Santos Carnival of Cups.

Narrabri Blue Boars Rugby Club, Santos major sponsor.

Narrabri War Vets cricket.

Narrabri Touch Football mixed open side.

Santos funds Local Cultural Heritage Data Collection.

Narrabri Scouts outfitted for jamboree.

Narrabri Golf Club.

Narrabri Men Shed, were donated a vehicle.

Narrabri Agricultural Show.

Central Northern Rugby Competition.

Narrabri Eagles AFL.

Gallopington Gully Polo Cross. Later they decided to not accept further sponsorship.

Killarney Bike Classic.

Nosh on the Namoi.

Land Council Christmas Hamper.

Boggabri Drivers Campfire.

Narrabri High School Robotics Team.

The photograph below is taken from the Santos NGP booklet which shows Santos's donation of five 300,000 litre water tanks to the Narrabri Shire Council. The Narrabri Shire Council is in favour of the NGP. It is interesting that the Shire councils of Moree, Walgett, Coonamble, Narromine, Gilgandra, and Coonabarabran, which surround the Narrabri Shire to the north, south and west, are all opposed to having the CSG industry in their Shires.



Mayor Conrad Bolton accepting Santos' donation of five 300,000 litre water tanks to Narrabri Shire Council, two of which are located at Narrabri Airport to support the Rural Fire Service. (Photo courtesy of the Narrabri Courier)

While Santos has "bought" the support or partial support of some community organisations through the giving of **Trinkets**, this has not been without its controversy.

Ref 2. Is Page 72, from The Newcastle University Report into local attitudes to Changing Land Use-Narrabri Shire Dec 2016.

the company has invested money in the local community through a range of sponsorships and community development projects, and a Community Benefit Fund estimated at \$160 million for infrastructure and regional development programs has been promised (Santos 2015).

APPROPRIATE GIFTS OR FAILED GIFTS?

Despite the stated company ethos and the significant investments that Santos has made, there is limited acceptance of the company and the proposed project within certain sections of the community. The nature of the project, the perceived environmental risks associated with CSG, and the local, national and global campaign against CSG and fossil fuels form part of community animosity and resistance. More acutely, however, opposition reflects the participants' sense of bearing the cost of the Narrabri Gas Project and receiving limited benefits in return. Many of the research participants are sceptical to Santos' community engagement and their contribution to the local community, arguing that these strategies in themselves result in negative social and cultural impacts. Bettina, one of the key stakeholders interviewed for the study, argued that Santos' investment in the local community is creating a 'welfare mentality'. Instead of gathering together and raising funds for local activities and needs, organisations will turn to 'easy money' provided by industry sponsorships. Similarly, another key stakeholder, Arthur, explained that:

the 'cargo cult' is really hooked in here because all the organisations, when they need to raise money, the first thing they will do is go to Santos. Instead of doing it the old-fashioned way of graft [...], really trying to get yourself going in all those different ways that country people have always done it in a very resilient sort of fashion, we'll just go to Santos and get some money from them.

Bettina and Caitlin both noted a cultural change within the community, whereby previously self-sufficient community groups transformed into groups expecting and relying on hand outs from coal and gas companies:

I think that it's a negative impact because [the organisations] were quite self-reliant and quite self-sufficient and they were actually only funded within their means. So they only had activities that were in their capacity to afford, whereas now you have Whitehaven, previously, and Santos, you know, and they funded a lot of things beyond what was necessary. So it creates a different level of expectation around what should happen (Bettina, key stakeholder).

In terms of the local sporting clubs, where once upon a time they'd say: 'we need to raise x amount of dollars. How are we going to do that? Cake stall?', which all serves to bring the community together, the first thing people say [now] is, 'let's go to the local mining company,' or, 'let's go to Santos', because that's considered the easy way out, but that does nothing for the community (Caitlin, farmer).

Harvey (2014) argues that transactional SLO approaches will often place an emphasis on 'outreach' and delivery of 'cargo'. This points to CSR policies that prioritise donations, direct funding or delivery of welfare programmes, unilateral construction of civic infrastructure, and community trusts, funds and foundations. The community engagement programs that the participants mention are examples of such outreach approaches, with a particular emphasis on sponsorships and donations. According to the participants, there is a general perception within the community of Santos as a simple one-stop shop for funding; if a community organisation needs money, all it has to do, they claim, is to approach Santos. Local farmer Nathan, for example, stated that: 'what we're seeing out at Santos at the moment is that if you want to sponsor an event, if you want cash, you go and see Santos. They'll cough up a coin for anything'. These sponsorships are, however, not straightforward, and might in themselves cause tension. Sarah, a farmer who remains undecided in her attitude to CSG, explained how Santos' investment in the local junior rugby club is a cause of contestation. She said that:

Santos sponsored our junior ruby [club] but we can't have their name on the jersey because so many people don't like them. So they won't allow their name to be written on the jerseys anywhere so we have it on their training shirts but it's not to be on their jersey that they wear when they play. That's because probably half the club don't want their sponsorship, so there you go (Sarah, farmer).

Whilst the community benefit schemes might be benevolent, within a contentious environment such outreach programs might, in fact, cause more opposition and concern. Some participants explain that, rather than leading to approval and acceptance of the company and the Pilliga project, these corporate contributions are fuelling scepticism and cynicism about the corporation's presence and activities. Nathan, cited above, perceives Santos' outreach practices as two-faced and argues that beside the sponsorships, the company 'does not spend a lot of money locally'. Rather than being seen as a sincere effort to compensate the community for negative

The page is Called Appropriate Gifts or Failed Gifts? It is worth reading as it alludes to the fact that many people are not won over to the pro gas way of thinking as a result of being offered Santos **Trinkets**.

An example given on this page involved the Santos sponsorship of the Narrabri Junior Rugby Club with players not wanting to pull on a jersey with Santos on the front.

Another example . After one season of Santos sponsorship money The Narrabri Galloping Gully Polo Cross Club has now resolved not to accept further donations from Santos as the majority of members do not support the NGP.

The sponsorship of the Narrabri Golf Club by Santos provoked outrage from many in the community and beyond when the club was coerced into cancelling a booking of the venue two days before a community information presentation where Senator Glen Lazarus and financial analyst Bruce Robinson were the guest speakers.

Ref 3. Is a statement from Hugh Barrett which has more detail on this incident.

This generated a series of **Fairy Tales** from Santos. Ref 4.

"In no way did Santos put pressure on the Narrabri Golf Club to cancel the event"

"Santos did not threaten to pull sponsorship from the Narrabri Golf Club, nor did we request that they cancel the event" Mr Mitchley said in a statement.

Statement of Hugh Barrett

On the morning of Thursday 25th February 2016 I had a phone call from Naomi Hodgson of The Wilderness Society informing me that the Narrabri Golf Club had cancelled the availability of the club's auditorium for a North West Alliance meeting scheduled for Saturday 27th February. Naomi said that she had made the booking about two months ago and confirmed it earlier in February.

As I am a member of the Board of the Golf Club, I offered to ring the Club to find out why this had occurred. I was unaware of the Board having made this decision and was concerned that it might have been a unilateral decision of another Board member. I spoke to Stacey Shields, the Club's Acting Manager, and she informed me that she had received a phone call from Annie Moodie of Santos, which had precipitated the decision to retract the availability of the Club's auditorium. This was after she had spoken to Richard Stokes, the Club's Manager, who was in Sydney on sick leave following a major operation.

I rang Annie Moodie but before I had explained my purpose in ringing, she asked me "Are you calling about the Golf Club", which I confirmed. She explained that Santos could not tolerate a "protest meeting" directed at Santos and the coal seam gas (CSG) industry. I suggested that it was not a protest meeting, but an orderly meeting of the North West Alliance (NWA), where people would be coming to hear Senator Glen Lazarus and others speak. She asked if I had seen the flyers being distributed on social media. I said that I hadn't, as I don't subscribe to social media. I asked her to forward a flyer to me, which she subsequently did.

Annie explained that The Wilderness Society had held a meeting at the Golf Club last year. Richard Stokes had rung her to ask if Santos, as the Club's major sponsor, had any concerns. She told him she was not worried about it. However, she told me "This time it is different". She explained that the NWA marketing on social media was targeting CSG and Santos, with a red bar through the Santos logo, etc. She explained that the "social media people" in Adelaide head office had picked up the NWA marketing and had rung her to ask if Santos was sponsoring the Narrabri Golf Club. Annie said that she then rang the Club and spoke to Stacey, explaining that the Club's renewal application for sponsorship was on her desk at the moment, that Santos was the Club's major sponsor, and that "we can't turn a blind eye". She told me that she didn't ask Stacey to cancel the event, but asked "what are you going to do"?

I then rang Naomi Hodgson and advised her of Santos' influence in the Golf Club's decision and suggested she look for an alternative venue. She suggested that a press release would be prepared about Santos' intercession in the arrangements. I asked to see a copy before release. She rang me back shortly after 1 pm and asked if she could read out the press release to me, as they were hoping to release it imminently. I said that I wanted to see it in writing.

Naomi subsequently attached the document to a text message, asking for a response ASAP. I responded by text "Nope, not happy. Will get back to you". She then texted to ask if the story would be OK if the quotes attributed to me were attributed to Rohan Boehm. I replied:

"No, not unless Rohan rings Annie Moodie and gets the story, as I have a conflict of interest, being a director of the club. Santos would undoubtedly pull its sponsorship based on the story, which puts me in conflict with the board".

Naomi then asked if she should get Rohan to ring Annie. I responded:

"That would be Ok, but I think the language needs to be toned down so as not to cause grief to the golf club".

When I saw the media release online, I was very unhappy about it as I knew that it would draw opprobrium to the Golf Club. I rang Annie Moodie on the morning of Friday 26th February and told her that the press release had nothing to do with the Golf Club. She thanked me for letting her know and said that she had entirely expected a press release along those lines and was aware that the Golf Club was not involved in it.

At 10:30 am Tuesday 1st March, Annie Moodie rang me to ask if I would prepare a letter for publication in Thursday's Courier, stating that Santos did not bully the Golf Club and did not threaten to withdraw sponsorship. She asked that I say that "Santos did not bully them into withdrawing the venue".

Annie said that she had spoken to Richard on Friday and that they had agreed to "let it go." She said that she had then received a call from Adelaide to "ask someone to put a letter to the Editor" of The Courier, and that the request had come down "from the CEO".

When I asked why she had rung the Golf Club the previous week, Annie expressed surprise that the Golf Club had reacted by cancelling the booking. I asked "what was the alternative" and she thought perhaps a sandwich board at the entrance would have been suitable, asking that respect be shown to Santos as a sponsor of the Club.

I told Annie that I had spoken to Richard yesterday and that we agreed that we would wait to see if there was any adverse comment in Tuesday's (1st March) Courier before reacting. I explained that Richard and I had agreed that it was not worth giving oxygen to the issue if not necessary. I then terminated the conversation, in which Annie had done most of the talking, at 10:45 am, as I was due at another meeting.

Ref 4

Ref 4. Is a media release on this incident with above the quotes.

Call for CSG 'bullying' investigation

🕒 FEBRUARY 26, 2016 5:10PM

By Peter Trute AAP

Call for CSG 'bullying' investigation

A stoush over a cancelled coal seam gas (CSG) protest meeting has escalated with federal senator Glenn Lazarus calling for an investigation into claims energy company Santos pressured a club it sponsors not to host the event.

Activists from the North West Alliance have accused Santos of pressuring the Narrabri golf club not to host an anti-CSG meeting on Saturday at which Senator Lazarus was due to speak.

Santos has rejected the accusation.

Senator Lazarus, a strong campaigner against the CSG mining industry in his home state of Queensland, said in a statement he was "absolutely disgusted" by the bullying allegation and would be raising the issue with Prime Minister Malcolm Turnbull.

"I want this issue fully investigated," he said.

North West Alliance member Rohan Boehm said the long-standing booking to hold Saturday's meeting of about 100 people at the Narrabri Golf Club was cancelled with two days' notice.

Mr Boehm said he was informed by the organisers that the golf club, which is sponsored by Santos, had been asked to consider its position.

"This is an extraordinary turn of events," he said.

"Santos is bullying this community and trying to shut down questions and dissent."

Santos NSW general manager for energy Peter Mitchley said the company respected the right of individuals to protest and did not pressure the club.

REF 4

"Santos did not threaten to pull sponsorship from the Narrabri Golf Club, nor did we request that they cancel the event," Mr Mitchley said in a statement.

"In no way did Santos put any pressure on the Narrabri Golf Club to cancel the event."

Santos is seeking to develop CSG mining in the Pilliga region near Narrabri in northern NSW.

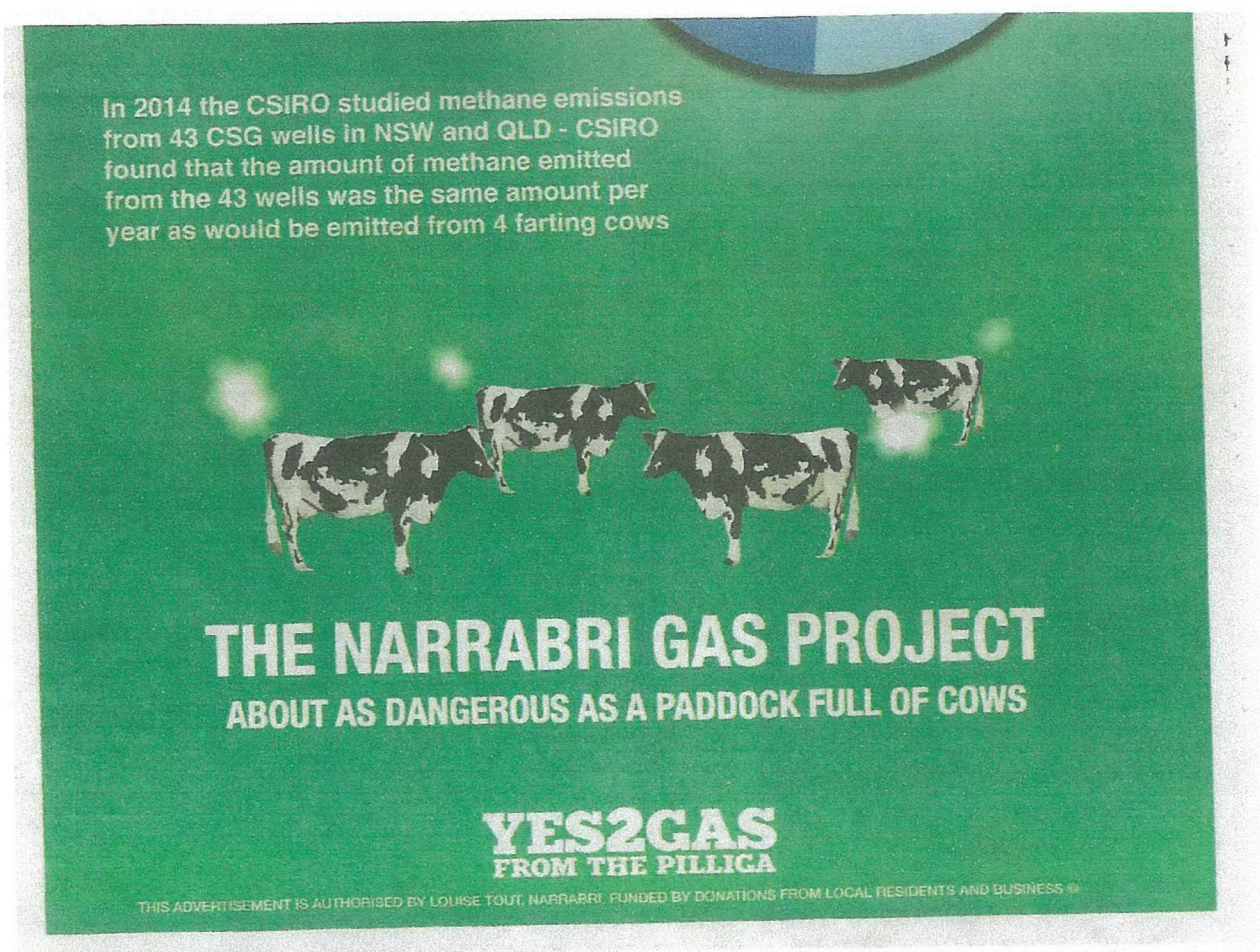
A wastewater treatment plant development at the project has been the target of recent protest action.

A representative of the Narrabri Golf Club declined to comment on the matter.

The North West Alliance meeting has been relocated to the Crossing Theatre in Narrabri.

Possibly the most consistent **Fairy Tale** we are told is that the NGP will provide (clean) and (sustainable) energy. These words are used five times in the first three pages of the Santos Narrabri Gas Project information booklet. On page six of this same booklet it tells you that the Project will have an operational life of over 20 years. Other information suggest up to 25 years. The fact is the NGP is not sustainable as it will only last for 20 to 25 years. The same claims are made during information dinners and field trips sponsored by Santos. When my wife and I questioned these statements suggesting they should explain that methane is about 50% cleaner than coal when burned and is probably worse than coal when fugitive emissions are considered, they did not answer the question. When questioned about sustainability at a public information evening, Mr Mitchley who was in attendance answered, "It depends on your definition of sustainable". We gave him our definition of sustainable and asked him what his definition was? He did not answer the question.

There is "massive uncertainty" about the real quantity of fugitive emissions from CSG projects as we rely largely on estimations and if these come from the gas industry they will be underestimated. In 2014 the opportunity to create another **Fairy Tale** arose when the CSIRO released measurements of methane leaks from 43 wells which would have been chosen by the gas industry for the study. The results found the leaks amounted to 0.02% of lifetime production well below the approximately 2% leakage rate where gas is likely to be cleaner than coal. The press releases included the Financial Review trumpeting: Coal Seam Gas releases very little greenhouse gas, CSIRO finds. The Australian had fun trivialising the issue: CSG leaks 'equal to that of cows' (That line was plucked straight from oil and gas lobby group APPEA's press release, comparing daily fugitive emissions of methane to that of four cows). ABC Rural report online read: Coal seam gas well fugitive emissions lower than previous estimates: CSIRO. The Narrabri paper the Courier printed the same story and later published a full page advertisement by the Yes to Gas supporters obviously using information from the APPEA press release.



The CSIRO scientists themselves were acutely aware of the limitations of their study, but their qualifications were conveniently omitted.

The CSIRO study only looked at emissions from the well pad, the slab of concrete the CSG wellhead sits on. The study noted "there were many other potential emission points throughout the gas production and distribution chain that was not examined in this study. These include well completion activities, gas compression plants, water treatment facilities, pipelines and downstream operations including LNG facilities. Emissions from some of these sources are often estimated for reporting purposes using methodology based on emission factors largely derived from the U.S. gas industry".

There are also the deliberate emissions which were not measured in this study. For example venting, flaring, high point vent emissions, and CO₂ that is scrubbed from the methane before being sent down the pipeline. It is known that CO₂ emissions from scrubbing can be high and to the best of my knowledge is not mentioned in the EIS.

The consent authorities should know this information if it is not in the EIS as it could be a serious oversight if not considered. Ask Santos to provide the percentage of CO₂ emitted to the atmosphere as a result of the scrubbing process, compared to the methane that is left?

Another little known but significant source of green house gas emissions the gas industry is responsible for occurs at the export terminals at Gladstone. Of all the gas that arrives at Gladstone 10% to 15% of it is burned to provide the energy to run the freezers that turn the gas into Liquid Natural Gas.

Ref 5. The report "Australian Energy Resources Assessment" published by the Bureau of Resources and Energy Economics. Chapter 4 titled "Gas". Page 86. Paragraphs titled Processing, transport and storage.

rock to act as a gas source in the case of frontier basins. Drilling is required to test whether the putative hydrocarbon trap contains oil or gas, both, or neither. Successful wells are commonly tested to recover a sample of the hydrocarbons for analysis to determine gas quality (liquids content, presence of carbon dioxide [CO₂]) and to determine likely production rates. The initial discovery well may be followed by appraisal drilling and/or the collection of further survey data to help determine the extent of the accumulation.

In Australia, government has taken a key role in providing regional precompetitive data to encourage private sector investment in exploration. Company access to prospective exploration areas is by competitive bidding, usually in terms of a proposed work program, or by taking equity ('farming-in') in existing acreage holdings.

Exploration for unconventional gas differs somewhat from the search for conventional hydrocarbons, especially when the target is a broadly distributed stratigraphic formation, such as a coal bed or shale. Seismic surveys and drilling still constitute the major exploration technologies. However, the distribution of the prospective formation is usually well known at the regional scale, and exploration success depends on identifying parts of the formation where the gas resource and reservoir quality are sufficient to sustain a flow of gas on a commercial scale.

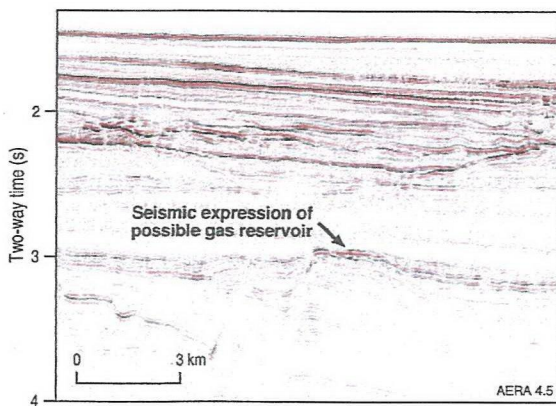


Figure 4.5 Seismic section across a prospective gas accumulation on the Exmouth Plateau, Carnarvon Basin
Source: Williamson and Kroh 2007

Most of Australia's conventional gas exploration occurs in the offshore basins, sometimes in water depths beyond 1000 m and with target depths from about 2000 m to more than 4000 m below the seafloor. The search for CSG, tight gas and shale gas is restricted to onshore basins. Target depths range from a few hundred metres to about 1200 m for CSG and down to depths of 4000 m or greater for tight and shale gas. The costs of the different exploration components—especially seismic work and drilling—vary markedly depending on the scope and location of the project, logistics, and other factors. Many shallow CSG wells can be drilled for the cost of one deep well in deep water. For example, an offshore well drilled to 3000–4000 m in water depths of 100–200 m typically costs \$30–50 million (roughly \$1 million

per day of drilling), depending on location, water depth and other considerations. Shallow wells drilled to 200–1000 m in CSG exploration and development typically cost around \$300 000 to \$1 million (around \$1000 per metre), with an average cost of around \$500 000 per well (using data from company reports and Geoscience Australia estimates).

Development and production

Once a decision to proceed has been made and financial and regulatory requirements have been addressed, infrastructure and production facilities are developed. For offshore conventional gas accumulations, this involves the construction of offshore production facilities, with the gas piped to onshore processing plants. There are proposals to develop some remote gas fields with floating LNG processing facilities on-site. The Prelude floating LNG (FLNG) project (Browse Basin) is under construction. Production of CSG resources requires the drilling of many shallow wells and removal of water to depressurise the coal formation before gas flow is established. Hydraulic fracturing combined with horizontal drilling is used to achieve commercial flow rates from tight gas and shale gas formations.

Processing, transport and storage

The gas extracted from the well requires processing to separate the sales gas from other liquids and gases that may be present, and to remove water, CO₂ and other impurities before the gas can be transported efficiently by pipeline or liquefied and shipped to customers overseas. As a result, onshore processing tends to occur near the production well.

Apart from small quantities used on site for electricity generation or other purposes, gas usually requires transport for long distances to major markets. This is managed in Australia by gas pipeline (for domestic use), and in liquefied form (LNG) by tanker (for export). Gas in pipelines travels at high pressures, which reduces the volume of the gas being transported as well as providing the force required to move the gas through the pipeline. LNG is natural gas that has been cooled to around -160°C at which temperature it becomes a liquid and has shrunk in volume some 600 times. Liquefaction reduces the volume and the cost of transportation over long distances. However, it typically consumes 10–15 per cent of the gas in the process.

Natural gas not used immediately can be placed in storage until it is needed. Normally, it is stored underground in large reservoirs, but it can also be stored in liquefied form. Gas can be reinjected into depleted reservoirs for later use following the extraction of oil and other liquids.

End-use market

Whereas major industrial users and electricity generators tend to receive natural gas directly, most users receive gas through distribution companies. As an end-use product, unconventional gas may be added to gas pipelines without any special treatment and utilised in all gas appliances and commercial applications.

On September 30th 2014, the Chief Scientist of NSW, Professor Mary O'Kane, released her final report into coal seam gas (CSG) mining. The report concluded there are genuine risks to water supplies and public health from CSG, matching the concerns raised by communities across NSW for many years.

The report identified possible risks from CSG mining, and listed recommendations that needed to be addressed before the NGP could proceed.

Even if all the recommendations were implemented, the report found that CSG could still only be considered with two substantial provisos: if a solution can be found to the vast amounts of toxic waste water and salt which it produces, and in circumstances where geology and hydrogeology can be adequately characterised.

Extraordinarily, in response to the Chief Scientist's report the CSG industry's **Fairy Tale** claimed that it provides a "green light" for the industry in NSW. In fact, nothing could be further from the truth, and the Chief Scientist herself told Alan Jones on radio that she was "startled" by the claim.

The Santos EIS proposal for dealing with the waste water is flawed and no commercial arrangement has been made with any third party to take this water. Nobody in their right mind would accept the treated waste water under the proposal set out in the EIS.

Santos still does not know what they are going to do with the salt. It seems they still do not have a commercial arrangement with any facility that is willing to take the waste salt, and in April 2017 Mr Mitchley announced on radio that Santos was considering a \$200 to \$300 million feasibility study into refining the salt to a quality that would be saleable.

It's ironic that the many individuals and groups campaigning to stop CSG (and operating on a shoe string) are regularly accused by the industry of lies and distortion of facts-usually without specifics. Meanwhile those who stand to make enormous financial gains from CSG continue to wilfully mislead the public via expensive ad campaigns.

APPEA is the industry body representing the CSG industry in Australia (and APPEA's chairman at the time was David Knox. He was also CEO of Santos).

The following **Fairy Tale** was made in an APPEA television commercial air in 2012 that "**CSIRO (and government studies) have shown that groundwater is safe with coal seam gas**".

Once the CSIRO became aware of the ad they rejected this claim made by APPEA. They reiterated "**at no time has CSIRO made such a statement, and nor do the results of CSIRO research support such a statement**".

Ref 6. Lies, lies and more lies: Stop CSG Illawarra

Ref 6

Say hello!

Join email list: ☐

The Illawarra campaign

Lies, lies and more lies

November 13, 2012

The insidious nature of the coal seam gas (CSG) industry has again been highlighted with more deceptive advertising claims from one of the big industry players – Santos

It's ironic that the many individuals and groups campaigning to stop CSG (and operating on a shoestring) are regularly accused by the industry of lies and distortion of facts – usually without specifics. Meanwhile, those *who* stand to make enormous financial gains from CSG continue to willfully mislead the public via multi-million dollar ad campaigns. We'll take a look at three recent examples:

1. APPEA TV ad:

“CSIRO studies have shown that groundwater is safe with coal seam gas”

APPEA is the industry body representing the CSG industry in Australia (and APPEA's chairman is David Knox, CEO of Santos). They're behind the multi-million dollar **We Want CSG** campaign.

In September 2012, APPEA found themselves admonished for their TV ad by none other than CSIRO – our nation's peak scientific body – for claiming that “CSIRO [and government studies] have shown that groundwater is safe with coal seam gas”.



David Knox (Santos CEO
APPEA Chairman)

CSIRO issued the following release once they became aware of the ad:

At no time has CSIRO made such a statement, and nor do the results of CSIRO research support such a statement.

CSIRO continues to undertake research to better understand the impacts of coal seam gas extraction on groundwater quality and quantity.

CSIRO has stated on the public record that coal seam gas extraction is likely to pose a 'low risk' to groundwater quality through contamination. CSIRO has also indicated that groundwater levels will fall as a consequence of coal seam gas extraction. In some places this could see aquifer levels subside by tens of metres for tens of years; in others it is likely to reduce

“At no time has CSIRO made such a statement and nor do the results of CSIRO research support such a statement.”

aquifer levels by several metres for several hundred years.

It's astonishing to consider that this ad was written, proof-read and, presumably, underwent some form of legal approval yet still featured such a blatant lie. The only explanations are outright deception, complete incompetence or an unholy blend of the two.

This ad has since been pulled from online view, but you can **read about it at the Sydney Morning Herald or on the CSIRO's site.**

2. Santos TV ad:

"Agriculture and CSG can and do co-exist"



In November 2012 Santos ran a TV ad featuring a farmer standing amongst a canola crop, extolling the virtues of CSG's co-existence with agriculture. It appeared to be quite a compelling story, except to Don Hubbard, the actual owner of the farm, who recognised it as his own. He did not provide permission for Santos or the farmer used in the ad to enter and film on his land.

In a statement Don Hubbard – a fourth generation farmer – told **New Matilda** :

"There is no way an operating broadacre farm can co-exist with CSG wells and there is no better dryland farming anywhere in the world than here on the Liverpool plains. If governments haven't the wherewithal to protect that, I despair about the future."

"There is no way an operating broadacre farm can co-exist with CSG wells"

Santos have since pulled the ad and confirmed it will not run again in its current form.

- **New Matilda: Coal Seam Gas Gets The Wrong Farmer**
- **ABC: CSG TV ad riles Liverpool Plains farmers**

3. Santos print and TV ads:

"Couldn't CSG threaten our water supplies?"

COULDN'T CSG THREATEN OUR WATER SUPPLIES?

"No. Just the opposite."

Stephen Tapsall
Water Study Leader
- Santos

Our search for coal seam gas is unlocking another significant resource -- new supplies of water.

The water we extract from coal seams is salty but once it's treated it's ready for a wide range of uses.

In Queensland, it is already irrigating crops to feed cattle and soon it will replenish town water supplies through an aquifer re-injection project.

We know water is a significant issue but CSG is not a threat to this essential commodity.

Similar claims are not unusual, for example in the Northern Daily Leader Friday February 28, 2014, Mr Peter Mitchley, Santos Energy NSW general manager says the coal seam gas operation in the Pilliga is **"profoundly safe"** and said opponents criticising the project are simply **"jumping at shadows"**.

Ref 6.5. See a copy of this statement below .

Ref 6.5

4 Friday, February 28, 2014
NEWS LEADER

'Profoundly safe' says Santos boss

PILLIGA WELLS

By Ross Tyson

SANTOS Energy NSW boss Peter Mitchley has insisted the company's proposed \$2 billion coal seam gas operation in the Pilliga is "profoundly safe" and said opponents criticising the project are simply "jumping at shadows".

Speaking in Tamworth on Tuesday, Mr Mitchley addressed a number of concerns raised by local farmers over the controversial 850-well development in a wide-ranging interview with *The Leader*.

Santos' announcement last week that it would lodge its application by the end of June, with a view to providing gas to the domestic market by 2017, has steered anti-CSG campaigners against the project.

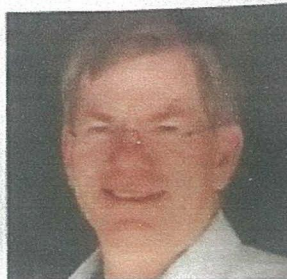
But Mr Mitchley said the company believed it had a "social licence" to proceed, providing it received government approval under the special inter-agency panel to be formed to assess the project.

"I'm confident what we do have is a strong support base in Narrabri and the more people work with us as a company and see how we go about things and what we do, they will become more comfortable," he said.

"Santos has a track record that isn't the track record of Eastern Star (Gas) and it isn't the track record of some cowboy outfit somewhere else. We'll do the right things in the right way."

Mr Mitchley, who gave an emphatic "no" when asked if hydraulic fracturing - also known as fracking - would be used to extract methane from the coal seams, admitting the company needed to do "a better job" of educating the public about the project.

He insisted the activities would not contaminate the Great Artesian Basin's aquifers and said Santos had spent \$4.5 million on water studies



Santos Energy NSW general manager Peter Mitchley.

proving as much.

"This company has done two separate water studies - peer reviewed and gone through all government processes - and they've said it's safe," he said.

"Are people worried about water? Yes, I understand the perception. Has it been studied? Yes, it has been studied. All the modelling says that there's going to be no adverse impact on aquifers."

"So, is it safe? I believe it's profoundly safe and I believe this company will do an excellent job ensuring its safety."

Mr Mitchley said as well as the project delivering the state \$1.6 billion in royalties, Santos would establish a community fund from which an estimated \$160 million would be drawn over the life of the operation to improve local infrastructure, services and facilities.

Individual landholders who agree to let Santos onto their land to drill wells could also be in for a windfall, according to Mr Mitchley, with farmers potentially earning more than \$100,000 a year.

"Santos has always said we will not go on somebody's land unless we have a willing farmer," he said.

"It's voluntary and voluntary is both sides - the farmer has to want us on his land and I have to want to be on his land."



Leigh Iv
March 8

ha ha ha ha ha ha I
with a proven existence
of toxic metals in the
it Santos. — with Jo

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Owen Jones
such a long wait
need nuke power
pollute directly
March 9 at 10:



Pam Pember
let the facts go
March 9 at 2:1



Karin Adams
eat money.
March 9 at 2:5



Michael McG
medicines, mir
the woodwork
March 10 at 1:



Desley Bank
March 10 at 1:



Chip Des
THE WATER E
A LIE, WHY W
March 10 at 4:

Nobody will guarantee this

The CSIRO has stated on the public record that CSG extraction is likely to pose a "low risk" to ground water quality through contamination. CSIRO has also indicated that groundwater levels will fall as a consequence of CSG extraction.

NSW Chief Scientist also mentions the possible risks to water from CSG mining.

A report prepared by: ECO Logical Australia for Santos in Oct 2014, on page 65, States.

An assessment of the Project indicates that the duration and wider geographic extent of depressurisation of groundwater head within the coal seams and adjacent strata **will** cause a significant impact to the groundwater resources of the Gunnedah-Oxley Basin. However, due to the depth of the target coal seams, low hydraulic conductivity of the target strata and poor hydraulic continuity with overlying strata, the overlying groundwater features of greater sensitivity (Pilliga Sandstone, alluvium) are highly unlikely to experience significant impact.

This **Fairy Tale**, which implies that the NGP will have no impact on groundwater, contradicts what the CSIRO, the Chief Scientist and one of their own reports .

Ref 7. ECO Logical comment is attached.

Ref 7



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Santos

We have the energy.

Referral of proposed action

Santos NSW (Eastern) Pty Ltd
Narrabri Gas Project
Gunnedah Basin, NSW

October 2014

Prepared by:

eco
logical
AUSTRALIA

FEATURE	SENSITIVITY	DESCRIPTION
Garrawilla Volcanics	Low – feature has medium quality and rarity on a local scale	Water quality generally unknown but considered likely to be unsuitable for use No known abstractions due to its depth The attributes of the groundwater system are likely to be relatively commonly found however recharge rates are very low and recovery is also likely to be limited
Clare Sandstone	Very low – feature has low quality and rarity on a local scale	Water quality generally poor due to the presence of minor coals and unsuitable for any use No known abstractions due to its depth and quality The attributes of the groundwater system are likely to be relatively commonly found however recharge rates are very low and recovery is likely to be limited
Coal seams including the target formation	Very low – feature has low quality and rarity on a local scale	Water quality highly saline and unusable for any purpose Attributes of this system are commonly found and widely distributed The nature and depth of this formation results in its lack of use as a water resource
Groundwater Dependent Ecosystems, springs and wetlands	High – feature has high quality and rarity on a regional or national scale	High priority GDEs exist at Eather, Hardys and Mayfield springs GDEs are likely to be used by threatened/migratory species, as described in relevant sections above Adopting the precautionary principle, it is assumed that these GDEs are of high sensitivity
Stygofauna populations	High – feature has high quality and rarity on a regional or national scale	Stygofauna communities may exist in the unconsolidated alluvium within the Project area. Given the depth of the proposed CSG wells, their separation from the alluvium, geological features between, the significant irrigation extraction directly from the alluvium, their sensitivity has been designated as low

Groundwater use within the Project area is limited. This is attributed both to land use constraints arising from the Project area largely coinciding with the footprint of the Pilliga and lower bore yields associated with the consolidated rock units.

It is understood from the NSW Office of Water (NOW) bore database PINEENA and limited bore inventory data obtained within PEL238 that there are no extractions from formations deeper than the Pilliga Sandstone. The majority of bores are utilised for stock and domestic purposes. A town water supply is provided from abstraction bores in Narrabri, to the north of the Project area.

The target strata for CSG extraction are the principal coal seams of the Maules Creek Formation, which is not currently utilised for water supply due to depth, poor water quality and availability of better quality groundwater near the surface.

X Compared with the assessment conducted in accordance with the Significant Impact Guidelines for the Exploration and Appraisal Program, an assessment of the Project indicates that the duration and wider geographic extent of depressurisation of groundwater head within the coal seams and adjacent strata will cause a significant impact to the groundwater resources of the Gunnedah-Oxley Basin. However, due to the depth of the target coal seams, low hydraulic conductivity of the target strata and poor hydraulic continuity with overlying strata, the overlying groundwater features of greater sensitivity (Pilliga Sandstone, alluvium) are highly unlikely to experience significant impact.

the GAB ←

While on the subject of APPEA **Fairy Tales** attached is another which is referenced in a report in the Northern Daily Leader. APPEA deny being invited to participate in a public forum with The Australian Institute in Narrabri to debate the CSG industry. Emails obtained by The Leader show that APPEA were invited numerous times.

Ref 8. Is the full report published by The Northern Daily Leader.

REF 8

The Northern Daily
LEADER (1)

APPEA caught out on CSG no show, emails show organisation was invited to The Australia Institute forum



Jamieson Murphy (/profile/358/jamieson-murphy)

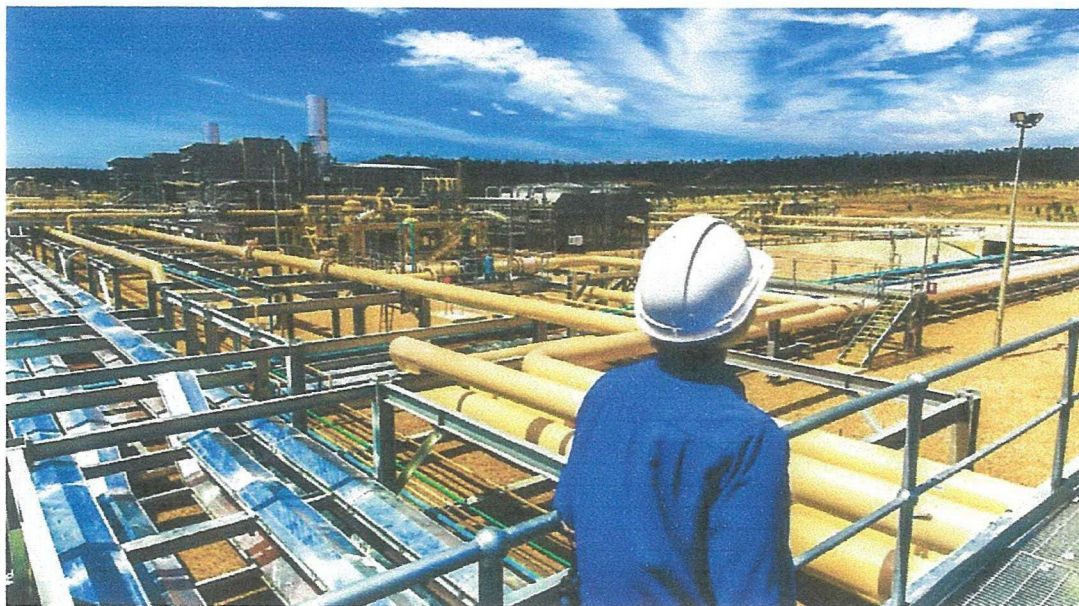
@jamiesonmurph (https://www.twitter.com/@jamiesonmurph)

30 Nov 2016, 5:30 p.m.

(<https://www.facebook.com/sharer/sharer.php?u=http://www.northerndailyleader.com.au/story/4327639/csg-industry-caught-out-on-debate-no-show/>)

([http://twitter.com/share?url=http://www.northerndailyleader.com.au/story/4327639/csg-industry-caught-out-on-debate-no-show/&text=CSG industry caught out on debate no show&via=The NDL](http://twitter.com/share?url=http://www.northerndailyleader.com.au/story/4327639/csg-industry-caught-out-on-debate-no-show/&text=CSG%20industry%20caught%20out%20on%20debate%20no%20show&via=The%20NDL))

(mailto:?subject=CSG industry caught out on debate no show&body=Hi,I found this article - CSG industry caught out on debate no show, and thought you might like it <http://www.northerndailyleader.com.au/story/4327639/csg-industry-caught-out-on-debate-no-show/>)



CAUGHT OUT: APPEA says they weren't invited to the specific forum held on August 29. Emails obtained by The Leader show the organisation was invited to the event numerous time, and was even offered the chance to discuss convenient dates.

Ref8

The Narrabri community is frustrated and angered at an apparent unwillingness by representatives of the coal seam gas industry to attend a local forum to discuss the economic impact of CSG on the region.

Business owners and residents say the "no show" by industry body APPEA is typical of the industry's disregard for local communities.

APPEA has defended its failure to attend the forum by claiming it was not invited to the event, but an email trail obtained by *The Leader* indicated it was invited.

Locals say the denial supported their belief the industry is unwilling to engage with the community to avoid the "hard questions".

From: Mark Ogge <[REDACTED]@tai.org.au>
Subject: Re: Attention Hannah: Invitation to speak at Narrabri CSG economic forum
Date: 18 August 2016 at 10:01:25 am AEST
To: <appea@mail@appea.com.au>

Hello Hannah,

Could you please let Noel know that have decided to postpone the event until mid Octol confirm a speaker to give the industry perspective.

We would of course still be delighted to have an APPEA speaker, and we happy to disci helps.

Kind Regards

Mark

On 09/08/2016, at 9:28 AM, Mark Ogge wrote:

Hello Hannah,

Thank you for your time just now. Below is the invitation for an APPEA representative to as discussed.

Many thanks

Mark

Noel Mullen

Deputy Chief Executive
APPEA

Dear Noel

I am writing on behalf of The Australia Institute to invite APPEA to participate in a public effects of coal seam gas development in North West NSW. The forum will be held in N August 31st.

We have extended an invitation to Peter Mitchell from Santos to speak, but haven't recd hoping APPEA can represent the industries' perspective.

We believe the potential economic effects coal seam gas development in the region is a and that it is vital to have a well informed public debate.

The forum would be an opportunity for APPEA to highlight the industries' contribution to potential economic benefits if the Narrabri Gas Project proceeds. As with any large reso both positive and negative economic impacts, and we believe it is important to have an discussion of these issues.

We are proposing a simple format with an APPEA representative and Richard Dennis (Australia Institute) speaking for 10-15 minutes each, followed by questions from the aud

Dr Guy Roth has offered to moderate the forum.

Please don't hesitate to call if you would like to discuss it further.

Yours sincerely

Mark Ogge
Principal Adviser
The Australia Institute
M: +61 [REDACTED]
E: [REDACTED]@tai.org.au
Web: www.tai.org.au

"It's typical," Narrabri resident Stuart Murray said.

The Wildness Society's Namoi Hodgson said she was "not surprised" APPEA denied it was invited.

"We've seen multiple examples of this over many years," Ms Hodgson said.

The forum was organised by independent think tank, The Australia Institute, who postponed the event twice to give industry representatives more time to provide a speaker and offered to "discuss dates if greater flexibility helps".

Ref 8

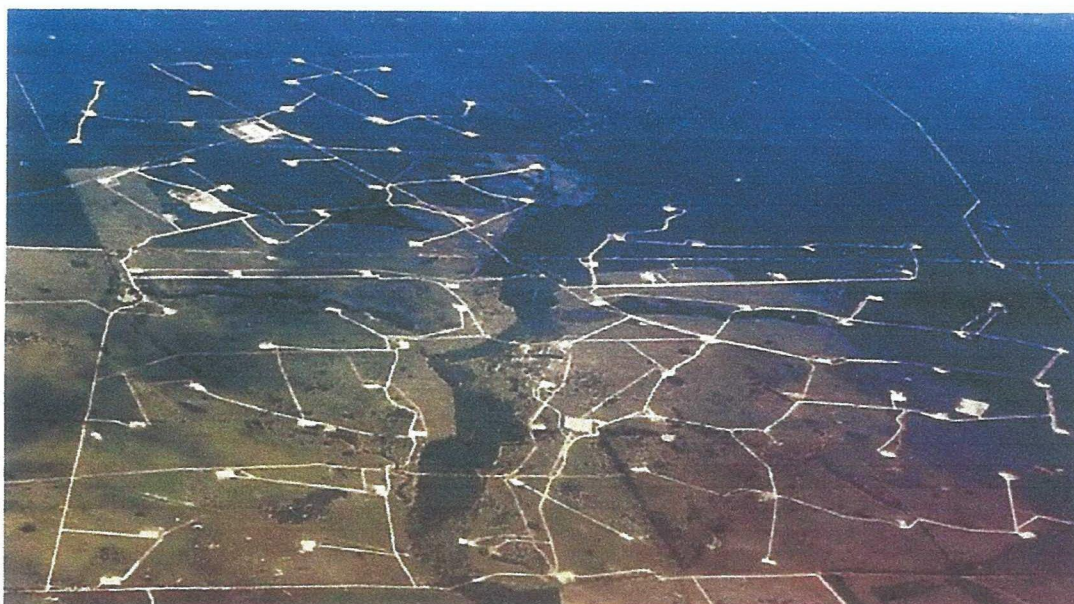
An APPEA spokesperson told *The Leader* the organisation "has not been invited by TAI to attend and will not be participating".

• News • Business

Local business owner Ann Loder attended the forum and asked how small businesses that don't get a contract with Santos survive, particularly when regular customers are spending less due to tough times. She was interested to hear what industry bodies had to say and was disappointed no representatives came to the forum.

"The truth needs to come out, it doesn't matter if it is for or against [CSG]," Ms Loder said.

"When we get people telling us they haven't been invited and we know full well they have, it doesn't do anything to restore our faith in the industry. It makes us doubt the stuff they say is the truth."



DOUBLE EDGED SWORD: The Australia Institute said CSG has damaged the local economy in places like Tara.

TAI principal adviser Mark Ogge said he contacted APPEA multiple times via phone and email to invite the organisation but received no response.

He said the offer was still on the table.

"It's a very important issue – these projects are being approved based on the economic claims being made," Mr Ogge said.

"If those claims don't stack up, important decisions are being made on incomplete or inaccurate information, which can lead to really bad outcomes.

"We'd be happy to come up again and have the debate – in fact we'll even have the debate in Sydney if it suits APPEA."

Mr Murray said he wanted to hear from APPEA, even though he believed he knew what the organisation would say.

"They are really good at pushing one line and getting around hard questions," Mr Murray said.

Ref 8

Santos was also invited, but declined as the forum would "predate the [Narrabri Gas Project] development application's publication".

• News • Business

"Santos plans to publicly display the EIS, as part of the development application, in the coming months," a Santos spokesperson said.

"This document will contain, as required, a detailed economic assessment for the project."

[See your ad here \(/advertise/\)](#)

The next **Fairy tale** involves the amount of money Santos claims that will be contributed to a Regional Community Benefit Fund.

In June 2012 Santos claims the contribution to this fund will be an amount in excess of \$300 million.

For most of the time since then the fund was expected to deliver around, \$160 million.

In 2017-More recent claims for these contributions are quoted as being up to, \$120 million.

MR Kevin Gallagher also quotes the \$120 million in his forward to the Santos EIS.

There has also been a downward trend in the estimate of royalty payments that will be generated by the NGP.

These have been reduced from \$1.6 billion, to \$1.2 billion. These figures are also probably optimistic as I would not be surprised if Santos try for royalty holidays or royalty discounts as other resource companies seem to be able to organise. A recent story in the Australian Newspaper 8/5/2017 also casts doubt on the amount of gas the NGP will be able to produce. The following is a copy of this article.

This story in *The Australian* (full text pasted below) is good news:

- Don Harwin sounding non-committal about Narrabri and distancing himself from estimates of the amount of gas that "come from Santos"
- Unnamed sources saying there are "geological issues affecting access to the coal-seam gas" in the Pilliga (the same problem AGL encountered in Gloucester)
- And a mention of strong opposition from local farmers and environmental groups that "intend to escalate protests over the next 12 months"

Online here: <http://www.theaustralian.com.au/business/mining-energy/doubts-over-36bn-narrabri-projects-ability-to-solve-domestic-gas-shortage/news-story/dea8e326552058a53eae0fc22de0dac0?csp=3ad6faa012ab7e1a6cf6843ed3a975c9>

Doubts over \$3.6bn Narrabri project's ability to solve domestic gas shortage

by Brad Norington

The Turnbull government claim that fast-tracking the proposed \$3.6 billion Narrabri gas project in NSW could help solve domestic gas shortages is in doubt because of funding uncertainty and a possible exaggeration of the available resource.

Federal Resources Minister Matt Canavan has promoted the Narrabri project as vital to meeting local energy needs and potentially enabling an early end to last month's government intervention curbing gas exports when local gas shortages occur.

Based on the estimates of mining giant Santos that its Narrabri project could supply up to 50 per cent of the NSW gas market, Mr Canavan said that export restrictions might only be needed for three years if the development was fast-tracked.

But the Narrabri project has been plagued by setbacks including a downgrade of the gas reserve, slow progress and concerns about the ability of Santos to raise massive funds needed for the development.

Despite insisting it remains "committed" to the Narrabri project, Santos has called it a "non-core" development and written down most of its value.

The Narrabri gas reserves under the Pilliga State Forest in northwest NSW have been rated lower than previously thought, with geological issues affecting access to the coal-seam gas.

The further complication for Santos and both the federal and NSW governments is strong opposition from local farmers and environmental groups that intend to escalate protests over the next 12 months in an attempt to frustrate a go-ahead.

NSW Energy Minister Don Harwin said his department was co-ordinating the assessment process — but it had "no fixed timeframe".

Government sources said the Narrabri project was still in its early stages, and progress would depend on speedy responses from Santos to questions raised about an environmental impact statement it submitted in March.

Mr Harwin's office takes no responsibility for optimistic forecasts that the Narrabri project could supply up to half of NSW's gas needs, stressing that such figures come from Santos.

In a February 2014 memorandum of understanding with Santos, however, the NSW government accepted Santos estimates as the basis for rating Narrabri as a "strategic energy project".

The memorandum, signed by then acting premier Andrew Stoner, then NSW resources minister Anthony Roberts, and senior Santos executives, said the NSW government "understands that the Narrabri gas project could supply between 25-50 per cent of the state's natural gas needs".

Ref 9. Is a copy of the documents which contain the information on the downgrades of the expected contributions to the Community Benefit Fund and to royalty payments.



Ref 9

NSW landholders and communities to benefit from new approach to CSG compensation

25 Jun 2012

Following recent NSW Government announcements, Santos today announced a Landholder and Community Compensation Scheme for its NSW operations that would see greater consultation and agreement with landholders and substantial financial benefits to both landholders and their regional communities.

Based on Santos' potential commercial production volumes in the Gunnedah Basin, total payments to host landholders in Santos' NSW permit areas could be in excess of \$150 million over a 20 year period while the local regional communities could benefit by an amount in excess of \$300 million – reflecting contributions from Santos and the NSW Government.

Over the last few months Santos has been actively engaging with landholders and regional community bodies with a view to devising a more defined, transparent process to agree access with individual landholders and establish a compensation scheme that fairly shares the benefits of NSW's important natural gas resources. Feedback from landholders has indicated that such a scheme would improve community confidence that a natural gas industry can coexist with traditional agriculture.

Santos Vice President Eastern Australia, James Baulderstone, said: "The new scheme, developed in consultation with local landholders, meets the Government's new policy. More importantly however, it demonstrates our commitment to a fair and productive working relationship with local landholders and their communities to develop a sustainable domestic gas industry for NSW."

"The scheme aligns the interests of landholders and the local communities with the success of the CSG industry. Our commitment is to respectfully work with local communities and share the benefits of developing this natural gas resource, which has the potential to secure NSW's energy security into the future," Mr Baulderstone said.

The key elements of Santos' NSW Landholder and Community Compensation Scheme are:

During exploration a private landholder would receive:

A written and agreed Farm Management Plan (**FMP**) prior to any exploration activity taking place. The FMP would ensure that the profitability and sustainability of food and fibre production is not compromised;

A first year payment equal to 120% of the value of the land utilised by Santos;

An ongoing yearly payment equal to 60% of the value of the land utilised;

An annual payment of \$30,000 per landholder for certain services associated with the upkeep and monitoring of the facilities associated with the Santos work program.

During commercial production a private landholder would receive:

An ongoing annual payment of \$30,000 per landholder for certain services associated with the upkeep and monitoring of the facilities associated with the Santos development;

A payment equal to 120% of the value of the land utilised in the first year of production;

Ref 9

In subsequent years, an annual share of an additional compensation pool (an annual amount equal to 5% of Santos' royalty payments associated with private land within a production licence area). A private landholder's compensation will be based on the proportion of their land utilised by Santos as compared to the total area used for our operations.

During commercial production the community would receive:

In line with the recent call from the NSW Government to also contribute at the regional community level, Santos will establish a Regional Community Benefit Fund. This fund will be created through payments by Santos of the equivalent of 5% of the Government royalty payment within our production licence area, effectively equally matched by the NSW Government (yielding a total contribution of 10%). The funds are to be used for the benefit of the regional communities working with Santos' CSG operations. The fund would be administered by a governance body comprising local and state government and licence holder representatives.

The Landholder and Community Compensation Scheme describes a number of significant changes to the compensation arrangements currently in place in NSW. In addition to annual land use payments, for the first time, hosting landholders are offered guaranteed income of \$30,000 p.a. for agreed services such as vegetation and animal control during the term Santos operates on their land.

"Many of the farmers we have spoken to have made two points very clear to us. First, they have been looking for a compensation arrangement that they can relate to the value of their business and their time. Further and understandably, they have stressed the importance of agreeing upfront how, when and where our operations should be conducted so as to maintain the productivity of their existing enterprises and also to protect the privacy and lifestyle for their families. The requirement to agree a formal Farm Management Plan is a central plank of our new plan," Mr Baulderstone said.

"We believe these elements of our new plan go to the heart of those important considerations.

"Under the new compensation scheme Santos is also setting up two new compensation pools. The first will be known as the Landholder Incentive Fund (**LIF**) and will compensate landholders in line with the long term success of a gas development once we reach the production phase.

"The second pool will be known as the Regional Community Benefit Fund (**RCBF**). This recognises the contributions that our local communities will make to our operations in terms of employment opportunities, road access and community facilities and services that we will use," Mr Baulderstone said.

The RCBF would be used to help fund major initiatives and infrastructure projects which directly benefit the NSW communities in which we operate.

"This will be a tangible way for the broader community, businesses and neighbouring landholders to receive direct benefits from our activities to the region. We are investing in the future of our local communities to thank the communities for working with us everyday," he said.

Mr Baulderstone said Santos was keen to introduce its new land access compensation scheme as soon as possible but this would not be possible until the company had certainty it will be able to proceed with its business plans which remain subject to settlement of NSW's draft Strategic Regional Land Use Policy, the Aquifer Interference Policy, renewal of exploration licences in its key permit areas and other outstanding regulatory and policy matters.

"We are pleased with the progress the NSW Government is making in this regard, including the announcement of new Land and Water Commissioner to oversee regulation," Mr Baulderstone said.

"However, the reality is that regulatory certainty must precede further significant investment in NSW's fledgling CSG industry and time is fast running out if the State is to secure its own strong and sustainable domestic supply of natural gas before its major interstate gas supply contracts begin to expire just two years' time," Mr Baulderstone said.

Ref 9

Weighing up the benefits

The multi-billion dollar Narrabri Gas Project will have substantial long term benefits for the local Narrabri area, as well as the regional and NSW economy.

The Narrabri Gas Project will deliver widespread benefits including direct and indirect jobs, substantial royalties and energy security for New South Wales.

Jobs

The Project will employ approximately 1,200 people during the construction phase and up to 200 people during the operational phase. It will also contribute to the regional economy via direct job creation locally, direct supply chain contracts and additional indirect jobs. Many sectors of the community will benefit including professional services, public sector, retail, construction, manufacturing and transport.

"Santos establishing this project in Narrabri will enable my business to grow and is creating other employment locally. I'm excited by the opportunities the industry provides to the town and the community."

Ron Campbell,
Business owner, Narrabri

State royalties and regional benefits

The Project is expected to contribute over \$1.6 billion in royalty payments over the life of the Project, directly to the NSW Government, helping to deliver hospitals, schools, roads, police services, public transport and other state-based infrastructure and public services.

To ensure the communities that host our work directly benefit, we will establish a Regional Community Benefit Fund. Our contribution to the Fund will equate to five per cent of the Narrabri Gas Project's annual royalty payment and will be matched by the NSW Government.

The Fund is expected to deliver around \$160 million to the region for improved infrastructure, services and facilities to benefit the regional community.

A report by the Allen Consulting Group estimates "...more than two fifths of the benefits will accrue directly back to the regional economy".

The Narrabri Gas Project will deliver:

- 1,200 jobs during construction
- Up to 200 ongoing jobs
- Regional and local benefits
- Safe, clean energy for NSW
- Royalties of \$1.6 billion to fund regional and state services over the life of the Project





The Narrabri Gas Project

Ref 9

It's been more than 40 years since Santos began supplying NSW with natural gas. Today natural gas is used for heating and cooking in more than one million NSW homes. It fuels the production of essential items like food, bricks, plastics, fertiliser and medical supplies, powers vehicles and generates electricity. In NSW the jobs of around 300,000 workers depend on a reliable gas supply.

Our proposed Narrabri Gas Project, could supply up to half of NSW's gas needs. It could bring substantial economic benefits to the region with a \$120 million community benefit fund established to support local programs and infrastructure. It could deliver around 1,300 jobs during construction and 200 ongoing positions, as well as significant local business opportunities.

From our Operations Centre in Narrabri West and our field locations focussed in areas of the Pilliga zoned for natural gas development, we can deliver clean, reliable energy for NSW without impacting local agriculture.

www.narrabrigasproject.com.au

Santos
We have the energy.

Corner April 2017

Ref 9

Ref 9

Narrabri Gas Project

The Project area covers around 95,000 hectares in the Pilliga and on private land in north west New South Wales.



ABOUT THE EXPLORATION

Santos has submitted the Narrabri Gas Project Development Application, including the Environmental Impact Statement (EIS), to the Government for assessment.

Santos is seeking approval to drill up to 850 natural gas wells on no more than 425 sites over the 95,000 hectare Project area. The majority of the Project area is on state land in a section of the Pilliga state forest set aside by the NSW Government for uses including logging and extractive industries. It is anticipated operational facilities will be located on about 1000 hectares, or around one percent of the Project area. The Project area is covered by the Gomeroi People's Native Title claim and Santos is working towards an agreement with the registered claimants.

Santos estimates the Project could supply up to 50% of NSW natural gas needs and deliver substantial benefits to the local community and the state.

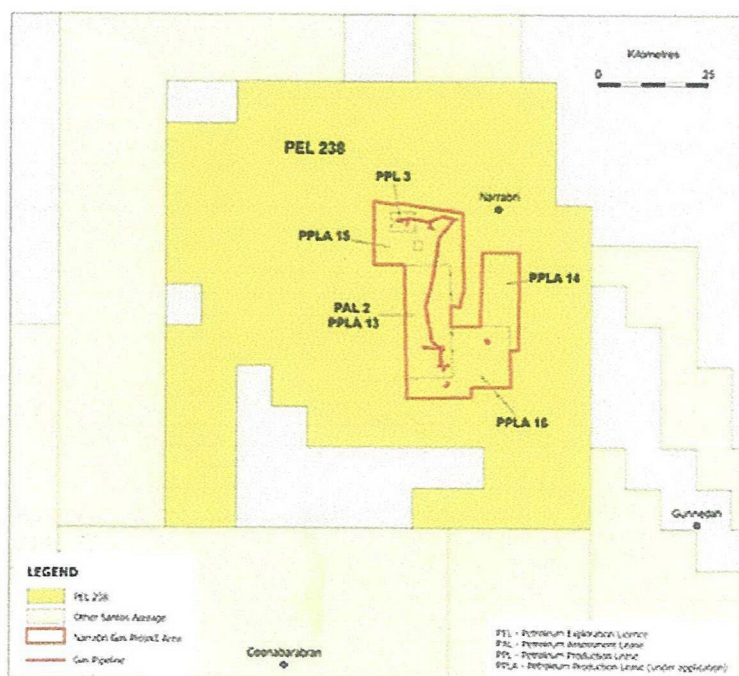
More than one million NSW homes and 33,000 businesses rely on natural gas as a source of energy. The State Government estimates the top 500 industrial gas users provide more than 300,000 jobs which rely on an affordable, secure supply of natural gas and has recognised the project's significance, declaring it a Strategic Energy Project.

Pipeline company APA Group is seeking approval to construct a pipeline from the Project area to the existing Moomba to Sydney Pipeline so that gas from the Project can be made available to the NSW market.

In addition to the provision of energy to NSW, the Project would create approximately 1,300 jobs during the initial construction phase and around 200 ongoing jobs, many of which will be locally based. Around \$1.2 billion in State royalties would be generated over the life of the Project to help provide important services like education, health and transport infrastructure. A community benefit fund totalling up to \$120 million would also be established to support local programs and initiatives.

The Narrabri Gas Project EIS concluded the project can be developed safely with minimal and manageable risk to the environment. The document will now be comprehensively assessed by both the NSW and Commonwealth Governments to ensure the Project meets the highest environmental standards.

For additional information on the Narrabri Gas Project or to view the EIS click [here](#).



25/4/2017

32

25/04/2017 3:19 PM

The Narrabri Gas Project Environmental Impact Statement

Ref 9

Santos
We have the energy.

The Santos Narrabri Gas Project's Environmental Impact Statement has concluded that the Project can proceed safely with minimal and manageable risk to the environment.

Australian energy company Santos is seeking approval to develop a project based on the natural gas resources contained in coal seams near Narrabri.

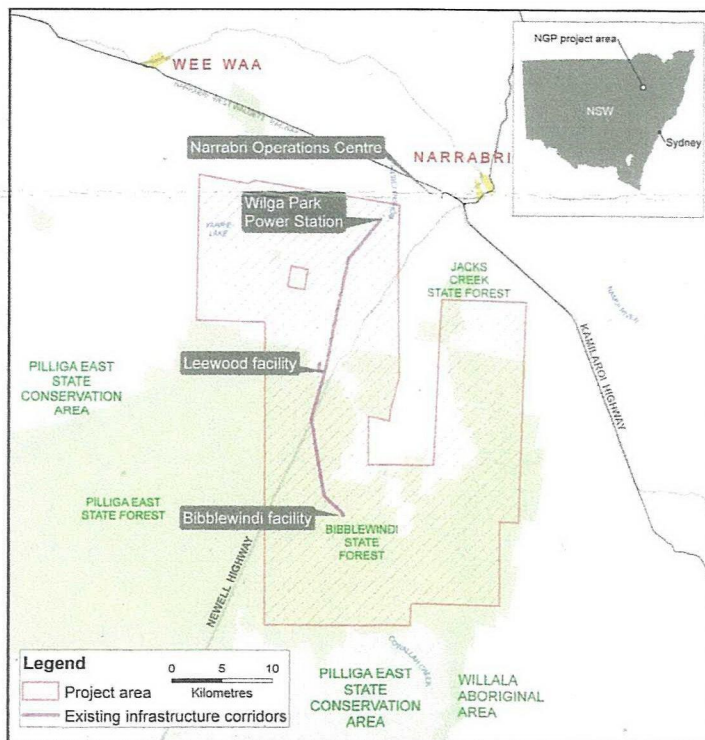
In NSW, more than one million homes, 33,000 businesses and about 300,000 jobs rely on an affordable supply of natural gas. The proposed Narrabri Gas Project could supply up to half of NSW's gas needs and deliver significant economic benefits.

Santos will make the gas available to NSW via a pipeline linking into the existing Moomba to Sydney Pipeline. The pipeline will be constructed by APA Group and subject to a separate approval.

As part of the regulatory approval process for the Project, Santos has submitted a Development Application, including the Environmental Impact Statement (EIS), to the NSW and Commonwealth Governments for their review and assessment.

The EIS is a comprehensive document required to identify and address potential impacts of the Project. It includes extensive studies, with modelling and data on areas including water, flora, fauna, soil, noise, air quality, cultural heritage and social impacts. It also incorporates the findings of thorough community and stakeholder consultation.

This information will be used to prepare detailed management and mitigation plans for the Project, allowing Santos to develop much needed natural gas for NSW safely and sustainably.



Map of the Narrabri Gas Project area

Key findings of the EIS:

- + Water available to farmers and the community will be unaffected
- + Drilling will be carried out safely using the NSW Well Integrity Code of Practice which has been reviewed by the NSW Chief Scientist and Engineer
- + Significant impacts on threatened and endangered flora and fauna will be avoided
- + Aboriginal cultural heritage sites will be protected
- + The Project will coexist with current land uses including agriculture and forestry
- + Substantial economic benefits to the local area including 1,300 jobs during construction and 200 ongoing jobs
- + A regional benefit fund of up to \$120 million will support local community programs, and royalties of around \$1.2 billion will be generated for NSW

Project area overview

Santos is seeking approval to drill up to 850 wells on 425 sites in the Project area in and around the Pilliga.

The Project area:

- + Is mostly (around 60%) on state land in a section of the Pilliga set aside by the NSW Government for uses including logging and extractive industries
- + Does not include National Parks or Nature Reserves
- + Does not contain strategic agriculture land as mapped by the NSW Government. Santos will only drill on private land when the landholder agrees to host our activities
- + Is covered by the Gomeroi People's Native Title Claim. Santos is working towards an agreement with the registered claimants
- + Will have operational facilities located on about 1000 hectares or around 1% of the 95,000 hectare Project area

In 2014 the NSW Chief Scientist and Engineer concluded that, with appropriate safeguards and controls, natural gas from coal seams can be safely extracted. The regulations covering natural gas extraction in NSW are among the most stringent in the world and Santos adopts the highest industry standards to ensure work does not have an adverse impact on the environment.

A few years ago, my wife and I went on a Santos site tour to see and learn more about the Santos NGP. The leader of the tour was the Santos hydrologist Glen Toogood. We were given the usual spiel about how clean and sustainable CSG was and eventually arrived at the Bibblewindi storage ponds and water treatment plant. Here we were shown a dead patch of forest that had been killed by a spill of produced waste water.

Mr Toogood, a person who, with his training should have known better, proceeded to tell us a very large **Fairy Tale**

He told us that approximately 10,000 litres of the produced water had killed this patch of forest. I doubted that this could be possible so I asked the following question.

How could approximately one and half cups of water per sq meter containing about half the amount of salt as sea water kill the forest-did it have Agent Orange in it ?

The only part of this question he answered was that it did not have Agent Orange in it.

Why would Santos tell such a Fairy Tale?

One obvious answer is to play down the size of this spill of toxic water which could enter the Great Artesian Basin as this is the southern recharge zone for this important underground water supply.

This **Fairy Tale** gets even worse because of conflicting information contained in the Santos EIS. The EIS confirms the above spill. "In June 2011 approximately 10,000litres of untreated produced water was released from Bibblewindi water treatment plant that was not reported to the regulator by Eastern Star Gas who previously owned and operated the water treatment plan. The spill resulted in an area of around 3.4 hectares of vegetation die back adjacent to the water treatment plant".

Using a typical analysis for sea water divided by 2, as the produced water is about half as salty as sea water it is easy to work out that the quantity of the salts sodium, chloride and bicarbonate added to the soil by 10,000 litres of the produced water is 41kg per hectare. If you add in the other salts in sea water it comes to 50kg of salts per hectare.

Ref 10. Part C Environmental Assessment. 14-12

In June 2011 approximately 10,000 litres of untreated produced water was released from the Bibblewindi water treatment plant that was not reported to the regulator by Eastern Star Gas who previously owned and operated the water treatment plant. The spill resulted in an area of around 3.4 hectares of vegetation die back adjacent to the water treatment plant. After acquiring Eastern Star Gas in November 2011, Santos discovered evidence of the release from the Bibblewindi facility and other reporting failures and notified the regulator.

In December 2011 Santos temporarily shut down all operations in the area including the treatment plant and the treated produced water discharge to Bohena Creek. The treatment plant was subsequently decommissioned and removed and the water stored at the facility was transferred to the Leewood Water Management Facility.

Santos publicly released a report on incidents at the Bibblewindi Water Treatment Facility in February 2012. The report included the results of soil testing undertaken around the Bibblewindi Water treatment plant. The results did not represent a health or ecological risk with the exception of salts. The salts were responsible for the area of vegetation die back adjacent to the Bibblewindi plant and were present in the soil due to the spill.

The EPA found that water in the affected groundwater system was 'barely moving', resulting in no danger to stock or crops in the area (NSW EPA 2014a). The area affected by the spill is being progressively rehabilitated.

In July 2012 Eastern Star Gas was issued two penalty infringement notices (PINs) under section 120 of the Protection of Environment Operations Act 1997 for pollution incidents which occurred in the months of March and November 2010 at the Bibblewindi Water Treatment Facility for discharging water from the treatment plant containing high levels of salt into Bohena Creek.

The EPA also issued a Formal Warning to Santos for a discharge event in December 2011 that contained elevated levels of ammonia. The EPA stated that it did not believe that environmental harm resulted from this event.

In June 2013 Santos NSW Pty Ltd was prosecuted under the *Petroleum (Onshore) Act 1991* for the previous reporting failures during Eastern Star Gas' operations. Santos NSW Pty Ltd entered guilty pleas for Eastern Star Gas' failure to report the spill in June 2011 and for lodging three reports by Eastern Star Gas that contained inaccuracies about the quality of treated water being discharged from the treatment plant. Santos NSW was fined \$52,500.

In 2013 elevated levels of total dissolved solids and slightly elevated levels of other elements (arsenic, barium, strontium and uranium) were detected during groundwater sampling at the Bibblewindi water treatment facility. Santos reported these results to the EPA and a conceptual site model was subsequently prepared for the site which indicated that a leak from Pond 3 at the facility had occurred. The lateral extent of groundwater impacts was confined to a discrete area immediately adjacent to the leak and generally found to decrease with depth. The investigations indicated that site conditions posed no risk to human health or the environment.

On 1 May 2014 the EPA issued an Environment Protection Licence (EPL) for gas operations around Narrabri. The EPL included a Pollution Studies and Reduction Program (PRP) for the Bibblewindi Water Management Facility. The PRP required the removal of all liquid from the pond by the end of 2014 and further information in relation to the leak and groundwater monitoring at the site. The pond was emptied in October 2014 with the water transferred to the Leewood Water Management Facility. The EPA was satisfied with the completion of the PRP and removed it from the licence, whilst extensive groundwater monitoring continues at the site in accordance with the EPL requirements.

In another part of the Santos EIS they tell us about the proposed use of treated water (most of the salts having been removed by reverse osmosis) for irrigating lucerne.

It states, "For lucerne, at an irrigation application rate of 750mm/yr, or 7.5 ML/ha-yr, the total sodium, chloride and bicarbonate salts from irrigation is expected to be between 1734 and 3124 kg/ha-yr." Please note this salt addition is in one year, with more to come in the following years. This could be 10,000kg per/hectare over the first five years.

Ref 11. Appendix G2. Potential Impacts of irrigation Activities.8.1 Salt inputs from treated water and soil impacts.

Ref 11

8 POTENTIAL IMPACTS OF IRRIGATION ACTIVITIES

8.1 SALT INPUTS FROM TREATED WATER AND SOIL IMPACTS

Most irrigation waters carry a salt load that presents a risk of accumulation in the rootzone particularly in arid regions or where high water tables exist. Annual rainfall of 644 mm will offset some of the effects of salt deposition by irrigation water. Given average rainfall, the weighted average EC of all water applied to the crop would be 0.57 and 0.99 mS/cm for the 25 and 30°C water qualities respectively with a target irrigation rate of 7.5 ML/ha-yr. The average weighted rootzone salinity (EC_e), of the soils sampled was 2.55 mS/cm. The threshold EC_e for lucerne is given as 2.0 mS/cm, with a yield reduction of 25% to be expected from reaching a salinity threshold of approximately 6.0 mS/cm (DERM, 2011).

For lucerne, at an irrigation application rate of 750 mm/yr, or 7.5 ML/ha-yr, the total annual input of sodium, chloride and bicarbonate salts from irrigation is expected to be between 1734 and 3124 kg/ha-yr depending on temperature due to treated water quality (Table 7). Calcium sulphate (gypsum) addition of (2040 to 3315 kg/ha/yr) will offset added sodium and have a positive effect on soil quality. The sodium chloride salt loading from the irrigation water would then decline markedly in the years following the treated water supply peak. Note that natural salt inputs of sodium chloride from 644 mm rainfall are estimated to be approximately 32 kg/ha/yr (Biggs, 2004).

The lucerne modelling predicted deep drainage of 4 mm/yr on the Vertosols and 11 mm/yr on the Sodosols, whereas the minimum calculated deep drainage rate or leaching requirement should be 30 mm to maintain a rootzone salinity EC_e of 4.0. The shortfall in deep drainage can best be overcome by management of irrigation schedules. During periods of low ET, an excess amount of water could be applied as irrigation and rainfall, resulting in dilution and achieving adequate leaching of rootzone salts.

Table 7 Annual salt loading from 7.5 ML/ha of irrigation water on lucerne

Salt added	Treated water (25°C) (kg/ha-yr)	Treated water (30°C) (kg/ha-yr)
Sodium	578	1050
Chloride	113	623
Bicarbonate	1043	1448
Total sodium salts*	1734	3124

8.2 DEEP DRAINAGE AND GROUNDWATER IMPACTS

The HowLeaky model estimated that annual deep drainage would be 4 mm/yr and 11 mm/yr for lucerne

You need to ask Santos to answer the above **Fairy Tale**, they have created.

The question is. How can 45kg per/hectare of these salts kill a forest for five years, and it is still dead, while 1734kg to 3124kg per/hectare of these salts will not kill a lucerne crop ?



Photographs of the Bibblewindi kill site.



This with the fence is the most recent taken in March 2017.

Below is an email from June 2013, which has a very interesting and EIS stopping last paragraph.

"Santos has always made clear that the rehabilitation of small impacted areas of the Pilliga Forest will be addressed prior to our investment in a safe, sustainable project that could deliver in excess of 25% of NSW's gas needs".

There is that word sustainable again.

If the above statement is not a **Fairy Tale** then this commitment is proof that Santos's word has no credibility.

doc 140

[REDACTED]
From: [REDACTED]
Sent: Thursday, 13 June 2013 11:08 AM
To: [REDACTED]
Subject: Santos update

Santos released this yesterday...

12 Jun 2013

Santos acknowledges proceedings issued this week alleging past reporting failures in relation to coal seam gas operations in the Pilliga Forest in north west NSW, previously owned and operated by Eastern Star Gas.

Santos acquired Eastern Star in November 2011. The facilities in the Pilliga were shut down soon after the acquisition because they were found not to meet Santos' standards. Since acquiring Eastern Star, Santos has worked closely with NSW regulators to identify and correct Eastern Star's previous practices and reporting processes.

On 22 February last year, Santos submitted a detailed report arising from its review of Eastern Star's operations to the NSW Government. That report highlighted the previous owner's failures in reporting.

Since that report, Santos has committed more than \$17 million to remediation works in the Pilliga operations and substantial remediation and rehabilitation progress has been made. An important part of upgrading those operations is the proposed construction of new water treatment facilities outside the Pilliga, which Santos announced in November last year.

Santos has always made clear that the rehabilitation of small impacted areas of the Pilliga Forest will be addressed prior to our investment in a safe, sustainable project that could deliver in excess of 25% of NSW's gas needs.

Cheers

[REDACTED]
[REDACTED] - Coal Seam Gas | NSW Environment Protection Authority |
85 Faulkner Street (PO Box 494) Armidale NSW 2350
[REDACTED] [REDACTED]

Please ask Santos. If they are going honour their commitment to rehabilitate the areas of forest that have been killed by the spills of toxic waste water, before they proceed with the NGP?

This question assumes that the NGP is to be given the approval to proceed.

The next **Fairy Tale** is a really neat trick. Take a country with enough gas to supply itself "indefinitely", send the vast majority of it overseas, refuse to sell locally at a fair price, create a domestic shortage, then demand access to some of our most environmentally sensitive resources as though it's an emergency measure.

This is exactly what the coal seam gas industry, in partnership with our State and Federal Governments has been telling us for years.

In January, 2011 the Santos board made a massive mistake when they approved a \$US16 billion plan to go ahead with two LNG trains at the Gladstone export terminal. It has taken till recently for the facts of the roll that Santos and its partners in the GLNG project have played in delivering a domestic market gas shortage to be well appreciated and indisputable. They have been filling their Gladstone export terminal freezers with other people's gas.

Santos have been able to get away with this (until recently) because they along with the State and Federal Governments, gas lobby groups and the Murdoch press have blitzed the so called gas shortage **Fairy Tale** relentlessly.

Finally most of the press started to report the looming gas shortage problem correctly, and this was backed up by the ACCC Inquiry into the Competitiveness of the Wholesale Gas Industry. The Chairman of the ACCC Rod Sims also gave a keynote address: Observations on the east Australian gas market at the Australian Domestic Gas Outlook Conference, Sydney 9 March 2016, in order to understand the truth behind conflicting statements from producers and consumers over gas availability.

Here are some quotes from his report and address.

- "The magnitude of gas flows to the liquefied natural gas projects, which are removing gas from the domestic market" is one the three key factors feeding into the uncertainty about future gas supply on the east coast.
- "I have said before that during the 2012-14 period, C&I users were getting few if any real offers for gas, and those that they did get were at sharply higher prices and on strict (take it or leave it) terms.
- Cooper Basin production has been declining since 2001, but more importantly most Cooper production is now largely going east to LNG rather than south to Sydney and Adelaide.

The papers that contain this information from the ACCC are attached.



Australian
Competition &
Consumer
Commission

EXECUTIVE OFFICE

13 April 2016

The Hon. Kelly O'Dwyer MP
Minister for Small Business & Assistant Treasurer
Parliament House
CANBERRA ACT 2600

23 Marcus Clarke Street
Canberra ACT 2601
GPO Box 3131
Canberra ACT 2601
tel: (02) 6243 1111
fax: (02) 6243 1199
www.accc.gov.au

Dear Minister

Inquiry into the Competitiveness of the Wholesale Gas Industry

I am pleased to present to you the ACCC's report following its inquiry into the competitiveness of the wholesale gas industry (the Inquiry). The Inquiry follows the notice given to the ACCC to hold an inquiry into the competitiveness of wholesale gas prices and structure of the upstream, processing, transportation, storage and marketing segments of the east coast gas industry pursuant to subsection 95H(1) of the *Competition and Consumer Act 2010 (CCA)*.

Through the course of the Inquiry the ACCC has used the powers available in Part VIIA of the CCA to compel documents and information and hold hearings with industry participants. This has included the receipt of in excess of 73 000 documents and the holding of 32 public and private hearings and numerous additional discussions and consultations.

There has been unprecedented change in the east coast gas market over the last four years, with the development of liquefied natural gas facilities in Queensland. The changes have created winners and losers, and increased uncertainty in the market. Participating in the market has become increasingly complex for many participants, with commercial and industrial customers in particular having been acutely affected by the transition.

There are three key factors feeding into the uncertainty about future gas supply on the east coast:

- The magnitude of gas flows to the liquefied natural gas projects, which are removing gas from the domestic market.
- The low oil price, which is resulting in declining investment in gas exploration and lower production forecasts for both domestic and LNG projects.
- Moratoria and regulatory restrictions, which are affecting onshore gas exploration and development.

Some suppliers have taken advantage of supply uncertainty to increase prices, shorten contract terms and implement more restrictive non-price terms and conditions. More supply and increased diversity of supply will be important for the future competitiveness of the gas market. While the Inquiry acknowledges that there are understandable reasons for policy positions like moratoria, blanket moratoria and regulatory uncertainty act to curtail gas exploration and new production. Projects and activities should instead be reviewed on a case-by-case basis.

While the pipeline sector is responding to the changing dynamics and offering new services, some pipeline operators are engaging in monopoly pricing. The regulatory regime is not fit for purpose for the gas pipeline sector and pipeline pricing is significantly unconstrained. A new test is proposed.

The east coast gas market remains opaque. Confidential bilateral negotiations remain the norm for both gas supply and transportation contracts. The lack of consistent, publicly available data on the sector is an impediment to participants, investors and policy makers.

Risk management has become more challenging, in part because producers are not willing to offer as much flexibility as they once did, and facilitated trading markets have limited liquidity. Trading markets are developing and the Australian Energy Market Commission (AEMC) is working towards further improvements in market design.

As I have outlined, all sections of the gas industry are facing significant challenges. New gas supply and more efficient gas markets will be equally important for enhancing the competitiveness of the east coast gas market in the long term.

Through the course of the Inquiry the ACCC has maintained close contact with relevant Commonwealth and state and territory stakeholders, including the Minister for Resources, Energy and Northern Australia, the Department of Industry, Innovation and Science, the AEMC and the Australian Energy Regulator.

Pursuant to subsection 95P(3) of the CCA, the ACCC is required to release this report after 28 days from delivery to you, unless you direct otherwise.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Rod Sims', with a stylized flourish at the end.

Rod Sims
Chairman



Australian
Competition &
Consumer
Commission

Keynote address: Observations on the east Australian gas market

Speakers:

Mr Rod Sims, Chairman

Conference:

Australian Domestic Gas Outlook Conference, Sydney

9 March 2016

At the Australian Domestic Gas Outlook Conference in Sydney, ACCC Chairman Rod Sims provides three observations on the operations, intricacies and efficiency of the east Australian gas market.

Transcript:

Check against delivery

Introduction

It is a pleasure to be here. As most of you know, the ACCC's report on the East Coast Gas Inquiry is due to the Minister for Small Business and the Assistant Treasurer, the Hon Kelly O'Dwyer MP, by 13 April 2016.

As part of the formal inquiry, we have held more than 30 private and public hearings with gas producers, retailers and customers. We have consulted with over 50 interested parties and received around 73,000 company documents, reports, contracts and papers.

Based on this raft of information, today I will provide just three main observations on the operations, intricacies and efficiency of the eastern Australian gas market.

- First, eastern Australia's gas market is experiencing a triple whammy that has important ramifications for all Australians.
- Second, without new gas supply from a range of basins and producers there will be significant implications for gas prices and possibly gas availability.
- Third, particularly given these price implications, it is important that the regulation of gas transmission pipelines, or the threat of regulation, is effective but that does not seem to be the case.

Changing landscape for the gas market

The triple-whammy that is fundamentally upending the gas market in eastern Australia is driven by a combination of local and international factors.

- First, the introduction of LNG, and in particular the demand and supply fundamentals for the projects, has come under question.
- Second, oil prices have fallen faster and further than nearly anyone thought possible, with important implications for gas exploration and supply.
- Third, regulatory uncertainty and exploration moratoria are making life very difficult for the upstream sector.

As I have stated on previous occasions, in this environment commercial and industrial (C&I) gas users have had a particularly difficult time.

As everyone knows, the ACCC's East Coast Gas Inquiry arose out of a desire by the Government to understand the

truth behind conflicting statements from producers and consumers over gas availability.

I have said before that during the 2012-14 period, C&I users were getting few if any real offers for gas, and those that they did get were at sharply higher prices and on strict "take it or leave it" terms.

Receiving and finalising gas supply offers became increasingly difficult for C&I customers as producers and retailers watched domestic gas prices rise in anticipation of linking to high international prices, and uncertainty grew as to how much gas the LNG projects could require.

As LNG production schedules firmed and international prices started to fall, gas did become available for domestic users, especially for the crunch years of 2016-2018 when many gas contracts rolled off.

Turning to the second element of the triple whammy, gas price uncertainty, this of course, is illustrated by the oil price changes of the last five years.

When the three LNG projects took their final investment decisions from October 2010 to January 2012, the oil price averaged around US\$108 per barrel.

When we started our inquiry in April 2015, it was around US\$55 per barrel. It is now jumping around US\$30 to \$40 per barrel.

While this is a low price, and comes as a shock for many in the industry, it is much closer to the 30 or even the 40 year inflation-adjusted price for oil of around US\$55 per barrel than the US\$100 per barrel that many industry pundits believed would be the new normal floor price for oil back in 2011-12.

Does this mean we should see the \$65 billion investment in Queensland LNG projects as poor decisions where capital is lost, or that the projects and their parent companies are doomed to penury?

Of course not. These are long-term projects, which will suffer the ups and downs of commodity price cycles during their 20 or 30-year life spans.

While we can question some of the decisions around establishing three stand-alone LNG projects based on a relatively untried resource base, these are now permanent investments which will benefit Australia over the years to come.

There may, of course, have been an element of hubris which flowed from the rhetoric of an unending resource super-cycle.

There seemed little questioning of the prevailing orthodoxy that CSG would meet the LNG requirements and that there would be ample supply for the domestic market.

There was also an acceptance that existing market structures would cope with the very different dynamics of LNG supply and demand, and insufficient focus on how industries would be affected.

This includes the unsuitability of an opaque, long-term, bilateral contract market to new realities of rising prices at a time of increasing supply and demand uncertainty.

"Uncertainty" should be a watchword for governments where policy options like exploration moratoria are put in place which further reduce new supply options.

The cost or benefits that these policy decisions impose on the wider community and industry need to be fully explored on a case by case basis.

All of the above risks and uncertainties were largely foisted on industrial and commercial customers operating in a market structure that offered few tools or opportunities to manage those risks and uncertainties.

Risk and uncertainty has a price in the market, and we have seen domestic gas prices rising, sometimes significantly, during this period.

In this environment, we should be seeing a supply response, but this is not happening to the degree that we would expect.

Gas supply

The east coast gas market is in a 'clash of cycles' where falling international oil prices have coincided with historically high domestic gas prices.

Indeed, Australian domestic gas prices are now relatively high by world standards, and our gas prices have risen while they have fallen in many other countries.

A domestic market with historically high prices and supply uncertainty should be seeing a supply response with increasing investment, exploration and development activity.

However, the fall in oil prices has downgraded the profits of a number of companies largely reliant on oil revenues to finance gas exploration and development.

Negative sentiment in financial institutions about the sector is also curtailing finance available to other pure gas explorers and developers in the east coast market.

Any new gas production will be complicated by relatively high barriers to entry, with geological risk overlain with large upfront capital costs and long development timeframes.

As I have just mentioned, further complicating this picture for new entrants and existing players is the spectre of regulatory uncertainty and state and territory-based moratoria which are making new exploration increasingly risky or stopping development.

If the basic exploration and appraisal activity required to bring new gas to the market is significantly reduced for a significant amount of time at some point the market is going to face declining production from mature fields, which will not be replaced in time to meet demand.

In turn, this will make other market reforms more difficult.

There is an urgent need for both new and importantly more diverse sources of gas supply into the domestic market.

New sources of supply will assist in ameliorating the supply uncertainty for downstream gas users and put downward pressure on prices in the market.

There are some encouraging signs of smaller explorers and developers either seeking to develop gas previously deemed too difficult to develop or teaming up with customers to develop new gas sources.

However, reforms to increase liquidity in trading markets require more gas and importantly, increasingly diverse sources of gas from basins located close to markets in the south where much of the domestic demand is.

The best-designed trading markets will falter without gas to trade.

The critical importance of new gas supplies, and new suppliers, for the level of gas prices is shown by what may be termed the "buyer / seller alternative prices".

The key point is that the effect of the level of LNG netback prices on domestic gas prices depends more than is realised on the level of supply competition in the market.

Let me explain.

Traditionally, the Cooper Basin and basins offshore Victoria have supplied the southern states, in direct competition with one another.

Cooper Basin production has been declining since 2001, but more importantly most Cooper production is now largely going east to LNG rather than south to Sydney and Adelaide.

Offshore Victoria has therefore become increasingly important for the southern markets.

As the Otway and Bass Basin reserves decline during the next decade, gas from the Gippsland Basin, and the Gippsland Basin Joint Venture in particular, will be increasingly important in meeting southern market demand.

As this situation inexorably develops, new and diverse gas supply into the southern market will be important for

providing price competition for the Gippsland Basin producers.

This is where a key contrast comes into play.

In a competitive gas market, with many supply alternatives in the southern states, buyers can effectively negotiate with producers where the price of gas is its production cost and a profit margin dictated by the level of competition.

In this world, the alternative price southern producers may expect is the LNG netback price at Wallumbilla **less** the cost of transport that they would need to pay to get their gas north.

This is the so-called "seller's alternative price".

However, if new supply is not forthcoming and gas users have very few supply alternatives, then the price that southern producers could charge is effectively the LNG netback price at Wallumbilla **plus** the transport cost to ship it to the southern gas users.

That is, the users option is to buy gas from the southern producer or get it from Queensland, with an added transport cost.

That is the so-called "buyer's alternative price".

To re-emphasise this point, whether gas users in the southern states pay the lower more competitive price for gas or the higher near monopoly price for gas depends on the diversity of supply that is brought into the market over the next few years.

New producers supplying relatively close to demand centres in the south increases competition which will put downward pressure on gas prices.

Pipeline regulation

While gas supply is crucial for the market, an efficient gas market also depends on an efficient transportation sector with competitive prices.

Indeed, there is an amplified effect of gas transport costs on gas prices through the differing "buyer and seller alternatives" I have just mentioned.

Unfortunately the dispersed geography of the market, with distinct demand centres in the capital cities and supply becoming increasingly concentrated in a small number of basins, has created a market where some pipelines are increasingly unrestrained by effective competition.

Changes in gas demand brought on by the LNG industry has also changed flow directions on gas pipelines, such as the Moomba to Sydney Pipeline (MSP) and the Moomba to Adelaide Pipeline System (MAPS).

Pipelines that have traditionally been competitors for the supply of gas to markets in Sydney or Adelaide are now in effect part of a complementary network transporting gas to Queensland.

In addition, three pipeline owner/operators dominate transportation in the gas market, with APA having an interest in almost 50 per cent of the sector.

This is a market where market power can be exercised and where the potential impact of monopoly pricing can be significant.

Less than 20 per cent of pipelines in the east coast are subject to any form of economic regulation.

The transmission pipeline sector of the gas markets is subject to access regulation under the *National Gas Law*. The test for regulation largely mirrors the test used in Part IIIA of the *Competition and Consumer Act 2010*.

The focus of this test is on the promotion of a material increase in competition in upstream or downstream markets to the pipeline, where the lack or restriction of access to infrastructure services provided by pipelines that cannot be economically duplicated would otherwise limit competition in those markets.

It is becoming increasingly apparent that the threat of regulation under the *National Gas Law* is not acting as an

So it is not surprising, that the domestic manufacturing industry is up in arms that the multinational gas exporters are selling our gas overseas in preference to the domestic market and demanding they pay prices above the export price, costing them billions of dollars more each year if they accept a contract. One of the alternatives is for these manufacturers to close down and or move their businesses overseas.

We now have an unhappy Federal government, or at least Malcolm Turnbull is because he recently declared a national energy supply crisis. Twice now Malcolm Turnbull has summonsed the gas industry to Parliament House requesting they become a provider of gas to the domestic market at reasonable prices. To the best of my knowledge at the time of writing Santos are the only group yet to reveal their plans to deal with this request.

This public reserve is yet another mistake and combined with their decision in the beginning to proceed with two LNG trains, and then happily divert domestic supplies of gas to the export market, shows that Santos does not care about the Australian public. To make matters worse they roll out the great looming gas shortage **Fairy Tale** to try and convince us that we need to drill for more gas.

I acknowledge that to become a net provider of gas back to the domestic market will mean more impairments to what have already been taken on the project and a complication of contests with contracted customers and financiers.

But that is the price of making mistakes. Santos should suffer the consequences of their mistakes not the domestic gas users and ultimately the Australian public.

Santos and for that matter the CSG industry is finding it difficult to obtain community acceptance, also called a social licence to operate. (SLO).

The reasons have been highlighted in reports such as:

The GISERA literature review specifically considers the roll of the SLO in the CSG industry, in particular in South East Queensland. It notes that:

Coal seam gas development in SE Queensland presents a different context to that of most mining developments in Australia, particularly in terms of the cumulative effects of having multiple operations in the region, the co-location of CSG wells on productive agricultural land and the extensive distribution of gas extraction industry and activity.

Then in the final report of the South Australian Fracking Enquiry, with the central point of the committee's final report being that the unconventional gas industry did not have an SLO in the south east of South Australia:

This has been made starkly apparent by widespread opposition from the local community. This is not vehement or violent opposition; it is peaceful and determined opposition, and it is occurring in spite of having previously been a conventional gas industry in the South East which has undoubtedly provided significant benefits including employment to the local community.

The Victorian Government has recently introduced a moratorium on gas exploration onshore in Victoria as a result of community opposition.

NSW has seen AGL abandon CSG in the Gloucester region, and community pressure resulted in the NSW Government cancelling the Metgasco CSG licence in the Northern Rivers area of NSW.

In North West NSW the NGP is immersed in controversy with unwavering and ongoing, well-coordinated local, regional, and now national opposition. People from a range of diverse backgrounds, including many local farmers, town residents, and the Gomeroi Aboriginal people have gone to, and will continue to go to, whatever lengths are necessary to protect the region from CSG and halt Santos's NGP.

The wide-scale of the community rejection has been demonstrated by the results of surveys, the attendances of people at demonstrations and community forums.

Demonstration photos



Local communities declare - NO GASFIELDS!!

NEWS

≡ Sections

Business



Australian coal seam gas protest

This work has continued with over 90 communities now surveyed covering 3.2 million hectares.

On the 18/10/2013 Mike Foley of the Land Newspaper published the results of a CSG survey commissioned by the Australian Institute who employed social research company My Opinions to canvass views of 1400 people. The survey found 89% of people support giving farmers rights to "Lock the Gate" to CSG, 96% are opposed to CSG extraction if it reduces the productivity of agricultural land and 56% oppose CSG on agricultural land even if the land owner consents.

Or Google, CSG demonstration along the Newell Highway 19 April 2015.

Farmers lock on to Santos CSG drilling equipment in the Pilliga 5th April 2014.

You can also view other videos of resistance to Santos NGP [here](#).





There have been many other examples of the strong opposition to the Santos NGP such as well attended public forums and gatherings. See the pictures above. One example was a presentation by a guest speaker, John Fenton from Wyoming talking and showing pictures of his experiences with the CSG industry in America. Approximately 700 hundred people attended which gives an indication of the interest and concerned that the local and surrounding community have.

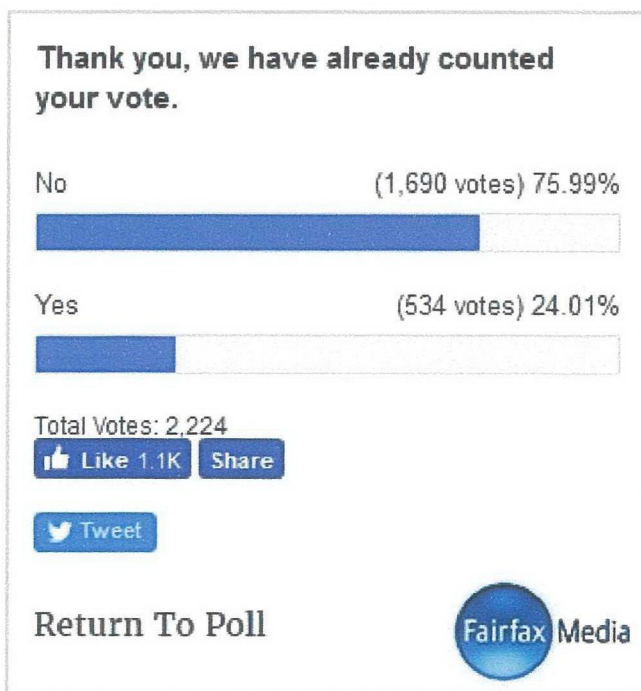
At this meeting 27/2/2014, what is called The Narrabri Resolution was voted on and unanimously passed. It states. We the community of North West NSW strongly oppose the Narrabri Gas Project and call for the protection of our water resources environment and culture from coal seam gas fields. We demand that all levels of Government listen to the concerns of farmers and regional communities, and bans coal seam gas in NSW.



Wyoming farmer John Fenton told a packed Crossing Theatre audience that coal seam gas ruined his small town's water supply in the US. Inset, the large crowd



The Land Newspaper on line CSG poll which was still open for voting at the time of writing shows that of more than 2,200 voters so far 76% voted no to CSG, while 24% voted yes to CSG. This result is even more convincing when you consider the effort put in by the pro gas supporters to encourage like minded people to vote yes. This included an email sent out by the Narrabri Shire Council encouraging employees to vote, the President of the Chamber sent a similar email to its members, and no doubt Santos and their contractors were doing the same. Here is a copy of the Land Newspaper results 10/5/2017.



This community opposition to the Santos NGP has generated many unfounded **Fairy Tales** by Santos and their supporters.

For example.

- I fully support, and our community **assessment** is that the vast majority of people want this project to proceed.

This is a statement by Kevin Humphries, State Member for Barwon, published in The Courier Paper 28/2/2017.

- A quick chat amongst a few people became an **overwhelming** vote of support.

This is a statement by Mrs Tout made in a Yes 2 Gas add in The Courier Paper, Annual Review December 2016.

- But Mr Mitchley said the company **believed** it had a "social licence" to proceed, providing it received government approval.

This is a statement by Santos Energy NSW general manager Peter Mitchley published in the Northern Daily Leader paper, 28/2/2014.

- Mr Stewart the president of the Narrabri Chamber of Commerce, in response to the Land Newspaper CSG Poll claimed the **huge swing** comparing the Lock the gate survey of 93% against CSG (at that time) to 81% against in this poll was a win for the pro gas supporters. He also manage to get a letter read out in the upper house claiming **the vast majority in the Narrabri community are in support of CSG.**

To be fare, at the time of writing this submission the Land Newspaper Poll to which Mr Stewart was referring gave the Yes 2 Gas people 24% of the poll while no to gas were 76%. This is not a vast majority.

- In the EIS Forward written by Kevin Gallagher, Managing Director and Chief Executive Officer of Santos he claims, "Santos has **gained a strong level of support** within the broader Narrabri community through its demonstrated commitment to operating safely and its extensive local engagement since acquiring the operations in late 2011. The **majority** of the Narrabri community recognise that the expansion of this relatively new industry can improve the prosperity of the local area".

This statement ignores the fact that the gas wells will not be drilled in Narrabri and that most (but not all) of the negative impacts will affect those outside of Narrabri and beyond. This is the reason for the overwhelming no vote by the rural community.

After years of constant advertising, and advocacy by Mr Stewart combined with lots of **Fairy Tales and Trinkets** it would seem that Santos has clawed back a few % of public approval. If the **Trinket and Fairy Tale** effect was deducted from the poll then the level of public approval would not have changed much.

The only conclusion that can be drawn from this information is that **Santos does not have a social licence to proceed with the NGP.**

If Santos claims they do have a social licence to proceed with the NGP,

Ask them to prove it?

Here are references to these comments and the reference to the letter being read out in Parliament if you need proof.



POST

60 Maitland Street,
Narrabri, NSW, 2390



EMAIL

editorial@nwcourier.com.au



FAX

6792 3476

Let's just get on with the gas project

The Narrabri Gas Project has been the most reviewed project on record and it is time the project commenced.

Planning started well over a decade ago and now we just need to get on with it.

Everyone has the right to share in the wealth of our communities and this project will bring significant benefits to the Narrabri region and will also provide much-needed gas supply for NSW households.

As a government we have tightened regulations on the project, ensuring these benefits are delivered according to the NSW Gas Plan,

recommended by Chief Scientist and Engineer, Mary O'Kane.

We have increased stringent monitoring of water and soils around the project, strengthened regulation and ensured protection of landholders' rights.

The vast majority of the project is located on land that was reserved for industries like gas extraction and was always considered to be of low environmental and ecological value.

At a time when rural communities need to diversify their economy, this is an outstanding project that I fully support, and our community

assessment is that the vast majority of people want this project to proceed.

Many of the knockers are not from our area, are poorly informed and are scaremongering. Independent information is available to anyone with concerns and I would direct them to the CSIRO's Gas Industry Social and Environmental Research Alliance.

CSG and agriculture can co-exist - we can have a secure gas supply for NSW without jeopardising our land and water resources.

Kevin Humphries
State Member for Barwon

Who do you represent?

This is an open letter to you, MP Kevin Humphries of the NSW National Party, allegedly representing the Barwon electorate, which many of us proudly call home.

This wonderful region of NSW should not be taken for granted, so I am reaching out to your leaders to let them know of the destructive path you have been heading down with the National's name, and taking our electorate in a direction against our wishes.

I am driven to write this, openly, (as privately we are being ignored) over the latest statements made by you to media over the current Environmental Impact Statement for the controversial gasfield project being discussed in the Narrabri region.

It is completely inappropriate to undermine the democratic process, with your statements of "we just need to get on with it".

You know it is not a done deal before the submission process has even concluded.

The claims by you of "scaremongering" by very concerned farmers, residents, property owners and nature lovers who are in this stage one or are next on the gasfield list, is upsetting to say the least.

We have appealed to you to represent us, to cancel the PELs which sit precariously over our homes and farmlands (the other six stages of gasfields next on the list). These can easily be cancelled as they have yet to be reappraised, meaning no costly buy backs, just the stroke of a pen.

These areas include the precious Liverpool Plains, Gunnedah, Moree, Coonamble, Coonabarabran, Bellata, Quirindi, Murrurindi, Gilgandra and every small town from Dubbo to the Queensland border.

Instead we are being blatantly ignored and treated with contempt, which may come at the loss of a seat for the Nationals at the next election. It is now understood, your move years ago to the NSW coast, over 400 km away from your electorate, is because you will not be contesting next election. Last election saw a 20 per cent swing, and with council mergers, lock out laws, Broken Hill water issues, greyhounds laws, Orange by-election loss, why increase the angst by adding massively unpopular coal seam gasfields to that lengthy list?

Will the next Nationals representative taking your place even stand a chance?

Your absence or representation from our communities have forced us to survey our region on this gasfield issue, starting by knocking door to door, street to street, town to town, currently over 3.2 million hectares, (a lot of which is in your Barwon electorate) with results on average 96 per cent wanting to remain gasfield free.

How much more democratic can this result be?

If you truly represented us you would be presenting these results to your party and media rather than your personal and industry views alone.

How much more needs to happen for you to realise, we are hurting and angry by your attitude?

That even you taking sides with a small gas lobby group making false claims of large support for this project hurts the Nationals credibility?

It will not surprise us that after Parliament that you will join other parliamentary colleagues in working for industry.

There is still time to make the right decision, not just for yourself, but for your National Party, for your electorate, the next candidate in line and for NSW.

Peter Small
Coonabarabran



Leigh Iv
March 8

ha ha ha ha ha ha h
with a proven existe
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61 shares

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Owen Jones
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No body will guarantee this



NARRI LEAKS

13 February · 🌐

DOES RUSSELL STEWART SPEAK FOR YOU ?

<http://www.northerndailyleader.com.au/.../narrabri-is-sick-.../...>

Mr Russell Stewart does not speak for me on CSG , I do not know of many people who he does , but he has managed to get a letter read out in the upper house claiming the vast majority in the Narrabri community are in support of CSG.

Refer the link below to Mr Stewart's letter read out.

It was revealed on the weekend , the council believes it knows what the vast majority of people think , and if the people do not share councils pro CSG views , then that's easy , just get the staff to vote in favour of CSG in an online poll. Manipulate the figures to the yes vote.

In the old days in council elections , this sort of thing used to be called , "vote early and vote often".

Anyone out there unhappy Mr Stewart claiming to speak for them ?
Register with a frown.

<https://youtu.be/Fbt2NGqUziQ>



Nats dismiss Greens Santos CSG motion

Greens NSW Senator Lee Rhiannon rises to move a motion around Santos coal seam gas project in Narrabri, and community protests around that project. The motio...

YOUTU.BE

← Plus Mr Stewart's Letter
being read out in Parliament

Foreword

Santos, an Australian energy pioneer, has been working to provide energy to homes and businesses across Australia and Asia for more than 60 years.

Santos is proud of the employment and economic benefits that have flowed from its work, and the strong relationships it has built with landholders and local communities since it was established in Adelaide in 1954.

In NSW, Santos is focused on developing a project based around the abundant natural gas resources located in coal seams around Narrabri in North West NSW. The Narrabri Gas Project could supply up to 50 per cent of the natural gas needs of NSW and deliver substantial benefits to the local community and the state. The natural gas will be made available to the NSW market via a dedicated pipeline to be constructed by APA Group, which will link into the existing Moomba to Sydney Pipeline.

This Environmental Impact Statement (EIS) has been prepared to assess all potential impacts of the project. It incorporates extensive data from detailed environmental, economic and social studies and assessments gathered over many years in the region. This information has been used to identify, quantify and evaluate potential environmental and social impacts of the project and develop strategies to avoid, mitigate and manage potential impacts.

The EIS concludes the project can be developed safely with minimal and manageable risk to the environment.

Over the past two decades, Santos has been safely extracting natural gas from coal seams in Queensland and more than 90 per cent of the natural gas used in that state now comes from coal seams. In NSW, Santos has a similar opportunity to utilise its knowledge and experience to develop the Narrabri Gas Project.

Natural gas is an essential requirement for a strong NSW economy and to support our lifestyles. More than one million NSW homes and 33,000 businesses rely on natural gas as a source of energy. The State Government estimates the top 500 industrial gas users provide more than 300,000 jobs which rely on an affordable, secure supply of natural gas and has recognised the project's significance, declaring it a Strategic Energy Project.

Despite this obvious need for natural gas, NSW produces less than five per cent of its gas locally and is reliant on interstate contracts which will need to be renegotiated in an increasingly competitive gas market.

In addition to the provision of energy to the state, the project would create approximately 1,300 jobs during the initial construction phase and around 200 ongoing jobs, many of which will be locally based. Over its life, the project will generate around \$1.2 billion in State royalties to help provide important services like education, health and transport infrastructure. The local community will also benefit from a Gas Community Benefit Fund totalling up to \$120 million which will support local programs and initiatives.

While delivering this much needed gas is vital for NSW, it is equally important that it is developed in a safe and sustainable manner and in a suitable location.

The Narrabri Gas Project area contains an abundance of proven gas reserves and the geology is favourable for gas extraction. The EIS found the project will have minimal risk of impact on agricultural and domestic water sources. The presence of thick geological aquitards between the deep target coal seams and the shallower groundwater sources ensures the project can be carried out without impacting other water users. The water that will be extracted is not water accessed by agricultural or community bores and is not from the Great Artesian Basin. In addition, the project is not located within

a major recharge zone of the Great Artesian Basin. Due to the geology of the deep coal seams, hydraulic fracturing will not be needed to extract the gas and Santos is not seeking approval to use this technology.

The majority of the project will be located on State forest land within a section of the Pilliga that was set aside by the NSW Government for logging and extractive industries. No areas of National Park are within the project area. Santos is working towards an agreement with traditional owners of the land, the Gomeroi, who have a native title claim extending over the project area.

The areas of private land within the project area are not mapped as Biophysical Strategic Agricultural Land and Santos has committed that it will only seek to place gas wells on private land if the landholder agrees to host these activities. To reiterate this commitment, Santos signed the *Agreed Principles of Land Access* with a number of key rural stakeholder groups. When Santos works with a landholder, a Farm Management Plan will be developed and agreed which ensures the landholder understands, and is comfortable with, all aspects of Santos' work. The ability for natural gas development to co-exist with agriculture and other industries is demonstrated by Santos' Queensland natural gas operations, where it has in excess of 850 agreements in place with more than 300 landholders.

Santos has gained a strong level of support within the broader Narrabri community through its demonstrated commitment to operating safely and its extensive local engagement since acquiring the operations in late 2011. The majority of the Narrabri community recognise that the expansion of this relatively new industry can improve the prosperity of the local area. Santos will continue to build on these relationships over the life of the project to ensure the local community can maximise the significant benefits and opportunities Santos' activities will deliver.

This EIS will now be comprehensively assessed by both the NSW and Commonwealth Governments to ensure the project meets the highest environmental standards. This assessment process will include opportunities for interested parties and the community to review the document and make submissions.

Santos welcomes this scrutiny and recognises the important role this rigorous assessment process will have in ensuring the project is developed safely, that community, government and stakeholder expectations are met and this much needed energy is delivered to NSW.



Kevin Gallagher
Managing Director and Chief Executive Officer
Santos Ltd

I refer to another **Fairy Tale** in Mr Kevin Gallagher's forward to the Santos EIS.

"The water that will be extracted is not water accessed by agriculture or community bores and is not from the Great Artesian Basin. In addition, the project is not located within a major recharge zone of the Great Artesian Basin."

The first part of this **Fairy Tale** is only half correct and therefore misleading. It has already been mentioned in this submission see Ref7. ECO Logical comment which is attached. It says- "An assessment of the Project indicates that the duration and wider geographic extent of depressurisation of groundwater head within the coal seams and adjacent strata **will** cause a significant impact to the groundwater resources of the Gunnedah-Oxley Basin."

As for the affect the NGP will have on the Great Artesian Basin, it will only be a matter of time before it will be adversely impacted and by how much is probably not known.

The second part of the **Fairy Tale**, I am sure will be challenged by many other submissions and in more detail. The recharge areas of the Great Artesian Basin according to the maps are wide spread. The main one in NSW is the southern recharge zone and is in the East Pilliga Forest between Narrabri and Coonabarabran. The NGP is situated in a major recharge area.

Please ask Mr. Gallagher to explain why he claims the NGP is not located within a major recharge zone of the Great Artesian Basin ?

References to where the recharge zones of the Great Artesian Basin from SoilFutures Consulting Pty Ltd, report called Great Artesian Basin Recharge Systems and Extent of Petroleum and Gas Leases. Second Edition are attached.

4. Upward hydraulic movement from aquifers underlying the GAB aquifers. This is thought to be happening in the Winton Sandstones in the central part of the wider GAB.

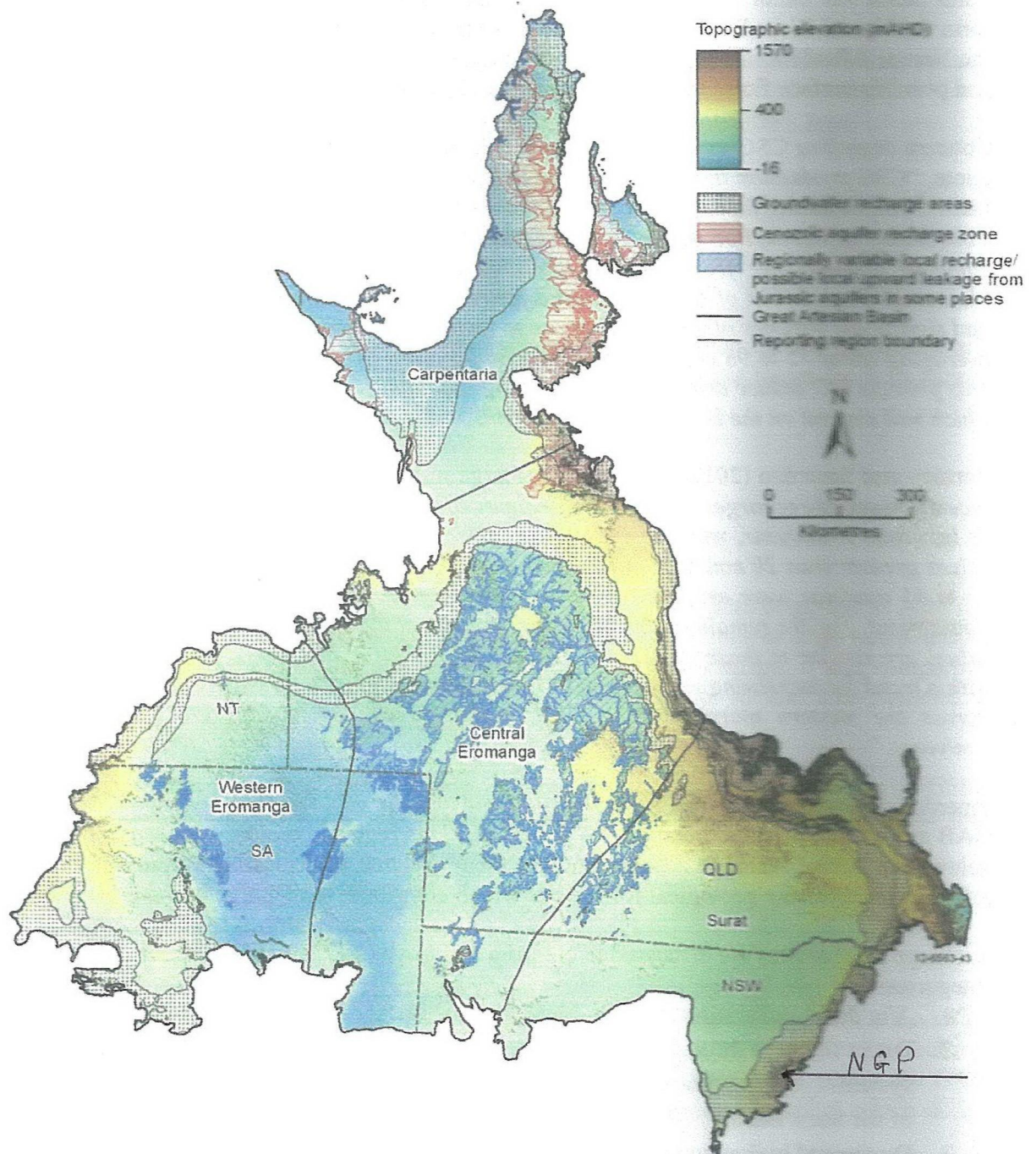


Figure 2: © CSIRO 2012 Hydrostratigraphy, hydrogeology and system conceptualisation of the Great Artesian Basin • 17 Figure 2.2 Digital elevation model with Great Artesian Basin boundary and aquifer recharge zones.

Figure 4 Shows known areas of recharge around the margins of the GAB, where recharge is through soil into underlying Cretaceous and Jurassic geologies or through alluvial fan systems which are prominent in the south eastern portion of the basin in the Pilliga Outwash. This figure shows that the total area of GAB marginal recharge (excluding Carpentaria) is 157 902 km² or 9% of the GAB.

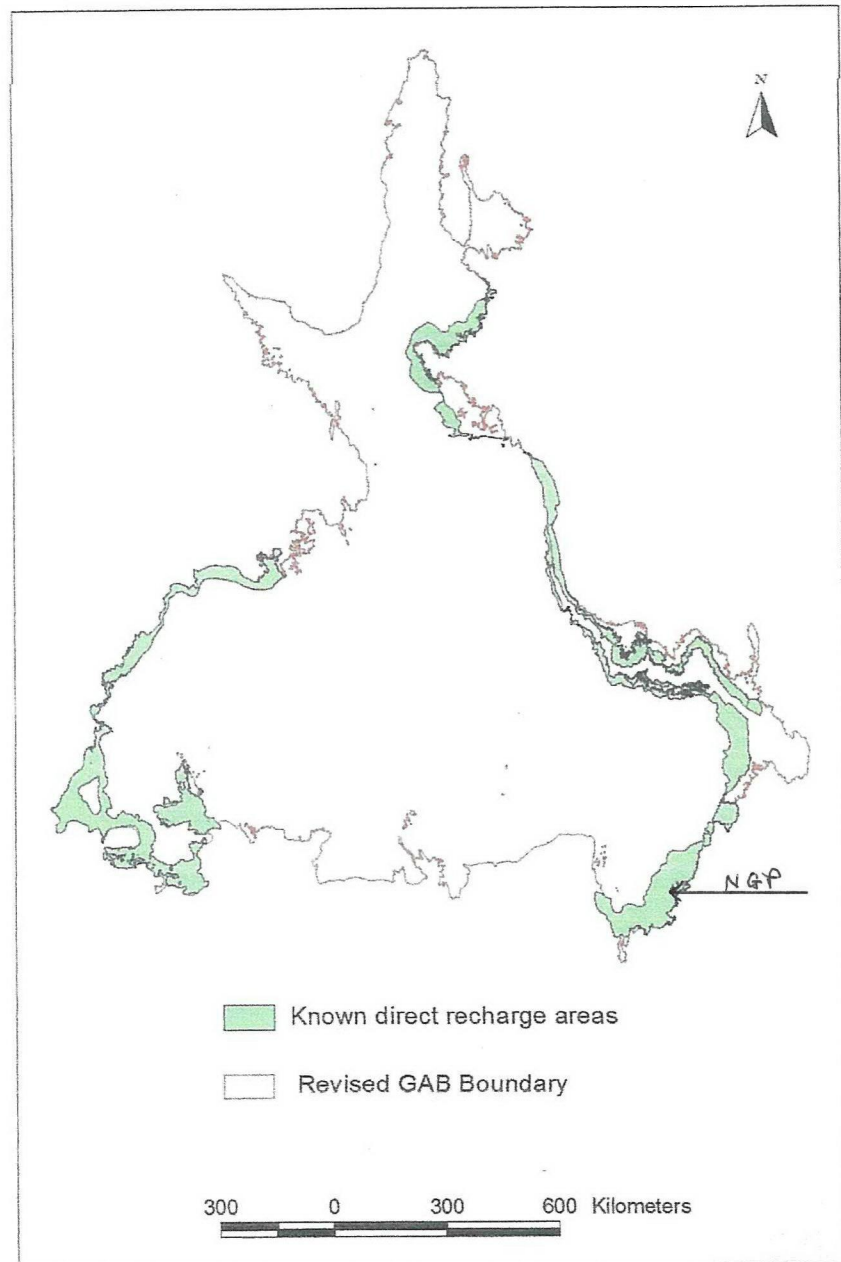


Figure 4: Direct recharge areas – margins of basin on Jurassic and Cretaceous Sandstones

Figure 5 shows the results of recharge measurement and modeling presented in Ransley and Smerdon (2012) and derived from Wohling *et al* (2012), Kellet and Ransley *et al* (2003) and Habermehl *et al* (2009) and are the most up to date assessment of GAB margin recharge available.

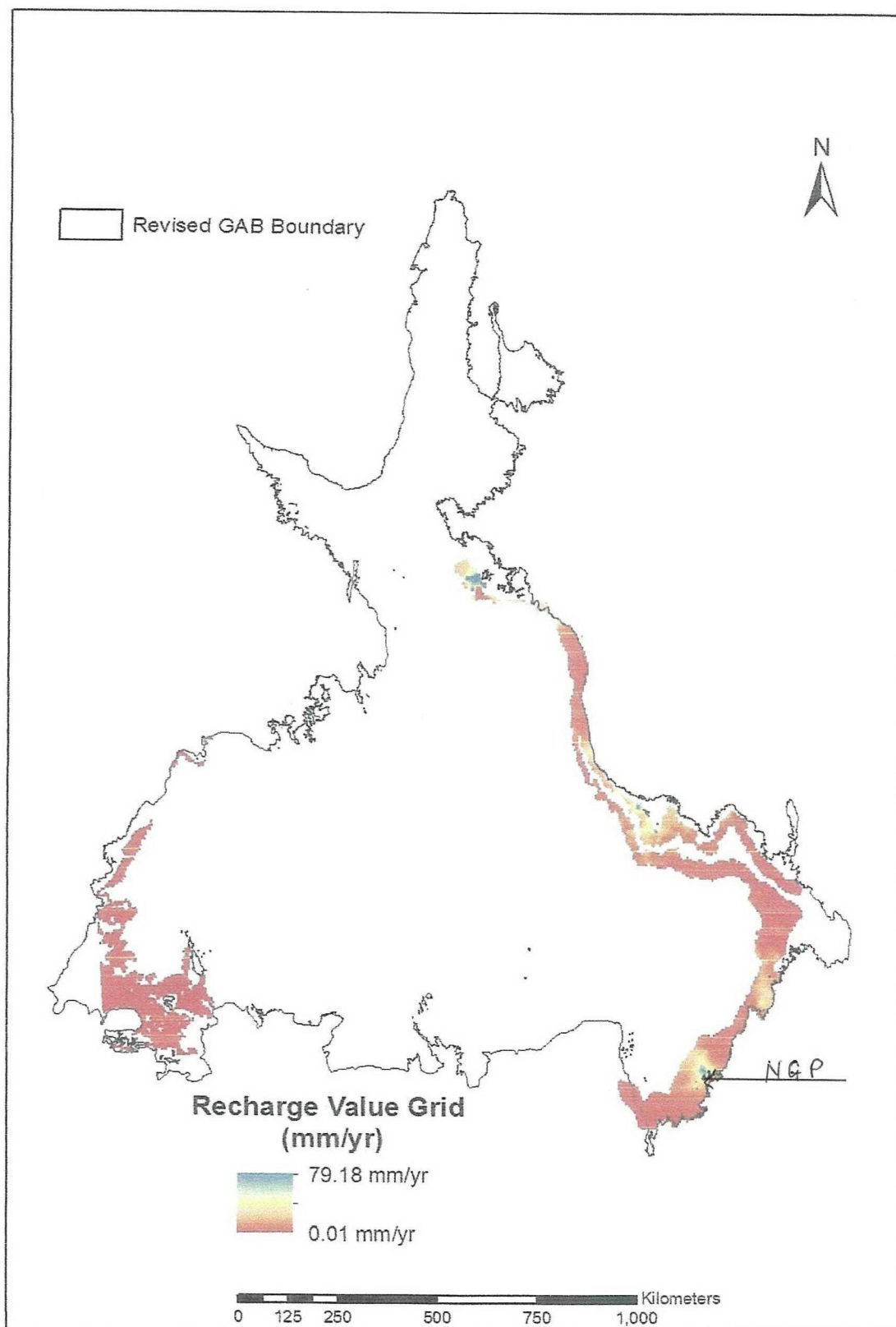


Figure 5: Modern recharge values for the GAB margins (from Ransley and Smerdon (2012))

3.3 Gas/Petroleum license areas and Recharge

The data from Figure 7 were overlain with the digitised (polygon) version of the Cretaceous and Jurassic recharge zones on the margins of the GAB (Figure 6). Figure 8 shows the extent of gas and petroleum related license areas within the critical recharge zones (>1 mm/yr).

32 326 km² (or 31%) of the critical recharge zone is not covered by any license. 70 590 km² (or 69%) of the critical recharge zone is taken up with either production or exploration leases.

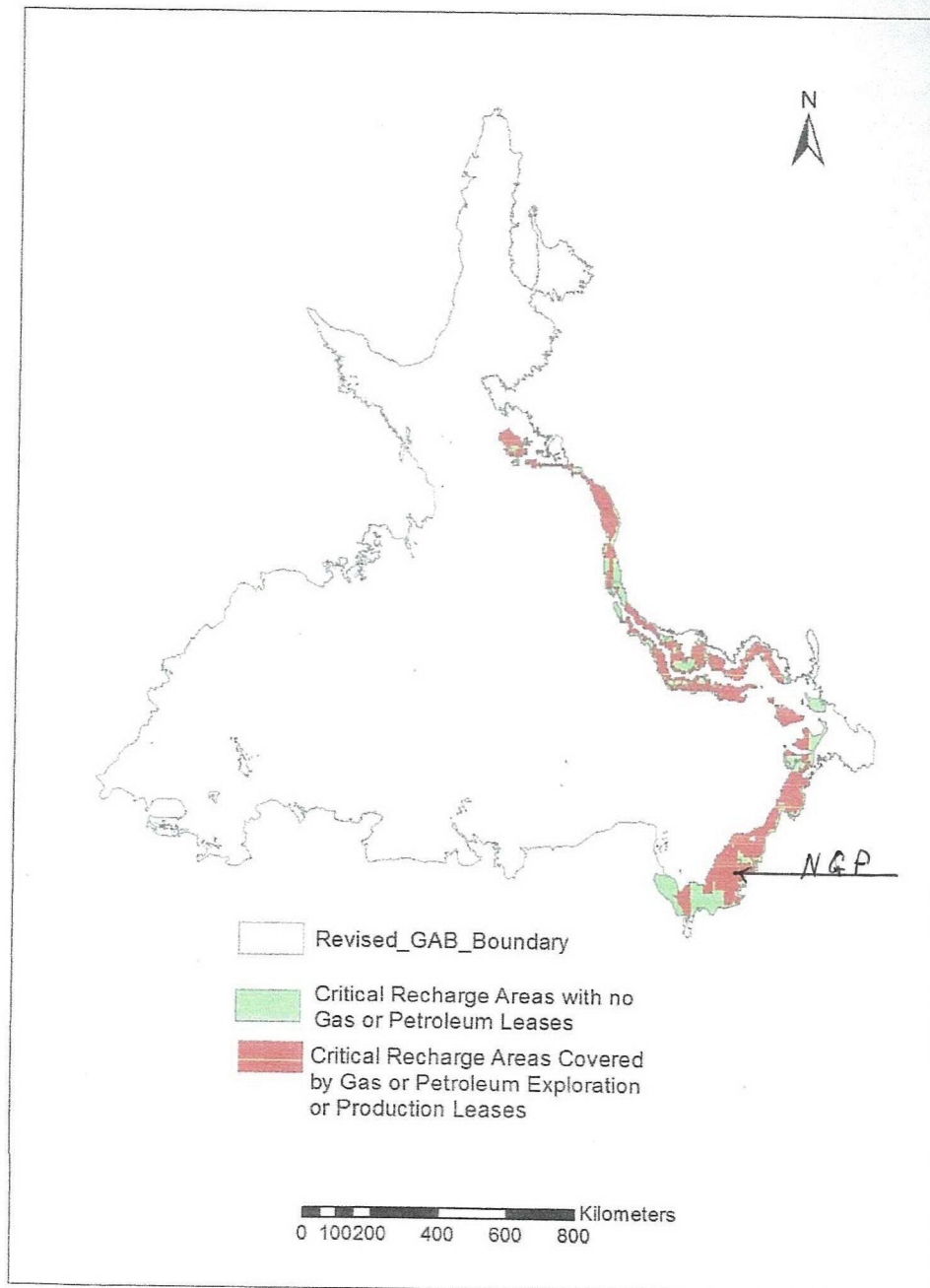


Figure 8: Extent of Gas/Petroleum production and exploration licenses within critical recharge zone (>1 mm/yr) of GAB

The recharge categories presented in Figure 5 were machine digitized into the three zones which are presented in Figure 6 below.

Figure 6 shows the following. The area with 1 – 5 mm/yr recharge is 65 064 km², or 3.8% of the GAB. The area with 5 – 30 mm/yr recharge is 37 775 km² (2.1% of the GAB). The area with recharge greater than 30 mm/yr recharge is 2 847 km² (0.2% of the GAB). In NSW the recharge areas of higher than 5 mm/yr and >30 mm are almost entirely contained within the east Pilliga area. The total area with recharge > 1 mm/yr is 102 826 km², or 6% of the GAB.

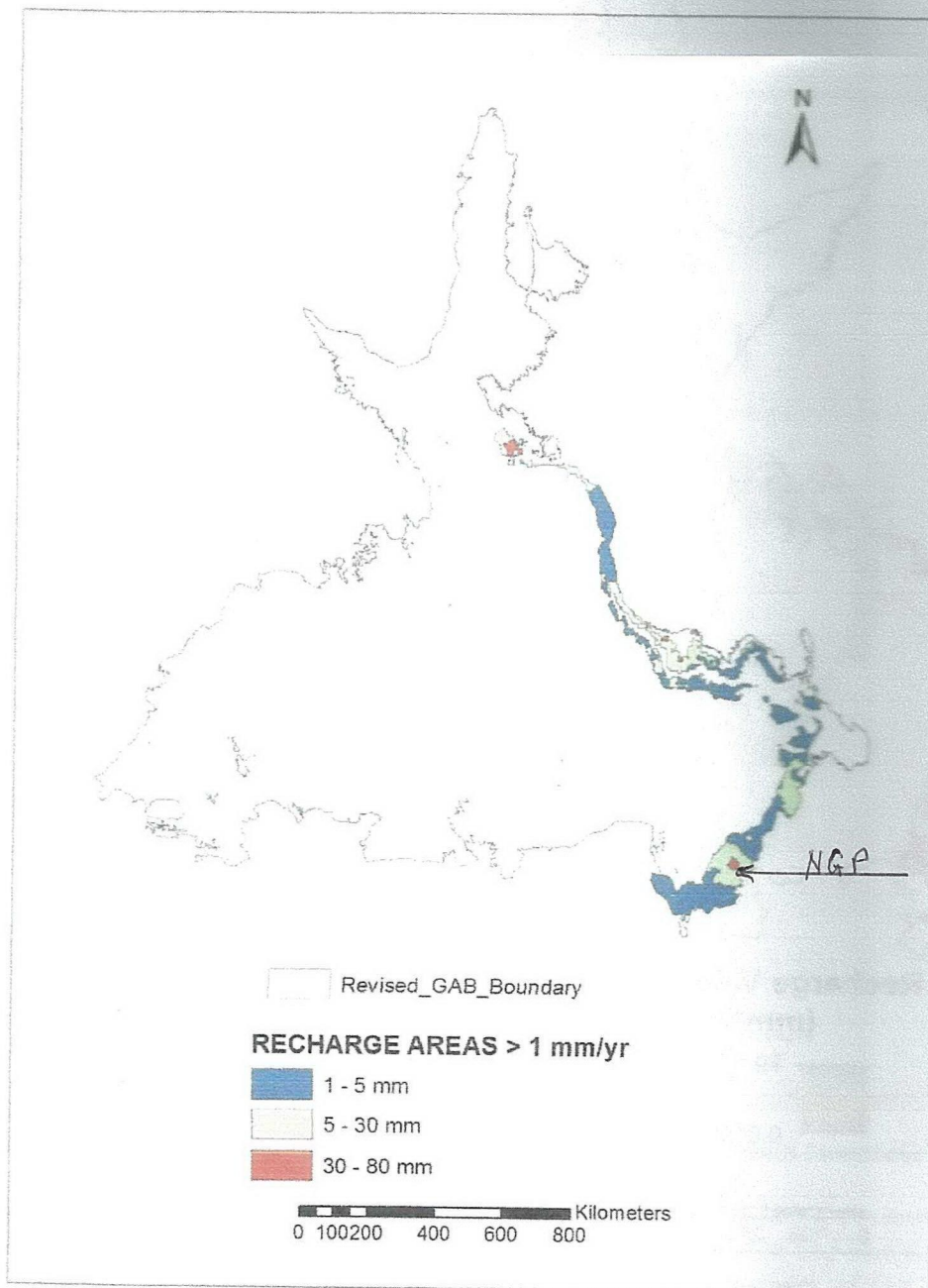


Figure 6: Machine digitised recharge zones from grid data provided in Figure 5.

In this submission.

The gas lobby group APPEA say our ground water is safe. See Ref 6 in this submission.

Mr Mitchley declares the NGP is profoundly safe.

Mr Kevin Gallagher in his Forward to this EIS and mentioned in the above comment leads you to believe the NGP will not affect the Great artesian Basin.

As Santos is so sure the NGP will not damage our groundwater supply, in particular the Great Artesian Basin, please ask them to give an iron clad guarantee that this will not happen?

If they refuse this request then we can be certain our ground water will be adversely impacted, and the approval to proceed with the NGP should be denied.

In conclusion.

- We know the threat to the Great Artesian Basin, a Nationally Significant Water Resource, remains.
- We know the gas from the NGP is not needed as there is plenty of supply if domestic supply is not diverted to export.
- We know that the NGP is not sustainable so any benefits to the community will be short lived.
- We know the adverse impacts on our community, our water, our air, our land, and our environment will be long lived.
- We know Santos do not want the NGP as they are trying to sell it.
- We know the majority of people do not want the NGP to proceed.

If the consent authorities can sift out the Fairy Tales from the Santos_EIS and consider properly the arguments why the NGP should not proceed then :

Approval for the NGP should not be given.

Stuart Murray.



Po Box 371
Narrabri.
NSW 2390.

12/5/2017