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Submission on the AQ NEPM Discussion Paper

This submission on the Air Quality NEPM Discussion Paper (2010) is made by:
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My interests and expertise relate to particles and air toxics especially those associated with wood-smoke. I have restricted my comments to these issues.

1. I believe new health evidence does support a revised standard. In particular, evidence of the adverse health impacts of long-term exposure to particles, both PM₁₀ and PM_{2.5}, indicates a need for some revision of standards aimed at reducing exposure to these air pollutants. Stronger evidence of adverse health effects of benzene and PAHs suggests standards for both should be included in a revised AQ NEPM.
2. Air pollutants for which no lower threshold is apparent require a management approach that achieves the lowest practical exposure when health, social and economic factors are considered. This suggests that annual standards are required for particles, benzene and PAHs in addition to appropriate short-term standards.
3. PM₁₀ short-term: the current short-term PM₁₀ standard of 50µg/m³ (24h) is appropriate in my view. However, consideration should be given to reducing the allowable number of exceedances. Analysis of historical data on exceedances should be used to establish whether natural events (e.g. wild fires) do cause 5 exceedances per year, if not the number should be lowered. Adoption of a standard that allows 'natural' events creates potential for misuse of the terminology, e.g. is a planned burn that escapes and fumigates an area natural or human-caused?
4. PM₁₀ annual: the lack of an annual PM₁₀ standard means that unacceptable long-term exposure can occur. The evidence suggests that an annual standard of 20 or 25µg/m³ is desirable.
5. PM_{2.5}: health evidence suggesting more adverse impacts from PM_{2.5} than PM₁₀ indicate a need for both short-term and long-term standards for PM_{2.5}. A 24h limit of 25µg/m³ with similar exceedance allowances to PM₁₀ appears appropriate. An annual limit of 10µg/m³ appears appropriate.
6. I support the inclusion of benzene and PAHs in a revised AQ NEPM but I do not feel I am in a position to suggest what short-term or long-term standards would be most appropriate.
7. The AQ NEPM has achieved much in protecting the population from unacceptable exposure to air pollutants. However, one section of society that has not benefited from the NEPM is the unlucky group that happen to live close to a house with a smoky wood-burning heater. Local topography and air

movements can create situations where extreme concentrations of air pollutants can enter people's homes. In theory, State and Local Government air pollution and nuisance provisions should deal with these cases; in practice many people continue to experience totally unacceptable air quality on a regular basis. One part of the problem is the lack of any quantified limit to what is acceptable. The use of vague terms such as 'nuisance' leaves local authorities with difficult personal choices to make in situations which are usually well beyond calm and rational identification of solutions. A national standard for short-term particle concentration exposure for households (excluding natural events) would greatly assist management of this serious problem. I suggest a 10 minute average PM₁₀ concentration of 250µg/m³ measured at an external wall of a home as a starting point for discussion.

I am very conscious of the fact that this is totally different to standards protecting airshed scale air quality. However, a national approach is required because 30 years of local efforts to deal with the problem have had limited success.

John Todd
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