

Ian Smith
"Narellan"
COONAMBLE NSW 2829

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Ms Carolyn McNally
Secretary, Department Planning and Environment NSW

Dear Ms McNally

I object to the Narrabri Gas Project. It should not be approved under any conditions whatsoever.

I am from Coonamble Shire and the majority of people in my Shire are against this project, by my estimate about 98%.

The majority of our Coonamble economy relies on sub-Artesian and Artesian water supply. It would be catastrophic to our entire economy if any threats were to come true, risking this water supply.

Under the PRECAUTIONARY PRINCIPLE, the possibility of irreversible damage should be sufficient to say NO to the risky Santos Narrabri project.

The submitted Environmental Impact Statement has stated that the project is an 'ecologically sustainable development' against the conditions of the EP&A Act. The Narrabri Gas Project has not comprehensively addressed the economic and social impacts at a local, state and national level. The EIS has largely ignored the political and historical context of the region and state. The major factors that have been expressed by local community members, research scientists, NSW Auditor-General and environmental groups are as follows:

The intentional undermining of the true cost of site rehabilitation, dismissing the true value and cost of underground and terrestrial ecology, ignoring the loss of workers from the local agricultural industry to the extraction project, the division of communities, downplaying the failure of industry to regulate extraction practices and direct health impacts.

Without adequately addressing these factors, Santos' EIS should not be approved. The security of our limited forest and groundwater communities must be prioritised and protected. With consideration to the points below, the Narrabri Gas Project is not an 'ecologically sustainable development' and should be rejected.

1. Rehabilitation costs and adjustments: The NSW Audit on Mining Securities and Rehabilitation undertaken by the NSW Auditor General, concluded that under the

current security deposit process, the submitted security deposits are unlikely to be enough to cover the full cost of each mine's rehabilitation. Furthermore, "the security deposits do not include sufficient contingency given the substantial risks and uncertainties associated with rehabilitation and closure". These points have been directly quoted from the NSW Audit report.

I support the call by Narrabri Shire Mayor Cathy Redding, and the Narrabri Shire, which have called for the \$100 MILLION SECURITY FUTURE FUND to be provided by Santos.

2. No economic justification: The economic case in favour of the Santos Gas project has definitely NOT been proven.

I use as an example of failed promises of economic benefits, the town of Boggabri, NW NSW which was promised great prosperity, jobs, economic stimulus. None of this has eventuated and I believe the same empty promises will haunt any other community which is associated with mining and gas projects of this nature which rely on fly-in and fly-out – or drive-in and drive-out workforces, and experience catastrophic "busts" after a very short construction boom.

The workforce for this project are professionals in the gas drilling business. These people will be brought into NSW from interstate and overseas.

There is no way that they will source the necessary goods and services in Narrabri, or Coonamble.

I saw Boggabri in the 1960's and 1970's and it was a 10 x times bigger and more prosperous town than it is today. The same will happen to Narrabri.

3. Risk to irreversible damage to Groundwater and the Great Artesian Basin (GAB):

In the Coonamble area, farmers undertook extensive bore capping schemes under the recommendation of Federal Government funding to save this precious resource.

Santos' EIS admits that the project will result in a loss of water from the GAB recharge aquifer over time. There is already a precedent in Queensland where CSG has drawn down GAB aquifers already.

We can't afford to risk this crucial resource.

The Narrabri Gas Project is LOCATED in a MAJOR RECHARGE AREA and the risk is EXTREMELY HIGH.

The risk to western farming communities is UNACCEPTABLE.

4. Salt – no safe solution for disposal:

The water removed from the ground by Santos will be treated, but this creates another problem: what to do with the salt? Peak salt production at Narrabri CSG will be 115 tonnes per day, or two and a half B-double truckloads per day. In the peak year, this would mean the creation of 41,900 tonnes of salt for disposal, which Santos says will take place in landfill.

5. Biodiversity and the Pilliga: The Pilliga is also the largest temperate woodland in New South Wales. Santos propose clearing nearly 1,000ha of the Pilliga, including habitat for critically endangered Regent honeyeater and for koalas, which are already in decline in the Pilliga. Spread across the whole forest, this clearing will fragment much larger areas of habitat. The gasfield will clear breeding habitat for Pilliga Mouse, which lives nowhere else, and breeding habitat for other wildlife. It will fragment and degrade the forest. Without specific information about where the wells and lines will be located, a proper ecological impact assessment can't be completed. Regardless, the Pilliga is a cherished natural and cultural icon and must be protected from becoming an industrial gasfield.

There are koalas in the Project Area but Santos EIS failed to identify them. Chapter 15 "Terrestrial Ecology Impact assessment" is inadequate and has failed to identify recently observed species. Santos's flora and fauna surveys were also inadequate. Koalas are a threatened species. I object to this Project on the grounds that terrestrial ecological impacts have not been adequately assessed and mitigated. Following a review of Chapter 15 of the Narrabri Gas Project (NGP) Environmental Impact Statement (EIS), a number of serious omissions within the assessment are evident, and several questions regarding the adequacy of the assessment remain unresolved, in particular:

- The adequacy of the methodology used to describe direct impacts is questionable. The lack of a development footprint by which impact could be measured according to 'whole of government' guidelines gives uncertainty to the outcomes.
- Levels of indirect impact have been significantly under-estimated. Using fox predation as a measure, pre-mitigation levels of indirect impact should be at least doubled in magnitude, based on available evidence.
- Survey effort for some key fauna species appears to be deficient and would have adversely affected the ability of the EIS to adequately account for some species.
- A NSW and Commonwealth-listed threatened ecological community White Box Blakely's Red Gum-Yellow Box Woodland (and derived native grassland) has been mis-identified and presumed to be not present in the study area. New data confirms its presence along Bohena Creek.
- The description of important habitat for a number of key fauna, such as the Regent Honeyeater, Pilliga Mouse, Koala, Black-striped Wallaby and Five-clawed Wormskink does not appear to be accurate.
- New information regarding the presence of the Koala in the study area discounts the assertion made in the EIS that it is not currently present.
- Due to deficiencies in the survey and assessment for two 'matters for further

consideration' (Regent Honeyeater and Five-clawed Worm-skink) statutory requirements under the NSW Biodiversity Offset Policy have not been met.

- Direct impacts upon Brigalow Park State Conservation Area remain uncertain as do the magnitude of indirect impacts upon the adjacent Nature Reserve and existing corridors.

- A Biodiversity Offset Strategy does not provide any surety for how well it will 'retire' the impact of the Project because the strategy provided in the EIS does not provide any like-for-like land-based offsets apart from an unproven rehabilitation plan and rests on the hypothetical efficacy of a feral animal control proposal. The suitability of the offset package with respect to the statutory requirements under the NSW Biodiversity Offset Policy is poor. Based on these findings, the Secretary for the Environment should reject this part of the overall Project assessment as being data-deficient and inadequate under the terms of NSW Biodiversity Offset Policy or request the matters outlined above be addressed by the proponent.

6. Risks to Air quality: The air quality assessment fails to include health-damaging fine particulate pollution with a diameter of 2.5 microns or less (known as PM2.5). With diesel generators at each well pad and at the water treatment and gas compression plants, there will be significant PM2.5 emissions. The air quality assessment and greenhouse section also fail to model the likely substantial escape of fugitive methane emissions.

What I will draw your attention to, is the very last paragraph about the outgassing from the produced water.

It is a pity the the EPA/CSIRO could not check the water balance tanks located at the gas fields themselves and the big tank at Bibblewindi. All have open tops and when viewed with the right background have a shimmer coming off them, and have smells: either a heavy coal smell or a Hydrogen sulphide smell emitting from them, so there is a outgassing from the water due to depressurisation of the water at these locations that is releasing the trapped gases including the above mentioned and Methane (which cannot be smelled).

Most of the highest peak CH₄ concentrations were measured in close proximity to several CSG wells within the Bibblewindi region of the Pilliga State Forest and the Tintfield area to the north (the emissions rates from the two Bibblewindi wells were measured separately, as discussed below). Another large spike of about 6.8 ppm CH₄ was detected further south in the Dewhurst region during May 2015, which was most likely also due to emissions from a well about 100m away, but we were unable to positively confirm the source with on-pad measurements at the time.

7. Compressor stations: Compressor stations pose dangers due to fugitive emissions, excessive noise and risk of explosions. Experience has shown in Australia and elsewhere globally, that the number of compressor stations may increase. We do not rely on current projections of only two compressor stations for this project.

8. Light pollution- scientific and tourism significance of the Dark sky: light

pollution from flares, compressor stations and the water treatment plant will ruin the dark sky needed by the internationally renowned Siding Spring Observatory.

Santos has failed to ensure that vital astronomical assets of the Commonwealth of Australia, and 50 other international research institutions, are not detrimentally impacted by the operation of a large gas field and gas processing equipment to the north of Siding Spring.

Over the years, major public funds have been invested in these world class facilities for astronomy. Australian taxpayers and science institutions are rightly deserving of protection of this asset.

There is no recognition of the cumulative impact of future expansion from PEL238 to other gas licence areas much closer to the observatory.

Santos has not proposed adequate mitigation measures to protect the observatory operations, particularly in not ensuring the clarity of the night sky from light pollution impacting negatively on visible light telescoping, and from not preventing an increase in chemical air pollution impacts on delicate instrumentation and mirror surfaces. It has also not recognised or mitigated chemical air pollution impacts on the Narrabri radio telescope facilities.

There is no recognition in the Santos EIS that air pollution (Chapter 18) at times will concentrate in certain weather conditions, such as during temperature inversions or cloudy, still nights and drift southward towards the observatory. Air pollution from gas fields is well-documented but has not been correctly identified in Chapter 18. It comprises methane, ethane, butane, and some higher hydrocarbons that can form ozone smog in sunlight, especially mixed with flaring combustion products like nitrous oxide. There is also hydrogen sulphide. This air pollution is not documented in the EIS by Santos. Gas field smog is highly corrosive on delicate instrumentation and can cause smog haze.

Santos have failed to propose adequate mitigation measures to minimise the impact of light pollution from flaring operations - in fact, no flare shielding is proposed. Two major flare stacks will likely operate continuously at Bibblewind and Leewood. Santos has under-estimated the likely continuous operation of these stacks and has not proposed adequate shielding.

Santos has under-estimated the amount of light pollution and has contradictory statements in the EIS about the number of flares – at one point it is stated that there will be 'up to 6' (5.3.3) pilot well flares, but in other parts of the EIS it is estimated over 25 pilot flares (Greenhouse Gas Chapter 24) will be operational at any time.

The NSW EPA recommends that flare stacks be shielded but this is not promised by Santos.

Chapter Q mentions the potential high light pollution impact of major flare events but 'talks down' the frequency of such events. This is NOT the experience in the QLD coal seam gas fields. The Santos EIS does not reflect practical on the ground experience of coal seam gas field operations.

The reality of gas fields is that gas supply restrictions mean that gas flaring can occur whenever the market is not drawing gas from the Project. This means that flaring can be a constant feature of an operational gas field. Claims by Santos that flaring will be minimal are simply not supportable.

It is inconceivable that the negative impacts of the Project on Siding Spring would be acceptable to Australian and international astronomers nor to the Australian public who have heavily invested in these world class facilities.

I do not consider light and air pollution that will be caused by the Project has been effectively mitigated by Santos's proposed mitigation measures.

9. FIRE RISK

The proposition of having flaring in 850 locations in the Pilliga Forest, even during TOTAL FIRE BAN days is unthinkable.

Already it is known that the Pilliga Forest is extremely susceptible to bushfire.

Santos has not made public its BUSHFIRE RISK ASSESSMENT.

THIS IS DONALD TRUMPISH – A JOKE!

CONCLUSION:

I have lived in Coonamble for 50 years, all my life, I have seen what greed does, and have no support for this project.

Yours faithfully,

IAN SMITH