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Submission of comments to the T4 coal port expansion, Newcastle, NSW

Submission from
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Doctors for the Environment Australia is an independent, national, public health, non-government, organisation of medical doctors.

Submission

Doctors for the Environment Australia recognises that an EIS is an important document from the point of view of public health and regrets that the T4 statement is very user unfriendly. Since health is incorporated into the EIS process it is necessary that the health aspects are readily accessible so that medical experts are facilitated in making their contribution.

For example it is confusing and an inconvenience to find that data pertaining to air quality is in three sites - chapter 12 and 2 Appendices.

We believe that there is bias in the choice of data for further modelling and in discussion of the health outcomes. An EIS should be an impartial assessment and not a case for the proponents.

From the point of view of public health this is a depressing proposal. From the data presented, Newcastle is a polluted town with likely existing health impacts and now we have a proposal that will undoubtedly increase pollution. It is not that Australia needs to make this sacrifice for energy security, as alternatives to burning coal for energy currently exist. Furthermore the morbidity and mortality conferred on the world's people by the export of this coal would not be insignificant.

In section 13, Green house gases we note that that the projected scope 3 emissions are approximately 300Mt CO2-e, which comprises 0.42% of estimated 2030 global emissions. This is a significant contribution, particularly given that Australia has one of the highest per capita emissions in the world. It is proposed that the T4 port expansion would export 120Mtpa of coal, which is twice the amount of coal currently exported from Newcastle. If the coal to be exported from the proposed T4 port was not exported, this would decrease the amount of thermal coal available internationally, which would result in an increase in the cost of coal and promote the use of renewable energy. Therefore, the health impacts of climate change should be an important consideration for this proposal. They are not outlined in our submission, but are well documented elsewhere[1].

[1] Hughes, L., McMichael, T. The critical Decade: Climate Change and Health, Climate Commission, Commonwealth of Australia, November 2011. http://climatecommission.gov.au/wp-content/uploads/111129_FINAL-FOR-WEB.pdf. Accessed on 6 May 2012

While there are a number of potential health impacts of the T4 port expansion, including declining air quality, contributing to climate change, noise, and traffic, we will focus on air quality in this submission, given that it is such a significant health issue for the people of Newcastle.

Air Quality

In relation to air quality, we have three main points:

1) The air quality is already poor in Newcastle and is likely to be impacting on the health of people living there;
2) The health impacts of the current level of pollution in Newcastle are not currently understood. There should be no more major developments such as the T4 port expansion at least until there has been more detailed air monitoring and a health impact assessment, and only then if the ambient air quality can be improved; and
3) The EIS document underestimates the air quality impacts of the T4 port expansion.

1) The air quality is already poor in Newcastle and is likely to be impacting on the health of people living there

As demonstrated in the EIS document, Newcastle is already a very polluted city, and the air quality data provided in the EIS shows that air quality in the region is already very poor and is also poorly monitored. For example, the National Pollutant Inventory (NPI) database for 2009/2010 highlighted 70 individual reporting sources of pollution within a 30 km radius of the proposed T4 project area. Because of the concentration of polluting industries in the city and their proximity to residential areas, the current level of air quality monitoring is inadequate, particularly given that many monitors of particulate matter collect data on only one day in every six.

In recent years, a large body of scientific evidence has emerged that has strengthened the link between ambient particulate matter (PM) and health effects, particularly in relation to fine particles, which are strongly associated with mortality and morbidity such as hospitalisation for cardio-pulmonary disease. Short-term PM exposure is linked to reductions in lung function and increased respiratory symptoms. Epidemiological studies have been unable to identify a threshold concentration below which ambient PM has no effect on health. Even levels of PM below OEH guidelines will have a negative impact on health (Pope, Dockery et al. 1991; Pope and Dockery 1992; Simpson, Denison et al. 2000; Pope, Burnett et al. 2002; Pope, Burnett et al. 2004; Simpson, Williams et al.

2005; Simpson, Williams et al. 2005; Pope and Dockery 2006; Pope, Burnett et al. 2009; Pope, Ezzati et al. 2009; Pope, Burnett et al. 2011).

According to the National Pollutant Inventory as quoted in Appendix M, the largest source of PM_{10} emissions with the Newcastle LGA was the existing Port Waratah Coal Services facility at Kooragang, although there are three larger sources that are situated outside of the Newcastle LGA. Given that ambient PM_{10} levels in Newcastle are high, it is difficult to see how a new coal facility at Kooragang, which will double the amount of coal exported, will not make a further additional contribution to air pollution in the city.

The OEH guideline for annual average levels of PM_{10} is 30ug/m^3. As previously stated, there is no safe level of PM exposure, and the World Health Organisation (WHO) guideline for annual average PM_{10} is 20ug/m^3. The WHO guidelines represent the most widely agreed and up to date assessment of the health effects of air pollution, and give targets for air quality at which the health risks are significantly reduced[2]. Most of the long term monitoring sites for PM_{10} close to the river have annual averages higher than this, as shown in Table 11, page 34 of Appendix M. Thus, prior to significant developments that are already approved and are in the pipeline, and the T4 port expansion, Newcastle residents are already, according to the World Health Organisation, experiencing levels of particulates in the air that they breathe that is injurious to their health.

2) *The health impacts of the current level of pollution in Newcastle are not currently understood. There should be no more major developments such as the T4 port expansion at least until there has been more detailed air monitoring and a health impact assessment, and only then if the ambient air quality can be improved.*

There is very little publicly available information about the health status of people in Newcastle, particularly relating to air quality. With insufficient air quality monitoring, it is not possible to predict the health impacts of the existing pollution. There is increasing evidence that the composition of PM has an important bearing on the health impacts of exposure to PM, there is limited characterisation information about PM in Newcastle, apart from work done by ANSTO and referred to in the report.

Appendix F describes the impacts of the significant increase of coal transport to the Port of Newcastle, due to the T4 port expansion, which will pass through parts of Newcastle, as well as a number of towns enroute. We note from other sources that there are no reliable data to indicate whether coal trains and rail transport increase ambient dust

[2] World Health Organisation. Air quality and Health. Fact sheet No. 313. World Health Organisation Media Centre, September 2011. http://www.who.int/mediacentre/factsheets/fs313/en/index.html Accessed 6 May 2012.

levels in urban areas in the lower Hunter. A base line study is now being undertaken to assess the extent to which coal trains and rail freight transport contribute or increase ambient particulate levels in the lower Hunter. It is the EPA's intention to make available to the public the results of the pilot study.

This is probably a belated attempt to remedy a lack of emission data. We do not see how an EIS encompassing the health impacts on Newcastle citizens can go forward without any data.

Turning now to the T4 EIS, there would appear to be no local data; the assessments are modelled from QR data. The wagons have been traversing the city for years, and yet there does not seem to be air quality data from near to the rail line and adjacent suburbs? We need to know whether or not there have been existing exceedances close to the rail line before T4 cumulative assessments can be made. In addition, the EIS does not address the potential impact on the health of people affected by the large increase in coal train traffic through their towns.

Therefore before any further new developments such as the T4 port expansion proposal are approved, there should be more detailed air quality monitoring in Newcastle together with a detailed health impact assessment. New developments should only be approved after the current air quality in Newcastle has been improved.

3) *The EIS document underestimates the air quality impacts of the T4 port expansion.*

The monitoring data used in the modeling for the impact of the T4 expansion were from measurements taken prior to at least five future developments that have been approved being operational. These future developments include another coal terminal, which has an approved capacity of 66 Mtpa. While the baseline for the T4 modeling takes into account modeling done for the EIS's for the new developments, given the significant margin of error in modeling work such as this, the baseline used for the T4 modeling could be an underestimate. Regardless, the impact of significant new developments on an already polluted air shed will only serve to increase pollutant levels. Of particular concern are the Total Suspended Particles (TSP) and PM_{10}.

There is considerable variation in pollutant levels from year to year, particularly PM_{10} and TSP. However, the modeling for the T4 project uses 2010 levels as a baseline, which had lower pollutant levels than the other years. We do not know the reason for the lower levels of air pollutants in 2010, but it could be due to changes in weather patterns such as La Nina. Given that the cause of the variation is not known, it would be more valid to use as the baseline an average value of pollutant levels across the

years for which data are available. It is not good practice to choose a single year as a baseline for determining the impact of new polluting industry. The T4 port expansion will certainly contribute significantly to a deterioration in air quality, and if average values for pollutant levels were used across a number of years, the expansion may lead to an increase in the rate of exceedance, particularly for PM_{10}.

While it appears from the EIS that both the approved new developments and the proposed T4 project will contribute only a small fraction of additional pollution to the Newcastle airshed, data obtained from such models are VERY rubbery. Error bars of +/- 50% (or greater) on predicted values would not be unrealistic, as they are based on compounded assumptions. Therefore, given that Newcastle's air quality is already poor, particularly with respect to particulate matter, it would be prudent to avoid another significant onslaught to air quality in the region at least until more detailed characterisation of particulate matter and health impact assessments are done.

Some of the assumptions applied in the modeling for the report are optimistic, and therefore could result in an underestimate of the impact of the proposed development.

For example:

- Data given in Table D3 (p143) for emission factors for diesel engines are not explicitly stated in the referenced ENVIRON (2009) report. For some reason the emissions factors have been converted from the standard g/kWh to g/HPh. The emissions factors used assume that new or near new engines will be used, which is highly unlikely due to the average age of the Australian fleet. If this was corrected it would significantly increase diesel particulate emissions during construction.
- Table D9 (p151). It is unlikely that the calculation (b) is accurate as the two control methods are not necessarily cumulative. Such control measures are more effective for some particle sizes than others, so the overall effectiveness of the combined measures will be less that of each individually.
- We cannot see where the emissions of the (presumably diesel) locomotives have been accounted for the analysis. These emissions will be non-trivial.

The study asserts (conclusions – p203) that current emissions standards for ambient air quality are adequate for protection of residents and workers against coal dust (and other contaminants in the area). There is growing evidence that carbonaceous particles such as diesel soot (and likely coal dust) have a more significant health impact than general/other ambient aerosols. Furthermore, there is evidence that health effects are related to particle surface area and/or number concentration, which

increases as particle size decreases (for a given mass) (Pope, Burnett et al. 2002; Pope and Dockery 2006).

Several mitigation strategies (e.g. AQCS – p113) are suggested in the report and some of these are incorporated in the analysis. It is not known if these will be required by the authority and therefore implemented. If not implemented then emissions levels due to the proposed T4 project could be significantly higher. Although not proposed, covering coal cars and washing down after unloading should be required.

The assessment examines average values – and does not preclude significant short-term exceedance due to the expansion project. Such short-term exceedance can have a significant impact on the health of people exposed, particularly affecting their lung function (Simpson, Williams et al. 2005; Simpson, Williams et al. 2005). Again, without this characterisation, the EIS is inadequate.

Conclusions

In conclusion, we acknowledge that the air quality in Newcastle is already poor and that there has been very little work done to characterise the air pollution and examine its impacts. In addition, we have identified a number of short-comings in the T4 EIS that could well underestimate the impact of the project on air quality in Newcastle.

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