

Submission on the Certain Aspects of Queensland Government Administration related to Commonwealth Government Affairs

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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 and public health. 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.

Potential health harms are possible with any development and it is the responsibility of the state government to assess these as indicated in Health Impact Assessment Guidelines (2001).¹

The Environmental Impact Assessment process incorporates this Health Impact Assessment which includes all aspects of community health, including social and mental health aspects and social disruption. All these processes are intended to look at the balance of positive and negative impacts of the development upon which informed decisions can be made.

DEA uses its expertise to determine whether these health obligations have been carried out. We have assessed whether the Queensland government has carried out these obligations in relation to resource developments.

In this submission we regret we have not had sufficient time to collate all the evidence we would wish to present.

Unconventional gas mining and health

DEA has studied this issue in the Australian context with submissions prepared by public health experts to:

- Senate Enquiries
http://dea.org.au/images/uploads/submissions/MDB_CSG_Senate_submission_June_2011.pdf
- The Australian Government Department of Sustainability, Environment, Water, Population and Communities
http://dea.org.au/images/uploads/submissions/CSG_and_large_coal_mining_impacts_on_water_resources_submission_07-13.pdf
- The NSW Chief Scientist Enquiry
http://dea.org.au/images/uploads/submissions/Review_of_CSG_in_NSW_-_Chief_Scientist_Submission_05-13.pdf
- The Hydraulic Fracturing Inquiry, Northern Territory 2014
http://dea.org.au/images/uploads/submissions/DEA_Hydraulic_fracturing_in_NT_inquiry_final.pdf
- The Inquiry into the Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas
http://dea.org.au/images/uploads/submissions/WA_Inquiry_into_Hydraulic_Fracturing_-_UG_Submission_09-13.pdf

These submissions draw attention to the main potential health hazards from contamination of ground water and from air pollution at well heads.

In summary there is evidence that the extraction of coal seam gas (CSG) produces large quantities of potentially contaminated water. The hazardous substances associated with this water include fluoride, boron, lead and benzene; substances which are implicated in a number of medical conditions and the water may also contain radioactive elements. Additionally, there are indirect ecological effects which may have adverse effects on the health of Queenslanders.²

There has been documented contamination of an aquifer in New South Wales by a CSG operation, confirmed by the NSW Environment Protection Authority. In this case, levels of heavy metals and uranium were found to be elevated adjacent to a pond holding produced water. While there was no direct threat to potable water, livestock or crops in this instance, events such as these highlight the potential for risks to human health posed by CSG.³ The contamination of drinking and agricultural-use water occurring in Queensland is a tragedy society must seek to avoid. However, recent comprehensive review of wells in several counties has indicated many unanswered questions regarding their integrity thus necessitating frequent inspection to detect aquifer contamination and emission profile.⁴

In addition to its production of contaminated water, some rural Queensland communities perceive the CSG industry as negatively impacting on their mental health.⁵

Internationally, there is growing evidence that CSG has contributed to contaminated wastewater and air pollution. Some of the volatile compounds found near gas production sites and in produced water include benzene, formaldehyde, hexane, hydrogen sulphide and polycyclic aromatic hydrocarbons. All of these compounds have potential long term adverse health effects in humans some due to carcinogenicity and teratogenicity.^{6,7,8} In addition, CSG mining releases methane into the atmosphere as fugitive emissions. Methane is estimated to have a global warming potential 72 times greater than carbon dioxide over a 20 year period.⁹

Most importantly assessment of risk must take into account the potential for long term effects, even decades later. In the United States there is a report in the scientific literature of an increased prevalence of heart defects in children whose mothers lived in close proximity to gas fields.¹⁰

Medical Opinion

In view of these findings The Australian Medical Association and Doctors for the Environment Australia share concerns about the rapid expansion of CSG. They have raised points of concerns including:

- The lack of adequate research on the chemicals used [in hydraulic fracking associated with CSG] and waste produced and insufficient data on cumulative health impacts;
- The lack of effective regulations that protect public health;
- The lack of comprehensive environmental monitoring and health impact assessments.¹¹

DEA supports the application of the precautionary principle, outlined in section 391 of the Environment Protection and Biodiversity Conservation Act 1999, which states that:

".....lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage."

Coal seam gas mining in Queensland and its regulation

In Queensland, at the end of the first quarter of 2014, there were 5,553 active coal seam gas wells, including 4,703 production wells.¹² This number is expected to grow significantly, with ongoing approvals of gas projects at a rapid pace.¹³

Our examination of the history of CSG approvals reveals evidence of acquiescence of the Queensland Government to CSG companies in pursuit of economic gain.¹⁴ The Government environmental approval process has been described as rushed, *"insufficiently transparent, altered and lacking key impact assessment"*,¹⁵ and as a result there is increasing community backlash against CSG in Queensland.^{16,17}

We draw attention to [Appendix A](#) which is an email provided by Simone Marsh formerly Contractor, Significant Project Coordination, Infrastructure and Economic Development, Department of Infrastructure and Planning, Queensland Government. Taken at face value this report details a number of concerns about the process adopted in relation to a CSG approval; we believe that each of these concerns must be answered by the Queensland Government with supporting evidence. In particular it is our opinion that many of these concerns also pose health questions and we ask that the Senate Enquiry request details of the requests that should have gone to the Queensland health department for guidance and the responses received from that department.

Santos GLNG Gas Field Development Project

DEA made a submission on the draft terms of reference for an environmental impact statement (EIS) http://dea.org.au/images/uploads/submissions/Santos_GLNG_Submission_02-13.pdf; this was critical of Santos's record in the management of gas projects and this should have necessitated careful scrutiny of its data in all assessment processes.

Our submission was critical of Santos's lack of understanding of the chemicals used in fracking and their perceptions of public health implications.

We noted:

"The draft terms of reference for the project lack specific health impact assessment. In order to fulfil the government's basic duty of care requirement of baseline health assessments as well as detailed plans for fully funded, independently implemented, long term epidemiological studies are Essential".

To take one example of inadequate assessment, our submission pointed out the need for well head assessment of volatile organic compounds (VOCs) emissions (5.7 Air Quality).

In our view there is no evidence that this health issue has been dealt with adequately even in the recent EIS¹⁸

<http://eisdocs.dsdip.qld.gov.au/Santos%20GLNG%20Gas%20Field%20Development/EIS/Main%20Report/chapter-0-executive-summary.pdf>.

The IESC and the scientific assessment of projects in Queensland

The scientific assessment of gas and coal projects is extremely complex particularly in relation to ground water.

Essentially, the Independent Expert Scientific Committee (IESC) was formed to bring together under the EPBC the nation's leading water scientists and experts to provide safety to the planning of the exploitation of mineral resources.

The creation of the IESC was a much needed approach when no state has sufficient scientific resources to provide its own adequate assessment.

The IESC was also a precautionary mechanism using federal government oversight against the pressure on state governments by powerful resource companies and their need for jobs and income to balance budgets.

The science of ground water is extremely complex for it necessitates detailed knowledge of geological formations over vast areas. In many cases

therefore expert opinion on the probability of harm has to be given on inadequate scientific data. There is a need therefore to apply the precautionary principle in case irretrievable harm is done. This is the role of the committee and this approach is reflected in all their reports.

We draw attention to our submission to the Environment Protection and Biodiversity Conservation Amendment (Bilateral Agreement Implementation) Bill 2014

http://dea.org.au/images/uploads/submissions/EPBC_Submission_-_05-14.pdf in which we note the request from the Federal government for the IESC to provide a report on the Carmichael Mine. The IESC comprehensively criticised the proponents report indicating danger to the Great Artesian Basin. The proponent and the government then responded by supporting the report of an independent expert hired to contest the IESC opinion. We conclude that the Queensland government is acting as an additional proponent and not as an arbiter in the process of assessment.

Monitoring

In all the documentation provided since this Santos project was initiated it is not apparent the well head air emissions are being monitored and characterised to address health concerns. Monitoring is also vital to detect excessive fugitive emissions. This requires regular inspections. In the 2013-2014 half-year report from The Department of Environment and Protection there was a target of ten inspections for the period. This target is grossly inadequate for numerous wells need to be inspected for a program to be effective. Only one inspection was completed! The status of the compliance program is listed as "On track".¹⁹

Conclusions and recommendations

The precautionary principle should be applied to human health in relation to coal seam gas development. With insufficient baseline data collected, a rushed and grossly inadequate environment approvals process, and a dearth of data on health outcomes, the Queensland Government either does not have or has not deployed sufficient resources and expertise to address the problem or is placing pecuniary interests above the public health of the citizens of Queensland in its unfettered expansion of coal seam gas mining.

Under the EIS process which incorporates Health Impact Assessment a government is the arbiter in making its decision to proceed and sits between the proponent whose duty it is to demonstrate safety, and the community that needs to be protected. The current situation appears to be that the government allies with the proponent to ensure community concern is overridden.

Federal Government intent to devolve more environmental powers to states must be condemned after analysis of the performance of the Queensland Government. When the best expertise has been offered (as with an IESC report) this has been rejected.

Further research is needed into the health and environmental impacts of CSG in Queensland, prior to any further expansion of this industry. In the interim, in lieu of responsible management by the Newman Government,²⁰ the Federal Government should seek mechanisms to impose greater regulation on the industry in Queensland.

In the interests of human health, we hope the Senate Enquiry will recommend an independent examination of the performance of all components of the approval process in the hope that Australia can move forward to efficient and effective assessment processes to serve both development and protection.

Doctors for the Environment Australia has assessed the health implications of many projects in Queensland and found them to be inadequate. We request that our spokesperson appears before the Committee to answer questions pertaining to this submission.

Appendix

Appendix A

Email of 24 May 2010.pdf
(See attached document)

References

¹ Health Impact Assessment Guidelines (2001)

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- ¹⁹ CSG/LNG Compliance Plan 2013-14 Mid-year report January 2014 <http://www.ehp.qld.gov.au/management/non-mining/documents/csg-lng-compliance-midyear.pdf>
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