From: Kulpecz, Andrew A
To: fracking inquiry
Subject: NT Hydraulic Fracking Inquiry
Date: Friday, 28 April 2017 6:16:24 PM

Dear Panel,

My name is Dr. Andrew Kulpecz, and I submit the following for your review into the use of unconventional gas and the use of hydraulic fracturing in the Northern Territory.

There have been many Inquiries on this and similar subjects around the world and in Australia in recent times. Virtually all credible (non-political) Inquiries have arrived at similar conclusions, in that exploring for and developing gas and oil from unconventional sources (shale) with the use of hydraulic fracturing (fracking) is unlikely to pose any significant risk to groundwater (aquifers) or to human health, providing appropriate robust regulations (including environmental aspects) are in place, which are adhered to and enforced, such that the risk is acceptable and as low as reasonably practical (ALARP).

The following is some of the recent outcomes of such credible Inquiries

A The Discussion Paper refers to (page 11) the previous work undertaken through the Hawke Reports (2014 and 2015) as well as the 2016 Hunter Report. These should the building base for the current Panel's work.

B Prior to the Hawke Report 2014 The Australian Council of Learned Academies (ACOLA) Report "Engineering Energy: Unconventional Gas Production A Study of Shale Gas in Australia" 2013, found that with appropriate safeguards in place shale gas (unconventional) with the use of fracking represents no greater risk than conventional gas. Although certain regulatory oversight needs to be maintained and adhered to maintain a risk profile which is acceptable and as low as practical (ALARP).

C The NSW Chief Scientist and Engineer, Professor Mary O'Kane conducted a review of Coal Seam Gas (CSG) and while we note that CSG is not the subject of the panel's Inquiry, we believe her findings are pertinent to this Panel's deliberations. On page 7 of her Report (30 Sept 2014) "There is a perception in some parts of the community that CSG extraction is potentially more damaging and dangerous than other extractive industries. This perception was heightened following the release of the American movie Gasland in 2010. The Review examined this issue in detail and concluded that while the CSG industry has several aspects that need careful attention, as do almost all industries, it is not significantly more likely to be more damaging or dangerous than other extractive industries". The relevancy is twofold, in that the NSW Chief Scientist and Engineer's Review debunked the hype associated with the movie Gasland, and recognised each extractive industry has its own unique characteristics which must be recognised, managed and regulated appropriately to achieve ALARP.

D The Western Australian Upper House reviewed the issue of fracking, and after two years of examining evidence etc. concluded (Nov 15) that fracking can be carried out safely if regulated appropriately. It found the impact on human health and the environment were 'negligible' despite widespread concerns about the practice.

E The South Australian (SA) Natural Resources Committee recently completed a two year Inquiry into unconventional gas and the use of fracking, and issued its final Report on 30

November 2016. It's key recommendation against its first Term of Reference was that unconventional gas (fracking) is unlikely to have any impact on groundwater (aquifers).

F As mentioned, there have been many Inquiries worldwide, but the UK is also very relevant to Australia, as its ownership to mineral rights is similar to Australia. The UK had a very rigorous inquiry carried out by the Royal Society and the Royal Academy of Engineering specifically to do a report on hydraulic fracturing and shale gas. Professor Sir Mark Walport UK Chief Scientist gave a speech predominantly focussed on Risk and Innovation in Germany in September 2014, summed up the findings, with the following

"There are really 3 science and engineering concerns about hydraulic fracturing (fracking). The first of these is: will it cause earth tremors? The second is: will you get contamination of the water table? And the third is: will there be fugitive release of the methane gas? (In other words if you leak all the gas then you lose the advantage of it as a fossil fuel). And what the science and the engineering tells you is that this is a drilling technology and no drilling technology is completely risk-free. **But if it is done well, if it is engineered well, if it is governed well, then it is as safe as any other form of drilling**, recognising that there is no 'free lunch', there is nothing that is completely risk-free." He went on to note

"Those are the engineering concerns, and that's what the Royal Academy of Engineers' report said and actually multiple other reports have all essentially said the same thing. But the public or publics who are protesting, at least in some parts of the world, about fracking are coming at in from a different angle. They're coming at it from the values angle and from the 'my pain, your gain' angle. And so there's a group that dislike fracking because they dislike fossil fuels, there's another group that dislike fracking because they actually just don't like big companies, and then there's a third group who just don't want the inconvenience of having something industrial happening in their back yard." The referenced speech can be found here http://bit.ly/1CVyur7

In line with the UK Inquiry and the recommended outcomes, the UK Infrastructure Bill 2014-15, was passed through the UK Parliament, and it, which among other things will permit fracking below 300 meters in the UK.

It is on this basis that I urge the Panel to adopt a factual and evidence based approach toward assessing the potential risks regarding the exploration for and the development of unconventional gas and oil, and the use of hydraulic fracturing to enhance its production, providing at all times, there is a robust regulatory regime which through strong enforcement enables the risk to be reduced to be ALARP.

Yours sincerely

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Andrew A. Kulpecz PhD

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