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Brief Analysis

A Clean Air Regulation Hazardous to Health

by Joel Schwartz and H. Sterling Burnett

The Environmental Protection Agency (EPA) has proposed a new federal standard for ozone air pollution that is much stricter than the current limit. If the proposal is adopted, the EPA will reclassify most regions of the United States as "nonattainment" areas. This means they violate the EPA standard and will be required to implement costly measures to comply with the new limits. Cities unable to meet the new standard could face federal restrictions on development, road-building and construction of new commercial and industrial facilities.

A more stringent ozone standard might be worthwhile if current ozone levels posed a significant threat to human health, and if making the standard stricter were cost free. However, neither of these conditions hold true. The current ozone standard is already low enough that exceeding it poses little or no health risk. And because the new standard will be difficult to meet in many areas — even if all vehicle, industrial and household emissions are eliminated — it arguably poses a more serious threat to Americans' welfare than the health risks of today's already-low ozone levels.

Current Ozone Regulations. The Clean Air Act requires the EPA to set limits for air pollution that will protect public health "with an adequate margin of safety." The EPA is also required to periodically review these criteria and, if new scientific evidence indicates the current standards are inadequate, establish stricter limits.

Under the current standard, levels of ozone and the pollutants that combine to form it are declining. For instance, across the country, on the average:

- Levels of NOx (oxides of nitrogen [NO and NO_2] produced during combustion) decreased 37 percent between 1980 and 2005. [See the figure.]
- Emissions of VOCs (volatile organic compounds) fell 47 percent.
- Peak 8-hour ozone levels declined 20 percent, and days per year exceeding the 8-hour standard fell 79 percent.

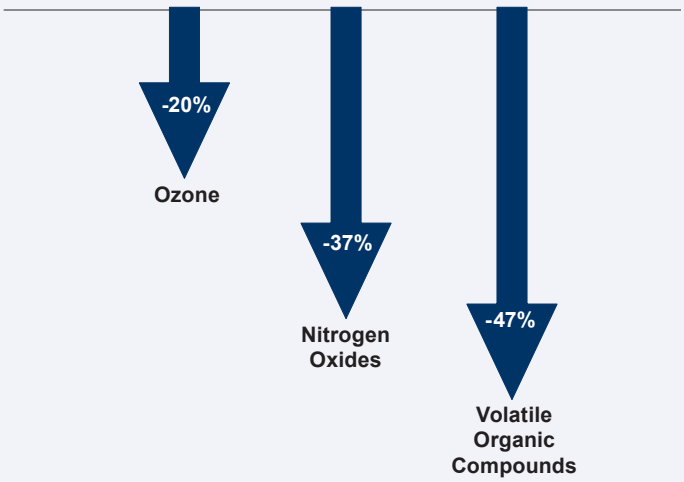
Only 19 percent of the nation's metropolitan areas violate the EPA's current ozone standard, down from 40 percent just a few years ago. Only 4 percent of nonmetropolitan counties — those that include only rural areas or smaller cities — violate the current standard. Programs currently in the design or implementation stages will reduce ozone even further.

The EPA is currently reviewing the standard for ozone, which it last updated in 1997. The present standard allows 85 parts-per-billion (ppb) of ozone as measured over an 8-hour period. The EPA proposes a new lower ozone limit of 70 to 75 ppb. However, this standard would put 67 percent to 87 percent of metropolitan areas and 39 percent to 72 percent of nonmetropolitan counties in violation.

EPA Administrator Stephen Johnson claims that a tougher ozone standard is needed to protect public health. Contrary to Johnson's claim, current ozone levels are already so low as to have (at most) a tiny effect on Americans' health. Indeed, the current standard provides safe air with plenty of room to spare.

New Standard — All Pain, No Gain. EPA estimates indicate that attaining the proposed 70 ppb standard nationwide would reduce hospital visits for asthma and other respiratory diseases by only a *few tenths of a percent*. But even this may be an overestimate, because

Reduction in Air Pollution Concentrations (1980-2005)



Note: Ozone measured under the 8-hour standard.

Source: Environmental Protection Agency.

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the EPA omitted contrary evidence. For instance, a study of California's Central Valley sponsored by the California Air Resources Board (CARB) found that *higher* ozone levels were associated with *fewer* hospital visits.

Regulators and environmentalists often blame ozone for causing a rise in asthma, but the evidence shows that ozone is not a plausible culprit:

- The prevalence of asthma has risen about 75 percent during the last 25 years, and nearly doubled for children, yet levels of ozone and all other air pollutants have fallen.
- The lowest asthma rates in the world are found in developing and ex-Soviet countries with substantial air pollution, while western countries with the world's cleanest air have the highest asthma rates.

Another indication that ozone is not a significant factor in causing asthma attacks or other respiratory distress is that emergency room visits and hospitalizations for asthma are lowest during July and August, when ozone levels are highest.

The most serious charge against ozone is that it kills thousands of people prematurely each year. But, like most other claims of harm from low-level air pollution, this one rests on indirect evidence from so-called "observational" epidemiology studies — studies in which researchers look for correlations between air pollution and risk of death in large groups of people. Evidence shows that observational studies give spurious results, often "finding" effects that aren't really there, and producing results that reflect researchers' expectations, rather than reality.

Both animal and human laboratory studies demonstrate that real-world ozone exposures aren't deadly. For instance:

- Animals exposed by researchers to 10 times the ozone levels found in the most polluted American cities did not die.
- In laboratory studies, college student volunteers who breathed controlled concentrations of ozone *50 percent greater* than the *current* standard while vigorously exercising for six hours registered only small, short-term changes in lung function.

Elusive Benefits, High Risks. The U.S. Supreme Court has ruled that the EPA must set air pollution standards no higher and no lower than the level required to protect public health. The Court also ruled that in setting levels of allowable air pollutants the EPA cannot consider the financial cost of the measures required to attain its standards. Still, those costs exist and can't be banished by judicial fiat. Consumers pay through higher prices, lower wages and fewer choices. Any risk/benefit analysis would show that the harms posed by stricter ozone standards far outweigh the tiny potential benefits.

The EPA has estimated the benefits of setting new ozone limits at $2.5 billion to $33 billion annually. The vast majority of these benefits come from ostensible reductions in premature deaths. If ozone isn't killing people, as the research cited above indicates, these benefits won't be realized — as the EPA itself acknowledges.

On the other hand, there is a well-established relationship between wealth and health — with lower household incomes associated with increased mortality risk. By this measure, the health cost of tougher ozone standards is high:

- The U.S. Office of Management and Budget (OMB) has estimated that every $7.5 million to $12 million in regulatory costs imposed on the economy results in a life lost.
- The EPA estimates that attempts to meet the new standards would cost $10 billion to $22 billion per year, making it among the most expensive federal regulations ever — a substantial underestimate since the standard is near or below background ozone levels in some areas, making it impossible to attain.
- On the other hand, based on OMB estimates, new ozone regulations would result in at least 833 to 2,933 premature deaths, as Americans' hard-earned incomes are diverted to complying with the EPA's regulations and away from housing, food, education and other things that improve people's health and welfare.

In fact, the American Thoracic Society has concluded that poverty, not pollution, is the number one risk factor for asthma. Measures that increase unemployment and reduce household income increase the risk of asthma.

Conclusion. The EPA is charged with setting air pollution standards at levels protective of the public health. Certainly risks as well as benefits to the public should be considered in setting such standards. The newly proposed EPA standard poses a significant risk of public harm with little reason to expect much in the way of benefits. Accordingly, the EPA should withdraw its proposal to tighten the ozone standard, and acknowledge that the current standard already protects Americans' health with room to spare.

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