

Submission on Santos EIS for the Narrabri gas project.

Apart from all the other environmental damage from the Santos proposal we are focussing on the greenhouse gas contributions to global warming from this project on these main areas:

- (a) As coal seam gas, otherwise called unconventional gas, it takes more energy to extract than does conventional gas and since there is more than enough conventional gas to kill life on the planet, this gas must remain underground for life to continue.
- (b) Coal seam gas fugitive emissions in excess of 2% make lifecycle emissions from unconventional gas a worse global warming contributor than coal. All reliable measurements of fugitive emissions are well above 2% of production.
- (c) Santos has ignored the contribution from fugitive emissions despite the industry having a fairly clear estimate of their magnitude. More below.
- (d) The amount of carbon that can be emitted before reaching either 1.5degC or 2degC of global warming is well defined. For gas, Australia will have reached 1.5degC global warming contribution by 2020 and 2degC global warming contribution by 2024. We have a moral obligation to keep our gas underground after 2020. There is then no point in starting CSG production in the Pilliga regardless of what Santos might say – they have been warned years ago.
- (e) Australia has behaved as an international pariah at climate greenhouse gas emissions conferences for decades to the extent that there is no international agreement on the geographical distribution of unburnable carbon. This does not absolve us of responsibility for passing on a habitable planet to future generations. We will use the work of McGlade & Ekins (1) to inform Australia's limits of emissions to the atmosphere. Our responsibility is to store our carbon out of the atmosphere regardless of who burns the carbon we dig up.

B) Expanding on point (b) above we have FLIR imagery of massive CH<sub>4</sub> emissions from compressor stations in the Chinchilla area of Qld adding to the credibility that the emissions are similar or higher than whole of gasfield measurements that have been carried out in the USA (see Dana Cauton also Gabrielle Petron). Also we have imagery of large emissions from high point vents on the water gathering lines. Though relatively simple to do (the Americans can do it) measurements of these large fugitive emissions have been studiously avoided in Australia. So until the proponents of this project do the fugitive measurements that they are avoiding they cannot object to us estimating fugitives from our measurements in Qld and actual measurements from gasfields in USA.

So using 6% of production as an estimate of fugitive emissions and the Santos 200TJ/day gas production and the mid range 20year GWP factor of 33 gives 12MtCO<sub>2</sub>e/year from the proposed Pilliga gasfield. It is difficult to decipher how Santos has apportioned their emissions but just fugitives alone are 11 times their estimates.

If the crude emissions from burning the gas are added to the 25year fugitives total you end up with 393MtCO<sub>2</sub>e over 25 years at GWP 72 and 12% fugitives down to 137MtCO<sub>2</sub>e over 25 years for GWP 33 and 6% fugitives which is significantly different from Santos' 15.5MtCO<sub>2</sub>e.

There is no research that shows unconventional gas has less life cycle emissions than coal, coal is too emissions intensive to use thus so is gas and it's time to abandon the Santo Pilliga project.

(D) Expanding on (d)

Using the reference (1) the amount of Australian gas (conventional) allowed in the atmosphere for a 50/50 chance at 1.5degC global warming is 36318PJ. At currently projected extraction rates (BREE) we will have reached this limit in 2020.

For a 50/50 chance at 2degC of global warming we'll have reached the 72635PJ of gas in 2024.

This makes opening up an unconventional gasfield stupid when there are conventional supplies (eg Bass Strait) that will become stranded once we hit the limits.

We have seen these limits coming for a long time, say 50 years now and done nothing and we still have to fight these stupid proposals.

I am able to provide the calculations behind the above statements and the FLIR video of emissions from compressor stations and high point vents on the water lines. These are only one of the reasons why this project should be scrapped and resources diverted to renewable energy transformation.

Alan Roberts

Climate Change Action Network

1. "The geographical distribution of fossil fuels unused when limiting global warming to 2 degC" Christophe McGlade & Paul Ekins" doi:10.1038/nature14016