

**REVIEW OF THE NATIONAL ENVIRONMENT PROTECTION  
(AMBIENT AIR QUALITY) MEASURE  
AIR QUALITY STANDARDS DISCUSSION PAPER**

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The headings below have been extracted from the discussion paper. **Chapter 5: Issues to be considered in evaluation of NEPM standards** (page 140 of *AAQNEPM Review Air Quality Standards Discussion Paper*) provides further discussion on these questions.

#### **ISSUES TO BE CONSIDERED**

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**Q1. Is there sufficient new health evidence to support a revised standard and if so, for which pollutants?**

The comments below have been made without an attempt to review the accuracy or completeness of the information presented in the Discussion Paper in relation to the description of the evidence of the health effects of the nominated pollutants.

Assuming that the data presented in the Discussion Paper is accurate and reliable, it appears that there is sufficient evidence to support a review of the standards for the existing AAQ NEPM pollutants in conjunction with a cost benefit analysis of any proposed changes.

The Discussion Paper does not present sufficient information to warrant the full inclusion of benzene and PAHs into a revised AAQ NEPM. The information presented in the Discussion Paper primarily focuses on industrial exposure to benzene and PAHs and provides no information with regards to the ambient concentrations of these pollutants throughout Australia and the potential health implications of exposure to these existing concentrations. On this basis,

if it is considered desirable to shift these from the Air Toxics NEPM to the AAQ NEPM to raise the profile and ensure an increased focus on ambient exposures, it is first warranted to include these as "Advisory Standards" as was done for PM2.5 while additional information is gathered.

**Q2. Does the current approach, which allows for a number of exceedances of the standard, meet the requirement for adequate protection or are there alternative methods that could provide more consistency in the level of health protection associated with complying with the NEPM standards?**

We believe that the current approach that allows for exceedances of short term standards provides an adequate level of protection to public health and recognises that natural and extreme events (potentially due to meteorological conditions or unusual process conditions/failures) can, and do, occasionally occur. Having an allowable number of exceedances recognises that annual 'worst-case' meteorological conditions (for example) can occur but occur infrequently. In the case of PM10/PM2.5 removing the threshold exceedances, and in the absence of a process which allows for natural regional environmental conditions, could result in costs to the population as a whole with minimal real benefits in terms of improved health outcomes being achieved due to the low frequency of the high dust events and allowable exceedances, or the practicality of reducing those exceedances.

For PM10/PM2.5 there is an argument for maintaining allowable exceedances based on natural conditions for the region in question (ie: assessed assuming an absence of anthropogenic development/activities) and adding exceptional events to that allowance.

**Q3. Should changes be made to the reporting protocols that would lead to a greater transparency and better understanding of the causes of exceedances in jurisdictions, the potential risk to population health, and management approaches being undertaken to address these exceedances?**

There should be greater transparency and consistency in the application of the AAQ NEPM standards by jurisdictions. The AAQ NEPM should be applied consistently in line with the intention of the NEPC when the AAQ NEPM was produced. Many jurisdictions have chosen to apply the NEPM standards to peak, or upper bounds exposure points which is not the intention of the NEPC and can create many issues for industry and significant costs which in many cases are difficult to reasonably justify.

**Q4. Any other issues you wish to raise?**

Natural and Exceptional Events

We support the exclusion of 'Natural' and 'Exceptional' events from data for the purposes of assessing compliance with the AAQ NEPM standards. If a similar model to the USEPA framework for defining such events were used within Australia, 'Exceptional' events, and within this definition, 'natural' events could have a significant impact on the measured ambient concentrations, particularly for PM10 and PM2.5 Some natural events reliably occur a number of

times each year due to the natural regional environment in the absence of any development or activities (influenced by vegetation cover, soil types, and regional climate, average rainfall, wind regimes).

A clear framework for defining these 'natural' and 'exceptional' events needs to be developed. The USEPA (2007), in its Final Rule for the Treatment of Data Influenced by Exceptional Events defined an event as "an exceptional event if the event affects air quality; is an event that is not reasonably controllable or preventable; is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and is determined by EPA to be an exceptional event." Within the USEPA definition 'natural events' can include high winds that create local and/or regional dust, but is noted to be "more substantial than a typical dry day(s) or season for the area in question." In Australia, due to regular natural events the existing maximum allowable PM10 dust exceedances in the current NEPM could not be met at some regional NEPM monitoring stations irrespective of human activities. For this reason the definition within a possible Australian framework for 'natural' events, should consider whether the exceedance would have occurred whether anthropogenic sources existed or not.

The main benefit of excluding 'natural' and 'exceptional' events is that it recognises that there are circumstances that can adversely affect air quality that are not reasonably controllable or preventable, and that the cost associated with attempting to mitigate the impacts of such 'natural' and 'exceptional' events can be far greater than the air quality benefits of attempting to do so. Therefore inappropriate and potentially ineffective expenditure are reduced which should enhance the prospect of more efficient use of resources for the management of air quality.

The process used to determine whether an event is deemed to be a 'natural' or 'exceptional' event need to be transparent and open to public review. Data associated with such events should not be excluded from the ambient monitoring datasets, or from publicly reported monitoring results as such exclusions would undermine the veracity of the ambient air quality monitoring data. All valid ambient monitoring data should be reported and any 'natural' or 'exceptional' events are identified and documented as part of the reporting and excluded from the AAQ compliance criteria.

Further consultation with stakeholders will be required to consider the process for determining natural or exceptional events, and to explicitly consider the impacts on areas in arid to semi-arid regions.

#### Monitoring Locations

Options outlined in the 2007 Discussion Paper included substantial changes to the NEPM framework within which air quality standards are to be implemented. Notably, possible alteration or expansion of ambient monitoring to cover urban, rural, background, traffic, and industrial area to obtain more data for exposure assessment in line with international practice have been suggested. Uncertainties regarding the application of the AAQ NEPM framework within which standards are to be implemented hinder the effective evaluation of suitable air quality standards during the current stage of the review. It is important that further stakeholder consultation is undertaken when potential ambient monitoring options are more defined coherently proposed (including framework; monitoring protocols; air quality standards) prior to options being selected for detailed cost-benefit analysis and impact assessment. Related to this is the consistent application of the AAQ NEPM standards by all jurisdictions as was intended by the NEPC (as outlined above).

#### Consistent Data Collection and Treatment Methodology

There appears to be significant variations in how jurisdictions across Australia manage monitoring data, particularly the treatment of short-term negative concentrations recorded by BAM and TEOM monitors where often valid data (based on the TEOM and BAM manufacturer's assessment) are invalidated by the jurisdictions. Differing treatments of data can result in significant differences between the same sets of data. The AAQ NEPM monitoring protocols need to mandate specific methods to deal with all aspects of data collection including data exclusions (invalidation), recommended minimum sampling intervals, and data averaging to ensure that data can be compared like for like across jurisdictions.

#### Planning Implications

In some regions the standard may not be achieved due to emissions from natural environmental sources (e.g. dust), and without sufficient guidance in the NEPM for decision makers or influencers to consider regional context; unintended planning consequences could arise. The exclusion of regional 'natural' and 'exceptional' events, as described in Q4, from the assessment of compliance with AAQ NEPM goals would alleviate some of this risk.

#### Increased Guidance

More direct guidance advice should be provided on the basis and intended application of the NEPM, and not as a target or standard to be achieved at industry boundaries or upper bounds sites. The use of the NEPM as proxy industry targets can result in significant costs with limited benefit to the population, or community as a whole, and has the potential to re-direct resources away from more critical environmental management needs.