

Attn: Executive Director, Resource Assessments

Department of Planning and Environment

GPO Box 39

Sydney NSW 2001

18 May 2017

To Whom it May Concern

This is a submission regarding Santos' Environmental Impact Statement (EIS) for the Narrabri Gas Project.

I object to this Project and believe it should be rejected.

My name is Carolyn Nankivell. I am a 4th generation farmer, mother of three and grandmother of three. As a grandmother, I am deeply concerned that my grandchildren, the most vulnerable members of our society, will be at greatest risk from the associated health impacts of Santos' Narrabri Gas Project. One of my daughters, son-in-law and all three grandchildren live and farm less than 6km to the north, and downstream, from Santos' proposed Stage 1 Narrabri Gas Project. They farm potatoes, peanuts, and grains that supply NSW, Australian and global consumers. To put that into some perspective, each year, year in, year out, their 945-hectare farm produces approximately 50 million potatoes, 1 million kilograms of peanuts and wheat for 3.3 million loaves of bread. The end point value of this product is in excess of \$50 million annually. They also employ up to 20 permanent and seasonal staff. They rely entirely on underground water to irrigate their crops, and for drinking and everyday household use. They have no other reliable source of water.

Santos' Environmental Impact Statement for the Narrabri Gas Project claims that "the Project can proceed safely with minimal and manageable risk to the environment". The evidence, however, paints a very different picture.

The lack of detail: Santos' EIS is very short on detail. It does not provide maps indicating where these 850 wells and the lines and infrastructure that run between, and around them, will go. Santos is

seeking a blank cheque consent for this gasfield on the promise that it will decide where the wells will go afterward using a “Field Development Protocol.” No project has ever been assessed this way before in NSW and the constraints Santos propose are weak and subject to change later on. This is not an appropriate way to assess the largest development project ever undertaken, and a designated State Significant Development, under the Environmental Planning and Assessment Act. Further, under procedural fairness, the Government must insist that Santos provide an opportunity for the community to review, assess and comment on the impact of the placement of individual wells, pipelines and other infrastructure before any further assessment is undertaken.

There is no justification: The significant harm on the social, environmental, and economic values of the Narrabri Shire and New South Wales that this project will inflict needs to be weighed against the economic justification for the project, but it is well known that there is no such economic justification. Santos is one of several large gas companies that threw the east coast gas market, and the industries that rely on it, into turmoil by opening up CSG fields in Queensland and contracting to sell more gas than those fields can produce to overseas customers. They drove up the price of gas and are plundering supplies previously available to manufacturers and power stations.

According to a new report by Tim Forcey and Dylan McConnell at Melbourne University’s Australian-German Climate and Energy College, a predicted shortage of gas for electricity generation in Australia from 2018 will not eventuate, and the recent surge in domestic prices will not be mitigated by opening up new coal seam gas fields.

<http://www.smh.com.au/environment/higher-energy-prices-have-little-to-do-with-gas-shortages-researchers-say-20170517-gw6tg2.html>

<https://www.theguardian.com/australia-news/2017/may/18/australias-2018-gas-shortage-will-not-eventuate-report-shows>

The gas produced at Narrabri might be as little as 4.9% of the volume contracted for sale out of Gladstone. It’s not going to bring down prices. In fact, it will force prices up, because unconventional gas like CSG is so expensive to produce and yields are so low. Research undertaken by gas company AGL shows that gas from the Pilliga would be the most expensive gas of anywhere in the current east coast gas market (in excess of \$10/GJ). The total number of jobs the project will support once the construction is over is just 145, with approximately 10% of those based in the Narrabri LGA. Weighed against damage to the land and water resources including the Great Artesian Basin, this makes no sense. We need sustainable jobs, not plunder for profit.

(<http://www.smh.com.au/comment/phoney-energy-crisis-merely-a-ploy-to-access-offlimits-gas-20170315-guz8pb.html>)

<http://www.smh.com.au/business/comment-and-analysis/east-coast-gas-market-has-all-the-hallmarks-of-a-cartel-20151011-gk6b4i.html>

<https://www.thesaturdaypaper.com.au/news/resources/2017/03/25/the-gas-industrys-power-play/14903604004401>

In addition, AGL, Australia's oldest gas company, says that the transition to a low carbon economy will largely bypass "baseload" gas, and instead shift straight to large-scale wind and solar.

(<http://reneweconomy.com.au/agl-kills-idea-of-gas-as-transition-fuel-wind-solar-storage-cheaper-63013/>)

Groundwater and the Great Artesian Basin: Santos' project is expected to remove 37.5 billion litres of groundwater over the life of the gasfield, mostly in the early years. This is utter madness, foolhardy and negligent when we live on the driest inhabited continent on Earth. The coal seam needs to be dewatered to release the gas, but this aquifer lies beneath the Pilliga Sandstone, part of the Great Artesian Basin recharge. Santos' EIS admits that the project will result in a loss of water from the Great Artesian Basin recharge aquifer over time. CSG operations in Queensland have already resulted in drawn down GAB aquifers. We can't afford to risk this crucial resource that is the lifeblood of rural and regional communities.

Salt: 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 three B-double truckloads per day. In the peak year, this would mean the creation of 42,000 tonnes of salt for disposal, for which Santos currently has no solution. Disposal at a yet to be disclosed landfill site is not a sustainable solution – it is a toxic legacy for future generations.

Cultural heritage and the Pilliga: The Pilliga is a spiritual, cultural, and social icon for Gomeroi/Gamilaraay people. Fragmentation and industrialisation cuts people off from their heritage and connection to country.

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 the 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 cannot be completed. Regardless, the Pilliga is a cherished natural and cultural icon and must be protected from becoming an industrial gasfield.

Social and health impacts: Santos' social impact assessment is three years old and utterly inadequate. Major health concerns remain unresolved including cumulative chemical and mental health risks, safety breaches, methane flaring and toxin contamination. The Compendium of Health Studies produced by the Concerned Health Professionals of New York shows mounting evidence for health damage by unconventional gas operations, including water contamination and respiratory illness. The Government must insist that Santos conduct a proper health impact assessment including modelling exposure pathways, reviewing literature and engagement with the Narrabri community. The Government must also insist on baseline health studies before any further CSG drilling takes place.

In Narrabri, this project will have negative impacts on cost-of-living, the labour and housing markets. The latter is cited as a benefit of the project but it will not benefit low-income renters, pensioners or other vulnerable groups in the community. The effect of the project on cost-of-living in the Shire needs to be modelled, assessed, and considered, as do the labour dynamics of the project. The project entirely surrounds Yarrie Lake, and Santos propose that wells might come as close as 200m from the Lake.

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.

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 and Dark Sky Park.

Climate change: Recent research by the Melbourne Energy Institute shows that Australia may be dramatically under-estimating the fugitive methane emissions from unconventional gas, including coal seam gas. It's not needed or useful as a source of energy: we have the technology we need to replace gas with renewable energy sources.

No social licence: Grass-roots community surveys conducted across 3.2 million hectares of North West NSW, and completely surrounding Santos' Narrabri Gas Project, has demonstrated that overwhelmingly people in those communities reject the prospect of living in a gasfield, with 96% declaring their communities and their land off limits to Santos.

The evidence from the US over a longer period, and from Queensland more recently, is that CSG is highly invasive and highly destructive of agricultural land, the water resources, and a health risk. It is also a risk to the food security of an entire nation. Scientific research has shown that large scale CSG developments, such as the development proposed for Narrabri, poses poorly assessed, yet potentially

catastrophic risks that will leave a legacy of suffering for generations to come. Far from giving this industry the green light, the recent report by NSW Chief Scientist, Mary O'Kane, highlighted the significant risks posed by this industry. She acknowledged that there will be "unintended consequences", and the families and communities surrounding the Pilliga Forest will be the ones that are directly and negatively impacted in the initial instance.

The Pilliga Forest is NOT the best place in NSW for a gasfield. In fact, I can't think of anywhere in the State of NSW where it would be acceptable to expose families to this industry for the sake of short term profits. Farmers and rural people understand the importance of the Pilliga Forest, and the water that flows beneath it, to supporting this entire region. If Santos destroys some, or all, of the water resources there, then it would be devastating in terms of people being able to live there, work there, grow crops there. Allowing the Narrabri Gas Project to proceed, putting at risk the productivity of the agricultural lands that surround the Pilliga Forest and the health and well-being of its residents, would be an appallingly short-sighted decision. Once the water resources and people's health are destroyed, there is no turning back.

I implore you not to expose my grandchildren to a legacy of suffering for the sake of some perceived short term monetary gain and I call on you to reject this proposal. I ask you to consider this - would you live and raise your family in the Narrabri Gas Project Area? Based on the evidence available, I would suggest that the answer is an unequivocal no. Don't let my grandchildren be the "collateral damage" arising from this industry.

Kind Regards

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