

**Preliminary Comments from Dr. Sverre Vedal on
EPA's Integrated Review Plan for the National Ambient Air Quality Standards
for Particulate Matter (External Review Draft – April 2016)
05-22-16**

Comments on Chapter 2

To what extent does the Panel find that Chapter 2 clearly articulates the decisions made in the last review of the primary (sections 2.1.1, 2.1.2) and secondary (sections 2.2.1, 2.2.2) PM standards, and the rationales supporting those decisions?

The review of the decisions and their rationale is generally well done and is faithful to their content and spirit, as I remember them.

Minor points:

p.2-8, line 20. I understand the context of this, but don't believe that part of the motivation for the 24-hr standard was that it also provided protection against PM effects "of shorter-than-daily exposure periods." However, there may be reference to that somewhere in the Federal Register.

p.2-8, line 5 & 2-9, line 6. I believe there was also discussion of neurological outcomes even at that time, in addition to reproductive and developmental outcomes, although this also had little impact on recommendations regarding the level of the standard.

To what extent does the Panel find that the policy-relevant questions presented in sections 2.1.3 (primary) and 2.2.3 (secondary) appropriately characterize the key scientific and policy issues for consideration in the current review? Are there additional issues that should be considered?

Primary PM_{2.5} standard.

With respect to the primary standard (section 2.1.3), there are clearly several issues that will be central to this round of deliberations on the annual and 24-hour PM_{2.5} standards:

1. Most notably, is there scientific justification for an even lower level of the annual standard?
2. Is there now sufficient evidence to propose either annual or 24-hour PM_{2.5} standards based on chemical composition or on source? The primary issue will likely be whether PM from coal combustion (and/or an indicator of coal combustion) should receive special attention in the annual standard.
3. Is there justification for an additional, or an alternative, indicator, specifically PM_{0.1}?
4. In light of findings from several human clinical studies involving experimental chamber studies with exposure periods on the order of only a few hours, is there justification for adding an alternative shorter averaging period?
5. While acknowledging that such an approach is not allowable at this time, is there justification for considering regional standards based on, for example, either: i) PM composition or source; ii) degree of short-term variability in PM concentrations; or iii) regional heterogeneity of reported health effect findings? These are interrelated, of course, to some extent at least.

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These and other issues relating to the primary PM_{2.5} standard were, apart from #5 above, covered by the policy-relevant questions posed in the Draft PM Integrated Review Plan. I have no additional questions to add. My #5, above, may be a non-starter and so may not rise to a level to be included in the list of questions.

Primary PM₁₀ standard.

Regarding the primary PM₁₀ standard, the principal issue will be whether to retain the standard or replace it with a PM_{10-2.5} standard, and if not, whether the current level of the PM₁₀ standard should be retained. There have been a number of PM_{10-2.5} findings reported since the last round, including human clinical findings from experimental studies, so clearly these will need to be integrated into these deliberations.

The policy-relevant questions relating to the PM₁₀ standard are thorough and clear.

PM monitoring.

Regarding monitoring, I initially thought it a bit odd to include this discussion here, but considering that there are clear policy-relevant issues to be addressed relative to monitoring, I believe it's appropriately included here. To integrate better with the rest of this chapter, staff might consider adding policy-relevant questions relating to monitoring.