

23 February 2022

Submission to the New South Wales Government Independent Planning Commission
relating to the Narrabri Underground Mine Stage 3 Extension Project (SSD 10269)

We write to provide a climate science perspective on the potential extension of the Narrabri coal mine.

The Paris Agreement, a legally binding international treaty, requires signatory countries to strengthen the global response to the threat of climate change by “holding the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C”. The Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report, released on 9th August 2021, included estimates of how much more carbon we can release into the atmosphere if either the 1.5°C or 2.0°C global warming targets are not to be exceeded. These estimates are known as the “carbon budgets” for 1.5°C or 2.0°C global warming. For each warming level different carbon budgets can be estimated depending on the accepted level of risk of exceeding that warming level. The IPCC provides estimates for several levels of risk – for example, the global carbon budgets still available to be used to avoid 2.0°C with a 50% chance and, reflecting lower risk, an 83% chance of success (i.e., allowing for a 17% chance of failure to meet the target).

Warming target (relative to 1850-1900)	IPCC estimates of the remaining carbon budget (GtCO ₂) for a given chance of limiting warming to a given warming target. Years are calculated from July 2021 and are years before the carbon budget is fully spent at current emission rates	
	50% chance	83% chance
1.5°C	500 (11 years)	300 (6 years)
2.0°C	1350 (32 years)	900 (21 years)

The IPCC expresses carbon budgets in terms of billions of tons of carbon dioxide (GtCO₂). However, a helpful way to look at this is to estimate the number of years at current levels of annual emissions that will use up the carbon budget. Note, we expect the carbon budget to be used up more quickly if annual emissions continue to increase and more slowly if annual emissions are cut. We also note that the carbon budget is much smaller if a near 100% certainty is required, something that is required for the 2.0°C warming limit in the Paris Agreement.

This tells us that we have very few years of the carbon budget left at current levels of emissions to avoid 1.5°C or indeed 2.0°C. These numbers are lower than commonly reported in the media and in briefings which rely on the 50% chance.

Some have argued that we can afford to continue emitting carbon dioxide beyond these timeframes as, later in the century, it may be possible to offset emissions over the next decade or so by extracting carbon dioxide from the atmosphere and storing it securely. However, this approach relies on our ability to deploy costly and yet-to-be-proven carbon drawdown technologies on a massive scale. This would be a high-risk strategy to avoid dangerous climate change.

The implications of this are straightforward. There is no carbon budget left that can be spent by an extension of coal mining at Narrabri. If New South Wales wishes to achieve its goal of net zero emissions by 2050, or by 2030 as the science now requires, coal still in the ground must be left in the ground.



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