

## **Onshore oil and gas mining and human health**

Continued expansion of natural gas development in Australia carries serious risks for human health and wellbeing both locally and globally. These concerns are detailed in a Background Policy Paper<sup>1</sup> on this issue.

Natural gas has been promoted as being part of the solution to reducing greenhouse gas emissions as it has about half of the CO<sub>2</sub> emissions as coal at the point of combustion. However, natural gas is about 90% methane, which is 80 times more potent as a greenhouse gas than CO<sub>2</sub> over a 20-year timeframe. As a result, small amounts of fugitive emissions negate any advantage that gas has over existing coal plants therefore, gas development threatens global efforts to address climate change the biggest threat to health in the 21st century<sup>2</sup>.

There are also significant health concerns locally. The basic determinants of good health include clean air, safe food and a clean adequate water supply. These essentials for health may be affected natural gas development, via contamination of air, surface water and ground water, chemical additives used during drilling and hydraulic fracturing, and compounds mobilised during the mining process.

In addition, there is accumulating evidence of associations between residence close to gas mining activities and reports of poorer health outcomes. Of particular concern are risks to the developing foetus. Although research on health impacts is still in its infancy, the precautionary principle holds that these environmental impacts should be prevented or controlled in order to protect human health.

### **DEA holds that there should be no further expansion of onshore natural gas development in Australia**

DEA recommends that Australia must develop comprehensive domestic energy and fossil fuel export policies that demonstrate full adherence to the letter and spirit of its commitments to the Paris Agreement and future international agreements. The greenhouse gas footprint of the industry must be comprehensively documented and controlled.

### **The management of existing oil and gas developments**

DEA recommends

#### **Chemical safety**

- Full mandatory disclosure to the national chemical regulator of all chemicals used in the industry in every Australian state and territory.
- Assessment of all chemicals used in drilling, hydraulic fracturing and other applications for human and environmental safety by the national chemical regulator
- Assessment of potentially hazardous chemicals present in waste water and air emissions
- Full public disclosure of chemicals using identifiable names for the benefit of medical treatment, environmental and human exposure monitoring and research

## Adequate environmental monitoring and enforcement

- Effective independent monitoring and reporting of waste water produced and methods of disposal including salt and other by-products
- Independently audited, best practice water and air quality monitoring programs with full and timely public disclosure
- Sufficient capacity and resources to effectively oversee compliance and significant penalties for non-compliance
- Full life cycle analysis of greenhouse gas emissions and water footprint
- Monitoring of abandoned wells with clear responsibility for companies to ensure no on-going methane leakage

## Land use planning

- Legal rights for landholders and those with native title to refuse any oil or gas development on their land
- No expansion of development close to key water resources, aquifers, national parks and key conservation areas, high value agricultural land or populated settlements
- Setback distances from residences based on health risk assessments and closure of existing wells where necessary

## Health assessment, protection and research

- Adequate health assessment, protection and research on communities in existing gas fields, with Health Impact Assessment under nationally developed guidelines

Support for research on the potential health effects of oil and gas development independent of industry funding, including long-term prospective health studies. This would include but not be limited to health surveillance of persons living and working near major oil and gas developments. The results of research must be translated into risk-reduction activities for the health and wellbeing of people and the environment.

## References

<sup>1</sup> <https://www.dea.org.au/wp-content/uploads/2018/11/DEA-Oil-and-Gas-final-28-11-18.pdf>

<sup>2</sup> [https://www.dea.org.au/wp-content/uploads/2017/02/DEA\\_Climate\\_Change\\_Health\\_Fact\\_Sheet\\_final.pdf](https://www.dea.org.au/wp-content/uploads/2017/02/DEA_Climate_Change_Health_Fact_Sheet_final.pdf)

December 2018

### DEA Scientific Committee

Prof Colin Butler  
 Prof David de Kretser AC  
 Prof Robyn McDermott  
 Prof Emeritus Sir Gustav Nossal AC  
 Prof Fiona Stanley AC

Prof Stephen Boyden AM  
 Prof Peter Doherty AC  
 Prof Stephen Leeder AO  
 Prof Lidia Morawska  
 Prof Hugh Possingham  
 Dr Rosemary Stanton OAM

Prof Emeritus Chris Burrell AO  
 Prof Michael Kidd AM  
 Prof Ian Lowe AO  
 Prof Peter Newman AO  
 Prof Lawrie Powell AC  
 Dr Norman Swan