

Submission to the Bylong Coal Project

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Healthy planet, **healthy people.**

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Submission to the New South Wales Government, Independent Planning Commission on the Bylong Coal Project¹.

Doctors for the Environment (DEA) is a non-profit national organisation of Australian doctors and medical students with an emphasis on preserving health and wellbeing with respect to the environment. It is our stance that human health is indivisible from environmental health.

DEA has contributed numerous submissions regarding the health impacts of coal mines including these recent submissions:

- Submission to the Queensland Department of Natural Resources, Mines and Energy - Improving resource approval efficiency consultation²
- Submission on the proposed amendment to prohibit open cut mining at Drayton South³

DEA has concerns that coal mining expansion will increase greenhouse gas emissions, driving increasing climate change and global temperature with severe and predominantly negative health impacts that will be felt on a local and global scale. Recent evidence from the Intergovernmental Panel on Climate Change (IPCC) has outlined the urgency to reduce greenhouse gas emissions.⁴ Consequently this mine cannot proceed as it will increase greenhouse gas emissions in Australia as well as globally.

DEA has concerns regarding the overall cost benefit evaluation of the project in which the health costs are underestimated as well as the cumulative impacts of the project on air quality.

Climate change and human health aspects relevant to Bylong

The greatest environmental and public health challenge of our time is climate change. The major cause of climate change over the past two centuries is the burning of fossil fuels resulting in rising levels of greenhouse emissions composed mainly of carbon dioxide.

The latest IPCC report⁴ has pointed to a confronting future for humanity if the use of fossil fuels continues and distinguished Australian scientists and medical doctors including members of DEA have endorsed these warnings in the leading medical journal the Lancet⁵.

In the face of such warnings on climate change from a distinguished body of world scientists, the IPCC, and warnings from the Australian Medical Association (AMA) and DEA about health risks in Australia from climate change and air pollution and their costs, it would be unwise to proceed with this project

Many of the health risks arising from climate change have been well characterised by groups such as the World Health Organization⁶ (WHO), the Lancet⁷, and the latest IPCC report⁴. Major health risks to Australia and New South Wales include the physical effect of heat stress, extreme weather events, changes in infectious disease patterns, food supply insecurity and increasing mental health distress.

Temperature stress

Rising surface temperatures create conditions that increase mortality on a population level, with the human body less able to continue essential functions as the temperature rises. Population studies have noted a correlation between rising temperatures and mortality⁸. These effects are more significant in people over the age of 65 and those who may be experiencing other conditions such as dehydration or severe infection. Higher rates of acute kidney failure resulting from these heat conditions are anticipated. The effect of heat stress will become more significant as more very hot days are to be expected with overall increases in global temperatures.

Extreme Weather

The likelihood of extreme weather events such as cyclones, floods and bushfires are increased with projections of future climate change. Events previously unknown to New South Wales such as tornados may occur due to shifting climate patterns. These events have direct health risks due to the danger of death and injury from the initial disaster, but also have public health consequences such as respiratory and cardiac 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 disaster⁹.

Infectious disease

Worldwide, shifts in the distribution of major infectious disease have been observed with increasing temperatures and increased areas of warm temperatures⁹. Regions hospitable to mosquito-borne diseases such as malaria and dengue fever are projected to expand over coming decades as temperatures and climate patterns shift. The significance of this for Australia is that the mosquito species responsible, which are currently found only in Queensland, may be found as far south as Sydney as temperatures rise.

Food Supply

New South Wales is currently experiencing a severe drought, with 98% of the state affected in September 2018 as per New South Wales Department of Primary Industries figures¹⁰. 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." Reduced rainfalls are more likely with changing climate patterns, and higher temperatures increase evaporation of surface water making it less available for agriculture¹¹.

Drought has critical impacts on a nation's ability to continue agriculture on a scale to maintain food supply. Access to an affordable, stable supply of healthy nutritious food is essential to maintain health, and 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.

Mental Health

The profound environmental upheavals are extracting a heavy emotional toll on people dealing with a warming world. 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 Government¹². Research published earlier this year in the Medical Journal of Australia has affirmed the link between weather conditions and the mental health of farmers¹³.

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 scale¹⁴.

Bylong and Greenhouse Gas Emissions

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] CO₂-e) would represent approximately 0.02% of Australia's commitment under the Kyoto Protocol (591.5 Mt CO₂-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 CO₂-e, with reference to table 12.1 of the applicant's Air Quality and Greenhouse Gas Assessment. 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 CO₂ equivalent greenhouse gases being released into the atmosphere to contribute to global warming.

The text of the EIS and supplementary answers discusses 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 Scope 1, 2 and 3 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.

The economic benefit of any mining project needs to be balanced with the future costs of climate change mitigation and adaptation. The financial costs of climate change will have significance for the NSW Health budget, as we care for people affected by the increased temperatures, infectious disease and mental health emergencies as described above. These 'externalities' have not been incorporated into the cost-benefit analysis of the project.

The financial impacts of climate change on future state budgets and the impact of Bylong Mine specifically are difficult to quantify but have not been accounted for at all in the documents submitted by KEPCO.

DEA recognises that energy security plays a part in health and wellbeing, however the proposed mine is entirely for export and will not contribute to the energy supply of New South Wales or Australian residents.

1.5°C

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"¹⁵.

Following this agreement, the IPCC was commissioned by the United Nations Framework Convention on Climate Change (UNFCCC) to prepare a special report on the impact that 1.5°C of warming would have on the globe. This report was published in October 2018 and delivered publicly for the first time at Incheon, South Korea.

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.

The significance of this increase for human health is described by the IPCC in the Special Report:

*"Lower risks are projected at 1.5°C than at 2°C for heat-related morbidity and mortality (very high confidence) and for ozone-related mortality if emissions needed for ozone formation remain high (high confidence). Urban heat islands often amplify the impacts of heatwaves in cities (high confidence). Risks from some vector-borne diseases, such as malaria and dengue fever, are projected to increase with warming from 1.5°C to 2°C, including potential shifts in their geographic range (high confidence)."*⁴

In order to ensure that global warming is limited to 1.5°C, the IPCC report 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. 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. 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 2050⁴."

The urgency of the message conveyed by the IPCC has been recognised globally, including in the nominated target market for Bylong coal of South Korea¹⁶. Given the changing global attitude to fossil fuel extraction, this increases the likelihood of reduced future revenue from coal mining and that Bylong will become a stranded asset with diminishing financial return to New South Wales.

Australia's emissions continue to rise. The latest National greenhouse Gas inventory states, "Emissions for the year to March 2018 increased 1.3 per cent or 6.8 Mt CO₂-e." ¹⁷ The IPCC report calls for a 45% decline in emissions by 2030 if the world is to stay below a 1.5°C rise in temperatures. Consequently, any increase in emissions, even Scope 1 emissions, is unacceptable.

Proceeding with the Bylong Mine is incompatible with meeting the goals of the Paris Agreement to maintain 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.

Economic Evaluation

The economic evaluation of the proposed Bylong coalmine has focused on the net returns of the mine with much debate regarding the price of coal. However, the costs to human health and the environment have been under represented which has resulted in a flawed economic evaluation.

Gillespie Economics has completed an updated economic evaluation (see appendix W of the RtPR report) and the cost to health is quoted as, "No property significantly impacted above health criteria and hence no costs included in the CBA. CIE in its peer review estimate health impacts at \$0.3M, immaterial to the CBA." This assessment fails to account for the broader health impacts of this mine. A Health Impact Assessment has not been done by the applicant. Consequently, it is not possible to accurately assess the financial impact of the mine on human health. A significant component to the under-estimate of the health costs is due to the deterioration in air quality that will occur in the Hunter valley.

Air Quality

The effects of the mine on air quality have been under-estimated in the Environmental Impact Study. There is no baseline air quality data with the nearest monitor at Merriwa, 45 kilometres away, used for the assessment. There will be a substantial increase in road traffic as well as diesel train movements. These have not been adequately assessed. These traffic movements will result in a decrease in the air quality in the Hunter valley.

There has already been a deterioration in the air quality in the Hunter Valley, so that there have been over 50 air quality alerts in 2018. This is despite the EPA's "dust stop" program. Consequently, despite reassurances regarding air quality there continues to be exceedances in air quality standards. This is occurring before the impact of the Bylong Coal Project. Therefore, the Bylong project cannot be approved as it will contribute to a deterioration of the air quality in the Hunter Valley.

Conclusion

This is a critical moment. We have unprecedented access to quality information and analysis of climate change, and a clear opportunity to make hard choices to shape the best possible future outcome.

It is overwhelmingly clear that the healthiest future we can seize at this point is one where global temperature rise is limited to 1.5°C.

The greenhouse gas accounting reported by KEPCO in the EIS and response to submissions does not take appropriate note of the total greenhouse gas emissions resulting from this project, including Scope 3 which will have the most significant effect on the future climate.

The health impacts of climate change will be broad in scope will affect all New South Wales residents with particular impact on those of poor health and the very young and very old.

It is the opinion of DEA that approval for the Bylong Mine be rejected by the Independent Planning Commission due to the health risks posed by the greenhouse gas emissions associated with the project and their effect on climate change in New South Wales and Australia.

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