Dr Nick Higginbotham
[redacted]

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Opposition to the extension of Wilpinjong coal mine.

Dear Department of Planning,

As a public health professional, acutely aware of the impact of mining related activities on the health of local communities, I **oppose** the extension of Wilpinjong coal mine project proposed by Peabody Energy US.

In recent weeks, the International Energy Agency has made it clear that the peak coal consumption in China was reached in 2013. Demand for coal globally is declining, and will accelerate in the immediate future, as the Paris Climate Binding Agreement takes hold and the world's nations turn to non-fossil fuel sources of energy.

Closer to home, the farming sector in NSW faces considerable challenges from the vagaries of weather, water scarcity, market cycles, rural isolation, and access to capital and labour.

Drought adds another layer of strain; evidence shows increased psychological stress among rural dwellers (Obrien, et al 2014), as well as increased risk of suicide among farmers and farm workers during drought periods (Hanagan, et al 2012; see also McPhedran, 2012; Vins, et al, 2015).

Global warming, in part caused by burning coal, will exacerbate the pernicious effects of weather extremes.

The industrialisation of rural farming locations by the coal-mining industry multiplies existing challenges, when farmers face an imposed and adverse transformation of productive landscapes.

The distress caused by one's loss of cherished environmental surroundings, and anxieties over damage to natural resources, especially water, is palpable (Connor, et al, 2004; Higginbotham, et al., 2006).

This occurs in particular when one has been charged with the stewardship of productive land through family tenancy over generations, and when individual landholders face the combined weight of industry and government in legal conflicts over land use, such as that brought about by the proposed extension of Wilpinjong by its owners, Peabody Energy US.

It is tragic that those who have the deepest affection and attachment to their place, and are most committed to protecting its values for the benefits of future generations, are at greatest risk of profound distress when landscapes are harmed by open cut and underground coal mining.

I urge the PAC to seriously consider the social, physical and mental health impact of the proposed the Wilpinjong extension. It is government's responsibility to reduce the risk of community distress and potential harm brought on by massive landscape transformation, and mining degradation, leading to the loss of rural farming productivity.

I also note that the Wollar community has considerable heritage significance for both Indigenous and European settlers. The social fabric of Wollar has been significantly damaged by the existing mine, through de-population and removal of social support networks. The cumulative social impact of this loss of residents through mining projects from Ulan to Bylong has not been considered in the impact statement, and this project will exacerbate such losses beyond recovery.

The public health science community recognises that global warming is the most significant threat to population health faced by our planet (Watts, et al, 2015). Burning coal is one of the greatest single contributor to global warming through CO2 emissions, which are now estimated to have a social cost of $200 per tonne (Moore & Diaz, 2015).

Nowhere in the Wilpinjong EIS documents is there recognition of this $9.6 billion cost to society of mining and burning 20 million tonnes of coal annually (each tonne of coal burned produces 2.4t CO2e).

Such 'externalities' should be an integral part of estimating the cost of coal mining projects, and be given due consideration by Planning. Yet, they are ignored, along with their adverse social, health and environmental consequences.

The planning rules wrongly exclude scope 3 emissions from consideration, which is a fault of the planning process. Human induced climate change will cause deaths from heat waves and bushfires in Australia, and from food insecurity around the world.

Air pollution assessment

Furthermore, the EIS is inaccurate as it is not assessed against the current Australian air quality standards and ignores some severe threats to human health.

In Section 5.2.1, an outdated standard of 30 ug/m3 for PM 10 is referenced. This was revised downwards to 25ug/m3 at the national meeting of environment ministers on 15th December 2015, after recognition that the old standard was injurious to health.

In Table 5.3 the PM 2.5 standard is incorrectly referred to as an advisory standard. The PM2.5 is now a compliance standard.

In Table 5.4 the WHO statement from 2005 is used to argue that PM10 is only a surrogate for PM2.5. Current understanding is that the particulate range 2.5 to 10 microns (coarse fraction) has health impacts in its own right. It is especially associated with lung cancer in non-smokers, and in restricted lung growth in children.

The 2013 WHO review reaffirmed the importance of assessing the coarse fraction particle sizes associated with coal dust. This size is strongly linked to respiratory tract disease (e.g., COPD, asthma, respiratory admissions) as well as daily mortality (see Brunekreef & Forsberg, 2005). PM10 has its own unique pathway to disease, beyond that of PM2.5, and should be given weight in air assessment separately from PM2.5.

In particular, coal dust is found in the 'mechanical' PM10 fraction (less so in the PM2.5 'combustion fraction') (Cambra-Lopeza, et al. 2010), and is emitted into the air through coal train movements, dumping, conveying and wind erosion from the coal stockpiles (Higginbotham, et al, 2010). WHO (2013) concludes: "Coarse and fine particles deposit at different locations in the respiratory tract, have difference sources and composition and act through partly different biological mechanisms and result in different health outcomes (p8)."

In brief, The calculations on page 11 deriving a level of PM10 based on equivalent PM2.5 are misleading and could lead to approval of a mine causing significant human health impacts.

<u>6.5 Blast plumes</u>

Open cut mining with ANFO explosive can generate high levels of the toxic gas nitrogen dioxide. A blast management plan is proposed to attempt to reduce the risk. Despite such plans, NO2 blast plumes still occur and can behave in unpredictable ways. This occurred at Warkworth mine in 2014 when a toxic plume settled on workers at nearby Mt Thorley mine even though they were 3 Km from the blast site. The workers required hospital attention but luckily none of them died. A similar incident in QLD affected workers 6 Km from the blast site. These events happened despite knowledge of "good blast practice" and I do not accept that the risk has been adequately considered.

To allow open cut mining using ANFO explosive to operate within 1.5 Km of the village of Wollar, including a primary school, disregards public safety and opens the government and mine up to the possibility of legal action by those affected. The only way to ensure safety is to establish an adequate buffer distance between blasting and the public, and greater than 3Km is required.

In summary, approval of the Wilpinjong mine will result in damages to the health of the citizens in the local community, in the short term, and compromise the health of all of Australians over time.

Sincerely

Nick Higginbotham, PhD

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