SUBMISSION FROM KONGWAK HILLS LANDCARE GROUP TO

THE STATE GOVERNMENT INQUIRY INTO UNCONVENTIONAL GAS IN VICTORIA

10 July 2015

Introduction

This submission has been prepared by the Kongwak Hills Landcare Group (KHLG). We are part of the Bass Coast Landcare Network and represent landowners and other community members in the communities of Kongwak and surrounds including Moyarra to the north, Glen Alvie and West Creek to the west, and Lance Creek and Wattlebank to the south.

Formed in 2013, the Kongwak Hills Landcare Group is one of the newest and most active Landcare groups in the Bass Coast and South Gippsland regions with over 50 fully financial memberships (most 'memberships' involve couples or families). Our members include traditional beef and dairy farmers who have lived and worked in the area for many decades, as well as new land holders. We are united in our commitment as the current custodians of the land to regenerate land that has become degraded through the mistakes of the past, and to protect the environment from such mistakes in the future.

As with the wider South Gippsland and Bass Coast region in which it is situated, the Kongwak Hills community is a traditional farming community, but it is also a rapidly growing community. Over the past 10 years our community has seen a large influx of new farmers who are helping to both: (1) intensify traditional beef and dairy production, and (2) diversity agricultural production of this extremely fertile region into fruit and vegetables to meet the growing food demands of Melbourne.

In early 2014 our community conducted a survey involving 605 residents of Kongwak Hills and surrounds. Ninety-eight per cent of those surveyed said that they wanted our community to be free of unconventional gas extraction. Following this overwhelming demonstration of community concern and support Kongwak was pronounced a Coal Seam Gas Free Community in May 2014.

We are writing this submission to the State Government's Inquiry into unconventional gas in order to communicate our wish that the State Government:

- maintain indefinitely the Moratorium on Coal Seam Gas extraction in South Gippsland and Bass Coast;
- expand the Moratorium to include extraction of other onshore unconventional gas extraction, and coal mining.

Below in our responses to the Terms of Reference of the Inquiry we explain why extraction of onshore unconventional gas is inappropriate in South Gippsland and Bass Coast, and why our community will continue to vigorously oppose it.

Comments on the Terms of Reference

(1) The prospectivity of Victoria's geology for commercial sources of onshore unconventional gas.

Against the wishes of many communities, Victoria may lose its chance to secure industries such as quality food production, renewable energies, quality lifestyle and tourism. Victoria benefits from its international standing as a pristine-environment food producer (major importers being India, China, and Japan), at a time when food contamination is a serious international concern. Gippsland particularly draws extensive business in its role providing farming, quality lifestyle and recreation on Melbourne's doorstep. Its abundance of water, grass, sun and sea positions it better as a showcase for high quality produce (vegetable, dairy, beef & wine) and physical beauty rather than as an Unconventional Gas field. Bass Coast is the second fastest growing municipality in Victoria in the context of its current socio-economic direction.

The productivity of unconventional gas (UCG) extraction in Victoria is not sufficiently guaranteed, especially in light of the environmental hazards and threats to local economy. The suitability/productivity of any shale bed is unpredictable and the price of unconventional gas for domestic consumers is likely to be greater than current estimates suggest.[1] The estimated local community financial gain proposed to be attributable to the UCG industry has been inflated due to the inclusion of tenuous flow-on effects, e.g., for local markets. These estimates also do not account for the negative impact of gas extraction on tourism, boutique and other food production enterprises, and land values. Methane gas release, chemical leakage into waterways, and deep destruction of landscape are linked to UCG extraction. These will not be reversible and will force an economic shift for Victoria, and particularly Gippsland, away from the development of the high quality lifestyle, food and tourism industries.

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

Unconventional gas extraction has been shown to be a risky industry, with a number of unpredictable and toxic outcomes. Unfortunately, regulatory agencies have been shown to be inadequate in their protection of the community.

Risks to waterways

There are a number of risks associated with CSG extraction, according to Peter Stone (Deputy Chief of CSIRO Ecosystem Sciences and Director of the Gas Industry Social Environmental Research Alliance)[2]. They are, the likely drawdown of aquifers; depressurisation of aquifers; risk of groundwater contamination; risk of subsidence of the surface, and salt being brought to the surface (1.8 million tonnes of salt per year) (SBS interview 2012). The AWA (Australian Water Association) surveyed over 1000 Water professionals (primarily engineers) in 2014 and found 70% regard CSG extraction as a risk to water resources in Australia (87% in Qld). Jeremy McKeown, CEO stated, "The profession is saying whilst there is a capacity to manage the coal seam gas production, there are real concerns where exploration or development is close to water that can be contaminated."[3]

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[1] Brooks, M.,2013 New Scientist, Aug pp 36-41.

[2] Stone, P, 2012. *SBS Broadcast Deputy Chief of CSIRO Ecosystem Sciences and Director of the Gas Industry Social Environmental Research Alliance, speaks to SBS about the known effects of coal seam gas on human health and the environment*. 16 Apr 2012 - 8:12 pm

[3] AWA 2014. State of the July 10, 2015Water Report

Peter Stone (CSIRO) identifies several types of water contamination that are possible; injection of chemicals through the fracking process, chemicals that naturally exist in coal seams being exposed to other parts of the environment, and the removal of large quantities of water from aquifers or coal seams. He states it is uncertain how long aquifers take to return to previous levels. Also, methane leaking into surrounding aquifers can occur if the wells into the coal seam aren't properly sealed.

Contamination of water has been linked to CSG. In Texas in 2013, a study sampling 550 water samples found elevated levels of 10 different heavy metals (including arsenic), and 19 chemical compounds (including carcinogenic BTEX compounds) associated with hydraulic fracking, as well as toxic levels of methanol and ethanol. Well-casing failure rates were closer to 12 % than the 3 % estimated by companies[4]. There have been 243 cases of well contamination in Pennsylvania in relation to the Marcellus shale boom. The Pennsylvania Environment Protection Agency (DEP) was, to quote the Inspector General, “unprepared to effectively administer laws and regulations to protect drinking water and unable to efficiently respond to citizen complaints”.[5] In Pavillion, Wyoming, the EPA detected high concentrations of benzenes, xylenes, purgeable hydro-carbons, and gasoline and diesel by-products in shallow ground water near fracking waste-water holding pits. Collectively these chemicals present risks of neurotoxicity, reproductive problems and cancer. The EPA determined that the most likely cause of groundwater contamination was leaking pits used to store fracking fluid waste. Groundwater contamination from toxic drilling wastewater poses a health risk to humans, as well as pets and farm animals that drink or bathe in contaminated water.[6]

Australia has had its own CSG contaminations. In 2014, Santos contaminated an aquifer which recharges the great artesian basin with uranium 20 times less safe than drinking guidelines recommend and was fined $1500. EPA chief environmental regulator Mark Gifford confirmed the contamination was caused by water leaking from the pond and that lead, aluminium, arsenic, barium, boron, nickel and uranium had been detected in an aquifer at levels ''elevated when compared to livestock, irrigation and health guidelines''. Toxic water from CSG extraction was dumped in the Darling Basin’s Condamine River with Qld government permission, despite containing 17 chemicals and heavy metals at levels considered toxic to animals and freshwater ecosystems.[7] Here in South Gippsland, we rely on springs and groundwater to feed our dams, water our pastures and provide water for livestock. Any contamination of our water sources would spell disaster for our farming and agricultural production.

Salt and Methane

A 2011 study in the Queensland Murray-Darling basin projected that the amounts of additional salt brought to the surface by CSG wastewater were of similar quantity to all combined salts added from conventional groundwater irrigation and natural sources. If all this salt was allowed into waterways, it would effectively double the amount of salt entering the landscape (Biggs, 2011. Australia Hydrogeology Journal 05/2011; 19(3):719-726.) In addition, the potent greenhouse gas, Methane (20 to 30 % more powerful than CO^2) is released from the flowback water that returns to the surface, and also released directly from leaky wells. Four to 8 % of a well’s total production goes straight to the atmosphere creating

[4] Hildenbrand, Carlton et al 2015. Environ. Sci. Technol., DOI: 10.1021/acs.est.5b01526

[5] Currell, M. 2014. Coal seam gas water leaks could be a problem for decades (Associated Press) http://theconversation.com, March 24, 2014 4.34pm AEDT

[6] McDermott-Levy, R., Katkins, N., & Sattler**, B.** 2013. American Journal of Nursing 113(6) pp 45-51

[7] SBS broadcast, 2011. Queensland 'ignored rules' in CSG water dumping Source: AAP Broadcast SBS 24 Nov 2011 - 12:48 PM

a greater burden (20% to 100%) than coal.[8]

Social risks

A number of social risks are inherent in UCG industry where communities are resistant and "locking their gates". Exploration on a single farm can spread for kilometres under adjoining properties, affecting other landowners with no real avenue for protest. Land values of adjoining properties can dramatically fall in the context of unsightly ponds, wells, trucking, piping, and general destruction of landscape. Mining law creates a dangerous David and Goliath legal situation if exploration is granted, but extraction subsequently resisted by the landowners. Ignoring communities when they designate themselves to be coal and gasfield-free results in bitterness and disillusionment with government representation.

Health risks

Acute health problems have been reported by people living in communities in which unconventional oil and natural gas extraction, such as fracking, occurs. According to a study in the USA[9], common symptoms or complications among people living near fracking sites include fatigue, burning eyes, dermatologic irritation, headaches, upper respiratory conditions (difficulty breathing), gastrointestinal (severe abdominal pain), musculoskeletal (backache), neurologic (confusion, delirium), immunologic, sensory (smell and hearing), vascular, bone marrow (nosebleeds), endocrine, and urologic problems, the risk of endocrine disruption and changes in quality of life and sense of well-being.

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

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

Onshore unconventional gas extraction cannot coexist with existing land and water uses for agricultural production in South Gippsland and Bass Coast. Domestic and export market conditions are driving intensification and diversification of agriculture here.

South Gippsland, and most of the geographical area of Bass Coast, is heavily invested in agriculture. Due to the fertile soils and high rainfall, beef and dairy production in this area is highly intensive, supplying a very large proportion of the domestic needs of Victoria, and increasingly so, a growing Asian market. With a predominant portion of the land having been cleared for agriculture over 100 years ago, all of the land and water resources in this area are fully utilised.

South Gippsland's agricultural industry is valued at approximately $1billion and has a growing reputation for clean, sustainable produce. In 2010 agriculture represented 17% of the economy, ($460m of GDP and 2490 employees), while food processing represented 18% ($476m of GDP and 770 employees)[10].

[8] Brooks, M. 2013. New Scientist, Aug pp 36-41.

[9] R. McDermott-Levy, R. Katkins & N. Sattler**,** 2013. American Journal of Nursing 113(6) pp45-51

[10] REMPLAN 2010

Demand for food produce from South Gippsland is increasing. Domestically, as the population of Melbourne has expanded, land previously used for agriculture has been lost to new housing developments. The domestic Victorian and Australian market is also increasingly demanding locally grown and 'clean green' or organically grown produce. This is a persistent and permanent trend within the domestic market and it is driving new agricultural investment. Less than two hours from central Melbourne, South Gippsland and Bass Coast is seeing high levels of population growth. In the Kongwak Hills area this growth comprises new farmers who are further intensifying beef and dairy production, including value-add process of cheese-making, as well as diversifying into fruit and vegetable production.

An additional driver of intensification and diversification of agriculture in this area is the pressure of climatic and environmental pressures in north and central Victoria, which have traditionally been Victoria's most productive fruit and vegetable growing regions. A shift to a hotter and drier climate, and diversion of water previously used for irrigation to environmental flows in the Riverland have closed and will continue to close many farms in these areas. Expansion of food production in Gippsland where the climate is mild and rainfall is high, is necessary to feed Victoria's population.

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

Kongwak is now a CSG free area. A large gathering of locals congregated at the Kongwak Hall on Sunday 25 May 2014 to declare Kongwak 97.6% CSG free. The local community was surveyed extensively and even though we are only a small rural community, over 600 signatures were obtained in support of the "Lock the Gate" movement. Our community has added its voice to countless other rural communities in Gippsland. We are unreservedly opposed to CSG and all other forms of UCG, to the extent that we will not consent to any mining or exploration on our private properties.
It is of great concern, however, to learn that the withholding of consent only provides limited protection to the rights of individual landholders. The *Mineral Resources (Sustainable Development) Act 199*0 (Vic) (**MRSD Act**) is skewed in favour of mining interests. Even if landowners oppose entry onto private property for the purposes of exploratory work or mining, the current legal framework provides mechanisms for mining interest to override these objections.

The Environmental Defender's Office (EDO) report into Reforming Mining Law in Victoria, April 2012[11] includes a summary of the existing law as it applies to Victoria. We refer to that report and, accordingly, we will not repeat the information here as the EDO report is concise and to the point. We do, however, consider it necessary to highlight the following paragraphs, extracted in full from the report relating to access to private land. This relates to both exploration and mining licences:

Current legal requirements under the MRSD Act for a Licensee to gain access to private property for the purpose of conducting work under an exploration licence.

> *"Before commencing work on private land under an exploration licence, the licensee must either:*
> *• obtain the consent of the owners and occupiers of the land affected;*
>
> *• make and register a compensation agreement with those owners and occupiers;*

[11] https://envirojustice.org.au/downloads/files/EDO_Reforming-Mining-Law-in-Victoria.pdf

• obtain a compensation determination from VCAT, to compensate the owners/occupiers; or
• purchase the land.

Therefore, although it is a requirement that the mining company seek the consent of the owner or occupier of private land, there is no requirement that they actually obtain it. The ability to obtain a compensation determination from VCAT allows them to circumvent opposition from the owner or occupier, and gives them a strong position from which to negotiate access agreements."[12]

The problem is exacerbated if an exploration licence is granted and access to private property obtained. If gas is located, it is unlikely that mining companies will submit to community opposition after expending significant resources and investment in the exploration stage. Naturally they will seek to obtain mining licences and are well resourced to fight any legal challenges brought by local communities and individual landowners. For that reason exploration licences should only be granted in very exceptional circumstances and should not be granted in South Gippsland for all the reasons set out in this submission.
Given the legal position as set out above, local property owners are justified in their concerns, which allow mining interests to override the unequivocal wishes of property owners and indeed, local communities. Landowners should be given adequate notice of any intention to make application for an exploratory or mining licence so they can adequately prepare objections and challenges and ensure that no licences are granted in this region. The current system is patently inadequate to deal with private landowner concerns, as has been recently demonstrated in neighbouring Mirboo North where local residents and landholders were not given adequate notice of the pending application for an exploration licence and decision. The decision by the Andrews Labour government to grant an exploratory licence against the wishes of the local community has proved to be a great disappointment to the local community, farmers and environmentalists alike.[13]

Land values

From a landholder's perspective, the indirect effect of allowing mining interests to usurp our prime agricultural land will inevitably mean a massive diminution in land values. Who would want to live near a mining site? More importantly, any farming activity would be severely compromised by the devastating effects of fracking and UCG on groundwater and soil. The exposure to salt, toxins and decontaminated water can mean an end to agriculture in what has been described as the future food bowl of Victoria.[14] Our land, soils and clean water are our most valuable asset and the effects of mining will only degrade what is becoming a scarce resource worldwide. Degraded land and soil will mean inevitably mean greatly diminished land values.

In 2012, the ABC *Landline* reported, that the Queensland Valuer General found even one well could mean a reduction of 12% in the value of a property.[15] Multiply this effect when numerous wells are drilled. When property values are depressed, some landowners may sell out further depressing the market and allowing mining companies to purchase valuable agricultural land at vastly reduced prices.

Farmers in our area have worked hard at maintaining and caring for the land so that it is productive farm land and will be available to future generations. They are in fact the traditional 'land carers' and we in Landcare have a lot to learn from their relationship with the

[12] EDO report, Reforming Mining Law in Victoria, April 2012 at page 13
[13] http://www.stockandland.com.au/news/agriculture/general/news/mirboo-north-against-mining-exploration/2735249.aspx
[14] http://www.stockandland.com.au/news/agriculture/agribusiness/general-news/positive-spin-to-climate-change/2728566.aspx and http://www.theaustralian.com.au/business/in-depth/australia-the-clean-green-food-bowl-of-asia/story-fni2wt8c-1226623265405
[15] http://www.crikey.com.au/2012/03/09/csg-and-the-land-straight-from-the-farmers-mouths/?wpmp_switcher=mobile

land. We do not believe that mining and farming can coexist harmoniously for the benefit of both land uses and fear the loss of not only valuable farming land but experienced farming communities.

(c) any implications for local and regional development, investment and jobs.

Due to the market forces outlined above in Section 3a, local and regional development, investment and jobs growth is firmly headed in the direction of intensification of agricultural production in South Gippsland and Bass Coast. Our infrastructure including production, processing facilities, towns, and road networks are set up to support agriculture.

New investment is flowing into agricultural production. As mentioned above, new farmers are moving into the area. In Kongwak alone, 5 new homes on farmland have been completed in the past 12 months. Chinese companies are purchasing dairy farms and building milk processing facilities for export of dairy products. This investment is not likely to continue if onshore unconventional gas extraction is allowed to take place. Fonterra, one of the largest dairy processing companies in the Southern Hemisphere has recently announced that it will not accept milk from farmland where fracking has taken place. High-end consumers of Melbourne have the same attitude as the demand for local, clean and green produce (even if it costs a little more) continues to climb. The organic industry is one of the fastest growing agricultural sectors in Australia, including in Gippsland.

A particularly notable feature of productivity in this area is that farms are small (most less than 100 hectares), and despite the high levels of productivity overall, profit margins are not high for individual farming families. The kinds of impositions that would be made upon land and water use by unconventional gas extraction (well pads, all weather roads for large trucks, the use of 20,000 litres of water per well per day, waste ponds and water treatment facilities) would severely inhibit the ability of individual farmers to go about their farming business, would reduce their already modest profit margins, and will render affected businesses unviable. The value of this farmland will drop dramatically, damaging the livelihoods and wellbeing even of farmers who seek to amalgamate properties into larger operations in order to maintain the viability of their businesses.

Even in the absence of disastrous events such as large scale ground water contamination, the initiation of unconventional gas extraction in South Gippsland and Bass Coast is highly likely to halt new investment, destroy many existing farm businesses, damage farm support businesses in our regional towns, and drive large scale disinvestment from an industry that Victorian's need for their food security into the indefinite future. It is highly irresponsible for any government to expose agriculture in South Gippsland and Bass Coast to any such risk that would reduce its productivity

(4) The ability of potential onshore unconventional gas resources contributing to the State's overall energy sources including:

(a) an ability to provide a competitive source of energy and non energy inputs for Victorian industries.

(b) an affordable energy source for domestic consumers.

Unconventional Gases are harder to extract than conventional gases. The rock has to be fracked to release the gas from the coal seam or rock, therefore the cost of extraction is higher than conventional gas extraction. With the Government planning to export gas the Victorian consumers will be competing with international prices in the future, making UCG unlikely to be an affordable energy source for consumers. An option to offset energy needs is to look at ways of building energy efficient homes and a Government funded energy efficiency retrofit programme for existing homes. Another option is to follow South Australia A in the renewable energy field.
South Australia is on the path to being a leader in renewable energy. It is the largest producer of wind energy in Australia. As of June 2014, South Australia hosts the bulk of the nation's installed capacity and approximately 27% of the state's energy production came from wind power.
The SA government has also committed to solar energy and during 2012-13, South Australia produced 31.5% of the state's total energy production from renewable energy.Since December 2009, it has been South Australian government policy that all government-owned buildings constructed or substantially refurbished after July 2010 have solar systems installed. Government-owned residential buildings are required to have a minimum 1.5kW solar system and all other government-owned buildings are to have a minimum 5kW solar system.

The government's commitment to solar power is consistent with a range of other actions being taken to move South Australia towards greater uptake of renewable energy and is contributing to meeting South Australia's 33% renewable energy target by 2020.

Let's follow the example here in Victoria.

(c) carbon dioxide emissions from these sources.

Natural gas is largely composed of Methane, and 3.6% to 7.9% of the Methane from shale gas production escapes into the atmosphere in venting over the life time of the well. These emissions are at least 30% more than and perhaps more than twice as great as those from conventional gas. The higher emissions from shale gas occur at the time wells are hydraulically fractured as methane escapes from flow back return fluids and during drill out following the fracturing Methane is a powerful greenhouse gas with a global warming potential that is far greater than that of carbon dioxide, particularly over the time horizon of the first few decades following the emission.
Methane contributes substantially to the greenhouse gas footprint of shale gas on shorter time scales, dominating it on a 20 year time horizon. The footprint for shale gas is greater than that for conventional gas or oil when viewed on any time horizon, but particularly so over 20 years. Compared to coal, the footprint of shale gas is at least 20% greater and perhaps more than twice as great on the 20 year horizon and is comparable when compared over 100 years[16].

(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:

[16] R W Howarth, R Santoro, A Ingraffea, "Methane and the greenhouse gas footprint of natural gas formations", Climatic Change June 2011, Volume 106, Issue 4, pp 679-690.

We wholeheartedly support the EDO report on mining reform and its recommendations[17]. The report has been referred to earlier and should be given due consideration. There are a number of points which we consider justify highlighting.

- The process by which communities are informed of mining proposals that may affect them appears to be deficient and does not allow communities any voice in the decision making process.
- At present, the majority of exploration or mining projects are approved without any requirement for a credible Environmental Impact Assessment. Without transparent and public processes, there is no evidence that an appropriate assessment of environmental impacts occurs, and certainly no way to scrutinise what actually does happen.
- There is no clear legal requirement under the current regime to quantify greenhouse impacts, or provide that information to the public. There is also no legal requirement that the greenhouse impacts of a proposal be taken into account in making key approval decisions.
- Victoria's mining laws are incapable of mediating competing land uses in a strategic or convincing way because of deficiencies in our planning laws in relation to exploration and mining projects. Some minerals projects are exempt from the requirement to obtain planning approval. While the MRSD Act provides that agricultural land be protected from mining, it is limited and unlikely to effectively address concerns over land use conflicts. To our knowledge and the knowledge of the EDO, no owner of agricultural land has successfully had their land excised from a mining licence.
- The mining industry is required to consult with community but the recent decision to grant an exploration licence in Mirboo North is clear evidence of the failure to do so in a timely, open and transparent manner. Further no penalty is applied for failure to do so.
- The current laws do not give community members a real say in whether or not they want mining in their community and fail to recognise the often substantial impacts that mining can have on a community's wellbeing. The local community may have to endure the potential air pollution, noise pollution, water pollution, health risks, increased traffic, changed economy and, of course, the impacts of climate change that fossil fuel mines create.

Accordingly we support the EDO recommendations which are well thought out and researched. For emphasis, we refer to and repeat these recommendations:

> *The EDO recommends:*
> ***The environment needs better protection***
> *• The Minister for Energy and Resources should be required to reject exploration licence applications that fall within a 'no go' zone, or would have a clearly unacceptable impact on the environment or community.*
> *• Exploration and mining projects should be subject to environmental impact assessment (EIA) and approval under new legislation to replace the Environment Effects Act 1978 (Vic) (EE Act), as recommended by the Environment and Natural Resources Committee.*
> *• The proponent must obtain their EIA approval before they can be granted a mining licence.*
> *• Work plans should be replaced and folded into two separate approvals — a mining licence and an environmental approval —each of them stronger, more transparent and more effective.*
> *• Victoria should fully participate in national coal and coal seam gas reform, by signing and implementing the National Partnership Agreement on large coal mines and coal seam gas.*
>
> ***Land use conflicts need more sophisticated management***

[17] https://envirojustice.org.au/downloads/files/EDO_Reforming-Mining-Law-in-Victoria.pdf

• The Department of Planning and Community Development (DPCD) must prepare Strategic Land Use Plans (SLUPs), based on scientific evidence and public consultation, to identify and protect areas which provide key ecosystem services.
• The SLUPs must avoid the mistakes made in similar schemes in other states, and recognise the need for ongoing case-by-case assessment for prospective mining projects.
• Areas identified by a SLUP for their indispensable ecosystem services should be protected from mining altogether through 'no go' zones declared by the Minister under the Mineral Resources (Sustainable Development) Act 1990 (Vic) (MRSD Act).
• Areas not protected through 'no go' zones should be protected through the planning system, which should be improved to provide more meaningful protection for competing land uses

Communities need more rights and more respect
• DPI should adopt a more cooperative, sensible attitude to sharing information with the public.
• The DPI website should be improved to make it easier for the community to obtain information.
• All licence applicants (including for exploration licences) should be required to notify the local council, and owners and occupiers of land within 2 km of the licence area, in writing.
• Any person should have the right to apply to VCAT to enforce a breach of the MRSD Act.
• Any person who objected to the grant or variation of a licence or environmental approval should have the right to seek merits review of that decision in VCAT.

A moratorium on new coal and coal seam gas projects
• No new licences for coal or unconventional gas exploration or mining should be granted until more is known about their risks, and the regulatory regime is reformed."[18]

Victoria only needs to look at the problems caused by UCG in Queensland and NSW to indicate a cautious approach must be taken to UCG in this state.
While the Victorian Farmers Federation recently voted in support of a five year moratorium on exploration and extraction of onshore gas in Victoria[19], we consider the moratorium should be more extensive and support the recommendation of the EDO that until the risks are fully investigated and the regulatory regime amended, the moratorium should continue. We must protect the land for future generations and forgo short term gains to exploitative industries. The future is on renewables and we act to our peril if we continue our reliance on fossil fuels.

(a) further scientific work to inform the effective regulation of an onshore unconventional gas industry, including the role of industry and government,

[18] https://envirojustice.org.au/downloads/files/EDO_Reforming-Mining-Law-in-Victoria.pdf, at page 6
[19] Press Release 28 June 2015, Re Victorian Farmers Federation Annual Conference held at Bendigo Friday 26 June 2015:
The VFF annual conference has passed 2 important resolutions reflecting concerns from their membership base about the onshore gas industry.

1. That the VFF recognises that there is increasing evidence of negative impacts on agriculture and water supplies from unconventional onshore gas mining exploration and extraction in both Australia and around the world.
2. The VFF supports a five year moratorium on exploration and extraction of onshore gas in Victoria.

particularly in relation to rigorous monitoring and enforcement, and the effectiveness of impact mitigation responses.

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

See para 5 above.

(6) Relevant domestic and international reviews and inquiries covering the management of risks for similar industries including, but not limited to, the Victorian Auditor-General Office's report Unconventional Gas: Managing Risks and Impacts (contingent upon this report being presented to Parliament) and other reports generated by the Victorian community and stakeholder engagement programs.

We are aware that other submissions have researched domestic and international reviews and because of time considerations we have not undertaken our own review. We know there is a vast body of material available for consideration and the consensus seems to be the UCG harbours unknown and unmeasured risk along with significant adverse effects on the environment, health and safety. We owe it to future generations to apply the brakes to this hazardous encroachment on our environment.