

WebMemo



Published by The Heritage Foundation

No. 1827
February 26, 2008

EPA Should Not Increase the Ozone Regulation Burden

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In June 2007, the Environmental Protection Agency (EPA) proposed a more stringent revision of the National Ambient Air Quality Standards (NAAQS) for ground-level ozone, the primary component of smog. Currently, the eight-hour ozone standard set by the EPA is 84 parts per billion (ppb). The new proposal would lower this to 75ppb or 70ppb.

The signature on the final ruling is expected in March, and the rule would go into effect 60 days after publication in the *Federal Register*. The EPA would require each state to designate attainment and non-attainment areas and to have a detailed State Implementation Plan outlining how to reduce air pollution.

The revisions purportedly aim to strengthen public health safety for asthmatics, children, and the elderly and to limit environmental damage to vegetation and ecosystems.¹ However, studies have proven that the current standard is stringent enough and that implementing a tighter standard would be extremely costly and could actually increase some health risks. Many counties would be forced to comply with new requirements that offer only marginal health benefits at best. The EPA should withdraw its proposal.

Standard Is Already Stringent. Although it was contested as too stringent by the Departments of Commerce, Energy, and Transportation and the Small Business Administration, the eight-hour standard of 84ppb was adopted by the EPA in 1997. The new standard was implemented despite the fact

that, at the time, the EPA estimated that the social costs of attaining 84ppb would be twice as much as the social benefits.² Out of 639 monitored counties, 104 currently violate the standard, most of them in Southern California and the coastal Northeast. If nearly one-sixth of monitored counties cannot meet today's standard, it is unlikely that a harsher standard will increase compliance.

The existing standard is more than sufficient to protect public health. The laboratory studies used by the EPA to justify a tougher standard fail to take into account the substantial difference between ambient concentrations and personal exposure. Federal, state, and local authorities use fixed ambient monitoring stations to measure ozone concentrations, but this does not measure the amount of ozone people actually inhale. In other words, the EPA sets policy based upon ambient concentration but then uses laboratory studies based on personal exposure to validate the need for a more stringent ozone standard.

Since ambient monitors do not consider the time that people spend indoors,³ ambient concentration is 1.67 times to 2.5 times higher than personal exposure. When laboratory studies assess the health

This paper, in its entirety, can be found at:
www.heritage.org/Research/EnergyandEnvironment/wm1827.cfm

Produced by the Thomas A. Roe Institute
for Economic Policy Studies

Published by The Heritage Foundation
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Washington, DC 20002-4999
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effects of a 60ppb to 80ppb personal exposure, the ambient concentration needed to have those effects is actually 100ppb to 134ppb.⁴ Thus, the ambient-based standards set by the EPA are automatically stricter than the levels recommended by the studies.

There are no compelling data to warrant a stricter standard. In laboratory tests, only two out of 30 healthy college students experienced a temporary reduction of 10 percent in lung function at a *personal exposure* of 60ppb.⁵ Personal exposure of 51ppb, which most resembles the current standard of 84ppb, had no negative effects on those tested.

These findings suggest that the current standard is actually too stringent. Even the EPA recognizes that “using ambient concentrations to determine exposure generally overestimates true personal O₃ exposures by approximately 2- to 4-fold in available studies, resulting in attenuated risk estimates.”⁶

Ambiguous Health Effects. Lowering ground-level ozone standards is not entirely beneficial for quality of health. The EPA distinguishes between “good” ozone and “bad” ozone: It maintains that ground-level (or “tropospheric”) ozone is a pollutant and a health risk, while stratospheric ozone protects the public and the environment by shielding Earth from the Sun.

However, ground-level ozone also reduces exposure to ultraviolet rays. In fact, Randall Lutter and Christopher Wolz suggest in *Environmental Science and Technology News* that a decrease in tropospheric ozone of 10ppb would result in increases in cata-

tracts and non-melanoma skin cancer.⁷ Subsequently, *tightening* the ground-level ozone standard could actually have detrimental health effects.

The EPA identifies a number of health risks associated with breathing ozone, most of which involve harmful respiratory effects. Still, the correlation and severity of these risks, especially for asthma, are unclear. From 1980 to 2005, when levels of ozone and other pollutants fell in the United States, the number of asthmatics increased by 75 percent. In fact, some of the lowest asthma rates in the world are found in highly polluted developing countries in the former Soviet Union, while countries in Western Europe have considerably higher asthma rates and relatively lower levels of air pollution.⁸

The lack of justified causality between smog and asthma casts further doubt on the need for states to spend billions of dollars to meet an EPA standard. College participants in a laboratory study exposed to ozone levels 50 percent greater than the 84ppb standards experienced minimal changes in lung function; moreover, these changes were only short-term.⁹

Economic Costs vs. Benefits. The Clean Air Act forbids the EPA from considering economic costs when setting ozone standards; however, the EPA must still provide a detailed cost-benefit analysis when amending NAAQS. A reduction in ozone-level standards would make sense if the economic benefits of better health (fewer doctor visits, fewer inhalers, higher work and school attendance) con-

1. U.S. Environmental Protection Agency, “2007 Proposed Revisions to Ground-Level Ozone Standards,” at www.epa.gov/air/ozonepollution/naaqsrev2007.html.
2. Joel M. Schwartz, “Comments on EPA’s Proposal to Adopt a More Stringent Ozone Standard,” American Enterprise Institute, October 9, 2007, at www.aei.org/docLib/20071101_SchwartzOzoneComments.pdf.
3. L. J. Liu, R. Delfino, and P. Koutrakis, “Ozone Exposure Assessment in a Southern California Community,” *Environmental Health Perspectives*, Vol. 105 (1997), pp. 58–65.
4. Schwartz, “Comments on EPA’s Proposal to Adopt a More Stringent Ozone Standard.”
5. *Ibid.*
6. Environmental Protection Agency, “National Ambient Air Quality Standards for Ozone; Proposed Rule,” July 11, 2007, at www.epa.gov/air/ozonepollution/pdfs/20070711_proposal_fr.pdf.
7. Randall Lutter and Christopher Wolz, “UV-B Screening by Topospheric Ozone: Implications for the National Ambient Air Quality Standards,” *Environmental Science and Technology News*, Vol. 31, No. 3 (1997).
8. Joel M. Schwartz, “A Clean Air Regulation Hazardous to Health,” *NCPA Brief Analysis*, October 22, 2007, at www.aei.org/publications/filter.all,pubID.27006/pub_detail.asp.
9. *Ibid.*

vincingly outweighed the costs of implementing the standard. In the Ozone NAAQS Regulatory Impact Analysis, the EPA projects that the annual cost of implementing an ozone standard of 70 ppb would range from \$10 billion–\$22 billion, while the benefits would range from a low spectrum of \$2.5 billion–\$24 billion to a high spectrum of \$9.7 billion–\$33 billion.¹⁰

The EPA's methodology for arriving at these estimates is questionable. As noted above, it is extremely difficult to determine the direct causality between lower ozone standards and improved health benefits. If ozone does not contribute to premature deaths, adverse health effects, and missed days of work and school as much as the EPA asserts, then the agency's estimates of the monetary benefits of a lower ozone standard are grossly overestimated. More study is needed in this area.

A revised standard could also increase illnesses or premature deaths by reducing household income. By displacing expenditures for housing, food, and other factors that are highly correlated with improved health, the new standard could result in an estimated 833 to 2,933 premature deaths.¹¹

The EPA's cost-benefit analysis should be subjected to more serious scrutiny on both sides of the equation.

Regional Effects. If the EPA decides on a stricter standard, many counties will face compliance problems. A standard of 75ppb would increase the number of non-attainment counties (those violating the standard) from 104 to 398; under a standard of 70ppb, the number would increase to 533, or approximately 83 percent of all monitored counties.¹²

The new standards would impose a severe economic burden on the vast majority of the nation's counties. Businesses would have less incentive to build new plants or develop in non-attainment counties. The U.S. Chamber of Commerce recognizes these risks, citing a study conducted by the Force on Hemispheric Transport of Air Pollution concluding that emissions from foreign nations contribute significantly to ozone levels. The Chamber also says the following:

[N]on-attainment counties can lose federal highway and transit funding; restrictive permit requirements deter companies from building new plants or modifying existing ones; and mandated federal pollution control measures inhibit business expansion as local plans for economic development are put on hold.¹³

A new ozone standard would affect counties all across the United States, including counties already classified as non-attainment areas and new regions that would be required to develop regulations in order to comply. The counties already struggling to meet the current standard would have the most trouble.

Furthermore, a study prepared for the National Association of Manufacturers analyzed five specific regions and estimated that annual attainment costs would range from \$1.4 million in Salt Lake City to \$9.8 billion in Atlanta, Georgia.¹⁴ Complying with a lower target of 65ppb would significantly exacerbate the financial burden, resulting in lower regional gross domestic product, thousands of lost jobs, a drop in population, and millions of dollars in lost state tax revenue.

10. Environmental Protection Agency, "Ozone NAAQS Regulatory Impact Analysis," September 17, 2007, at http://pubweb.epa.gov/air/caaac/mstrs/sept2007/evans_adler.pdf.

11. Schwartz, "A Clean Air Regulation Hazardous to Health."

12. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Counties with Monitors Violating Alternative 8-hour Ozone Standards 0.070-0.075 parts per million," MAPS, p. 3, at www.epa.gov/air/ozonpollution/pdfs/20070621_maps.pdf.

13. U.S. Chamber of Commerce, "Chamber Praises Air Pollution Task Force Findings on International Ozone Levels and U.S. Air Quality," press release, June 27, 2007, at www.uschamber.com/press/releases/2007/june/07-108.htm.

14. NERA Economic Consulting and Sierra Research, "Estimated Attainment Costs and Economic Impacts in Selected Regions of Proposed Revisions to the EPA 8-Hour Ozone Standard," January 2008, at www.nera.com/image/PUB_Ozone_Standard_Jan2008.pdf.

Conclusion. It is appropriate for the EPA to consider the public health risks associated with ground-level ozone. However, the EPA should consider the trade-offs involved in making the current standard stricter. Like reducing the speed limit to 15 miles per hour, it might save more lives but would come with extremely high economic costs.

The EPA should retract its proposal to lower the NAAQS ground-level ozone standard from 84ppb to 75ppb or 70ppb. The current ozone standard set by EPA is already more stringent than it needs to be and provides more than enough leg room to protect citizens' health.

The costs of tightening the standard have outweighed the benefits in the past, and the new proposal would experience diminishing marginal returns: Every additional dollar spent would yield inconsequential or even adverse health benefits. Before the EPA forces states to adopt onerous air pollution reduction plans, it should take this proposal off the table.

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