To the Environment and Planning Committee,

Object: Inquiry into Unconventional Gas in Victoria

My name is Zianna Fuad and I am currently living in Melbourne, Victoria, aged 22. I am enrolled in a Bachelor of Environments and completing a major in Environmental Geography, Politics and Cultures at the University of Melbourne. Through studying science and geography I have explored closely the relationship between human activities, the natural and built environments and our reliance on the earth's natural resources. What the course has shown me is the quality of our society and ecosystems depend on the educated, informed and sustainable management of our forests and farmlands. The other obvious concern is water, which the management of is closely connected to our survival. I come from rural Australia and have witnessed the fragility of our natural land and farmlands. Through working on dairies and around other crops I understand that rural Australia supports Australia's urban food demand and contributes heavily to our economy. I have travelled to rural areas in Gippsland that are covered in unconventional gas (UCG) licenses. Speaking to local farmers I shared the fear that this could cause for their business and livelihoods. As a tourist to these places, I also witnessed the immense beauty of these natural landscapes that could be lost to the industrialization of the UCG industry. Through this experience and much more reading, I believe that unconventional gas UCG threatens some of our most precious and sensitive ecosystems, waterways and farmlands.

I would like to make it clear that I do not support UCG drilling. This includes any form of unconventional gas mining (including coal seam gas, tight gas, shale gas & underground coal gasification). I believe there is a compelling case to place an outright and permanent ban on all onshore unconventional gas drilling in Victoria.

I will therefore limit my comments to the terms of reference that seem most relevant to me.

(1) the prospectivity of Victoria’s geology for commercial sources of onshore unconventional gas;

When compared to Victoria’s strong agricultural economy, the royalties towards State government is expected to be negligible. There was no commercial production in Victoria before the moratorium and the search for commercial quantities of tight gas has been going for decades, with no strong results. Exploration licenses are held heavily over Gippsland, some of Australia’s richest dairy and grazing land. This area also provides local produce for Melbourne and for exportation markets. Why would we consider putting some of our best farmland at risk by allowing this industry to proceed for only minimal royalty returns to the state?

(2) the environmental, land productivity and public health risks, risk mitigations and residual risks of onshore unconventional gas activities;

It is understood that a lot of research into the Industry needs to take place. The uncertainty of the science makes it clear to me that there are many related risks. The potential risks are too high and would be irreversible. New evidence is being found on the disintegration of gas wells, contamination of ground water and local health effects for nearby residents. Doctors for the Environment have outlined three key areas where there is the potential for adverse human health impacts:

- through contamination of water, air and soil
- through diversion of water and land away from agricultural food production
- from mental health impacts on communities who have had environmental changes imposed upon them
The authors of the Case for a Ban on Fracking (2015) research report summarize that pollutants can cause health problems as including “respiratory, neurologic, and dermal responses as well as vascular bleeding, abdominal pain, nausea, and vomiting.” Marion Carey reports that ‘The effects of volatile organic compounds vary with the types of chemical, duration of exposure and concentration, but they can cause eye, nose and airway irritation, headache, nausea, dizziness, and loss of coordination.’

(3) the coexistence of onshore unconventional gas activities with existing land and water uses, including —

(a) agricultural production and domestic and export market requirements;

Please see below

(b) the legal rights of property owners and the impact on property values; and

UCG activity fundamentally industrialises landscapes with access roads, drill pads and processing equipment, waste ponds and water treatment sites, flaring pits, and pipelines. The industry will increase local traffic, local activity and local sound pollution. It will disrupt the local community economy and property values. Examples of reduced property values are in many Queensland towns such as Dalby, Chinchilla and Roma, with investors surprised with how rapidly the market dropped. There is little proof that UCG will provide long term employment in local areas. Many positions are specialized and short-lived. Local business is likely to be effected by the intensity of the industry. Some businesses may succeed in a UCG boom, but evidence from Queensland showed that the inequality in success saw low-income earners forced out of towns. Regional centres should be encouraged to grow strongly and sustainably, as this puts less pressure on large cities and keeps even population growth. Supporting and growing our renewables industry will provide more jobs that are future-proofed and lead to greater long-term employment growth in Victoria. There is already more people employed installing solar panels in Victoria than in coal generation.

(a) co-existence with agricultural production

Agriculture is a cornerstone of Victoria’s economy, producing goods valued at around $9 billion a year with a growing output from $6.56 billion in 2007-08 to around $9 billion in 2010/11.

With a 25% share of Australia’s total food exports and a 28% share of Australia’s total wool and fibre exports, Victoria is Australia’s largest state food and fibre exporter.

The dairy industry in Gippsland is the highest value agribusiness industry in the region. In 2006 it produced 30% of Victoria’s milk production and 20% of Australia’s dairy production, making it one of Australia’s leading dairy regions. By 2011, it was providing 23% of national milk production.

Other booming industries include viticulture, fruit and organic produce. Certified organic produce would be particularly comprised by water contamination cause by UCG, and in bad circumstances it would effects all surrounding produce.

The UCG industry would compete with farmers over water as the hydraulic fracking process uses large amounts of water. According to Tina Hunter, an Assistant Professor at Bond University, “the fracking of one


CSG well can require as much as 5 million litres (ML) of water, although often only 2 - 3 million litres of water is used. In this process, a high-pressure mix of water, sand and chemicals is injected into the reservoir to release gas. The agriculture industry relies on groundwater and healthy aquifers. Even the conservative numbers will test the sustainability of Australia’s underground water reserves. There have been long droughts in Victoria’s history and any prospective competition for water could threaten the future of our food. Competition over water could also affect urban water demand in cities such as Melbourne.

The potential for contamination of groundwater

Around the world new evidence in being found on the contamination of groundwater from UCG wells. The industry often attempts to manipulate the view over contamination risks using examples of poor management to excuse effected areas. With Australia having such large and well connected aquifers, any industry that included even the slightest risk of contamination should not be allowed to threaten the productivity of our land.

Two scary examples of documented contamination in the United States are below:

- researchers have traced low levels of methane and other contaminants to a source of shale gas in the sprawling Marcellus Formation, which lies beneath much of New York state, Pennsylvania, West Virginia and Ohio.  
- Pennsylvania’s Department of Environmental Protection has catalogued 243 cases of contamination of private drinking wells from oil and gas drilling operations. In some cases, one drilling operation contaminated the water of multiple wells, with water issues resulting from methane gas contamination, wastewater spills, and wells that simply went dry or undrinkable.  
- The EPA investigated A coal seam gas project in NSW operated by energy company Santos. Uranium was found at levels 20 times higher than safe drinking water guidelines. Other pollutants leaked from a waste water holding pond was lead, aluminium, arsenic, barium, boron, nickel and uranium.

The Gippsland Water Atlas shows that aquifers that run from East Gippsland to the Latrobe Valley, almost 150 km away are connected. Therefore any contamination from drilling or over allocation for mining can be expected to impact far beyond the local area.

In an already heavily deforested state, further fragmentation from wells, roads and clearings will jeopardise healthy biodiversity. A flare accident in Seaspray burnt hectares of grassland and native vegetation before

6 http://thinkprogress.org/climate/2014/08/29/3477184/pennsylvania-fracking-water-contamination/
the local CFA could intervene. This also presents the pressure that associated risks can have on local communities.

Even within the brief points above it is clear that UCG operations cannot peacefully co-exist with farming. Such vibrant local agribusinesses should not be jeopardised for foreign gas demand.

(4) the ability of potential onshore unconventional gas resources contributing to the State’s overall energy sources including —

UCG is a fossil fuel and is unrenewable. With the acceptance of well researched, mainstream science the phasing out of fossil fuels must begin to maintain a liveable climate for generations to come. The widespread burning of fossil fuels are the main single cause of human induced global warming. Victoria can provide its gas demand from offshore, natural gas sources. While we can exist of these deposits we should begin the phasing out of fossil fuels and develop a strong renewable energy sector.

(5) the resource knowledge requirements and policy and regulatory safeguards that would be necessary to enable exploration and development of onshore unconventional gas resources, including —

(a) further scientific work to inform the effective regulation of an onshore unconventional gas industry, including the role of industry and government, particularly in relation to rigorous monitoring and enforcement, and the effectiveness of impact mitigation responses; and

(b) performance standards for managing environmental and health risks, including water quality, air quality, chemical use, waste disposal, land contamination and geotechnical stability;

Below is a list of countries or states that have chosen to ban fracking. I believe that the banning of fracking anywhere shows the obvious concern over the science behind the UCG industry. From the negative examples of UCG drilling elsewhere in Australia and around the world, I believe the best way to regulate this industry is to ban it. This is the simplest policy response.

Outright Fracking Bans

USA

  

- **San Benito County, California** – April 2014

**Mendocino County, California** – 4th November 2014 – this ban on fracking was implemented as part of a community Bill of Rights to “natural and chemical free communities and ecosystems, a clean environment, and self-government by the people, without manipulation and overwhelming influence from corporations.”

It imposes considerable penalties for breaches.

http://ballotpedia.org/Mendocino_County_Community_Bill_of_Rights_Fracking_and_Water_Use_Initiative,_Measure_S_%28November_2014%29

- **Santa Cruz County, California** – May 2014 - http://www.reuters.com/article/2014/05/21/california-
• **Highland Park, New Jersey** - Sep 17, 2013 — An ordinance to ban fracking was passed by Highland Park Borough Council.  

• **Secaucus, New Jersey** – 26th June, 2012 - The mayor and Town Council banned fracking and fracking waste water “in a resolution that states that the drilling process causes environmental hazards.”  


• **Hawaii** – October 2013 - unanimous County council bill banned hydraulic fracturing.  

• **Vermont** – 17th May 2012 – Vermont was the first US state to ban fracking. The Governor stated that protection of drinking water is more important than increased access to natural gas.  
http://www.huffingtonpost.com/2012/05/17/vermont-fracking-ban-first_n_1522098.html

**UK**

• **Wales** - from February 2015 - “effectively making it impossible for shale gas developments to receive planning permits in Wales.”  

• **Northern Ireland** – July 2014 – the environment minister promised that there will be no fracking in Northern Ireland unless it can be proved “safe beyond doubt”.  

**Europe**

• **France** -30th June 2011 - Ban on hydraulic fracturing was voted in by parliament. The International Energy Agency claims that France has more plentiful reserves of shale gas than most of Europe, but France’s Constitutional council threw out a 2013 challenge to the law by US based Schuepbach Energy  
http://www.dw.de/french-court-rejects-challenge-to-anti-fracking-legislation/a-17151744

Current President François Hollande has promised the ban will be maintained for his five-year term.  

• **Luxembourg** – 13th November 2012 – the Luxembourg parliament voted against a motion to extract underground shale gas based on environmental concerns.  

• **Bulgaria** – 18th January 2012 - Bulgaria banned exploratory drilling for shale gas. On 14th June 2012 Bulgaria imposed an absolute ban on fracking and revoked Chevron’s shale gas permit.  
http://www.theguardian.com/world/2012/feb/14/bulgaria-bans-shale-gas-exploration
Spain – 30th January, 2014 – fracking was banned in Catalonia as part of the urban planning law. http://ccaa.elpais.com/ccaa/2014/02/01/catalunya/1391210321_238105.html

– fracking was also banned in Cantabria, followed by La Rioja and Navarra later that year. http://sociedad.elpais.com/sociedad/2013/04/08/actualidad/1365443283_986703.html


Navarra – banned hydraulic fracturing for exploration and extraction “under the provisions of the Regional Law of Urban Planning and Land Regime of Navarre.”
http://www.diariodenavarra.es/noticias/navarra/mas_navarra/2013/10/10/el_parlamento_prohibe_quot_fracking_quot_navarra_pese_upn_ppn_132959_2061.html

Canton of Fribourg, Switzerland – April 2011. Decision not to renew exploration licence of Schuepbach Energy, and all other licences suspended “for an undetermined period.”

Austria – March 2014 - a fracking ban was enshrined in the Vorarlberg State Constitution.


New Zealand


Kaikoura – April, 2012 - The Kaikoura District Council declared itself a frack-free zone.

Most of all, Victorian communities do not want unconventional gas! 60 communities have undergone local surveying, getting results higher that 85% of residents saying ‘no’ to the UCG industry. The Government needs to understand that there’s no social license for this industry in Victoria and must respect the wishes of Victorian communities.

Again, I must emphasize that the risks are too high to allow the industry into Victoria. A short UCG boom cannot compensate for the dangers it would pose to farmland, natural landscapes, biodiversity and local communities.

I recommend that Victoria ban all unconventional gas drilling permanently.

Kind regards,

Zianna Fuad