

## ***COARSE PARTICULATE MATTER COALITION***

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October 15, 2019

Dr. Louis A. ("Tony") Cox, Jr.  
Chairman  
Clean Air Scientific Advisory Committee  
EPA Science Advisory Board Staff Office(1400R)  
U.S. Environmental Protection  
Agency, 1200 Pennsylvania Avenue  
NW, Washington, DC 20460;

*Submitted electronically through SAB staff*

Re: CASAC Review of First Draft Policy Assessment for Particulate  
Matter

Dear Chairman Cox and Committee Members:

The Coarse Particulate Matter Coalition (CPMC), an organization of industries dedicated to scientifically sound regulation of coarse particulate matter (PM<sub>10-2.5</sub>) in air, offers the following comments in connection with the Clean Air Scientific Advisory Committee (CASAC) review of the First Draft of EPA's Policy Assessment (PA) for Particulate Matter (September 2019).<sup>1</sup> CPMC's comments may be summarized as follows:

1. The Committee should affirm the conclusion in the draft PA that the newly available evidence for coarse PM does not support revision of the current PM<sub>10</sub> standards;
2. The Committee should affirm the conclusion in the draft PA that the newly available evidence does not change the prior conclusion that health effects have been attributed to coarse crustal PM only at exposure levels well above the current PM<sub>10</sub> primary standard;
3. The Committee should ensure that the PM Integrated Science Assessment is revised as previously recommended.

These points are discussed further below.

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<sup>1</sup> Current members of the Coalition include the Corn Refiners Association, National Cotton Council, National Stone, Sand & Gravel Association, Rio Tinto Kennecott and the National Cattlemen's Beef Association.

## **Retention of the Current PM10 Standards**

The draft PA notes that in the last review, EPA chose not to revise the PM10 concentration limit as a result of uncertainties in the coarse PM evidence at that time, including uncertainties in the exposure estimates used in epidemiologic studies, in the independence of the health effect associations from other pollutants, and in the biological plausibility of the coarse PM-related effects. The PA finds that these uncertainties persist in newly available evidence, and therefore recommends retention of the current standard without consideration of potential alternatives.

CPMC urges the Committee to affirm this approach. As discussed in our comments to the Committee on the draft Integrated Science Assessment (ISA), the upgraded causality determinations proposed in that document for various health endpoints for the coarse fraction were not supported by EPA's criteria for judging causality. This is particularly true with respect to the proposed upgrade for cancer from "inadequate" to "suggestive." In support of that approach, the draft ISA: (1) discusses only two epidemiological studies of coarse PM, which produced weak and somewhat inconsistent results; (2) discusses no confirming experimental studies, other than studies of biological plausibility; (3) finds that the studies of biological plausibility are few and their results are mixed and often attributed to urban road dust; (4) finds that no exposure-response relationship has been established; (5) discusses no confirming experimental evidence; (6) establishes no temporal sequence; and (7) indicates that the vast majority of the PM cancer findings are not specific to coarse PM, the few specific results are weak and most of the studies are focused on urban road dusts. CPMC agrees that these results, and the similar results for the other health effect endpoints for coarse PM, are insufficient to support revision of the PM10 standard.

Similarly, with respect welfare effects, the PA concludes that the uncertainties that prevented revision of the secondary standard in the last review remain present in the newly available evidence, and therefore recommends retention of the current secondary standard. CPMC supports this recommendation as well. We urge the Committee to state clearly in its response to EPA that the newly available evidence in this review is insufficient to support revision of either the current primary or secondary standard for PM10.

## **Coarse Crustal Exposures**

The draft PA confirms EPA's conclusion in the last review that the health effects evidence for the coarse fraction (PM10-2.5) is derived primarily from studies of contaminated urban dusts, and that effects from exposure to coarse crustal material have been seen only at levels well above the current standard. The draft finds that newly available evidence in this review does not alter these conclusions.

The draft ISA finds that PM<sub>10-2.5</sub> throughout the US is almost entirely primary in origin, composed largely of crustal material, sea salt, and biological material, and also notes that national average PM<sub>10-2.5</sub> concentrations have changed little over the past decade (p. ES-4). The ISA also finds that concentrations are highest in southwestern U.S. and are observed to be largely dominated by crustal material, but organic material can also represent a substantial contribution to mass, as well as biological material like bacteria, viruses, fungal spores, pollen, and plant debris (p. 1-12).

In contrast, the profile of urban roadside emissions presented in the draft ISA is quite different (pp. 2-70-71). The draft reports higher concentrations of PM components near roads with heavy traffic, including carbonaceous aerosols, PAHs, steranes, chromium, copper, iron and black carbon.

The 2009 PM ISA noted that in the prior review, "the CASAC PM Panel was also in general agreement 'that coarse particles in urban or industrial areas are likely to be enriched by anthropogenic pollutants that tend to be inherently more toxic than the windblown crustal material which typically dominates coarse particle mass in arid rural areas'" (p. 1-9). The 2009 ISA discussed a number of new studies involving crustal material, but nearly all of them involved road dust, combustion sources or other external sources of potential contamination (see Table 6-17). The only reference to potential harm from exposure to crustal material involved studies of dust storms, with concentrations well above the current standards (p. 6-97). Accordingly, the Policy Assessment (PA) in the last review found that evidence of harm from exposure to crustal material was limited to studies involving high concentrations (p. 3-29).

This also was recognized by CASAC members in the last review. For example, in his individual comments on the second draft PA Dr. Joe Brain stated:

There is also a continuing cry for a more thoughtful assessment of particle composition. There is increasing evidence that the extent of particle toxicity relates to the composition and solubility of the particles. There is also concern about the most appropriate metric. Should standards really be mass-based or should they reflect numbers or surface area of particles? The composition issue is particularly relevant to discussions of coarse particles. How do we make the distinction between those derived from fossil fuel combustion and resuspended crustal dust? There is consensus that resuspended crustal dust is less toxic than combustion products. There are clear regulatory implications as well. It's hard to regulate dust storms, but easier and more appropriate to regulate stationary and mobile sources (emphasis added).

The only evidence for coarse crustal health effects discussed in the current draft ISA concerns dust storm events during which concentrations well above the current standards were linked to increases in cardiovascular ED visits and hospital admissions (p. 6-248). The draft ISA notes that even with respect to these studies, there are concerns with respect to the potential for exposure measurement error and copollutant confounding (*id.*).

As a result of these findings, now consistent through at least three PM NAAQS reviews, the draft PA concludes that nothing has changed, and the available evidence continues to show: (1) that the health effects evidence for the coarse fraction is derived primarily from studies of contaminated urban dusts; and (2) that effects from exposure to coarse crustal material have been seen only at levels well above the current standard. CPMC urges the Committee to affirm these conclusions in the draft PA.

### **Draft ISA**

In its letter of April 11, 2019 to the Administrator regarding the draft PM ISA, the Committee called for numerous revisions to the draft ISA. We urge the Committee to continue to advocate for such revisions. While it is true, with respect to the coarse fraction, that the draft PA recommends no related changes in the PM10 standards, there are many reasons to ensure that the final ISA provides an accurate analysis. While we would disagree, some may argue that the health effects findings proposed to be upgraded from “inadequate” to “suggestive” could be used to support a revised standard. Even if not, the findings and conclusions in the ISA often are used for other purposes, such as toxic tort or product liability litigation. And the findings in this review are likely to be accepted as given in future reviews, despite the absence of sufficient support at this stage. We urge the Committee to continue to advise major changes in the draft PM ISA as reflected in the Committee’s April 11, 2019 letter

CPMC thanks you for considering our comments, and for the time and effort you have contributed to the CASAC deliberations on these important public health and welfare issues. Please feel free to contact me with any questions or comments you may have.

Respectfully submitted,

Kurt E. Blase

Counsel for the Coarse PM Coalition