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Ms Kerry Scott,  
Project Manager,  
NEPC Service Corporation,  
Level 5/81 Flinders Street  
ADELAIDE SA 5000  
27 August 2010

Dear Ms Scott,

RE: Review of the National Environment Protection Measure (ambient air quality) Air Quality Standards Discussion Paper.

Thank you for the opportunity to respond to the very comprehensive and well researched air quality standards discussion paper. I am a public health physician, general practitioner and NHMRC Research Fellow at the Menzies Research Institute in Hobart. I lead a research unit in environmental epidemiology, which has a particular focus on the health effects of air pollution from bushfires and other sources of biomass smoke. I offer the following comments on the discussion document for the on-going development of air quality standards in Australia.

**Standards for Particulate Matter (PM)**

1. Given the strong and consistent evidence relating to PM<sub>2.5</sub> in I support the suggestion that the current reporting standards for PM<sub>2.5</sub> be changed from reporting to regulatory.
2. I further suggest that the NEPC consider introducing a long term (yearly) standard for particulates as the available evidence suggests that health outcomes for long term exposure are greater than for short term (daily) exposure.<sup>1</sup>

**Bushfire smoke and dust storms**

3. I agree with the observation in the NEPM discussion document that bushfire smoke and dust events are becoming an increasingly common source of pollution in association with a warming climate. However I note that research relating to these issues was not specifically addressed in the discussion document.
4. I disagree with the suggestion that 'natural and exceptional events' such as bushfires be removed from the compliance standards for the following reasons:
  - It is not possible to define a 'natural' versus an 'unnatural' fire.
  - Human land management practices can either increase or decrease the risk of severe bushfires and dust storms.<sup>2,3</sup>

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- These is good evidence that fire regimes, and therefore smoke, are amenable to manipulation and intervention. Interventions to reduce severe fire events will by definition also reduce severe smoke events.<sup>2</sup>
  - Bushfire smoke pollution has serious public health effects. There is evidence that the respiratory health impacts are likely to be worse than similar levels of background urban particulates arising from the combustion of fossil fuels.<sup>4,5</sup>
5. As exposure to this source of air pollution is likely to continue to increase, I believe that the public will be better served if the NEPC is pro-active about managing the potential public health hazards from bushfire smoke.

#### **Prescribed burning**

6. The issue of prescribed burning was not addressed in the discussion paper. A dramatic increase in prescribed burning programs, (eg as recommended by the Royal Commission into the Victorian Bushfires), is likely to occur throughout southern Australia. Prescribed burns will affect air quality, albeit to a much lesser extent than severe bushfires. However the available evidence indicates that no safe lower threshold and that higher risk people can be adversely affected by exposures within current 24 hour targets<sup>6</sup>.
7. For this reason I believe that the NEPC should develop specific guidelines and air quality targets for prescribed landscape burning for any reason (including agriculture, forestry, fuel and ecological management). These should include short term, eg 1 hour or 4 hour targets for PM<sub>2.5</sub>, and should be incorporated into the NEPM. See some guidelines from USA as examples.<sup>7,8</sup> However, I acknowledge the current paucity of research in relation to the impacts of brief (less than 24 hour) exposures.

#### **Allowable exceedances**

8. My personal view is that the concept of 'allowable exceedances' is arbitrary and these should not be included in the standards. If air quality standards are not met then this should be reported along with detailed explanation for the reasons and review of management strategies. Eg if excess bushfire smoke (or woodheater smoke) is the main reason that targets for particulate matter are not met then the management plan for the prevention of the relevant source of PM needs to be reviewed.

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