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SUBMISSION INTO THE INQUIRY INTO UNCONVENTIONAL GAS IN VICTORIA

INTRODUCTION

I am writing to express my strong opposition to the introduction of an unconventional gas industry (I will use the term Coal Seam Gas (CSG) in my submission.) into Victoria. For a period of years I have been following the development of CSG in Queensland and New South Wales and I have been horrified by the damaging effects CSG has on the health and wellbeing of the local community, the miners themselves, the surrounding environment and the surrounding surface waters and groundwater. In this particular submission, I will focus on water usage associated with CSG and its concomitant problems. I will then introduce evidence from the latest United Nations (UN) report on global water issues to demonstrate that in this day and age we cannot afford to be introducing a water intensive industry into Victoria when water stress is increasing globally day by day. This will be followed by a series of examples from different overseas countries which are currently experiencing extreme water stress in order to highlight that if we do not act now to preserve our water resources, it may be too late in another 10 or 20 years.

CSG AND WATER USAGE

- Coal seams contain both water and gas. In order to extract the gas, a large amount of water must be pumped out of the coal seam.
- This extracted water, known as 'produced water', has high saline levels as well as other toxic compounds and heavy metals.
- The extraction of produced water affects water levels in adjoining aquifers and there can be a drawdown in intermediate and deep groundwater.
- The actual production of CSG requires massive amounts of water, which come from surface waters or underground aquifers. Yet again, the use of this water can have a significant effect on the surrounding environment and ecosystem, through lowering water quality and depleting aquifers.
- There is no safe way to dispose of wastewater. This means the water must be stored in tanks or holding ponds until it can be removed to a treatment facility.
- The difficulties of disposing of wastewater can lead to contamination of surrounding waterways, especially where wastewater is directly discharged into surface waters.
- Even when wastewater is 'treated' it contains significant levels of ammonia, cyanide and boron.
- In January, 2015, AGL and its contactor, Transpacific Industries, discharged water from CSG wells directly into Hunter Water's sewage network, even though Hunter Water had made it very clear, it would NOT accept wastewater from CSG activities.

Despite being found not in breach of pollution licence conditions by the New South Wales Environment Protection Agency (EPA), this flagrant disregard for the correct disposal of produced water, demonstrates that companies involved with CSG cannot be trusted to act in the best interests of the public or the environment.

- It is the risk of water contamination that is one of the most serious concerns of CSG production, both to surface waters –rivers, creeks and lakes- and groundwater systems, including aquifers and drinking wells.
- Contamination can come from fracking fluids, which contain hundreds of chemical additives, drilling, fluids, methane, wastewater and solid waste.
- Contamination may take the form of spills, leaking of fluids and wastewater from the wells and pipes, the discharge of insufficiently treated wastewater and the direct movement of methane, fracking fluids or wastewater upwards through the rock body.
- Water contamination can lead to serious health impacts on aquatic and terrestrial wildlife, livestock, vegetation, as well as the local community.

In view of the vast amounts of water used in CSG, the possibility of contamination of the surface and groundwater, the difficulties of disposal of 'produced water', I cannot conceive of a government willingly acquiescing to the introduction of such a potentially dangerous industry into Victoria, especially in view of the 2014 report by the Intergovernmental Panel on Climate Change (CC) which makes it very clear that we are now on the cusp of runaway CC and at the forefront of that CC will be severe water stress as the following reports make clear. It is for this reason, as well as the aforementioned, that I object in the strongest possible manner to the introduction of CSG into Victoria.

THE UNITED NATIONS WORLD WATER DEVELOPMENT REPORT 2015

In March, 2015, the UN released its annual report on world water resources. The report highlights the fact that the world could face a 40% shortfall in water in just 15 years, unless countries dramatically change their water use. Already many underground aquifers are running low, while rainfall patterns are predicted to become more erratic with Climate Change (CC). The report highlights the worrying trend that just as the demand for water is increasing, simultaneously reserves are dwindling and stresses that this reduction of water resources will lead to crop failure, the breakdown of ecosystems, the collapse of industries, worsening disease and poverty and increased violent conflicts over access to water. The report makes it clear that economic decisions can no longer be made in a vacuum and that there needs to be recognition of the earth's finite resources.

'Global environmental degradation, including climate change, has reached a critical level, with major ecosystems approaching thresholds that could trigger their massive collapse...Despite efforts to create cooperation around environmental treaties and agreements, decisions directly affecting environmental issues are often taken outside of environmental policy circles. Any predominance of economic logic without the integration of social and environmental considerations...means that long term environmental objectives may be set aside in favour of short term economic goals.'

Fortunately, here in Australia there have been restrictions in place over the use of our surface and groundwater. However, if we do not heed the warnings of the UN and the following examples, we will doom ourselves to increasing water stress and its associated difficulties.

SAO PAULO

Sao Paulo, a mega-city of 20 million people in Brazil, is facing critical water shortages due to an on-going drought and the possibility, unthinkable as it is, exists that the city may run out of water by September, this year! The water crisis has been exacerbated by deforestation of the Amazon, an unwillingness of the government to introduce rationing, unsustainable water usage by agriculture and industry and an appalling lack of maintenance of water infrastructure, which means 30% of water, is lost to leakages. Residents of Sao Paulo now face the daily problem of having reduced water flow, water being cut off for hours or in many cases, days at a time, the unpleasant experience of having effluent being discharged through their taps on occasion, as well as an increased risk of mosquito borne diseases, such as dengue fever, as a result of water being stored, when it is available, in poorly sealed bottles and containers. The water crisis also means that Sao Paulo may soon face the loss of electricity as much of the city's power relies on hydro-electric dams.

The water crisis in Sao Paulo was a serious wake-up call to me. It allowed me to put together the warnings of scientists about CC and give a human face to the suffering that will occur if we do not act wisely NOW!

INDIA

Currently, 54% of India faces high to extremely high water stress. Concurrently, India is also facing one of the greatest groundwater crises on the planet. Recent studies reveal that Northern India is home to the most quickly depleting aquifers in the world, with farmers extracting so much water, there is the possibility the aquifers could collapse and with it, the supply of potable water. Already, available water is often polluted, and the future appears dire as the national supply is predicted to fall 50% below demand by 2030.

I cannot conceive all the implications of the above facts. Living here in Australia, I take for granted, the fresh, clean, water that daily falls from my tap. However, this is yet another example of increased water stress and yet another reason why I firmly believe that we need to do everything possible now, to safeguard our surface and groundwater supplies.

CALIFORNIA

California, one of the world's largest economies, is now in the fourth year of a mega-drought, with 93% of the state experiencing drought, ranked 'severe' or worse. As a result of the drought, low snow packs –in 2015, the snow pack was only 5% of the historical average-, which previously replenished water reservoirs, and heavy reductions in water allocations by the State's water management, farmers are turning to groundwater to supplement their water needs. Unlike Australia, there are no restrictions on the groundwater that can be accessed from an owner's property and now California, like India, is facing, rapidly

diminishing supplies and massive land subsidence. In the words of Jay Famiglietti, senior water scientist at the NASA Jet Propulsion Laboratory and a professor of Earth System Science at UC Irvine,

'As difficult as it may be to face, the simple fact is that California is running out of water... Right now the state has only one year of water supply left in its reservoirs and our strategic backup supply, groundwater, is rapidly disappearing.'

As I follow the daily reports on what is happening in California, I am staggered at the potential catastrophe that could unfold in one of the richest states in the world. However, it is certainly another wake-up call that cannot be dismissed and yet again, highlights the importance of maintaining the integrity of our water supplies if we are to stand any chance of combatting the rapidly emerging impacts of CC.

CONCLUDING COMMENTS

In May, 2015, the Bureau of Meteorology (BOM) declared an El Nino event and as of June 23, 2015, central and eastern tropical Pacific Ocean sea surface temperatures were more than 1 degree above average for the sixth consecutive week. At this stage the strength of the 2015 El Nino cannot be determined but international models surveyed by the BOM all suggest this will be a significant event. It is well known that El Nino brings with it the strong possibility of increased temperatures and decreased rainfall for the Eastern seaboard of Australia. In view of the fact that parts of Victoria, especially in the west are already under significant water stress, I reiterate, that the introduction of any new water intensive industry would be reckless and in fact, criminally negligent. We can no longer afford to place short term economic decisions before the long term viability of our state, and that means that we need to ensure the integrity of our water supplies.

The introduction of CSG into Victoria is unacceptable at this time and place. We need to be planning for our future, a future in which our energy needs are met by renewable energies and not coal and gas. I ask that you place CSG in a global perspective and consider the importance of water to our long term needs. As has been stated many times before, you cannot eat coal, you cannot drink gas and right now we need to be protecting our water and our farmlands so that there is the possibility of a future for our children and our grandchildren.

REFERENCES

The United Nations World Water Development Report 2105: Water for a Sustainable World

California has about one year of water stored. Will you ration now? Jay Famiglietti, Los Angeles Times, 12.3.2015

www.peakoil.com/forums/environment

www.lockthegate.org.au

www.quitcoal.org.au