

GENERAL PURPOSE STANDING COMMITTEE NO. 5
INQUIRY INTO THE PERFORMANCE OF THE NSW ENVIRONMENT
PROTECTION AUTHORITY

Supplementary questions: Hunter Community Environment Centre

Answers are to be returned to the Committee secretariat by 11 December 2014.

- 1. You stated in your evidence that in transit losses of 1-3% were likely to be incurred.**

As each wagon contains approximately 100 tonnes, and each train is approximately 100 wagons long, and 100 trains per day that is a loss of between 10,000 and 30,000 tonnes per day.

Where is this coal going? Over 12 months this would amount to a huge stockpile.

The transit loss estimates provided in our submission are based on emission factors developed in the early 1980s to quantify fugitive coal dust emissions from coal trains. These emission factors were derived from three research studies that found for unregulated coal trains travelling over a distance of 1100 km, the maximum potential coal losses (in the form of TSP) are estimated to be in the range from 0.5% to 3.0% of the total coal load.¹ This is equivalent to an emission rate of between 4.5g/tonne/km and 27g/tonne/km. These emission factors have since been adopted as the industry standard for freight train operators in the United States.² We believe that in the absence of regional data, this range represents a suitable baseline estimate for trains on the Hunter Network, but it also noted that the literature on the dust emissions from coal trains is very sparse, and the factors contributing to particulate emissions are highly context dependant.

As a baseline, this range is consistent with the limited authoritative literature of which we are aware. An OECD report on the available remedies for environmental issues associated with coal found that fugitive coal dust emissions from train haulage are estimated to lie in the range from 0.05% and 1% of the load.³ Another study on a single, specific rail line reported losses in the range of 0–0.3% of total load, representing a loss rate of 281g/km/wagon.⁴ The major outlier study involved the collection of coal dust in bags mounted on top of wagons travelling from a port to a power station in Portugal. This study reported a total emission rate for uncontrolled coal wagons was found to be

¹ Cope DL and Bhattacharyya KK (2001) *Fugitive Coal Dust Emissions in Canada*. A report from D. Cope Enterprises to The Canadian Council of Ministers of the Environment (CCME).

² See for example, <http://www.bnsf.com/customers/what-can-i-ship/coal/coal-dust.html>

³ OECD (1983) *Coal: Environmental issues, remedies*. Paris: Organisation for Economic Co-operation and Development.

⁴ Lazo JK and McClain K (1996) "Community perceptions, environmental impacts, and energy policy: rail shipment of coal" *Energy Policy* 24: 531–540.

9.6 g/km/wagon.⁵ This is equivalent to about a fiftieth of the emission rates calculated using the Canadian approach.

Coal dust is, in effect, an umbrella term to describe the full range of particle classifications. Different size particles have different patterns of dispersal. As a general guide, however, assuming 280 grams per kilometre per wagon is equivalent to approximately 93 grams per hectare per wagon within 150 metres on either side of the track, where the particulate pollution is most concentrated.⁶ In addition to the patterns of dispersal within and beyond the rail corridor, the ballast cleaning and line maintenance works undertaken by ARTC are extensive, and also explain why we would not expect to see a “huge stockpile” of coal from the fugitive dust emissions in the rail corridor.

The accumulation of coal is sufficient to require an extensive maintenance program of ballast and shoulder cleaning, and in some cases re-laying of track. For instance, ARTC has recently invested in the use of an \$18million ballast cleaning machine, including material handling wagons, to ballast clean sections of the Hunter Valley Coal Rail Network, as described in a joint media release from ARTC and the Leighton Swietelsky Rail Joint Venture dated 15th July 2014.⁷ In the statement, Alec Mackenzie, Executive General Manager Hunter Valley, ARTC, confirmed that for the Hunter Coal Rail Network: “Ballast cleaning forms a fundamental part of the rail maintenance task for ARTC.” We recommend that the Committee request that ARTC provide specific details about the extent of this maintenance program, including the methods of waste disposal.

2. The Minerals Council submission on page 2 questions “whether the EPA’s initiative are fair and the best use of the EPA’s resources” and more generally the increase in regulations from the EPA. What is your response to this?

On the issue of air quality in the Upper and Lower Hunter, HCEC supports and endorses the Minerals Council’s call for the “EPA’s air quality strategies should be based on expert analysis of the available air quality data, an assessment of the relative risks of different sources of particulates, and the costs and benefits of mitigation options for each source.” To date, this has not occurred. In the absence of an evidence-based, participatory and transparent cost-benefit analysis, there is not sufficient information to determine whether the EPA’s response is proportionate, adequate, or the best use of public resources. We also maintain it is incumbent on industry to participate in good faith in these cost-benefit assessment processes to ensure that decisions are based on the best available information and current best practice.

⁵ Ferreira AD, Viegas DX and Sousa ACM (2003) “Full-scale measurements for evaluation of coal dust release from train wagons with two different shelter covers”. *Journal of Wind Engineering and Industrial Aerodynamics* 91: 1271-1283. Cf. Ferreira AD and Vaz PA (2004), “Wind tunnel study of coal dust release from train wagons”. *Journal of Wind Engineering and Industrial Aerodynamics* 92: 565-577.

⁶ Simpson Weather Associates Inc (1993) *Norfolk Southern Rail Emission Study*. Consulting report prepared for Norfolk Southern Corporation, Charlottesville, VA, December 1993.

⁷ <http://www.artc.com.au/library/News-2014-15-07.pdf>

Similarly, the effectiveness and efficiency in use of EPA's resources generally should be measured according to the same standard of evidence and scientific rigour. As discussed in our opening comments, we support the use of a Pressure-State-Response framework in determining the appropriateness and adequacy of the EPA's regulatory response to maintaining environmental health. That is, any given regulatory response should be judged *sui generis*, based on the current and desired state of environmental condition and community health, and the pressure and threats upon environmental condition as a consequence of the activity to be regulated. In this way, the test for the appropriateness, adequacy, fairness and resource efficiency of the EPA's regulatory responses can be gauged against the achievement of established environmental and health targets.

3. The Minerals Council has accused the Hunter Environment Centre on Page 9 of their submission, in regards to interpretation of UHAQMN results of “presenting misleading interpretations of the data that heightens community concerns”. What is your response to this?

Each year, the Hunter Community Environment Centre issues a public statement in which we count the number of regional incidents where air pollution exceeded the national guideline for particle pollution, derived from publicly available EPA data and supplemented by data from the Orica air quality monitoring site in Stockton. The HCEC press release referenced in the Minerals Council accusation⁸ stated that “particle pollution levels soared in Newcastle and the Hunter Valley during 2013, exceeding the national guideline for particle pollution on 171 occasions.” Further, this statement also noted that “pollution levels exceeded the PM₁₀ standard nine times in urban Newcastle, five times at the Beresfield monitoring site, four times at the Newcastle High sports field and twice in Wallsend. PM₁₀ levels exceeded 80 micrograms per cubic metre (µg/m³) on 14 occasions. On 15 September, Muswellbrook residents were exposed to PM₁₀ levels more than twice the standard (106.8µg/m³).” Finally, the statement notes that these “171 exceedances of the PM₁₀ standard compares to 115 during 2012 – a 50% increase.”

In all cases, these statements are empirical facts, verifiable by reference to the EPA's own data. They are provided without causal attribution or interpretation – much less misleading ones.

⁸ <http://www.hcec.org.au/20140119/premier-urged-control-air-pollution-2014-50-increase-air-pollution-breaches-newcastle-and>