To the Independent Planning Commission.

From: Stuart Murray
PO. Box 371
Narrabri NSW 2390

Re: Submission **OBJECTING** to the Proposed Santos Narrabri Gas Project

To The Commissioners.

I am Stuart Murray, a retired agronomist now cattle farmer in the Narrabri Shire with a property approx 10KM to the east of the Narrabri Gas Project.

Over the last couple of years eastern Australia has experienced the impacts of climate change with unprecedented frequent and severe weather events. We have always experienced these events but we now know that the build up in greenhouse gas emissions by burning fossil fuels has made the situation worse.

Scientists have been telling us this for 30 years. On average I know that droughts will get worse and our business along with other agricultural businesses will be worse off as a result. Unfortunately our politicians have largely ignored the climate scientists preferring to take their advice from the fossil fuel industry.

It is lunacy to even consider the approval of the Narrabri Gas Project as there are better options that do not have the negative impacts of this project. We need climate action now and the rejection of the Narrabri Gas project would be a step in the right direction.

It is not unusual for Santos to downplay and trivialise the negatives of this project, salt and fugitive methane emissions are two examples.

The following are only three examples of the extraordinary lengths the pro gas lobby go to justify the Narrabri Gas Project.

I will leave the numerous other reasons why the NGP should not proceed to others

Firstly, and possibly something few if any, will present to the IPC panel.

During the IPC Meeting with Santos, Mr N Fox (Santos) while presenting to the panel commented on fugitive emissions said: '***CSIRO research included a 17,000-head cattle feedlot in NSW. If all the proposed 850 wells were operating concurrently, methane emissions from the project would be significantly less than a feedlot of this size***'

It is not uncommon for a comparison, such as this, to be made between fugitive methane emissions from GSG projects and methane emissions from cows. They do this to demonise the cattle industry and create the illusion that the CSG is not so bad after all. In 2014 the CSIRO released measurements of methane leaks from 43 wells which would have been chosen by the gas industry for study. The results found the leaks amounted to 0.02% of lifetime production, well below the approximately 2% leakage rate where gas is likely to be cleaner than coal. The press releases included the **Financial Review** trumpeting : Coal Seam Gas releases very little greenhouse gas, CSIRO finds.

The Australian had fun trivialising the issue: CSG leaks equal to that of cows. This line was plucked straight from oil and gas lobby group **APPEA's press release**, comparing daily fugitive emissions of methane to that of four cows. The **Narrabri paper the Courier** printed the same story and later published a full page advertisement by the Yes to Gas supporters obviously using information from the APPEA press release.

To make matters worse the CSIRO scientists themselves went to great lengths to explain the limitations of their study which did not include measuring methane emissions that occur from other downstream parts of their infrastructure, but their qualifications were conveniently omitted.

The pro gas supporters, including Santos, seize on this comparison to help justify the approval of the NGP.

its support for the project. Some shires within this 150 kilometres radius such as Moree, Coonamble, and Coonabarabran are strongly opposed to coal seam gas and therefore less likely to accept the disposal of salts in their waste facilities.

Santos has signed a MOU with an American Company to carry out a study for a potential plant at Narrabri that could produce sodium bicarbonate from the brine. Santos has had 9 years to prepare a strategy for the disposal of these salts but have failed to do so.

It should also be noted that over the life of the project a total of approx 11,400 tonnes of these salts will have been deposited on irrigation lands and into Bohena Creek.

[Ref: Calculated from information in Santos's EIS Appendix G2, Concept irrigation design Page 28.]

Thirdly The Department of Planning Assessment report provided to the IPC states '**on balance, the Department has concluded that the project is in the public interest and is approvable subject to strict conditions'.**

If the recommendations made by the Chief Scientist Mary O'Kane, to our Government to ensure the development of a world class gas industry that is safe and sustainable have not been fully implemented, having almost six years to do so, then given this track record the conditions and regulations recommended in the Department's Assessment will not be implemented either.

On balance the project should not proceed as there are other options such as importing gas which do a far better job of satisfying the needs for gas eg supply and downward pressure on price. This option also avoids all the negative impacts of the Narrabri Gas Project and you would not need **strict conditions.**

The project is not in the public interest when better options are available and combined with the fact that the majority of people do not want the project means the project should not be **approved.**

If this project is approved it will be a blow to democracy and destroy our trust in these processes.

Stuart Murray

Other uses

The verb 'to ruminate' has been extended metaphorically to mean to ponder thoughtfully or to meditate on some topic. Similarly, ideas may be 'chewed on' or 'digested'. 'Chew the (one's) cud' is to reflect or meditate. In psychology, "rumination" refers to a pattern of thinking, and is unrelated to digestive physiology.

Ruminants and climate change

Methane is produced by a type of archaea, called methanogens, as described above within the rumen, and this methane is released to the atmosphere. The rumen is the major site of methane production in ruminants.[30] Methane is a strong greenhouse gas with a global warming potential of 86 compared to CO_2 over a 20-year period.[31][32][33]

In 2010, enteric fermentation accounted for 43% of the total greenhouse gas emissions from all agricultural activity in the world,[34] 26% of the total greenhouse gas emissions from agricultural activity in the U.S., and 22% of the total U.S. methane emissions.[35] The meat from domestically-raised ruminants has a higher carbon equivalent footprint than other meats or vegetarian sources of protein based on a global meta-analysis of lifecycle assessment studies.[36] Methane production by meat animals, principally ruminants, is estimated 15–20% global production of methane, unless the animals were hunted in the wild.[37][38] The current U.S. domestic beef and dairy cattle population is around 90 million head, approximately 50% higher than the peak wild population of American Bison of 60 million head in the 1700s[39], which primarily roamed the part of North America that now makes up the United States. However, methane breaks down into carbon dioxide, which is absorbed by plants, which are eaten by animals. This process will form a circle, meaning that a constant number of ruminants does not alter the amount of methane in the air. This circle contains no new source of carbon, therefore it is balanced. Reducing the number of cows will reduce the total methane in the air due-to-cows, but this will not stop CO2 levels rising.

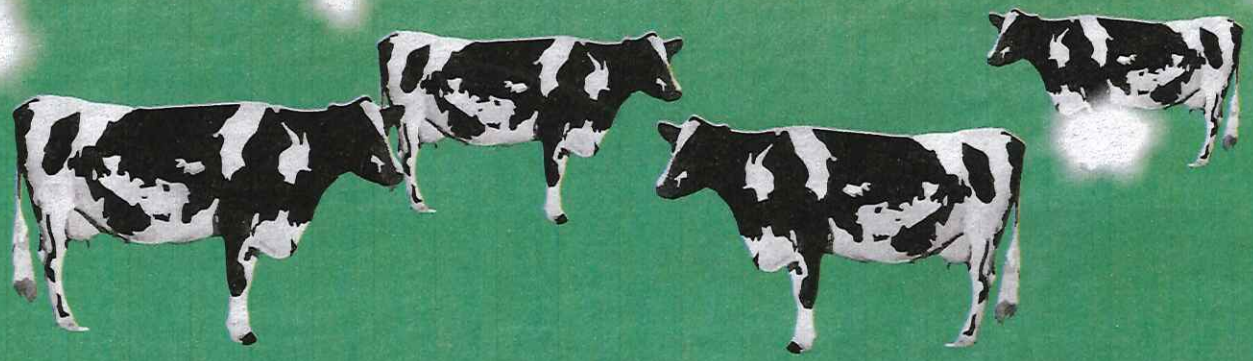
See also

- Monogastric
- Pseudoruminant

References

1. "Rumination: The process of foregut fermentation" (http://www.ultimateungulate.com/cetartiodactyla/Rumination.html).
2. "Ruminant Digestive System" (http://faculty.fortlewis.edu/LASHELL_B/Nutr2-Rumdigestion.pdf) (PDF).
3. Fernández, Manuel Hernández; Vrba, Elisabeth S. (2005-05-01). "A complete estimate of the phylogenetic relationships in Ruminantia: a dated species-level supertree of the extant ruminants". *Biological Reviews*. **80** (2): 269–302. doi:10.1017/s1464793104006670 (https://doi.org/10.1017%2Fs1464793104006670). ISSN 1469-185X (https://www.worldcat.org/issn/1469-185X). PMID 15921052 (https://pubmed.ncbi.nlm.nih.gov/15921052).
4. Fowler, M.E. (2010). "Medicine and Surgery of Camelids (https://books.google.com/books?id=Z2XBSPBZU3EC&printsec=frontcover#v=onepage&q&f=false)", Ames, Iowa: Wiley-Blackwell. Chapter 1 General Biology and Evolution addresses the fact that camelids (including camels and llamas) are not ruminants, pseudo-ruminants, or modified ruminants.
5. Richard F. Kay, M. Susana Bargo, Early Miocene Paleobiology in Patagonia: High-Latitude Paleocommunities of the Santa Cruz Formation (https://books.google.com/books?id=lFEgAwAAQBAJ&printsec=frontcover#v=onepage&q&f=false), Cambridge University Press, 11/10/2012
6. "Suborder Ruminatia, the Ultimate Ungulate" (http://www.ultimateungulate.com/cetartiodactyla/Ruminantia.html).
7. Ditchkoff, S. S. (2000). "A decade since "diversification of ruminants": has our knowledge improved?" (https://web.archive.org/web/20110716073320/https://fp.auburn.edu/sfws/ditchkoff/PDF%20publications/2000%20-%20Oecologia.pdf) (PDF). *Oecologia*. **125** (1): 82–84. Bibcode:2000Oecol.125...82D (https://ui.adsabs.harvard.edu/abs/2000Oecol.125...82D). doi:10.1007/PL00008894 (https://doi.org/10.1007%2FPL00008894). PMID 28308225 (https://pubmed.ncbi.nlm.nih.gov/28308225). Archived from the original (https://fp.auburn.edu/sfws/ditchkoff/PDF%20publications/2000%20-%20Oecologia.pdf) (PDF) on 2011-07-16.

In 2014 the CSIRO studied methane emissions from 43 CSG wells in NSW and QLD - CSIRO found that the amount of methane emitted from the 43 wells was the same amount per year as would be emitted from 4 farting cows



THE NARRABRI GAS PROJECT

ABOUT AS DANGEROUS AS A PADDOCK FULL OF COWS

YES2GAS
FROM THE PILLIGA