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Dr Kathleen Wild  
DEA

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Good morning to the IPC Chair and Panel members (Graham Kirkby, Stephen OConnor, Wendy Lewin). Thank you for the opportunity to speak this morning regarding the Bylong Mine Project.  
Coal

I would like to first acknowledge the Wiradjuri people, traditional owners of this country and their ongoing connection to their land, water and culture. I pay my respects to their Elders past, present and emerging, and to any Aboriginal people here today.

I also recognise the other speakers today and their  
My name is Dr Kathleen Wild. real & valid concerns regarding the future of the Valley

I am a general practice registrar in Newcastle New South Wales and member of Doctors for the Environment Australia, and I speak representing that organisation today.

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DEA is a national non-profit organisation of Australian doctors and medical students. We work to preserve and maintain human health and wellbeing with respect to the environment. It is our stance that physical and mental health is indivisible from the health of the environment in which we live. We know we

Our primary concern with respect to Bylong is that coal mining expansion increases greenhouse gas emissions, drives climate change and global temperature rise with severe and predominantly negative health impacts that will be felt on a local and global scale.

~~DEA~~

The effect that coal has on human health has been well attested. Mining is an occupational hazard for those who work in the industry, with a risk of lung disease associated with workplace dust and particulate exposure. and local areas

The mining process exposes local areas to dust and particulate pollution, which again carries risks of lung and heart disease to those exposed, and I note that this has been evaluated in the Final Assessment Reports, <sup>so</sup> addressed

However by far the greatest public health risk associated with the extraction and combustion of coal, which has not been sufficiently evaluated in the FAR, is the critical contribution this activity has on greenhouse gas concentrations in the atmosphere.

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I will briefly discuss the health risks of climate change and why in respect to the latest information we have on climate projections, further expansion of coal mining and the associated greenhouse gas production represents a health risk to New South Wales.

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In 2009, the eminent medical journal the Lancet stated:

"Climate change is the biggest global health threat of the 21st century."

This health threat manifests itself in many ways that will affect New South Wales residents include the physical effect of heat stress, extreme weather events, changes in infectious disease patterns, food supply insecurity and increasing mental health distress.

*As doctors we know that we can treat one person at a time in our practices and hospitals but prevention through public health is better than a cure.*



SLIDE

One of the most direct effects that climate change will have on human health is the physical stress of increasing temperatures on the human body. More people pass away on very hot days. Those most sensitive to the physical effects of heat and most at risk of dehydration, kidney failure are the very young, very old and those with pre-existing medical issues. The elderly are exquisitely vulnerable to complications of dehydration like low blood pressure and falls, which can result in a variety of injury.

*Rural areas are more at risk with already poor access to services*

*kidney failure ✓*

SLIDE

The graph pictured shows the rising number of temperature-related deaths forecast over the coming century in pink, with a comparator of how that number can be reduced with appropriate action to moderate climate change.

The likelihood of extreme weather events such as cyclones, floods and bushfires is increased with climate change. These events have direct health risks due to the trauma from the initial disaster, but there are public health consequences in the aftermath. These can include lung and heart disease following a bushfire due to air pollution, infectious disease following floods, and disrupted access for routine health care needs in the wake of a disaster. Annual weather-related disasters have increased by 46% from 2000 to 2013. (Lancet countdown)

One example of extreme weather causing significant poor health on a large scale is the thunderstorm asthma event that occurred on November 21st 2016. This was a day in which a confluence of a storm front and unusually high pollen counts led to 3365 more attendances to Melbourne and Geelong hospitals for lung disease, <sup>and 10 deaths</sup> The degree to which pollen levels were elevated that November has been associated with increasing temperatures due to climate change.

While it is impossible to attribute any single extreme event one hundred percent to rising temperatures, such as bushfires or the thunderstorm asthma, this is the kind of circumstance that will become more likely with changes to the climate.

There is also the risk of future increases in certain infectious diseases such as malaria and dengue fever due to the rapid shifts in climate and habitats of the mosquito responsible. q

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Another series of consequences that will impact our health is reflected in the severe drought New South Wales is currently experiencing, with 98% of the state affected in September 2018.

As per the CSIRO, "Lower rainfall and reduced runoff in the southeast of Australia associated with the current drought is in part due to natural variability as well as to human-induced climate change."

Drought has critical impacts on a nation's ability to maintain food supply, ~~but~~ <sup>we are currently experiencing, with decreasing agricultural outputs.</sup>

Access to an affordable, stable supply of healthy nutritious food is essential to maintain health.

As this becomes more tenuous with future warming more expensive food will disproportionately affect the nutrition of people already living in poverty with negative health consequences. *We've seen milk become more expensive over a matter of months.*

These profound environmental upheavals are also extracting a heavy emotional toll for New South Wales farmers and residents. In New South Wales in recent months, a \$6.3 million dollar package for emergency mental health aid to drought-stricken communities has been announced by the State Government<sup>8</sup>. Research published earlier this year in the Medical Journal of Australia has affirmed the link between weather conditions and the mental health of farmers<sup>9</sup>.

International research has indicated that climate change and associated disruptions will have a wide range of mental health effects on the whole population, including depression, anxiety, post-traumatic stress disorder and suicidal ideation. The population distress will affect the function of conventional mental health systems with associated implications for future health budgets, however research suggests that this response can be bolstered by appropriate adaptation and mitigation measures taken on a local and global scale<sup>10</sup>.

These are, in broad strokes, the public health issues at play when we consider how climate change will affect our futures.

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With regard to the impact of the Bylong Mine on Australian and global greenhouse gas emissions, it is noted in the Environmental Impact Statement (O-103) that "Average annual scope 1 emissions from the Project (0.09 million tonnes [Mt] CO<sub>2</sub>-e) would represent approximately 0.02% of Australia's commitment under the Kyoto Protocol (591.5 Mt CO<sub>2</sub>-e) and a very small portion of global greenhouse emissions". Scope 1 emissions include the costs of energy use incurred during the mining processes as well as the impact of fugitive coal seam methane released during the mining process.

However, when considering the impact this mine will have on the global climate, it is

impossible to separate the construction and operation of the mine from the impact that burning the coal produced will have on future warming projections, which is an element of Scope 3 emissions in the greenhouse gas accounting standard.

The average yearly carbon emissions from burning the coal alone will be 8.8 million Tonnes of CO<sub>2</sub>-e. This is nearly 100-fold the Scope 1 emissions over the same period. Over the lifetime of the mine, burning Bylong coal will result in over 202 million Tonnes of CO<sub>2</sub> equivalent greenhouse gases being released into the atmosphere to contribute to global warming.

The text of the EIS and supplementary answers, and the final assessment report, really discuss only the impact that Scope 1 emissions will have to Australia's commitment to Greenhouse Gas Emissions with regard to the scope of the Kyoto Protocol. However, if we are to evaluate the health impact of the mine and its output with respect to how climate change will impact on New South Wales and Australia over the coming decades, we must account for all emissions related to the project.

Rising temperatures in NSW - with all the associated ill health effects of heat stress, food supply insecurity, ~~increasing ranges of infectious disease~~ and natural disaster events - will not be avoided because the coal mined here was exported for combustion. The emphasis on Scope 1 emissions as provided by KEPCO, while relevant to the letter of Australia's GHG accounting under the Kyoto protocol, does not reflect the true effect this mine will have on the future climate and our country's associated health risks.

On signing the Paris Agreement, Australia made a commitment to "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change".

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Following this agreement, the Intergovernmental Panel on Climate Change was commissioned by the United Nations Framework Convention on Climate Change to prepare a special report on the impact that 1.5°C of warming would have on the globe which was published in October 2018.

This report was widely publicised with a message of doom and gloom, but this should be tempered with the potential for optimism and action.

The primary message to derive from the IPCC report is that with appropriate moderation and phased reduction of greenhouse gas emissions over the next 3 decades, there is a high likelihood that global warming could be limited to 1.5°C. Without this urgent action, which must be commenced within the coming decade, global temperature rises up to 2°C can otherwise be expected. This would be a <sup>disaster</sup> crisis situation. for public health.

*With regard to Australia's ~~own~~ obligations under the Kyoto protocol it must be noted that our own emissions continue to rise quarter to quarter.*

The Special Report advises that

“Pathways that limit global warming to 1.5°C with no or limited overshoot show clear emission reductions by 2030”. We need to reduce greenhouse gas output from this point in time, not commit to increase them with further fossil fuel extraction and combustion.

In order to ensure that global warming is limited to 1.5°C, the IPCC specifically identifies that reduction of global emissions with an endpoint of net carbon neutrality must be achieved by 2050. This time period aligns with that of the proposed 25-year lifespan of the Bylong Mine, with a projected total output of 206 million tonnes of CO2 equivalent greenhouse gases over that time. As the cumulative amount of greenhouse gas emissions is important, the process of reducing emissions must be begun in the next decade.

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Now, this is a very busy graphic and I apologise for that, but this is from the IPCC report and compares three different scenarios of emission reduction and their impact on future temperatures.

With action, the IPCC predicts that "limiting global warming to 1.5°C, compared with 2°C, could reduce the number of people both exposed to climate-related risks and susceptible to poverty by up to several hundred million by 2050"<sup>12</sup>.

Proceeding with the Bylong Mine is incompatible with meeting the goals of the Paris Agreement to ~~maintain~~ <sup>limit</sup> global temperature increases to 1.5°C above pre-industrial levels, and moderate the negative effects that climate change will have on human health over the next century.

The full public health impact of the greenhouse gas emissions from the full life-cycle of Bylong coal has not been fully accounted for in the assessments to date.

Finally, I would like to draw your attention to the graphic shown on the slide. This image is called a "warming stripe". Each vertical line represents the average global surface temperature of one year between 1850 and 2017. The coolest temperatures are shown in dark blue with the warmest temperatures a dark red. You can see the clear trend.

The difference between average temperatures in the pre-Industrial age and today is about 1.35 degrees celsius. We are getting very close to the 1.5 degrees celsius limit that represents the best possible future health for our people and our planet. This is truly a critical time to act to preserve the health of future generations from the worse extremes of climate change, and that action has to start with limiting fossil fuel combustion.

It is because of the significant public health implications of ~~worsening~~ <sup>its contribution to</sup> climate change that DEA recommends that the Bylong ~~mine~~ <sup>coal</sup> project does not proceed.

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