

I urge that the committee undertaking this review on effects of fracking in WA acknowledge and take into account a important discussion paper by a Professor of Health, Safety and Environment School of Public Health and Social Work, Queensland University of Technology Melissa Haswell¹ which exposed concerns on conclusions reached by WA Parliamentary² and Health³ reports 2014, 2015. She also gave recommendations if a further inquiry was to be conducted.

There has been a surge in peer-reviewed publications since the original reports. The majority of these publications, including a systematic literature review⁴ on public health impacts of unconventional gas development and a US EPA report⁵ presenting extensively analysed experimental evidence on impacts on drinking water supplies, have only added to concerns regarding the potential for significant health impacts to be borne by the WA community.

The new evidence includes studies showing associations between the industry and increased presence and concentration of air and water contaminants and psychosocial stressors which may impair health. Children have been identified as potentially at greater risk. Studies also report increased frequency of health impacts, such as frequencies of asthma exacerbations, cardiovascular and neurological conditions requiring hospitalisation, lower birth weights and other birth complications, nasal and sinus symptoms, migraine headaches and increased mental health burden are all associated with living close to industry operations and are gravely concerning.

To address these concerns, this inquiry is urged to conduct an independent and rigorous update of the evidence of potential health benefits or risks associated with the entire lifecycle of the industry.

Prof. Haswell has recommendations for this further inquiry :

1. Ensure the scope and terms of reference for the review, is sufficiently wide to include all significant health concerns and risks and

the latest international and local evidence.

2. Acknowledge that many professional public health and medical groups in Australia and overseas, are calling for the Precautionary Principle to be applied to unconventional gas development because of existing scientific evidence and continuing uncertainties regarding the multiple risks to people and the environment. The correct definition of the precautionary principle must also be communicated in the proceedings of this inquiry.

3. The inquiry must refrain from insinuating that the debate is simple and involves only myths and facts.

4. Accept that understanding of the implications of unconventional gas mining for Western Australia requires analysis of evidence from peer-reviewed literature, acknowledging that unproven regulations and untested solutions to challenging issues can place (human health at risk. It also requires respectful listening to individuals and families whose lives have been disturbed by anticipated, perceived and actual impacts of gas developments near or within their farms, residences and communities.

5. Fully reveal to the community the current evidence of risks and impacts across the entire life cycle of this industry on health and wellbeing of people and their environment. The risks, and their impacts should they occur, need to be clearly recognised as community-borne costs worthy of compensation and consideration in economic, social and health cost-benefit analyses.

6. Must examine and make public the realistic short- medium- and long-term economic benefits of the unconventional gas industry to enable accurate comparisons between its full likely costs and benefits. Also compare the cost-benefit ratios of unconventional gas mining with other potential state developments that may carry greater benefits with fewer potential health and environmental losses. (Any health assessments of the implications of further developments to extract unconventional gas which is a highly potent greenhouse gas,

must involve consideration of the state of the climate. Concentrations of carbon dioxide in the atmosphere are now permanently above 400 parts per million, with previously unseen impacts on global stability in temperature, sea level rise, droughts, floods and heat waves. These lead to direct and indirect health impacts and contribute to the urgency of our response to move to clean, renewable energies. There are large net improvements that would be achieved in reducing greenhouse gas emissions as well as **all** of the health impacts described in this report by shifting from unconventional gas to existing renewable energies. These improvements are much greater might achieved in transitions from coal or 'clean coal' to unconventional gas, and arguably at lower cost. (The sooner our decision makers commit and follow through on the actions we need in rejecting continuation of coal, oil and gas production and welcome proven cleaner energies such as wind and solar, the more health benefits will accrue to the people of Western Australia and globally.

1. Haswell M. Health concerns associated with unconventional gas mining in Western Australia: a critical review. 5 MAR 2017 Research Gate <http://apo.org.au/node/74194>

2. *"Hydraulic fracturing for shale and tight gas in Western Australian drinking water supply areas: Human health risk"* WA Health Department, June 2015

3. *"Implications for Western Australia of hydraulic fracturing for natural gas"* Western Australian Standing Committee of Environment and Public Health Affairs, Report 42, 2015

4. Saunders, PJ, McCoy, D, Goldstein, R, Saunders, AT. A review of the public health impacts of unconventional gas development (2016) Environmental Geochemistry and Health, DOI 10.1007/s10653-9898-x.

5. United States Environmental Protection Agency. *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources*; Final Report. US EPA: Washington DC; December 2016. Available at:

<https://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=332990>,
downloaded February 10, 2017.