

**Submission
No 549**

INQUIRY INTO COAL SEAM GAS

Organisation: Northern Rivers Greens

Date received: 14/09/2011

Submission to NSW Upper House Enquiry on Coal Seam Gas

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NSW's Lack Of Coal Seam Gas Regulation Must Change.

The NSW government must not permit further drilling of coal seam gas until we can be assured that the whole process is safe. We need a moratorium on further development until an independent enquiry can examine the impacts on our precious water supply and aquifers, the impact of fracking on contamination of aquifers, the effect on farmers and food security especially in areas of prime agricultural land, the questionable assessment of coal seam gas as a 'transition' fuel with low greenhouse gases, as well as the impacts on local communities and roads, bridges and other infrastructure.

The quantity of infrastructure required to connect wells with pipelines and roads, water management facilities, processing facilities, compressor stations, and transmission pipelines to power stations and export terminals will have a highly detrimental impact on native bushland and in the case of Lions Way pipeline a huge impact on adjacent World Heritage forests of priceless value.

Depending on the environment, the impact on the surface can undermine the agricultural potential of an area or significantly disrupt the environmental values of our priceless ecology.

Before the government approves a new industrial process in NSW it must have ensured that it won't harm either people or the environment. Mustn't it? That's what any sane person would expect.

The other issue which concerns us is the lack of landholder rights to be able to refuse entry and to refuse mining. If landholders own the surface, why can miners build roads and pipelines and mining infrastructure on the surface against landholder's wishes. And without even a DA, which a local resident needs to obtain, even to build a carport.

The main issues that need to be addressed before proceeding holus bolus with CSG are:

1. Contamination

There are two issues here: the chemicals injected into the rocks and the contaminants released by the fracturing. Both have the potential to pollute water supplies.

The Tyndall Centre at the University of Manchester (see reference) reviewed the impacts of fracking in the only country where it has so far been

commercially exploited, the United States. It found that fracking poses "significant potential risks to human health and the environment."

"The fracturing and 'flowback' fluids ... contain a number of hazardous substances that, should they contaminate groundwater, are likely to result in potentially severe impacts on drinking water quality and/or surface waters/wetland habitats."

Amazingly, fracking fluids in NSW, I believe, are exempt from regulation as well. Companies are allowed to treat the composition of the fluids as trade secrets. There is little information on what they contain and what risks they might present. The NSW government must hold an independent scientific enquiry before any more drilling is allowed to proceed.

This Tyndall Centre has been able to identify at least some of the substances being injected into the rocks there. Of 260 chemicals, it finds that 58 give rise for concern. Some are known carcinogens, some are suspected carcinogens, some are toxic to people, some are toxic to aquatic life, some are mutagenic and some have reproductive effects.

The fluids returning to the surface carry not only the chemicals injected into the rocks, but also those picked up in travelling through them. Among these, the Tyndall report shows, are heavy metals and radioactive materials.

Both the fracking fluids and the flowback fluids can contaminate water either

through the cracks forced open in the rocks by the fracking process, or through drilling bores through aquifers. The Tyndall Centre found that water supplies have been contaminated not only by the fracking chemicals and dissolved pollutants from the rocks, but also by gas bubbling out through the cracks.

In Australia, the National Toxics Network released a report in June 2011 indicating that the BTEX chemicals (Benzene, benzene, Toluene, Ethylbenzene and Xylene) are found naturally in the coal gas seams and that the fracking process can release BTEX from the natural-gas reservoirs, which may allow them to disperse into the groundwater aquifers or to volatilise into air.

The documentary *Gasland* horrifyingly shows people turning their taps on and setting light to the water. In some cases, gas bubbling up from underground fractures has caused explosions in the basements of people's homes.

Fracking has been banned in France, is currently suspended in areas of the UK and is suspended pending review in Quebec, Canada and has strict conditions in the New York state in the US including a ban within primary aquifers and within the drinking water catchment. In NSW, we must enact these measures before it is too late.

2. Water use

Fracking requires the use of very high volumes of water. Damage to thousand year old water supply in artesian basins is irreparable. The severe lowering of water tables has already been reported in both the US and Queensland. Damage to the Great Artesian Basin in the driest continent in the world does not bear thinking about.

The chance of pollution of local water supplies to towns and villages in our region has not been shown will not occur. Arrow Energy has exploratory rights near major water supplies in the Lismore Council area. The Tyndall Centre report has warned that it "could put considerable pressure on water supplies at the local level in the UK" and likewise here. The impacts of climate change may further exacerbate this problem.

3. Greenhouse gases

The natural gas produced by fracking is the same simple chemical (methane) as the gas extracted by conventional means. When it is burnt, a given volume produces the same quantity of carbon dioxide as conventional gas does. Even so, the impact of coal seam gas on the atmosphere could be much greater than the impact of the same volume of conventional gas.

Methane is itself a powerful greenhouse gas. It does not persist in the atmosphere for as long as carbon dioxide, but during the first 20 years following its release, it is 56 times as effective at trapping heat.

More methane is likely to escape from the process of splitting rocks open than from drilling into conventional aquifers.

A paper published earlier this year in the journal Climatic Change found that methane emissions from CSG fracking, "are at least 30% more than and perhaps more than twice as great as those from conventional gas." This, it says, boosts the climate changing impact of CSG to such an extent that it is not just worse than conventional supplies, but worse even than coal, which is the most carbon-intensive fossil fuel. The paper found that, per unit of energy released, burning CSG produces between 120% and 200% of the emissions produced by burning coal.

The Way to Go From Here

NSW needs to conduct a fully independent scientific enquiry into this export-driven CSG industry before irreparable mistakes are made.

We need also full environmental impact assessments, health impact assessments and the effect on our communities of the full life cycle of this production. We need to be moving away from fossil fuels to renewable energy as countries like Denmark and Germany are successfully doing.

In 2011, Germany set another record with renewable energy. A new report by

the German Association of Energy and Water Industries (BDEW) highlights, in the first half of 2011, renewables accounted for fully 20.8 percent of power production, as Der Spiegel reports.

Throughout the past decade, Germany has fundamentally transformed the way it produces electricity. The country increased its share of renewable electricity from 5 percent in 2000 to 18 percent in 2010. Over time, Germany has consistently met its legislated targets ahead of schedule, and appears poised to outdo itself again in the next years. The goal by the current centre-right government of Chancellor Angela Merkel is to draw at least 35 percent of production from renewables by 2020. The opposition parties claim that 40 percent or even more is realistic.

Today, wind and biomass are the pillars of Germany's renewable sector. The main driver of the 2011 development, however, has been photovoltaic -- in a country that is as sunny as the state of Alaska.

The real change came in the photovoltaic sector, where output almost doubled -- up more than 76 percent since 2010.

The BDEW saw two reasons for the boost in new installations: Equipment prices have plummeted by 50 percent since 2006, reflecting more competition, and the federal government decided against a planned cut in subsidies for private solar-power generation. Just recently, Deutsche Bank, a largely German bank, gave German renewable energy and climate policy high marks and rates Germany's feed-in tariffs as "best in class."

In conclusion, the introduction of coal seam gas benefits no one but the foreign owned export industry. Even the former head of Woodside Petroleum, Don Voelte, said earlier this year that NOT taking his company down the coal seam gas path was one of his proudest moments and that he would sleep more easily at night.

I hope the NSW government will be able to say the same.

Reference

Tyndall Centre For Climate Change Research, (2011)

Shale gas: a provisional assessment of climate change and environmental impacts: A research report by The Tyndall Centre University of Manchester
www.tyndall.ac.uk Accessed September 2011.