

# Protecting our farms; protecting our water

*Regulating the coal seam gas industry*



## Protecting our farms; protecting our water – regulating the coal seam gas industry

*The Greens are calling for a moratorium on all coal seam gas extraction and promise to introduce environmental laws to protect productive farmland and precious water supplies from harm.*

The rapid expansion of the coal seam gas industry in Australia's rich farming regions poses significant risks to agricultural production and underground water supplies.

The CSG industry is planning to drill up to 40,000 wells in Queensland by 2030, taking a minimum one hectare each of prime agricultural land each. CSG in New South Wales is starting to boom, with Victoria, South Australia and Western Australia next in line. Yet there are many critical unanswered questions about its broader impacts which have alarmed farmers who fear that their livelihoods and the country's food security may be put at risk.

Australia has just four per cent good quality agricultural land. The Greens believe that in this time of global food insecurity any threats to Australia's food bowl should be treated with great caution. Similarly, risks of contamination or depletion of the water table in this region have serious consequences for the region and beyond. The expansion of the CSG industry also poses serious harm to a range of endangered species and over four thousand hectares of endangered vegetation in Queensland alone. And it's no climate solution as the methane produced will dramatically increase Australia's greenhouse gas emissions.

The Greens will move to amend our national environmental laws to ensure that coal seam gas (CSG) extraction does not proceed at the expense of food production, water security, our endangered species or the climate.

## The Greens' proposals

The Greens are calling for a moratorium on new coal seam gas approvals until there is full scientific understanding of the impacts on groundwater, food security, rural communities, threatened species, the climate and the Great Barrier Reef, and adequate environmental protections are in place.

A recent Galaxy poll of 1,048 people shows 68 per cent of Australians support a moratorium on coal seam gas until the full health and environmental impacts of disrupting water aquifers are known. (19-21 August 2011 [http://greensmps.org.au/webfm\\_send/585](http://greensmps.org.au/webfm_send/585) )

A motion for a moratorium on coal seam gas was moved by Senator Larissa Waters in on 13 September 2011. It was defeated when Labor, the Liberals and the Nationals all voted against it.

On 24 August 2011, Senator Waters introduced the *Landholders' Right to Refuse (Coal Seam Gas) Bill 2011* designed to provide Australian landholders with the right to refuse the undertaking of coal seam gas mining activities on food producing land without prior written authorisation. The intent of the bill is to allow farmers to say no to coal seam gas mining on their land to protect the 4% of Australia's good quality agricultural land from all other inconsistent land uses. The bill was debated on 22 September. Both Labor and the Coalition indicated they would not support the bill when it comes to a future vote. This would effectively allow the mining industry to continue to ride rough-shod over Australian farmers.

Senator Waters has called on federal Environment Minister to suspend and reconsider his approvals for the massive dredging at Gladstone for the three LNG facilities (Santos, QGC and APLNG) and refuse two other proposed LNG facilities (Arrow and LNG Ltd). The federal and Queensland governments have committed to undertaking a strategic assessment of cumulative impacts of future (post 2013) CSG and coal export related developments on the Great Barrier Reef World Heritage Area, following the 'extreme concern' expressed by UNESCO, the World Heritage body. The proliferation of LNG facilities and the dredging of 46 million cubic metres of seabed, akin to an underwater open cut mine, threatens to compromise the Reef's Overall Universal Value.

## Background

### ***How CSG extraction works***

Underground coal beds are generally immersed in water, and the water pressure keeps the methane generated by the coal trapped in the bed. Methane is extracted by drilling a bore down to the bed and pumping out water to ease the pressure and release the methane. The coal bed may be deliberately fractured (or 'fracked' in mining parlance) to increase the flow of gas. The methane travels up the bore and is piped off to be liquefied and sold. The water is a waste product as discussed below.

### ***Where is it occurring?***

CSG is most established in Queensland, predominantly in the Surat Basin (in southern Queensland from Toowoomba in the east to past Roma in the west), where annual agricultural production is worth \$1.5-2

billion<sup>1</sup>. The Surat Basin is high quality farming country where wheat, sorghum, barley, cotton, melons, sheep, cattle, and a range of other crops and livestock are raised. The CSG will be extracted, compressed and pumped by pipeline north to Gladstone where it will be liquefied and exported. There are also plans for 8,000 coal seam gas wells in Central Queensland's Galilee Basin.

CSG is now extending into New South Wales, Victoria and soon South Australia and Western Australia. Wherever there is coal, there is coal seam gas.

## **Problems with CSG mining**

### ***Impacts on underground water***

CSG extraction involves pumping enormous quantities of water out of coal bed aquifers. If those aquifers are connected to other aquifers, or inadvertently become connected from miners hydraulically fracturing ('fracking') coal beds, water may travel from those aquifers into the empty spaces left in the coal beds. This would cause the water table to drop and could mean that water is unavailable for other purposes such as farming. It is not clear whether it would even be possible for miners to 'make good' as required by current State Government policy.

The National Water Commission in its Coal Seam Gas and water position statement December 2010 acknowledge that not enough is known about the inter-connectedness of our underground water resources to know whether coal seam gas mining is safe:

*"The Commission is concerned that CSG development represents a substantial risk to sustainable water management given the combination of material uncertainty about water impacts, the significance of potential impacts, and the long time period over which they may emerge and continue to have effect."*

*"Potential impacts of CSG developments, particularly the cumulative effects of multiple projects, are not well understood."*

### ***Greenhouse impacts***

Methane is a far more potent greenhouse gas than carbon dioxide. Emissions are created by extracting, piping, compressing, liquefying, flaring and venting the gas, and by land clearing to make way for pipes, roads and wells. There may also be unknown emissions from leaking wells or methane escaping via nearby bores or other openings that connect to the underground hydro-geological network. Methane has been known to escape in unpredictable ways in areas where mining has disturbed the ground.

The CSG industry has made claims that coal seam gas has much lower carbon emissions than coal mining, and therefore is safer for our climate. The truth is we don't have yet comprehensive Australian studies to measure

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<sup>1</sup> The Queensland Government's 2010 publication Surat Basin Future Directions Statement (p.19) reported that the Surat Basin was responsible for 18.2% of Queensland's agricultural production. Assuming the same proportion in 2008-09, it would have been worth \$1.71 billion.

carbon emissions from CSG over the course of its entire life cycle, from well drilling through to export. The Greens suspect that CSG will not be that much cleaner than coal, and as is a dangerous distraction from renewable energy sources that have already been established as low-emission, such as wind and solar.

### ***Surface disturbance, threats to endangered flora and fauna***

The CSG industry is likely to drill up to 40,000 CSG wells in Queensland. Each one requires one hectare of cleared land around it, an access road, and there will be a network of pipes and pumping stations to transport the methane to Gladstone some 800kms away. This has the potential to make significant areas of prime agricultural land unavailable for food cultivation. It also threatens a host of rare, vulnerable and endangered plants and animals, including the Bridled Nail-Tail Wallaby, the Grey Falcon, the Brigalow Woodland Snail, koalas, and up to 4415 hectares of endangered vegetation, including rare acacias and eucalypts. Dredging for the new wharves and pipeline proposed for Gladstone will jeopardise a World Heritage zone inhabited by endangered dugongs, turtles, and dolphins.

### ***Waste Water and Salt***

The water brought to the surface through CSG extraction has a high concentration of salt and sodium that renders it useless for many applications<sup>2</sup>. Just one CSG operator, Qld Gas Corporation, has stated that it will produce 4.6 million tonnes of salt over its 20 year project<sup>3</sup>.

The Queensland Government has said evaporation ponds can no longer be used to dispose of this water, but it is not clear how it will be managed. Some miners use reverse osmosis to purify the water, but this results in 60% of the water being cleansed and 40% remaining with a much higher concentration of salt and sodium than it began with. Some miners are examining the possibility of reinjecting it underground, but this could result in contamination of groundwater if in fact the coal bed aquifer is not discrete from groundwater aquifers. This leaves a massive disposal problem<sup>4</sup>.

### **What can you do?**

The Greens are calling on all Australians to join the national movement against the risky coal seam gas industry. Our support is helping local community groups to find their voice and join forces with national campaigns against CSG such as the Lock the Gate Campaign. A recent national rally on Sunday 16 October 2011 saw thousands of Australians across the country turn up to say No to coal seam gas.

The Greens continue to represent community concerns on CSG at the local, state and national level, and are taking action in Parliament to stop the headlong rush for coal seam gas, for the sake of our environment, our farmland and for coming generations.

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<sup>2</sup> <http://www.dip.qld.gov.au/statewide-planning/queensland-coal-seam-gas-water-management-policy.html>

<sup>3</sup> Submission 259, QGC Submission to the Parliament of Australia Senate Inquiry into the Management of the Murray Darling Basin – Impact of Mining Coal Seam Gas, July 2011.

<sup>4</sup> <http://www.dip.qld.gov.au/resources/report/coal-seam-gas-water-discussion-paper.pdf>