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Submission to the Narrabri Gas EIS

I object to this project and recommend that it not be approved. Instead the vast amounts of public and private funds devoted to this proposal would be better spent on renewable energy projects such as the proposed new solar farms in places such as Gilgandra, Narrabri, Walgett and Nyngan.

I am a retired Science teacher and Environmental educator. I have been in the Coonabarabran area for over 40 years, initially on a farm in the southern Pilliga, spending much recreational time in the Pillga, appreciating its natural values.

I was on the original CCAC from 2005, tasked with advising on the management of the entire southern reserves declared under the BBS Act.

At that time, when I first heard of this major expansion of the Narrabri Gas Project, my initial reaction was that it didn't belong in such an important natural area as the Pilliga. I did however think that it might be of additional financial benefit if allowed to go ahead on marginal agricultural land around the Pilliga.

In the intervening years I have learnt more about the proposal. This industry is so risky that it should not go ahead at all, anywhere. And had its advocates been paying attention they would feel the same way. Throughout the entire EIS, Santos has underestimated the risks and overestimated the benefits.

In 2014, the NSW Chief Scientist, Mary O'Kane released a report which made 16 recommendations. At the time she said that "there is still much for the Government to do" before the industry could go ahead safely. Few of these recommendations have been implemented and until all of them are, the industry should not go ahead.

Groundwater and geology

- The EIS admits that there will be drawdown of water in nearby aquifers. If aquitards prevent the movement of water downwards due to depressurization, why will there be drawdown?
- They also admit that there will be a time lag for cross contamination to occur between aquifers. It will be outside the scope of the EIS but it will still happen and we will bear the consequences.
- Damaging or contaminating aquifers with produced/contaminated water is an act of negligence from which there is no return.

Surface water quality

- Spills and leaks are an inevitable consequence of this industry. There is a recent ABC report indicating that there have been 3 spills of untreated CSG waste water in the last 3 weeks in Queensland.
- Release of water into Bohena Creek, even at the high flow rates required would change the chemical composition of the water entering the Namoi which in turn could impact fish breeding and irrigation farming. A gauge should be installed at the water release site to accurately gauge the flow rate.

Hydrogeology and geomorphology

- The surface of the project area is not flat but undulating with dry watercourses and rocky rises. In heavy rainfall events there is potential for erosion to occur exposing unsupported gas pipelines. Exposure to the air breaks down the impermeable covering of the pipeline, increasing the risk of leakage.

Soils and contamination

- Treated water should not be used for dust suppression or for irrigation purposes throughout the project. The cumulative contamination would impact both this important natural area and the viability of the soil to grow crops.

Terrestrial ecology

- The proponents have downplayed the impact on natural areas from all aspects of the proposal, ignoring the importance of forested landscapes in creating rainfall as well as the impact on groundwater dependent ecosystems.
- Perhaps only the claimed 1000ha will be directly impacted by the removal of vegetation but this industry actually industrialises the entire 95 000 ha project area because it is so spread out and requires so much additional infrastructure - roads, pipelines, treatment plants, compression stations, flares, well heads, man camps and traffic operating in some cases 24/7
- The impacts are not just limited to habitat removal and they are cumulative. Gas leakages, constant noise, contaminated water spills, increased traffic load, 24 hour lighting and flaring, fragmentation, all have impacts on natural organisms.
- The Pilliga was known as a hot spot for koalas before a population crash apparently associated with the Millenium Drought. They are still not doing well and are endangered with local extinction. They are still found in the project area and can recover if left alone. Santos' actions are not helping.
- The offsetting is doomed to failure because it requires like-for-like. It is the size and diversity of the Pilliga which makes it so irreplaceable. The Biobanking methodology itself is flawed, overestimating similarities.
- Rehabilitation has so far proved unsuccessful and costly at the scale which would be required by this degree of development. Old spill sites are still bare and well pads showing some recovery are actually infested with aggressive weeds such as African Lovegrass.

Aquatic ecology

- While acknowledging the existence of a number of threatened aquatic species, there is no concern for the stygofauna described in 2012 and the required studies were specifically designed not to find any.

Property and land use

- Only humans are assumed to be sensitive receivers, requiring distance to be placed between them and infrastructure. Small animals may be even more sensitive and thus adversely impacted by air quality and noise. This is not considered in the EIS.
- Bees are very sensitive to air quality and bee-keeping is an important export industry in the Pilliga.
- Gas infrastructure and farming are incompatible, requiring farmers to avoid driving over pipelines and to take wide detours because of the size of their implements. Land Access agreements do not protect landowners because they can't say no.

Air quality

- The background methane level in the Pilliga is negligible. CSIRO studies in 2015 indicated spikes in methane levels around several of the wells. Queensland experience is that even new pipelines have leakage problems and aging infrastructure even more so.
- Methane is not the only gas released by this process. Other gases include BTEX and VOCs and other petrochemicals. These are known to have impacts on the health of living things.
- All gas wells leak eventually and the problem won't go away, remaining long after the companies no longer exist.

Noise and vibration

- The constant hum of generators on the well pads and the constant traffic movements will disturb the peace of the Pilliga and of the country homesteads.

Aboriginal heritage

- Acknowledgement of Aboriginal connection to the land is trivialised when all that is done is to identify the presence or absence of physical artefacts and avoid or move them. The connection between artifacts, story and landscapes will be destroyed by the industrialisation of the project area.

Historic heritage

- Though historic heritage is more easily identified, old timber-workers themselves also appreciated the landscape and took pride in maintaining its integrity. Their management too will be destroyed by this industrialisation.

Traffic and Transport

- There will be a massive increase in traffic access throughout the project area, especially during the development stages – trucks carrying water, drilling mud and saline waste, maintenance staff, workers moving to and from work sites, drill rigs, transportable accommodation …. The dust pollution will multiply as will the amount of road kill. It will also impact on road and air quality. This has been underestimated in the EIS.

Landscape and Visual

- Landholders may have little initial visual impact because the initial development would be in forest. It will become more obvious once it moves onto farmland.

- The EIS claims that well pads will be situated no less than 750m apart along existing roads and tracks. In a 20km length of road, this would be the equivalent to seeing 27 well sites beside the road. This destroys the very nature of the visual landscape..

Greenhouse gases

- Methane, the main component of CSG, is a much worse greenhouse gas then carbon dioxide.
- Methane is not a safe transition fuel to a more sustainable future. Its use has no environmental benefits. It would be better for the future to bypass this use of gas as a source of energy altogether.
- The CEO of Santos recently admitted its business model assumes a 4°C rise in global temperatures indicating a complete disregard of the climate changing potential of its industry.

Hazard and Risk

- Risk of spills from failure of pond walls is assessed as very low. But there have already been at least 20 reported spills, some of which were due to human error. Anything this complicated runs a cumulative risk of failure due to human mistakes.
- Risk of uncontrolled release and ignition is also assessed as low, being 50 chances in a million per year. Over the 25 year life of the project this gives a cumulative risk of 1.25 chances in 1000 – a much higher probability.
- The permanent flares additionally have potential for risk to their reputation and the environment on catastrophic fire days.
- Because risk assessment is over the life of the project there is no consideration of risks associated with long term breakdown of well casings and likelihood of gas leakages. This has already been seen on the Condamine River.

Social and Health

- The EIS emphasises some potential community benefits of the industry while ignoring the negative ones resulting from the "boom and bust" nature of the industry. It does not guarantee these benefits.
- Promised local jobs are minimal once the construction phase is completed.
- Research provides evidence of the human health impacts of CSG.
- Symptoms experienced by large numbers of people after the catastrophic failure of gas storage at Porter Ranch in California are the same as those experienced by a small number of people around the gas fields of Queensland. The gas is the cause.

Economics

- The world price of gas has collapsed since this project was first suggested and Santos has recently re-valued this project as $0.
- It will cost $3 billion to develop this project and the production costs are very high, making the gas very expensive.
- We don't need the gas. There is enough in Bass Strait reserves for the foreseeable future.

- The continuation of the project is a good illustration of the "tyranny of sunk costs". They have already spent so much money on it that psychologically they can't write it off.
- The EIS has exaggerated job benefits. Of the 2.2 million jobs the gas industry claims to support in NSW, 2.2 million are employed in businesses that use gas for running the hot water taps in the bathroom.
- Benefits will accrue to a few. Costs will be paid by the community and the taxpayer.

Waste management

- The two major byproducts of this industry are contaminated water and toxic salts. No amount of treatment will render them completely safe.
- Reverse Osmosis is energy intensive and expensive. The treated water whether spread for irrigation, used for dust suppression or released into the environment will still contain potential contaminants like heavy metals.
- There is no way to dispose of the vast quantities of salts except by dumping in landfill, where it must be contained forever.

Cumulative impacts

- Each new well adds to the impact on the farms or the bush.
- This project was originally described as Stage 1 with a proposed additional 6 such gasfields throughout the northwest. Once this proposal is approved and goes ahead there will be no stopping the industry spreading.

The EIS seems over-dependent on desktop analysis and modeling. Models are only as good as the assumptions they are based on. Desktop analysis depends on the data already being in existence. Large parts of this area have only been studied superficially previously so there is no data.

This project is so flawed that no amount of regulation, auditing, monitoring or mitigation is going to keep its impacts at reasonable levels. I recommend that the EIS not be approved.

Yours faithfully

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