



# Tamboran

Ms. Margaret Liveris,  
Committee Clerk,  
Standing Committee on Environment and Public Affairs,  
Legislative Council,  
Parliament House,  
GPO Box A11,  
Perth WA 6837

September 20, 2013

Dear Ms. Liveris,

**Inquiry into the Implications for Western Australia of Hydraulic Fracturing for Unconventional Gas**

We are very pleased to present our submission to the Inquiry addressing the terms of reference. We commend the Western Australian Government for its commitment to developing its hydrocarbon resources in a safe and sustainable manner and for the leadership the Department of Mines and Petroleum (DMP) has shown in leading efforts to educate people about unconventional gas through its website and public forums. We believe Australia is well placed to be the next country to develop its unconventional resources, thus this Inquiry is both timely and relevant.

Tamboran is a globally focused unconventional oil and gas exploration and development company. We currently hold acreage in Western Australia, South Australia, the Northern Territory, Botswana, the United Kingdom and Republic of Ireland. We have a joint venture with Santos for development of our Beetaloo/McArthur basin acreage in the Northern Territory and Santos is also a cornerstone corporate investor in our company. The company has been built around applying the expertise developed in North American in unconventional oil and gas to other highly prospective basins worldwide. Further details on the company and management can be found at [www.tamboran.com](http://www.tamboran.com).

Given the potential resource base available onshore in Western Australia, it is vitally important that there continues to be a stable and predictable regulatory regime to enable the timely development of unconventional oil and gas projects in the State. Any modifications to the current regulatory regime must be based on solid scientific evidence and appropriately risk managed through sound and established engineering practices. We note that APPEA has been making a concerted effort to bring to the fore important facts such as "Hydraulic fracturing has been used in Western Australia since the 1950s. More than 780 petroleum wells have been fractured in WA with no known adverse effects on the



environment, water sources or public health"<sup>1</sup>. This shows that the current regulatory regime is working effectively.

The Australian Council of Learned Academies (ACOLA) published a report earlier this year on the unconventional gas production potential for Australia, which contains an excellent overview of the science and environmental issues facing unconventional gas in Australia. ACOLA also commissioned a number of review papers, which fed into the main report<sup>2</sup>. They make a pertinent point that "A number of environmental issues related to the shale gas industry have arisen in the United States and similar questions have been raised about potential impacts in Australia. A large number of impacts are possible, but the likelihood of many of them occurring is low and where they do occur, other than in the case of some biodiversity impacts, there are generally remedial steps that can be taken" (Cook et al., (2013) p16).

Even this week there has been new evidence showing that the methane emissions from onshore drilling is much lower than previously thought<sup>3</sup> which suggests that the strict environmental standards brought in over the past decade have enabled the establishment of good operating practices that are adhered to throughout the industry (for an example of standards related to hydraulic fracturing please see the American Petroleum Institutes site - <http://www.api.org/policy-and-issues/hf>). Tamboran, through leverage of its North American expertise is well placed to bring these to Australia.

Turning now to the particular terms of reference of the Inquiry:

**a) How hydraulic fracturing may impact on current and future uses of land;**

In a number of basins in Western Australia, particularly the likes of the Canning and Officer basins, the current use of land for economic purposes is extremely limited due to the remoteness of the land and its surface aridity. Thus, it could be argued that the development of oil and gas assets in such basins will assist with the local and regional development of the land through the building of infrastructure such as road and pipelines. Thus, the 'impact' should be seen in a potentially positive light. We note that the ACOLA report also makes this point that the unconventional gas industry "has the potential to help address the aspirations of Aboriginal people to build greater economic self-sufficiency." (Cook et al., (2013) p17). Our unconventional projects in the Northern Territory (and elsewhere) will deliver direct financial benefits to the local communities through land compensation payments and royalties directly

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<sup>1</sup> Source APPEA Natural Gas Brochure 2013 (<http://www.appea.com.au/wp-content/uploads/2013/08/APPEA-Nat-Gas-Brochure-FINAL-Lores.pdf>)

<sup>2</sup> Cook, P, Beck, V, Brereton, D, Clark, R, Fisher, B, Kentish, S, Toomey, J and Williams, J (2013). *Engineering energy: unconventional gas production*. Report for the Australian Council of Learned Academies, [www.acola.org.au](http://www.acola.org.au).

<sup>3</sup> [http://www.washingtonpost.com/business/economy/study-finds-methane-emissions-from-onshore-natural-gas-drilling-lower-than-estimates/2013/09/16/6913c4c0-1f09-11e3-94a2-6c66b668ea55\\_story.html](http://www.washingtonpost.com/business/economy/study-finds-methane-emissions-from-onshore-natural-gas-drilling-lower-than-estimates/2013/09/16/6913c4c0-1f09-11e3-94a2-6c66b668ea55_story.html)



ties to the success of the project. Similar unconventional gas projects in Western Australia could supplant the recent cancellation of the agreement between Woodside and the Kimberley land council<sup>4</sup>.

**b) The regulation of chemicals used in the hydraulic fracturing process;**

Tamboran's position is that the chemical composition of the fracturing fluids should be disclosed to the regulatory agencies permitting the project and made available to the wider public. Similarly regulation of the disposal of fracturing fluids should be in line with other jurisdictions and based on evidence-based research (or accepted best practice). We would suggest that DMP and other relevant interstate agencies consider the establishment of an Australian version of the US 'FracFocus' site. The FracFocus site is an excellent resource detailing chemicals used<sup>5</sup> as well as individual well data available for searching by the general public. We believe that disclosure assists the establishment and maintenance of trust with the wider public stakeholders though education is needed initially to assist with understanding as to the types of chemicals used in the fracturing fluids and their equivalent domestic or industrial uses. APPEA and DMP have commenced this education process.

**c) The use of ground water in the hydraulic fracturing process and the potential for recycling of ground water; and**

The sourcing and use of water for the fracturing process will be a key issue for many projects in the more remote basins of WA and the recycling potential of this should be highlighted as a key project issue in order to minimise environmental footprint and costs for the project. There has been significant progress in the recycling of water in the US through UV treatments to reduce chemical treatment of water post fracturing. For hydraulic fracturing, we would suggest that project proponents seek to implement the maximum practical water recycling and indeed, given the remoteness of some of these projects, it is eminently possible that projects may be improving water access in such areas if the water can economically be treated to bring it to potable standards. Thus, the likelihood that unconventional projects will be burdening local communities and regional primary industries for water is minimal. The coal seam gas industry in Queensland has been a successful example of how the oil and gas industry can successfully co-exist with local land users and indeed, improve water access for all<sup>6</sup>.

**d) The reclamation (rehabilitation) of land that has been hydraulically fractured.**

The introduction of horizontal drilling has enabled minimisation of the surface 'footprint' of the drilling rigs during the drilling and fracturing stages of the project. Similar to conventional oil and gas projects,

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<sup>4</sup> <http://www.businessspectator.com.au/news/2013/9/19/resources-and-energy/indigenous-leader-slams-woodside-report>

<sup>5</sup> (<http://fracfocus.org/water-protection/drilling-usage>)

<sup>6</sup> [http://www.santoswaterportal.com.au/media/pdf1830/santos\\_glng\\_water\\_booklet.pdf](http://www.santoswaterportal.com.au/media/pdf1830/santos_glng_water_booklet.pdf)



once the well has been put into production, there is a very limited visual impact on the local land – only a small wellhead and some piping. Long-term rehabilitation of hydraulically fractured land will be no different to any other oil and gas project.

Another important point that we wish to raise during this submission is the concept of fracturing induced seismicity. We refer (again) to the ACOLA report, which goes into significant detail on this issue.

“A number of reports and presentations have concluded that seismicity associated with deep hydraulic fracturing of shales does not present a significant problem. For example the United Kingdom Royal Society/Royal Academy of Engineering report ‘*Shale Gas Extraction in the UK*’ (The Royal Society and the Royal Academy of Engineering, 2012) states: ‘*There is an emerging consensus that the magnitude of seismicity induced by hydraulic fracturing would be no greater than 3 M<sub>L</sub> (felt by few people and resulting in negligible, if any, surface impacts).*’ In a United States ‘State of the Science’ presentation on this subject, and by the National Academy of Sciences (US NAS, 2012), a similar conclusion is reached, namely that ‘*hydrofracking, by itself, rarely triggers earthquakes large enough to be a safety concern*’ (Leith, 2012) and ‘*the process of hydraulic fracturing a well as presently implemented for shale gas recovery does not pose a high risk for inducing felt seismic events*’ (US NAS, 2012).” (Cook et al., (2013) p133 (and references cited therein)).

We, as future operators of unconventional gas projects in Australia, fully support the implementation of baseline monitoring (both subsurface and top surface) prior to any fracturing operation in order to both protect industry and regulators from spurious claims but also to enable public confidence in the procedure and competence of the operators. Western Australia has been able to maximize the benefits of the minerals and LNG industry to date and is well placed to capitalize on its unconventional potential in a safe and sustainable manner should it continue to support and have confidence in the DMP as its lead regulatory agency.

**We look forward to the report from the committee and should you have any further questions around our comments or would like to expand upon our answers, please do not hesitate to contact me.**

With my best regards,

Patrick Elliott

Executive Chairman