

Submission to the Independent Scientific Panel Inquiry into Hydraulic Fracture Stimulation in Western Australia 2017

Submitted by The Hon. Diane Evers, MLC.

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This is not a confidential submission.

To the Independent Scientific Panel,

Thank you for the opportunity to provide comment on the Scientific Inquiry into Hydraulic Fracturing Stimulation (fracking) in Western Australia (WA).

I realise that the Terms of Reference (ToR) of this Inquiry do not involve consideration of the prospect of banning hydraulic fracture stimulation in Western Australia, however in making a submission I must reiterate the Greens (WA) call for a legislated ban on hydraulic fracture stimulation throughout WA.

That said, I have a number of concerns in relation to the South West that are directly relevant to this Inquiry. Although the Terms of Reference of this Inquiry exclude consideration of potential impacts of fracking on the 'onshore environment of Western Australia, outside of the Perth metropolitan, Peel and South-West regions', a number of citizens and stakeholder groups have notified me of their concerns that this Inquiry covers several matters that are of significance to the South West of Western Australia, as outlined in the next section.

I support the contents of the Hon. Robin Chapple MLC's submission to this Inquiry, and remind the committee that both Robin and I have serious concerns regarding the resources allocated to the Inquiry, the Terms of Reference for the Inquiry, and the independence of the Inquiry panel members.

Like the Hon. Robin Chapple MLC, I fully support the submissions of the Conservation Council of WA, Environs Kimberley and The Wilderness Society of WA since their understanding of issues relating to Western Australia's unique geographical and geological settings and the potential for harm to environmental values is comprehensive and well-informed. I also support the input of other key stakeholders such as the Lock the Gate Alliance, FrackFree Future and the Gasfield Free Southwest Alliance (WA). In addition, I would like to emphasise a number of issues that are directly relevant to the South West.

Concerns for the South West

It has always been the position of The Greens (WA) that unconventional gas exploration and development should not be allowed anywhere in Western Australia as the risks to our water, our land, our health and our precious places are too great.

The Greens (WA) also maintain that landholders, leaseholders and traditional owners should be given legally binding rights to reject gas activities on their land, and that communities who have already declared themselves gasfield free should have their decision recognised.

The Background Paper released by the Inquiry lists many social, environmental, economic and health risks that can be associated with fracking, which threaten the South West as well as the rest of WA:

- Contamination and other impacts on groundwater and surface water
- Impacts on soil quality
- Impacts on biodiversity
- Impacts on farming and other beneficial uses of the environment
- Air pollution
- Greenhouse gas emissions
- Impacts on Aboriginal heritage
- Impacts on public safety
- Impacts on amenity and aesthetic enjoyment of a local area¹.

Questions remain about the health effects of fracking on both human and animal populations, and research continues. For example, in the US unconventional gas and oil drilling (UGOD) has been shown to be associated with increased hospitalisation rates². This study notes that “Despite substantial increases in well drilling, the health consequences of UGOD toxicant exposure remain unclear”. Other research has revealed that “Prenatal residential exposure to unconventional natural gas development activity (is) associated with two (negative) pregnancy outcomes, adding to evidence that unconventional natural gas development may impact health”³.

Not only is it unacceptable to put people’s health at risk while serious questions about the health impacts of fracking remain, it is absolutely unnecessary since it makes more sense for Western Australia and the world to move straight to the use of renewables. Recent Climate Analytics research⁴ indicates that neither conventional nor unconventional gas extraction is possible if Australia (and therefore Western Australia) is to meet its obligations according to The Paris Agreement⁵ on climate change. Greenhouse gas emissions associated with extraction and transport

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<https://frackinginquiry.wa.gov.au/sites/default/files/Scientific%20Inquiry%20into%20Hydraulic%20Fracture%20Stimulation%20in%20WA%20-%20Background%20Paper%20-%203%20November%202017.pdf>

² Cardiology inpatient prevalence rates were significantly associated with number of wells per zip code ($p < 0.00096$) and wells per km² ($p < 0.00096$) while neurology inpatient prevalence rates were significantly associated with wells per km² ($p < 0.00096$). Furthermore, evidence also supported an association between well density and inpatient prevalence rates for the medical categories of dermatology, neurology, oncology, and urology. These data suggest that UGOD wells, which dramatically increased in the past decade, were associated with increased inpatient prevalence rates within specific medical categories in Pennsylvania. Further studies are necessary to address healthcare costs of UGOD and determine whether specific toxicants or combinations are associated with organ-specific responses. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0131093>

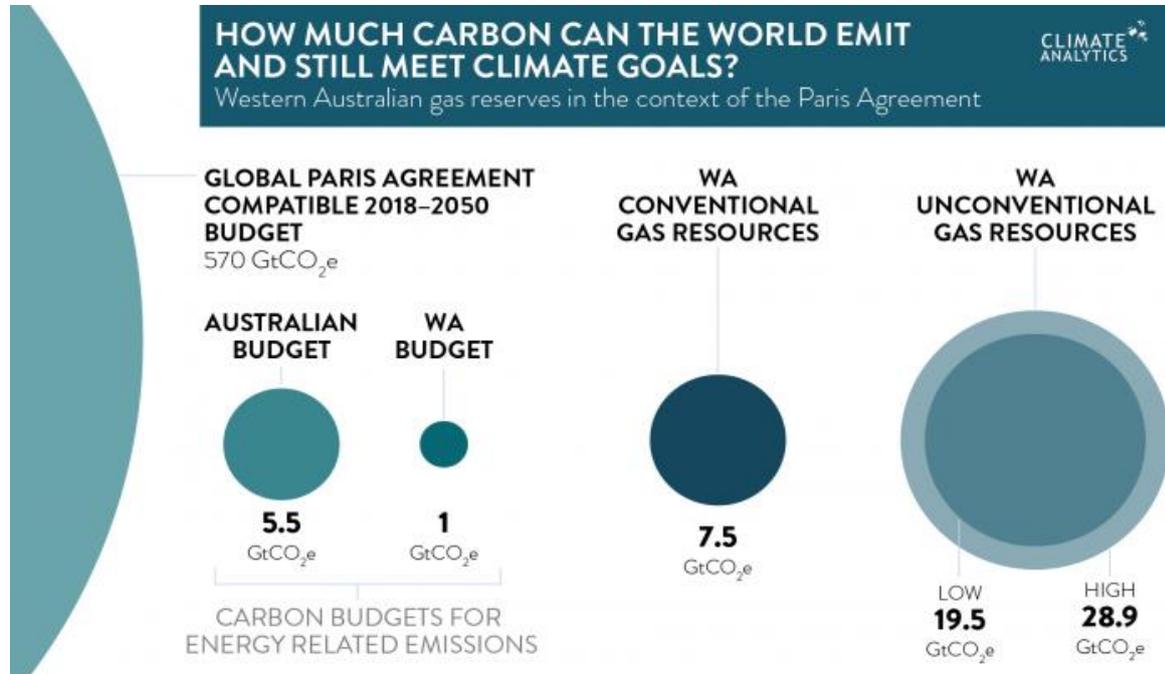
³ <https://www.ncbi.nlm.nih.gov/pubmed/26426945>

⁴ <http://climateanalytics.org/files/climateanalytics-report-westernaustraliasgasgamble-2018.pdf>

⁵ http://unfccc.int/paris_agreement/items/9485.php

of our conventional and unconventional gas resources will exceed Western Australia’s carbon “budget” many times over (see Figure 1). The South West is particularly vulnerable to climate change and fracking anywhere places the climate at risk.

Figure 1: WA and global emissions goals and gas resources



In fact, it is becoming clear that rather than being a “transition” fuel as the trend towards renewables accelerates, gas provides little or no reductions in emissions in comparison to coal while delaying the deployment of renewables.

Methane is leaked through the process of fracking and transportation of natural gas. Methane is an extremely potent greenhouse gas – roughly 25 times more potent as a heat trapping gas than carbon dioxide⁶. Although it is true that gas is associated with lower levels of greenhouse gas emissions than coal if you confine analysis to the emissions associated purely with the production of electricity from natural gas in comparison to coal, full accounting of all Scope 1 emissions⁷, including methane leaked during fracking and transportation, shows that there is no climate advantage in using gas over coal if the leakage rate of methane is around 2-3%⁸.

Unfortunately this leakage rate appears to be on the low end of the spectrum of what generally occurs. In the US, for example, it is estimated that the leakage rate of methane is over 3%⁹, while

⁶ <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>

⁷ Scope 1 greenhouse gas emissions are the emissions released to the atmosphere as a direct result of an activity, or series of activities at a facility level. Scope 1 emissions are sometimes referred to as direct emissions. Examples are:

- emissions produced from manufacturing processes, such as from the manufacture of cement
- emissions from the burning of diesel fuel in trucks
- fugitive emissions, such as methane emissions from coal mines, or
- production of electricity by burning coal.

<http://www.cleanenergyregulator.gov.au/NGER/About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy>

⁸ <https://e360.yale.edu/features/how-climate-activists-failed-to-make-clear-the-problem-with-natural-gas-mckibben>

⁹ <https://e360.yale.edu/features/how-climate-activists-failed-to-make-clear-the-problem-with-natural-gas-mckibben>

'higher leakage rates are discussed in many estimates of life cycle emissions from unconventional gas resources, with estimates of emissions from hydraulic fracking very uncertain and heavily debated, ranging between 2 and 17%¹⁰. Data on the situation in Western Australian is lacking, however it is alarming that:

Recent work in WA estimates a possible loss rate of about 6.5% from upstream components of the natural gas production system: with such a loss rate the reserve carbon footprint would be increased by about 50% compared to the no leakage case. At present there is a lack of data and analysis of these issues in Australia giving rise to concerns that actual loss rates could be much higher than estimated in present Australia inventories¹¹.

Use of Western Australia's gas resources is therefore likely to increase greenhouse gas emissions, not reduce them, with direct environmental, social, economic, health and other effects. Although further research is needed to fill this alarming knowledge gap, it is clear that the use of gas as a climate change mitigation strategy is flawed, and arguably dangerous to people, the environment and the economy.

To add insult to injury, our focus on gas has distracted us from pursuing renewables sufficiently. As Bill McKibben from 350.org explains:

If we hadn't discovered fracked natural gas, the effort to deal with climate change would have moved us far more quickly into renewables...In fact, the conversion to natural gas is making things markedly worse because the money that gets spent on this useless transition locks us into burning fossil fuel when, with each passing month, the actual alternatives of sun and wind get cheaper and more available¹².

We risk investing in what will become stranded assets if we continue to focus on gas.

Rather than further compounding this mistake, we should now concentrate on promoting renewable energy industries – the energy industries of the 21st century - rather than continuing to extract gas. The South West has already demonstrated its capacity to pursue renewables, such as through the Albany Wind Farm and the Albany Wave Energy (demonstration) Project (AWEP).

Exclusion of the South West from the Inquiry

Many citizens and stakeholders are also concerned about the omission of the South West (and the Perth and Peel region) from the Terms of Reference of this Inquiry. While they recognise that this exclusion could be because the South West is already covered by a ban on hydraulic fracturing stimulation, they are also aware that the ban on fracking in the south west is not covered by an Act of Parliament and can therefore be overturned by a Minister. I agree and argue that an Act of Parliament is needed to protect the South West from fracking. This should be taken further to ban unconventional gas exploration and mining. This is particularly important since although it is not currently possible to frack in the South West given that the water used in fracking swells its clay soils and therefore stops the flow of gas, technological developments in future may overcome this difficulty and place the south west at risk of damage from fracking again. The community wants certainty on this issue.

¹⁰ <http://climateanalytics.org/files/climateanalytics-report-westernaustraliasgasgamble-2018.pdf>

¹¹ <http://climateanalytics.org/files/climateanalytics-report-westernaustraliasgasgamble-2018.pdf>

¹² <https://e360.yale.edu/features/how-climate-activists-failed-to-make-clear-the-problem-with-natural-gas-mckibben>

Furthermore, stakeholder groups such as Lock the Gate argue that if No Go Zones are endorsed as the preferred way of protecting areas of WA from fracking that the South West should be included in the category of No Go Zones, supported by an Act of Parliament. This is good advice and should be followed.

Recommendations

I support the Hon. Robin Chapple's recommendations that:

1. All Environment Plans are exempt from permanent confidentiality. The regulations must include legally enforceable environmental controls to cover:
 - Groundwater and aquifer contamination.
 - Air pollution.
 - Disturbance to native farmland and native vegetation.
 - Corroding, cracking and leaking wells.
 - Uncontrolled fugitive methane emissions.
 - Large volumes of liquid waste dumped into the environment.
2. Regulations must also include:
 - Provisions for WA farmers, Native Title Holders and other landowners the right to say no to hydraulic fracturing stimulation on their land.
 - Protections of our precious water resources from overuse and/or contamination by hydraulic fracturing stimulation.
 - Independent measurements of leaking methane from hydraulic fracturing stimulation and results to be made publicly available.
 - Stronger environmental laws to protect our natural environment.
3. The main elements that need to be considered in the regulatory framework are:
 - regulations and/or requirements that relate to the management of fluid from hydraulic fracturing operations; and
 - regulations and/or requirements that relate to the handling and storage of chemicals used in hydraulic fracturing operations.
4. In addition:
 - Create an Act of Parliament so that the existing ban on fracking in the South West becomes strengthened through legislation and cannot be overturned by Ministerial decision alone.
 - If No Go Zones are endorsed as the preferred way of protecting areas of WA from fracking, the South West should be included in the category of No Go Zones, and this inclusion should be supported by an Act of Parliament.