Submission No 68

INQUIRY INTO WATER AUGMENTATION

Organisation: Joint submission by Armidale Action on Coal Seam Gas and Mining, New England Greens Armidale Tamworth, New South Wales National Parks Association (Armidale branch) & Knitting Nannas New England North West

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Submission to the Inquiry into the augmentation of water supply for rural and regional New South Wales

A joint submission on behalf of

Armidale Action on Coal Seam Gas & Mining &

New England Greens Armidale Tamworth &

New South Wales National Parks Association (Armidale branch) &

Knitting Nannas New England North West

New England Greens Armidale Tamworth (NEGAT) , Armidale Action on Coal Seam Gas & Mining (AACSG&M), New South Wales National Parks Association (Armidale branch) (NPA Armidale) and (KNNENW) compliment the Government on the commissioning of the inquiry and are grateful for this opportunity to contribute.

Considerations in this submission fall into three parts:

a) the omission of climate change in the terms of reference
b) the need to ensure the evaluation of a range of significant risks specific to the reinjection of waste water used in CSG and mining in the north-west of NSW
c) a suggestion for a more holistic approach, which acknowledges the complexity of ecosystems

a) The omission of any consideration of climate change in the terms of reference is a severe limitation on the usefulness of the inquiry. In particular, climate change will affect both requirements for water use and storage and incidence and severity of flooding.

b) Significant risks associated with reinjected water which require evaluation in the North West region of New South Wales include:

    a. Seismic risk: we note that the NSW Chief Scientist Mary O'Kane, in a report on coal seam gas in 2014, observed that seismic activity could occur from aquifer injection. The Federation of American Scientists reported there could be a link between seismic activity and aquifer injection in southern and western USA.
    b. The reinjection of waste water from coal seam gas and coal mining and in the north-west of New South Wales is of grave concern. As this is the recharge zone of the Great Artesian Basin, NEGAT, AACSG&M, Nat Parks Armidale and KKNENW are convinced that any water injected must be of drinking quality to protect the water supplies of the future. The chemistry reinjected should be complimentary to the existing environment for example the ph of Bohena creek in the Pilliga forest in an uncontaminated state was 6.64 while the ph reading of produced water from Santos' reverse osmosis plant was 8.67 (p. 23 'The Plundering of Pilliga and Leard Forests')

c. Impacts on biodiversity: understanding of groundwater systems is rudimentary. Stygofauna recently discovered in aquifers in *The Pilliga feed on bacteria and help to maintain water chemistry and keep groundwater clean. They also keep flow-ways open through their burrowing activities, which then helps surface water, such as rivers and streams, to flow smoothly (p.30 '*The Plundering of Pilliga and Leard Forests') . The effect of reinjected waste water on such creatures is simply unknown.

c) NEGAT and AACSG&M urge the consideration of a holistic approach to environmental management for example native vegetation management to slow the flow of water in water courses and maximise water use. This possibility has been publicised by Peter Andrews, author of *Back from the Brink.*

Finally, AACSG&M, NEGAT and NPA Armidale are of the opinion that, if money is derived from the mining of coal or coal seam gas, any suggestion that reinjected waste water should be paid for is bizarre.

References: 'Aquifer plan risks earthquakes', Mike Foley The Land p.3 10 September, 2015

'The Plundering of Pilliga and Leard Forests and the Surrounding Farmlands,' Pat Schultz

Jan Brahe: Armidale Action on Coal Seam Gas and Mining,

Elizabeth O'Hara: New England Greens Armidale Tamworth

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