

Submission on the Origin Kyalla drilling and hydraulic fracturing 2019 (EP117 N2)

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Healthy planet, **healthy people.**

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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.

DEA has recognised expertise in onshore gas and oil development in terms of its health and environmental impacts. It has made many submissions to governments on unconventional gas since 2011 (Appendix A).

Drilling and development of oil in the Northern Territory supported in principle by the policies of both major parties and by the NT government will be decided by an approval system which is inadequate in necessary consideration of both national and international interests in the complex world of today.

For example, as part of this large NT development the Kyalla proposal is an unacceptable threat to Australia and the World currently grappling with a climate and biodiversity crisis. The severity of this crisis has become apparent from three international reports released in the past few months after the Pepper enquiry was delivered on March 27, 2018 followed by the NT government's decision to proceed. Consequently, we recommend that the NT government reconsider the decision to proceed with the major development of gas mining. State and national recognition of the problem is vital; we recognise this is unlikely, but it is our duty to inform the public that we believe it is necessary.

Recommendations

The project should not proceed because it's role will increase the climate crisis.

If it does proceed the Environment Management Plan (EMP) should be improved by;

- Diligent monitoring of methane leaks.
- Climate modelling of the region.
- Comprehensive hydrogeology by IESC.
- Recognition of direct effects on human health with monitoring of air and water for toxic chemicals.
- The recognition that this is now an international issue which affects the aspirations of many countries.

Submission

The findings of two major international reports and an Australian Senate report would indicate to scientists and medical doctors that reconsideration of gas mining development is necessary.

These reports are;

- 1) The recent IPCC report² which demands urgent and deep reductions in the emissions of methane, tropospheric ozone and black carbon. IPCC modelling shows that if emissions of these pollutants are not in rapid decline by 2030, we have little chance of limiting warming to 1.5°C or even 2°C.

"Limiting warming to 1.5°C implies reaching net zero CO₂ emissions globally around 2050 and concurrent deep reductions in emissions of non-CO₂ forcers, particularly methane (high confidence)".

The oil and gas industries are the main cause of rising methane levels.

- 2) The Special COP24 Report on *Health and Climate Change*³: the first recommendation was

To identify and promote actions to reduce both carbon emissions and air pollution, with specific commitments to reduce emissions of short-lived climate pollutants in Nationally Determined Contributions (NDCs) to the Paris Agreement".

In this special COP24 report we refer the NT government and assessors of this proposal to Box 2 and the section "Health impacts under scenarios of warming by 1.5°C and 2.0°C" pages 20-25

The need for action of climate change should now be the prime consideration for any new fossil fuel development. The World Health Organization (WHO) is deeply concerned about the huge toll of death and illness from the air pollution from fossil fuels and is increasingly aware of the health toll from climate change itself, and by climate acting forcings in particular.

As part of the COP24 meeting, DEA presented an extensive review on the health and safety of gas mining⁴ which has several health implications for gas mining in the NT; we will refer to these in the appropriate sections.

- 3) A world and national biodiversity crisis parallels the climate crisis; they are related and augment each other. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) summarised this disaster⁵ and states:

"The overwhelming evidence of the IPBES Global Assessment, from a wide range of different fields of knowledge, presents an ominous picture," said IPBES Chair, Sir Robert Watson. "The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide."

In Australia, the Interim Report⁶ by the Senate Inquiry into Faunal Extinction⁷, *The Senate Environment and Communications References Committee Australia's faunal extinction crisis*, has been released. It provides a damning testimony of the appalling loss of wildlife and habitats facilitated by the failures of the Federal Government to protect the environment.⁸

The importance of these three reports to the Beetaloo Basin relates to the need to retain and nurture its biodiversity to maintain sustainability as a food producing resource. Biodiversity loss resulting in deteriorating soil ecology will have a critical impact on food production as detailed by the report *"The State of the world's biodiversity for food and agriculture"* from the Commission on genetic resources for food and agriculture, organisation of the United Nations⁹ (summary¹⁰).

Comment on specific sections of the EMP

3.11 GHG Emissions Domestic

It is noted that submissions on the draft Code of Practice: Onshore Petroleum Activities have only just been received and judgement on these received proposals cannot have been made. It is therefore totally inappropriate that the EMP should be seeking opinion on the Kyalla program before their assessment, for example we note in Table 9;

All wells will be tested every six months for any leaks as per the NT Petroleum CoP

There is increasing evidence that emissions from leaks from all stages if the mining and transport of gas will overwhelm attempts to honour the Paris agreement. The EMP must provide evidence that six monthly monitoring is adequate; on the basis of reported leaks in the literature we advise weekly or at the minimum ,monthly monitoring for wells and all subsequent points in the life cycle of gas, so as to measure these emissions more carefully. In conclusion 6 monthly monitoring (Appendix L section 6) is inadequate considering the urgency of the need to reduce emissions from leaks.

Scope 3 emissions

Approval systems in Australia do not recognise this as an issue, but it is. Australia's international position and standing as a wealthy country, second largest per capita domestic emission producer as well as being one of the greatest exporters of fossil fuels is not appreciated by those losing their homelands to sea level rise and this resentment is increasing in many other countries worldwide. If the climate crisis is to be averted, those fulfilling their international responsibilities will eventually deliver reprisals Australia.

4.1.1 The regional climate

The climate of the permit areas is arid to semi-arid, with rainfall decreasing in frequency and quantity from north to south.... 630 mm to 540mm per annum. This is highly relevant to the use of water resources;-

4.1.6 Hydrogeology

This is inadequate taking into account the high-water use of fracking which is in competition with the pastoral industry for water.

The question is "What does climate modelling for the next 30 years indicate?"

This information is essential because climate change is progressing more rapidly than expected and the sustainability of the region as a source of food production may be in jeopardy.

Water for agricultural and human use must take precedence; this is a sustainability goal whereas mining to provide income and some jobs is not when there are alternatives for employment in clean energy.

These are matters of great importance, so much so that no mining development should proceed without the input of national water expertise from the IESC.

Chemicals

The Executive summary states

A chemical risk assessment has been completed for all chemicals to be used in hydraulic fracturing. The list of chemicals, as well as the result of the assessment are provided in Section 3.5. All chemicals were considered of low concern when standard chemical handling, storage and disposal practices were utilised.

We do not agree.

Tier 1 assessment – assessment of effects on human health and on the environment is inadequate in the light of recent evidence of health impacts on those living in gas fields. These impacts and their possible causes are extensively reviewed in a DEA report¹¹ and it is clear that serious health conditions are being identified in inhabitants within 10km of gas fields in the US which are not present further away. Chemical exposure via air or water is the suspected cause. The causative chemicals may be those used in drilling or some other mining process, toxic chemicals in coal seams or shale¹² which are released into the air at the well head or in returned water. There is now extensive evidence of the toxicity of such chemicals.¹³

In addition, chemicals resulting from interaction of introduced and returned chemicals may have relevant biological activity.

The statement on chemicals in the EMP Executive summary is perfunctory and naive and should be revisited and safety measures undertaken. Fortunately, the nearest town is 30km away but there are implications for workers.

Some of the relevant chemicals are listed in Appendix G of the EMP but the circumstances under which they will be measured or monitored in water or air is unclear.

2.3 Alignment with the Principles of Ecologically Sustainable Development (ESD)

The project transgresses the principles it extols.

These are:

Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

The proponent fails to provide a cost benefit analysis upon which it's economic value can be assessed. Clearly in the scientific assessment of the IPCC its role in climate change would exclude it.

The principle of inter-generational equity –that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

We venture to say that this view is not shared by hundreds of thousands of schoolchildren around the globe who do not put repair of budgets or increase of wealth as a priority; their beliefs have more rationality than this statement in the EMP.

The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

This project damages these values by its prominent role in enhancing climate change.

Conclusions

As a result of the information provided above DEA takes the position¹⁴ that no further gas mining should occur in Australia and the reasons are listed in our report.¹⁵

Recognition must be given to the need for expert review of EMP because of the potential severe consequences for these proposals. One month is totally unacceptable unless finance is provided for an independent expert to work full time for a month. Experts from medical and scientific professions have insufficient time in after-hours work to address all the

content fully. There is no reason to expedite these assessments to the extent that this EMP seems to lack input from the Code of Conduct review.

References

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- ² https://report.ipcc.ch/sr15/pdf/sr15_chapter2.pdf
- ³ <https://apps.who.int/iris/bitstream/handle/10665/276405/9789241514972-eng.pdf?ua=1>
- ⁴ <https://www.dea.org.au/wp-content/uploads/2018/12/DEA-Oil-and-Gas-final-28-11-18.pdf>
- ⁵ <https://www.ipbes.net/news/Media-Release-Global-Assessment>
- ⁶ https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalextinction/Interim_report
- ⁷ https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalextinction
- ⁸ https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/Faunalextinction/Interim_report
- ⁹ <http://www.fao.org/3/CA3129EN/CA3129EN.pdf>
- ¹⁰ <http://www.fao.org/state-of-biodiversity-for-food-agriculture/en/>
- ¹¹ <https://www.dea.org.au/wp-content/uploads/2018/12/DEA-Oil-and-Gas-final-28-11-18.pdf>
- ¹² <https://www.sciencedirect.com/science/article/pii/S0269749117347176>
- ¹³ <https://www.annualreviews.org/doi/full/10.1146/annurev-publhealth-040218-043715#i11>
- ¹⁴ <https://www.dea.org.au/wp-content/uploads/2019/01/DEA-Position-statement-on-onshore-oil-and-gas-mining-and-human-health-final-12-18.pdf>
- ¹⁵ <https://www.dea.org.au/wp-content/uploads/2018/12/DEA-Oil-and-Gas-final-28-11-18.pdf>

Appendix A

Doctors for the Environment Australia Gas Bibliography, November 2018 to May 2019

Comprehensive review from refereed journals of the medical and emission data on the gas industry

<https://www.dea.org.au/wp-content/uploads/2018/12/DEA-Oil-and-Gas-final-28-11-18.pdf>

Our Position

<https://www.dea.org.au/wp-content/uploads/2019/01/DEA-Position-statement-on-onshore-oil-and-gas-mining-and-human-health-final-12-18.pdf>

Health issues in gas fields

<http://theconversation.com/expanding-gas-mining-threatens-our-climate-water-and-health-113047>

The gas bomb

<https://reneweconomy.com.au/the-world-may-be-nursing-a-gas-bomb-78318/>

The gas lobby says it must have more gas for Australian industry yet it is rolling out domestic gas <https://reneweconomy.com.au/new-estates-are-being-forced-to-install-gas-pipelines-this-is-wrong-10697>

A further article on the gas bomb

<https://independentaustralia.net/environment/environment-display/the-methane-gas-bomb-a-climate-emergency,12636>

Drilling in the Bight

<https://reneweconomy.com.au/oil-drilling-in-australian-bight-a-disaster-for-climate-biodiversity-16393/>

Unconventional gas mining; Doctors for the Environment Australia submissions to Governments 2011-2019

Northern gas pipeline submission

<https://reneweconomy.com.au/oil-drilling-in-australian-bight-a-disaster-for-climate-biodiversity-16393/>

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April 2017
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Jemena Northern Gas Pipeline EIS
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Inquiry into Hydraulic Fracturing of Unconventional reservoirs onshore within the NT 2016 (ToR)
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<https://www.dea.org.au/wp-content/uploads/2017/04/Unconventional-Gas-VIC-submission-07-15.pdf>

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<https://www.dea.org.au/wp-content/uploads/2017/02/Inquiry-into-Unconventional-Gas-SA-01-15.pdf>

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