

**Submission
No 190**

SUSTAINABILITY OF ENERGY SUPPLY AND RESOURCES IN NSW

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Legislative Assembly Committee on Environment and Planning
Parliament House
6 Macquarie Street
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Re Inquiry into Sustainability of energy supply and resources in NSW

Dear Committee Members,

I am a scientist at the University of Sydney who has followed the climate change science for many years, and am making a submission because recent announcements from the International Panel on Climate Change (IPCC) are very relevant to your terms of reference. I am writing as an individual.

Recent announcements have given new focus in this area but have not been widely publicised and I thought it could be useful to make a submission.

The IPCC October 2018 IPCC "Summary for Policymakers" tells us that the current global National proposals for dealing with climate change would still lead to 3 or more degrees of warming, even though most countries signed the 2016 Paris Agreement to keep the maximum temperature down to 1.5 degrees of warming. The 2016 1.5 degrees agreement was done because analysis showed that the previous target of 2 degrees would be too damaging to be acceptable. The Paris Agreement response is clearly inadequate as the 2018 modelling of National current ambitions for climate change predicts a 3 degrees rise or more which is clearly much worse than 2 degrees of warming.

It is critical to address this urgently. The maximum warming is determined by the accumulated anthropogenic global emissions of CO₂ and other greenhouse gases as at the time we reach net zero emissions. One tonne emitted early in the industrial revolution is as damaging in the long term as one emitted today.

This is because much of the CO₂ remains in the atmosphere and ocean surface water for millennia. The IPCC 2018 report addresses this by looking at routes to achieving that target, and these are listed and discussed.

The report concludes that we have a global budget of about 600 gigatonnes left for further CO₂ emissions ever, in order to keep warming down to 1.5 degrees. The IPCC Summary presented a 2-stage path to achieve this: 1) to cut 45 percent from the 2010 annual levels by 2030, and 2) to reach 'net zero' emissions around 2050.

The 2030 target is needed to get emission levels down soon to stop further accumulation, and it allows some time to work out how to reach the final target by 2050. The target was not fixed as there are still uncertainties, including on amounts of greenhouse gases released from permafrost etc. as a result of warming, and the 2018 report gives estimates for those.

The relevance to this to the Re Inquiry into Sustainability of energy supply and resources in NSW is that energy supply is a major source of atmospheric CO₂ and a likely area for achieving the necessary reduction in emissions, and 2030 is well within the operating range of CO₂ emitting power plants built from now on. Indeed I find it hard to see how we can build more fossil fuel plants if we are to achieve net zero emissions by 2050.

It is also important to maintain and extend areas of native vegetation across the globe as these sequester carbon.

I raise both of these matters because climate change and energy supply are linked and the need to address climate change must be a factor in the NSW energy supply policy.

I find that the most people are not aware of the long term implications for climate change impact. The prediction is that 40% of anthropogenic CO₂ will still be in the atmosphere or ocean surface waters 1000 years later, and will influence climate for many thousand years (Solomon, Plattner et al. 2009, Knutti, Rogelj et al. 2016, Seneviratne, Donat et al. 2016). We will be suffering from the effects of the greenhouse gases already emitted for a very long time. We need to get it right this time.

References URL for the International Panel on Climate Change (IPCC) October 2018 IPCC "Summary for Policymakers. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>

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