

SUPPLEMENTARY SUBMISSION, NARRABRI GAS PROJECT

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Doctors for the Environment Australia

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-Government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital and private practices. We work to prevent and address the diseases - local, national and global - caused by damage to our natural environment. We are a public health voice in the sphere of environmental health with a primary focus on the health harms from pollution and climate change.

Executive Summary

DEA opposes the Narrabri Gas Project. The mining, production, transportation and burning of gas is a health hazard. The health impacts occur at each stage and are both local and global impacts. Since the health impact assessment was done for the Narrabri Gas Project in 2016, there have been over 1500 journal articles published related to the health impacts of gas developments. These articles show a litany of adverse health impacts which have not been included in the assessment for the Narrabri Gas Project. The health impacts alone should be sufficient to reject this proposed development.

Yet when the increase in greenhouse gas emissions is considered, it is also clear that the Narrabri Gas Project cannot be allowed to proceed. The fugitive emissions from coal seam gas developments are in the range of 1.4-17%. The latest National Greenhouse Gas Inventory shows that the annual fugitive emissions from gas production continue to rise and it stands out as one of the only sectors to show a rise in Australia's emissions. Climate change is well and truly upon us and Australia cannot afford to have any sector show a rise in emissions. It is unlikely that the world will be able to meet the Paris goal of limiting temperature warming to 1.5C let alone 2.0C. There is no room for further fossil fuel developments.

The cost benefit analysis is flawed in that it does not account for the costs of the predicted health impacts. Finally the issue of how to manage the vast amount of salt waste has not been addressed.

Given the number of inadequacies and deficiencies in the application for the Narrabri Gas project, DEA maintains that this project should be rejected.

DEA's 2017 Submission on the Narrabri Gas Project is available [here](#).

DEA's 2018 submission in response to Santos's response to submissions is available [here](#).

Lack of Health Assessment

The health impacts due to the Narrabri project have not been adequately assessed.

The Health Impacts Assessment (HIA) was completed by Environmental Risks Sciences (En Risks) in 2016. The [report](#) is of insufficient standard to adequately assess the health impacts. The final conclusion of the HIA cannot be considered reliable as noted by the report's opening statement. The below paragraphs outline the reports limitations:

"The methodology adopted and sources of information used are outlined in this report. Environmental Risk Sciences has made no independent verification of this information beyond the agreed scope of works and assumes no responsibility for any inaccuracies or omissions. No indications were found that information contained in the reports provided by Santos and its consultants for use in this assessment was false.

This report was prepared from October 2014 to December 2016 and is based on the information provided and reviewed at that time. Environmental Risk Sciences disclaims responsibility for any changes that may have occurred after this time.¹"

In the HIA, the most contemporary reference was from 2015. Since 2013 there have been over 1500 studies published related to the health impacts of gas developments. This data has not been included in the health assessment for the Narrabri project proposal.

Our review of the studies has shown accumulating evidence of associations between residence close to gas mining activities and reports of poorer health, such as asthma exacerbations, sinus conditions and migraines, skin rashes, fatigue and headaches as well as hospitalisations for heart, neurological, respiratory, immune system diseases and some cancers. ([DEA Onshore Oil and Gas Background Paper 2019](#)²) Some of the cardiorespiratory effects have been [reported](#) from Queensland gas fields³.

In the US, there are increasingly consistent observations of the higher risk of negative birth outcomes, such as low birth weight, pre-term delivery, higher risk births and some birth defects in pregnancies spent closer to gas mining activities, compared to pregnancies spent further away, or in the same area before commencement of gas mining activities.

Increased levels of stress, depression, and traffic accidents have also been reported among those living near gas mining. Australian researchers have found that stress and worries about coal seam gas mining may contribute significantly to mental health risks among directly affected farmers⁴.

Therefore, the 2016 HIA cannot be considered an adequate assessment of the health impacts. The HIA should not reassure the IPC that the health impacts have been adequately addressed and that any health impacts will not affect the health of the community. In its conclusion the HIA is quick to put limits on its final statements.

“Where the controls and environmental management measures outlined in the EIS are implemented, the assessment has not identified project related impacts that may adversely affect the health of the community” and “The assessment undertaken for the project relates to the activities outlined in the EIS, specifically relevant to the geology and hydrogeology of the project area.”

The 2020 NSW Parliamentary review into the Implementation of the recommendations contained in the NSW Chief Scientists’ Independent review of Coal Seam Gas Activities highlighted the lack of adequate health assessments:

“We note that a body of reports on the health impacts of coal seam gas activities has commenced and that further studies of this kind would be beneficial to fully understand the health impacts of this industry. The committee therefore recommends that the NSW Government review all new findings in relation to health impacts and that these be included in any new assessment of coal seam gas activities.”⁵

Unfortunately, this recommendation was not followed by the NSW Department of Planning, Industry and Environment where the health impacts were virtually ignored.⁶

The NSW Department of Health noted in 2018 “that there has been a significant increase in the number of studies published on unconventional gas from an environmental epidemiology and exposure assessment perspective over the last 5 years”.⁷ Yet this evidence has not been considered.

DEA recommends that the IPC reject the Narrabri gas project due to the potential adverse health impacts reported in relation to gas developments. Both the NSW Legislative Council government enquiry and the NSW Department of Health have noted that there has been an increase in the amount of published scientific material regarding the health impacts from gas which have not been included in the HIA for the Narrabri Gas Project.

Greenhouse Gases are not diminishing

1.FUGITIVE EMISSIONS UNDER-REPORTED

The fugitive emissions from the Narrabri project have been under-estimated. This becomes very relevant when the project is put into Paris agreement context which is aiming to keep global temperatures below a 1.5C rise. The NSW Department of Planning, Industry and Environment (NSW DPI) assessment suggests that increasing NSW emissions would still allow Australia to fulfill its Paris Agreement commitments. It is already unlikely that the goal of limiting global temperature rise to 1.5C will be achieved, let alone with increasing emissions from CSG.

There is only one independent measure of fugitive emissions from coal seam gas wells in Australia⁸, [indirect emission measurements](#) taken over a Queensland

CSG field in 2012. The CSIRO has published data and this has been quoted by the NSW DPI assessment of the Narrabri project. However, the data that has been quoted in that study has been provided to the CSIRO by the gas industry and was not measured by the CSIRO.⁹ Consequently, the claimed 0.5% fugitive emissions from gas production in Australia is not independently verified and cannot be relied upon as being accurate. Furthermore, the National Greenhouse Gas Inventory (NGGI) defines fugitive emissions to include venting, flaring and leaks, whereas the quoted 0.5% does not include flaring. On face value, the 0.5% has been an underestimation.

One study which measured fugitive emissions in Australia did not measure fugitive emissions over the lifetime of the well. It found significant fugitive emissions when the well is undergoing 'workover' (the process of performing major maintenance on a well) but there were no measurements made during the construction and commissioning of the well. Some of the wells were not in operation when tested. When in a stable operating phase there were low emissions but this does not recognise many phases of gas production.¹⁰ This study is just one example of where results have been extrapolated and then used to account for the entire amount of fugitive emissions from CSG.

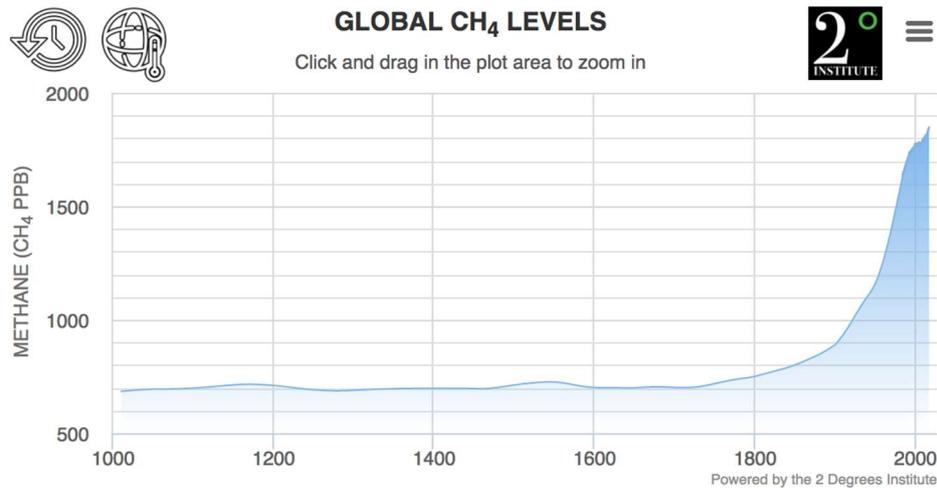
Evidence from around the world has shown that fugitive emissions can vary between 1.4-17%.¹¹ It is worth noting that when fugitive emissions are at 2-3%, any benefit that gas has over coal for greenhouse gas emissions disappears.¹² But even if the fugitive emissions are 0.5%, there are still significant emissions of greenhouse gases.

If Australia, and the rest of the world, are going to keep temperatures below 1.5C then there is no room for further fossil fuel developments of any kind.¹³ For the world to stay below 1.5C warming, it would need to decrease emissions by 15% each year, every year until they are zero. To put this in perspective, the recent worldwide shutdown due to COVID-19 reduced total greenhouse emissions by 17% for a few months. We would need this scale of change year after year to keep the world below a 1.5C rise.¹⁴

The most recent National Greenhouse Gas Inventory (NGGI) has shown an ongoing rise in Australia's annual fugitive emissions. This rise is in direct correlation with the increase in the gas industry in Australia and has occurred despite a decrease in fugitive emissions from underground coal fugitive emissions. The NGGI notes, "Annual emissions in this sector (Energy – fugitive emissions) increased by 2.5 per cent over the year to December 2019. This increase in *fugitive* emissions was driven by an increase of 17.9 per cent in natural gas production, and partially offset by a decrease of 4.2 per cent in underground coal production."¹⁵

Compelling evidence that fugitive emissions from the gas industry are contributing to global warming can be found in the Nature article 19/02/20 which revealed that anthropogenic sources of methane (principally from fossil fuel extraction) have been underestimated by 25%-40%. Further, this research revealed that natural sources of methane have been overestimated.¹⁶

Global methane levels have been rising steeply in this century and are now at more than double preindustrial levels.



Graph One: CH₄ graph 2 degree institute¹⁷

The IPCC Interim 1.5C report made clear the urgent need to rapidly reduce short term climate pollutants, methane particularly, if the world is to stay below 2 degrees Celsius of warming.¹⁸

The IPCC report warned methane emissions will need to reduce by 35% or more if a sub 2 degrees target is to be achieved.

2. GAS IS NOT A TRANSITION FUEL

Gas has been promoted as a transition fuel on the basis that emissions from combustion of natural gas are between 30% and 50% less than from coal. Other sources of emissions are ignored in these calculations. When fugitive emissions of both methane and CO₂ include emissions from extraction, transport, liquefaction (in the case of LNG), flaring, and venting, any improvement over coal is questionable.

Scope 3 emissions are not included in Australia's commitment to the Paris Agreement. However, the argument that Australia's gas will alleviate energy poverty in client countries is specious when viewed in the context of climate change; the UN projects there will be 200 million climate refugees by 2050 unless climate change is controlled. A worst-case scenario posits a figure of 1 billion displaced persons in that time.¹⁹

3. AUSTRALIA'S CLIMATE RISK

Australia's overdependence on fossil fuel export income not only carries with it the moral hazard of being the world's biggest producer of fossil fuels but is also a direct threat to Australia itself. The threats are inherent in the climate change

impacts on Australia and in the risks following the world turning away from fossil fuels, as it must surely do. The bushfires of the last summer were but one manifestation of our changing climate. While loss of life was low, the ongoing hardship and mental suffering of affected communities remains raw and will do so for years to come.²⁰

Climate change causes multiple other health impacts including but not limited to the following; prolonged heat waves lead to increased morbidity and deaths from cardiovascular, respiratory, and renal causes, and heat stroke²¹; zoonotic diseases such as dengue, malaria, and tick-borne diseases are changing their distribution—viruses such as Sars Cov 2, responsible for the present pandemic, may more easily make the jump from animals to humans as habitat loss and climate change force species out of their normal range²²; drought, soil erosion, and extreme weather events will cause declining food security in Australia, heavily impacting the rural sector.²³ Ambient air pollution mostly from burning fossil fuels is responsible for around 4.2 million deaths per year²⁴ globally and 3,000 deaths each year in Australia.^{25,26}

Inaccurate Cost-Benefit Analysis

The cost benefit analysis which has been outlined by the Proponent (Chapter 27) and the NSW DPI is inaccurate. Firstly, it does not include the costs of the health impacts of the project. Secondly, it estimates a cost due to the impacts of the greenhouse gases produced on climate change but, as pointed out above, the greenhouse gas estimates for the project are inaccurate. Consequently, the GHG costs are also under-estimated. If both these factors are considered, then it is likely that the project doesn't have a cost benefit.

No Plan for Salt Waste

Up to 840,000 tonnes of salt may be produced during the project, with around 33,600 tonnes produced each year. There has not been a definite plan made on how to dispose of this waste. At peak production there will be 117 tonnes of salt produced per day. The impact of this salt on the land where it will be disposed of has not been adequately addressed. Degradation of this land is inevitable. In a country such as Australia, which already has salinity problems, it would be irresponsible to add this additional saline load to the environment.

CONCLUSION

DEA urges the IPC to not approve the Narrabri Gas Project. We cannot afford to risk our community health and well-being, our clean air and water, our productive farming land and further erode the stability of our climate.

Due to local and global effects **gas is a health hazard.**

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