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EPA's Upcoming Ozone Standard: How Much Will Compliance Cost?

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The Environmental Protection Agency (EPA) is under a court order to complete a review of its ambient air quality standard for ozone (the "ozone NAAQS") by October 1, 2015. The agency must *propose* any change to the standard by December 1 of this year.

A NAAQS is essentially EPA's definition of what constitutes clean air in the case of six of the most common pollutants. The agency conducts an exhaustive review of the published research on the health effects of these pollutants before determining the levels that (in the Clean Air Act's words) "are requisite to protect the public health," allowing an adequate margin of safety. If an area has monitor readings higher than the ozone NAAQS when averaged over a three-year period, the area is in "nonattainment" of the standard.

The NAAQS does not directly impose emission controls on industry or other pollution sources, but it sets in motion a process under which nonattainment areas are identified and states submit implementation plans to EPA to demonstrate how they will bring the areas into compliance.

It is widely assumed, based on publicly available EPA documents, that the EPA Administrator will propose a more stringent ozone standard. The current standard is 75 parts per billion (ppb), averaged over an eight-hour period, with the fourth highest annual reading in three consecutive years averaged to determine whether an area is in attainment. Both EPA staff and the agency's outside science advisors have recommended that the standard be set in the range of 60 to 70 ppb.

Given this assumption, there has been speculation regarding the economic impact of a NAAQS revision. At the moment, no one knows what a revised NAAQS would cost, because EPA hasn't proposed one and we don't know what areas will be designated nonattainment. But even after a proposal is signed, cost estimates will be little better than guesses.

Why? Three reasons: the long implementation period; the unpredictable pace of technology development; and the decentralized nature of compliance decisions.

First, an ozone NAAQS has a longer implementation schedule than almost any air pollution standard. After the most recent two revisions of the standard in 1997 and 2008, it took seven years and four years respectively for the states and EPA to identify the areas to be designated "nonattainment." After that, the states had three years to develop implementation plans detailing the pollution control measures they would impose. Meanwhile, because of tighter standards for gasoline, motor vehicles, power plants, and other emission sources—many of which were already promulgated prior to the NAAQS decisions—air quality improved in most areas. Economic factors and changes in technology also played a role.

These same processes are likely to occur as the current revision is finalized and implemented. In December, EPA will identify areas that would not meet its proposed standard based on monitoring data available at that time; by the time nonattainment areas are actually designated, monitoring data could be significantly different.

To give an example from the most recent (2008) revision of the ozone NAAQS:

- When EPA proposed the revision in July 2007, 398 counties had monitoring data showing nonattainment with a 75 ppb standard—the standard that was eventually promulgated.
- Upon promulgation of the NAAQS eight months later, the number of counties with data indicating nonattainment was 345, based on available data at that time.

- By May 2012, when nonattainment areas were actually designated, the number of nonattaining counties had been reduced to 221.

Ozone nonattainment areas have as long as 20 years to reach attainment. There are numerous mileposts along the way where reasonable further progress toward attainment must be demonstrated, but EPA's history in regard to implementation suggests that 20 years is not a firm deadline: New York, Los Angeles, and other cities have been designated nonattainment for an ozone NAAQS since the early 1970s, and still have years available on what might be called EPA's "deadline clock."

Meanwhile, the second factor cited above plays a role: technology to reduce emissions improves. EPA, in its last two reviews of the ozone NAAQS, stated that it couldn't identify the controls that some areas might impose to reach attainment, but it concluded: "Technological advances over time will tend to increase the economic feasibility of reducing emissions, and will tend to reduce the costs of reducing emissions." This has certainly been the case since 1971, when the first NAAQS were promulgated. At the time, not a single production car was equipped with a catalytic converter, which within five years became the industry standard. By 2013, continued improvements in catalysts and engine technology had lowered total ozone-creating vehicle emissions by 60% to 87% while vehicle miles traveled nearly tripled.

A third factor that makes predicting costs guesswork is the decentralized nature of emission control decisions. Aside from some statutorily mandated compliance measures, states—not EPA—decide what sources will be regulated and how stringent the controls will be. Often, industry can choose how to comply, based on a range of available technologies.

In anticipation of the EPA ozone proposal, debate over a standard's cost has already begun: a July 2014 study released by the National Association of Manufacturers concluded that "the potential emissions control costs would reduce U.S. Gross Domestic Product (GDP) by $270 billion per year on average over the period from 2017 through 2040...." If that turns out to be the case, the rule will be the most expensive EPA rule in history, by far.

But NAM's study reached another conclusion that received less press: it spoke of "the limited information now available to assess these compliance costs and economic impacts," and concluded, "We refer to our estimates as potential costs and economic impacts to reflect the substantial uncertainties in the underlying emission reduction and cost information." These words are worth keeping in mind as competing cost estimates make their appearance in the months ahead.

For more information on the ozone NAAQS, see CRS Report R43092, *Ozone Air Quality Standards: EPA's 2015 Revision*.

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