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Clean Air Scientific Advisory Committee
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Review of the
Policy Assessment for the
Review of the Particulate Matter
National Ambient Air Quality Standards
Second External Review Draft June 2010
EPA-452/P-10-007

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Good morning. Thank you for the opportunity to offer comments on behalf of the American Lung Association.

I would like to focus on several major issues regarding the rationale underlying the recommendations for the fine and coarse particle standards.

Fine Particles

First, with respect to the fine particle standard: the draft Policy Assessment states that it might be appropriate to considering a more protective 24-hour standard of 30 $\mu g/m^3$, but only in conjunction with the more protective option of an annual standard of 11 $\mu g/m^3$.

There is strong evidence of the adverse effects of short-term exposure to $PM_{2.5}$. The Integrated Science Assessment (ISA) concluded that there was a causal relationship between short-term $PM_{2.5}$ exposures and cardiovascular effects and mortality, and a likely causal relationship with respiratory effects.

The draft Policy Assessment allows that it might be appropriate to consider a tighter daily standard to protect against strong local or seasonal sources of emissions that result in high daily concentrations, despite the annual average standard.

Here is where the logic falls apart. It does not make sense to consider a tighter 24-hour standard of 30 $\mu g/m^3$ only in conjunction with the most stringent annual standard under consideration, that is the standard of 11 $\mu g/m^3$. If daily concentrations are of concern with a standard of 11, they are even more so of concern with an annual standard of 12 or 13 $\mu g/m^3$. A higher annual standard will be less effective at moderating 24-hour peaks than a lower standard.

The justifications offered by the draft Policy Assessment do not hold up. First, the draft states that the annual standard should be controlling -- but the National Ambient Air Quality Standards must protect public health -- even if the 24-hour standard is controlling in some areas. This whole rationale of the "controlling" standard is not germane to selecting standards, and has no statutory basis in the Clean Air Act.

Second, the draft policy assessment purports to set a 24-hour standard based on the average peak to mean ratio in most but not all regions of the country of 2.5. (In the Northwest, the ratio is approximately 3.5). The Policy Assessment states that it is reasonable to focus on 24-hour standards that are at least 2.5 times the annual standard. This is used to argue that the current level of the standard of 35 $\mu g/m^3$ meets this criterion. But again, the goal is to identify a level that will protect health, not to maintain the annual standard as controlling.

Different areas have different distributions of 24-hour exposures, with some places having fairly steady levels year-round and other areas having large variation between peak and average concentrations. The health effects associated with acute and chronic $PM_{2.5}$ exposures are distinct. EPA, therefore, must adopt standards that individually or collectively address both sets of exposures.

The draft Policy Assessment further justifies its failure to consider tightening the 24-hour standard based on regional considerations. EPA's analysis of air quality data shows that a standard of 11 $\mu g/m^3$ annual, and 30 $\mu g/m^3$ daily, would primarily impact the Northwestern region of the country, where emissions from wood-stoves and agricultural burning are problems. A standard of 30 or 25 $\mu g/m^3$ in conjunction with an annual standard of 13 or 12 $\mu g/m^3$ would affect additional regions of the country.

This regional justification is not allowed under the Clean Air Act, and it is bad policy because it would fail to provide equal protection throughout the U.S.

Coarse Particles

With respect to the coarse particle standards, we are dismayed that the Policy Assessment contemplates a relaxation of the form of the 24-hour standard. The current form of the standard is the "one expected exceedance" form (not to be exceeded more than once per year on average over 3 years). We are very concerned that the draft Policy Assessment suggests moving to a 98^{th} percentile form.

The goal of the 24-hour standard is to prevent peak daily exposures. As we have argued in the past, a 98^{th} percentile form of the standard excuses too many days of unhealthy air quality from the compliance determination -- seven days per year. The continued reliance on 1 in 6 day monitoring (or 1 in 3 day monitoring) is not a reason to move to a 98^{th} percentile standard. Indeed it is past time to require daily monitoring of PM_{10} concentrations. Daily monitoring will be useful for determining compliance, as well as for conducting epidemiological studies of daily exposures.

Even if EPA lowers the level of the 24-hour standard to compensate for a more lenient form, it will not address our concerns. The Agency needs to consider the practical effect of a change in form that does not increase the protectiveness of the standard -- which is to delay delivery of health benefits. That is because a change in form of the standard will delay implementation for eight years. States will have to reclassify nonattainment areas, and develop new implementation plans, and the deadlines for attainment will be extended. Meanwhile, clean up efforts will be stalled.

The draft Policy Assessment argues that the PM_{10} indicator for coarse particles is desirable because it will allow less coarse particle pollution in urban areas than in rural areas, and this is a good thing because urban coarse particles are more toxic. Toxic coarse particles are present in rural areas as well as urban areas, so this is not a valid consideration. Mobile, off road, and stationary combustion sources are located in rural and urban areas. Likewise, industrial sources of coarse particle emissions exist in less populated areas. Toxic pesticides and metals can contaminate coarse particles in rural areas.

National standards must protect all citizens, urban and rural alike. The draft Policy Assessment says the reason for this is that fine particles are more prevalent in urban areas therefore you would have to emit less coarse particles (relative to rural areas) to meet a PM_{10} standard -- in other words the PM_{10} standard would me more stringent in urban areas. The PM_{10}:$PM_{2.5}$ ratio varies from region to region; therefore a PM_{10} standard might similarly allow more coarse particle pollution in the West than in the East.

The draft Policy Assessment states that most health studies of coarse particles have been conducted in urban areas. This is because you can only conduct studies where you have monitoring data. But this lamp post effect does not mean that rural areas have less toxic coarse particles. There is no support in the ISA for the notion that rural particles are less toxic than urban.

Monitoring

The policy assessment should include a discussion of monitoring issues relevant to compliance with the standard. This should include consideration of monitoring technology, network design, siting, and frequency. EPA often describes four aspects of the standard: averaging time, indicator, form, and level. Monitoring is a fifth integral element that determines the effectiveness of the standard in protecting public health.