Maules Creek proposed coal mine: greenhouse gas emissions
By Dr Ian Lowe

In my earlier submission regarding the Boggabri Coal Mine, I estimated that the overall greenhouse gas (GHG) emissions resulting from the proposed mine would be about 20 to 25 million tonnes of carbon dioxide equivalent per year.

On the new data now provided, with an additional expected 13 million tonnes per year of raw coal being mined and 10.8 mt/year product being exported, the GHG burden will be significantly greater. The proponent's own estimate, which certainly does not inflate the final impact, gives the total impact as about 30 million tonnes of CO_2 equivalent per year, or some 630 million tonnes for the period 2012-2032. To put these figures in perspective, the total of the emissions from the entire country of New Zealand is about the same – 32.6 mt in 2007. The State of NSW now emits about 150 mt/year and the likely 2020 target will be lower. The response currently before the Commonwealth parliament aims at a 5 per cent reduction if there is no concerted international action, with reductions in the range 15 to 25 per cent if there is international agreement to tackle the problem of climate change seriously. So the expected reduction in emissions from NSW if the national goal is uniformly allocated will be in the range from 7.5 to 37.5 million tonnes per year. In that context, even the proponent's estimate of the local emissions, Scope 1 + Scope 2, of about 0.25 mt/year is a significant extra burden for the State. The Scope 3 emissions, unavoidably produced by the use of the coal by its customers, will be somewhere in the range from about 20 to 27 per cent of the State's total emissions budget in 2020. Put another way, the Scope 3 emissions from this mine alone are comparable in scale to the most ambitious State reduction target being canvassed at this stage. So NSW would need to double its reduction within the State to undo the damage that would be done to the global atmosphere if this mine were allowed.

The EIS includes assertions that the overall impact on the global climate would be minuscule: "an annual increase in average global temperature of 0.00003 C". This is a specious argument. First, it is based on an assumption that doubling the atmospheric concentration of carbon dioxide would raise the average global temperature by 2.5 C, where the science is now warning that the increase could be much greater. The "best guess" for a doubling of the pre-industrial level is now 2.9, with a warning that it could be in the range up to 4.4 C. The Australian Academy of Science said last year that global emissions need to peak by 2020 and then be

reduced rapidly to give a 50:50 chance of keeping the increase below 2 degrees. Allowing the atmospheric concentration to double runs a serious risk of passing a critical “tipping point” and precipitating catastrophic interference in the climate system. Even if this doesn’t happen, the crucial question is not the average **annual** increase in global temperature due to this project, but its **total** impact. Being charitable and using the proponent’s figures, 0.00003 C per year for twenty years is 0.0006 C overall if the mine stops operating in 2032. Dr Malte Meinshausen, Senior Research Fellow at the Potsdam Institute, gave evidence as an expert witness in a recent case in the Queensland Land and Environment Court about the direct measurable impacts of a temperature increase on that scale. He estimated that 0.0006 C increase in average temperature would cause an increase in sea level that would flood an additional 23,000 homes around the Pacific rim by 2080, for example.

The crucial point that needs to be considered is that the science now shows that carbon dioxide released by the burning of fossil fuels remains in the atmosphere (and continues to change the global climate) for a very long time. While it has been generally accepted that a significant fraction will still be in the atmosphere 200 years after being released, there is now evidence that as much as 35 per cent of the CO_2 could still be there in 1000 years. The mine effectively would transfer into the atmosphere huge amounts of carbon that are now safely sequestered beneath the ground. So the damage to the climate and sea level from a large coal mine would stretch far into the distant future.

It should be added that the Maules Creek proposal is additional to the Boggabri mine, which has applied to be allowed to expand its output to 7 mt/yr. That should be a reminder that approval of a mine does not set limits, as in this case the proponent has come back with a request to expand its output dramatically. A proposal for another mine (Tarawonga), very near these two, is also being developed with the intent of producing a further 3 mt/yr. If all three proposals were to go ahead, the total impact of burning the coal would be greater than 60 mt/yr of CO_2-equivalent. To put the potential impacts into a global perspective, if the Maules Creek mine were a nation, it would rank 75th in the world for total emissions, ahead of the greenhouse gas emissions of 140 entire countries. If all three proposals were approved, the total greenhouse gas impact of the mining province would rank above all but 50 entire nations: more than such countries as Sweden, Hungary, Finland, Portugal and Norway, among the 165 it would exceed. So the proposals really are of global significance.