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# Testimony

**of Ross Eisenberg**

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*before the* House Committee on Energy and Commerce

Subcommittee on Energy and Power

Subcommittee on Commerce, Manufacturing and Trade

*joint hearing on* “EPA’s Proposed Ozone Rule: Potential Impacts on  
Manufacturing”

June 16, 2015



## SUMMARY OF TESTIMONY

Manufacturers have demonstrated a commitment to protecting the environment through greater sustainability, increased energy efficiency and reducing emissions. Since 1990, manufacturers have reduced their emissions of the primary precursors of ozone, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC), by 52 and 70 percent, respectively. As a country, ozone levels are down 25 percent and are due to decrease *another* 25 percent over the next three years under the dozens of existing laws and regulations designed to reduce emissions.

The NAM opposes the EPA's proposed revisions to the national ambient air quality standards (NAAQS) for ozone. This proposal is likely to be the most expensive regulation ever, costing as much as \$140 billion per year and placing the equivalent of 1.4 million jobs in jeopardy annually. A substantial portion of the compliance with a new standard will come from controls that are unknown even to the EPA, and if these controls are not invented in time, manufacturers will be forced to consider scrapping existing plants and equipment. Manufacturers operating in newly designated nonattainment areas could be effectively closed off to any new growth, and even manufacturers in areas that comply with the new standards will struggle to model attainment and obtain their new permits. No sector will be spared, and the nation's manufacturing comeback—driven largely by an advantage on energy—could be placed in jeopardy.

A recent poll of manufacturers found that 66.3 percent are concerned with how a new ozone standard will impact their business, and 53.5 percent say they are unlikely to move forward with projects in ozone nonattainment areas. Over half of U.S. states filed comments opposing a tighter standard; 33 states raised serious issues with implementation of the rule. National associations representing counties, mayors, highway officials, metropolitan planning organizations and port authorities, as well as countless individual mayors, state representatives and development officials from virtually every state in the union have all weighed in against this rule.

States, cities, counties, and business leaders have all come to the same conclusion: existing regulations will drive down ozone levels over the next decade and provide the environmental benefits we all deserve, making the excessive costs of a tighter new ozone standard unnecessary. An economy that relies on development cannot withstand the fallout of a new ozone regulation that will plunge large swaths of the country into nonattainment, deter projects from moving forward and place jobs in jeopardy.

**TESTIMONY OF ROSS EISENBERG**  
**BEFORE THE HOUSE COMMITTEE ON ENERGY AND COMMERCE**  
**SUBCOMMITTEE ON ENERGY AND POWER**  
**SUBCOMMITTEE ON COMMERCE, MANUFACTURING AND TRADE**

Joint hearing on:  
“EPA’s Proposed Ozone Rule:  
Potential Impacts for Manufacturing”

**JUNE 16, 2015**

Good morning, Chairmen Whitfield and Burgess, Ranking Members Rush and Schakowsky, and members of the Subcommittee on Energy and Power and the Subcommittee on Commerce, Manufacturing and Trade. My name is Ross Eisenberg, and I am vice president of energy and resources policy at the National Association of Manufacturers (NAM). The NAM is the nation’s largest industrial trade association, representing nearly 14,000 small, medium and large manufacturers in every industrial sector and in all 50 states. I am pleased to represent the NAM and its members at today’s hearing on the Environmental Protection Agency’s (EPA) proposed national ambient air quality standards (NAAQS) for ground-level ozone.

Manufacturers have demonstrated a commitment to protecting the environment through greater sustainability, increased energy efficiency and reducing emissions. We are building cleaner and more efficient automobiles. Since 1990, highway vehicle emissions of the primary precursors of ozone, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC), are down 48 and

30 percent respectively,<sup>1</sup> while an additional 60 million vehicles have been added to U.S. roadways over the same time period.<sup>2</sup> We are operating cleaner and more efficient factories. Since 1990, manufacturers' NO<sub>x</sub> emissions have decreased 52 percent and VOC emissions by 70 percent,<sup>3</sup> while our value added to the economy has more than doubled.<sup>4</sup> As a country, ozone levels have fallen nearly 25 percent since 1990,<sup>5</sup> and our economy has grown by 43 percent.<sup>6</sup> With the right policies and a balance between environmental ambition and technological feasibility, we can have both a clean environment and a prosperous economy. However, when policymakers push beyond the limits of what is technologically feasible, the critical balance between environmental improvement and economic growth is lost, and manufacturers and the economy will suffer.

Increasingly, we are losing that balance. More and more, the EPA is proposing regulations that are beyond the bounds of innovation, putting manufacturers and other industries in a position where the only available compliance strategy, unless policies are modified, is closing up shop. When the EPA first issued its Boiler Maximum Achievable Control Technology (MACT) regulation,<sup>7</sup> the standards were so unrealistic that that no single boiler could

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<sup>1</sup> EPA, National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data, February 2014.

<sup>2</sup> U.S. Department of Transportation, Office of the Assistant Secretary for Research and Technology, Bureau of Transportation Statistics, National Transportation Statistics, Table 1-11: Number of U.S. Aircraft, Vehicles, Vessels and Other Conveyances.

<sup>3</sup> EPA, National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data, February 2014.

<sup>4</sup> U.S. Department of Commerce, Bureau of Economic Analysis, Value Added by Industry.

<sup>5</sup> EPA, Air Quality Trends. [www.epa.gov/airtrends/aqtrends.html#comparison](http://www.epa.gov/airtrends/aqtrends.html#comparison).

<sup>6</sup> U.S. Department of Commerce, Bureau of Economic Analysis, Gross Domestic Product by Year.

<sup>7</sup> EPA, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 75 Federal Register 32006 (June 4, 2010) (EPA Docket Number OAR-2002-0058).

meet all of the rule's requirements.<sup>8</sup> In 2012<sup>9</sup> and then again in 2014,<sup>10</sup> the EPA proposed New Source Performance Standards (NSPS) for new coal-fired utilities at levels that were neither being achieved in practice nor which could be achieved by any commercially available technology.<sup>11</sup> Now, the EPA has proposed new ozone standards for which it can only identify 35 percent of the necessary technologies to achieve a 65 parts per billion (ppb) standard, while relying on so-called unknown controls for 65 percent of its path to compliance.<sup>12</sup> This is not a balanced policy. This is not an achievable rule.

Last week, the NAM released our quarterly *Manufacturers' Outlook Survey*, which examines manufacturers' attitudes regarding the economy and other topics.<sup>13</sup> Two-thirds of manufacturers (66.3 percent) said they are concerned with how new ozone standards will impact their business. Just more than half (53.5 percent) said they are unlikely to move forward with projects in ozone nonattainment areas. Only 5.9 percent said they would be very likely to move forward with a project in a nonattainment area; 15.1 percent said they would be somewhat likely to move forward; and 25.5 percent said they were uncertain.

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<sup>8</sup> See comments filed by the National Association of Manufacturers on Aug. 23, 2010.

<sup>9</sup> EPA, Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, Docket ID No. EPA-HQ-OAR-2011-0660; FRL-9654-7, 77 Fed. Reg. 22,392 (April 13, 2012).

<sup>10</sup> EPA, Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, Docket ID No. EPA-HQ-OAR-2013-0495; FRL-9839-4, 79 Fed. Reg. 1,430 (Jan. 8, 2014).

<sup>11</sup> See NAM comments filed May 9, 2014.

<sup>12</sup> EPA, Regulatory Impact Analysis of the Proposed Revision to the National Ambient Air Quality Standards for Ground-Level Ozone, pp. ES-8, ES-9 (November 2014).

<sup>13</sup> [www.nam.org/Data-and-Reports/Manufacturers-Outlook-Survey/2015-Q2-NAM-Manufacturers-Outlook-Survey.pdf?utm\\_source=nam&utm\\_medium=download&utm\\_campaign=outlook](http://www.nam.org/Data-and-Reports/Manufacturers-Outlook-Survey/2015-Q2-NAM-Manufacturers-Outlook-Survey.pdf?utm_source=nam&utm_medium=download&utm_campaign=outlook).

These poll results echo the sentiment that more than 400 manufacturers brought to Washington, D.C., in early June as part of the NAM's annual *Manufacturing Summit*. Again and again in more than 200 meetings on Capitol Hill, including many with members of the Energy and Commerce Committee, manufacturers warned lawmakers of the impact a new ozone standard would have on their operations.

Manufacturers are not the only ones concerned with a stricter ozone standard. The governors of 22 states—Alabama, Arizona, Arkansas, Georgia, Idaho, Indiana, Kansas, Kentucky, Louisiana, Maine, Michigan, Mississippi, Nebraska, New Mexico, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, West Virginia, Wisconsin and Wyoming—sent letters to the EPA or the White House opposing the proposed new standard and asking for the current standard to remain in place. Lieutenant governors in Ohio and Missouri sent letters urging the same, as did state environmental agencies in 15 of those states plus North Carolina and North Dakota, and attorneys general in 12 of those states plus Montana. Iowa and Virginia stated that if the standard were tightened, it must not be any lower than the highest point in the EPA's proposed range. Thirty-three states raised serious issues with implementation of a new standard. The National Association of Counties, National League of Cities, U.S. Conference of Mayors, American Association of State Highway and Transportation Officials, Association of Metropolitan Planning Organizations, American Association of Port Authorities, National Association of Regional Councils and mayors, state representatives and local development officials from

virtually every state in the union sent letters to the EPA warning of the challenges a stricter ozone standard will present.

The NAM opposes the EPA's proposed revisions to the NAAQS for ozone. This proposal is likely to be the most expensive regulation ever, regardless of the point in the proposed range of 65 to 70 parts per billion (ppb) at which the Administrator ultimately lands. A substantial portion of the compliance with a new standard will come from controls that are unknown even to the EPA, and if these controls are not invented in time, manufacturers will be forced to consider scrapping existing plants and equipment. Manufacturers operating in newly designated nonattainment areas could be effectively closed off to any new growth, and even manufacturers in areas that comply with the new standards will struggle to model attainment and obtain their new permits. No sector will be spared, and the nation's manufacturing comeback—driven largely by an advantage on energy—could be placed in jeopardy.

The current standard of 75 ppb and dozens of other recent regulations on power plants, manufacturers, vehicles and fuels are already causing manufacturers to make dramatic reductions in ozone over the next several years, reductions that will protect public health. They will also impose significant new costs. Manufacturers support reasonable regulation, but at some point, the costs of manufacturing in the United States will make it impossible for manufacturers to stay in business. A strict new ozone NAAQS may be that tipping point.

The Clean Air Act has successfully improved air quality across the United States over the past four decades. However, incremental improvements in ozone

are now coming at an exponential cost. A NAAQS process that does not allow the Administrator to consider cost or technical feasibility when choosing a standard is no longer productive. The members of these two Subcommittees have proven that you can work together to tackle challenges facing the manufacturing sector in thoughtful, bipartisan ways. The NAM urges you to consider ways to improve the ozone NAAQS process so that we can continue to protect public health as well as the economy and our nation's manufacturing base.

### **Manufacturers Are Already Making Major Emissions Reductions**

Ground-level ozone is formed through a chemical reaction when NO<sub>x</sub> and VOCs interact with sunlight. Emissions from power plants, industrial facilities, automobiles, gasoline vapors and solvents all release NO<sub>x</sub> and VOCs. Natural sources, such as plant life and fires, also contribute to the formation of ozone; today, given how much U.S. ozone levels have already been reduced, a significant portion of a given area's ozone concentration is made up of natural background ozone and ozone that has traveled from other states and, increasingly, from overseas.

Under the Clean Air Act, the EPA is instructed to select a primary NAAQS for ground-level ozone that protects the nation's public health within an "adequate margin of safety." In March 2008, the EPA lowered the primary NAAQS for ground-level ozone from 84 ppb to 75 ppb.



EPA groups the sources of manmade ground-level ozone into four main categories: (1) on-road and nonroad mobile sources; (2) industrial processes (including solvents); (3) consumer and commercial products; and (4) the electric power industry. These sectors have taken or will take major steps to reduce NO<sub>x</sub> and VOCs over the past few decades by complying with the following regulations:

### Mobile Sources

- New emissions standards under Title II of the Clean Air Act, 42 U.S.C. 7521–7574, for numerous classes of automobile, truck, bus, motorcycle, earth mover, aircraft, and locomotive engines, and for the fuels used to power these engines;
- New EPA standards for locomotive and marine diesel engines;
- New standards for Category 3 (C3) engines installed on U.S. ocean-going vessels and marine diesel fuels produced and distributed in the United States;
- New greenhouse gas and fuel efficiency standards from EPA and the National Highway Transportation Safety Administration for new 2014-2018 model year medium and heavy-duty engines and vehicles; and
- New EPA Tier 3 standards for tailpipe and evaporative emissions from passenger cars, light-duty trucks, medium-duty passenger vehicles and some heavy-duty vehicles.

### Industrial Processes

- Maximum achievable control technology (MACT), reasonably available control technology (RACT) and best available control technology (BACT) standards for a wide range of industrial categories, including combustion sources, coating categories, and chemical manufacturing;
- New EPA emission standards and fuel requirements for new stationary engines;
- New EPA regulations for commercial, industrial and solid waste incinerators, which set standards for NO<sub>x</sub> and several air toxics for

all commercial incinerators, as required under Section 129 of the Act;

- New air toxics rules for industrial boilers, which will yield co-benefit NO<sub>x</sub> reductions as a result of tune-ups and energy efficiency measures, especially from boilers that burn coal; and
- Several new source performance standards and air toxics standards, including upcoming review and revisions for gas turbines and municipal waste combustors and proposed requirements for the petroleum refining industry.

### Consumer and Commercial Products

- New national VOC emission standards for aerosol coatings;
- Review and revision of existing rules for household and institutional consumer products, architectural and industrial maintenance coatings, and automobile refinish coatings;
- Control techniques recommendations issued in 2008 for four additional categories of consumer and commercial products, such as surface coatings and adhesives used in industrial manufacturing operations; and
- Energy Star, a joint program of the EPA and the U.S. Department of Energy, which encourages energy-efficient products and practices.

### Electric Power Sector

- The EPA's Clean Air Interstate Rule (CAIR) and its successor, the Cross-State Air Pollution Rule (CSAPR);
- New Source Performance Standards (NSPS) for electric-generating units;
- Prevention of Significant Deterioration (PSD) or Nonattainment New Source Review (NNSR) requirements;
- The Mercury and Air Toxics Standard (MATS) rule; and
- Regional Haze best available retrofit technology (BART) determinations.

Manufacturers' responses to these regulations, combined with market-driven innovation and other dynamics, have reduced and will continue to reduce NO<sub>x</sub> and VOC emissions substantially. In 1990, 25.2 million tons of NO<sub>x</sub> were

emitted in the United States; by 2013, this total was cut by almost half, down to 12.9 million tons. The current ozone standard of 75 ppb will drive down the total U.S. NO<sub>x</sub> emissions to 9.7 million tons by 2018.

Even in the absence of new ozone regulations, NO<sub>x</sub> emissions will be roughly 25 percent lower in 2018 than they are today, and more than 60 percent lower than they were in 1990. Manufacturers are making the air cleaner and will continue to do so, and we are doing it *without* having to revise the ozone standard any further.

### **Tighter Ozone Standard Could Be the Most Expensive Regulation Ever**

When the EPA sought to tighten the ozone standard to a range between 60 and 70 ppb in 2011, its own estimate of the cost of the rule ranged from \$19 billion to \$90 billion, depending on the level chosen.<sup>14</sup> Any of these estimates would have made for the most expensive regulation of all time and presented major cost and attainment challenges for manufacturers. Moreover, the EPA's analysis was incomplete: it left out costs for California, the nation's largest economy, and it provided little justification for what appeared to be an unrealistically low cost estimate for unknown controls needed to comply with the rule.

The EPA's proposed ozone rule issued in November 2014 was accompanied by even lower cost projections: \$4.7 billion at 70 ppb, \$16.6 billion

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<sup>14</sup> [www.epa.gov/glo/pdfs/201107\\_OMBdraft-OzoneRIA.pdf](http://www.epa.gov/glo/pdfs/201107_OMBdraft-OzoneRIA.pdf).

at 65 ppb and \$41.2 billion at 60 ppb.<sup>15</sup> However, the EPA modeled only attainment in 2025, but nonattainment designations will be made as early as 2017, meaning the cost projections do not take into account areas that go from nonattainment to attainment between 2017 and 2025. The EPA only projected costs for areas with emissions monitors, which excludes roughly 76 percent of U.S. counties. It assumes costs will be lower due to NO<sub>x</sub> reductions from the proposed Clean Power Plan, a rule that has not gone final and may not in its current form.

The EPA has an affirmative duty under Section 109 of the Clean Air Act to direct its independent advisory board, the Clean Air Scientific Advisory Committee (CASAC), to advise the Administrator of any adverse economic or energy effects resulting from a new ozone NAAQS.<sup>16</sup> Neither the EPA nor CASAC has met this duty—a fact confirmed by the General Accountability Office (GAO) in a report last week.<sup>17</sup> GAO wrote:

The Clean Air Scientific Advisory Committee (CASAC) has provided certain types of advice related to the review of national ambient air quality standards (NAAQS), but has not provided others. Under the Clean Air Act, CASAC is to review air quality criteria and existing NAAQS every 5 years and advise EPA of any adverse public health, welfare, social, economic, or energy effects that may result from various strategies for attainment and maintenance of NAAQS. An EPA official stated that CASAC has carried out its role in reviewing the air quality criteria and the NAAQS, but CASAC has never provided advice on adverse social, economic, or energy effects related to NAAQS because EPA has never asked CASAC to do so. In a June 2014 letter to the EPA

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<sup>15</sup> The EPA separated California from the cost totals from the rest of the lower 48 states, but for purposes of this testimony the two values are combined.

<sup>16</sup> 42 U.S.C. § 7409(d)(2)(C).

<sup>17</sup> *EPA's Science Advisory Board: Improved Procedures Needed to Process Congressional Requests for Scientific Advice*, GAO-15-500 (June 4, 2015), available at [www.gao.gov/products/GAO-15-500](http://www.gao.gov/products/GAO-15-500).

Administrator, CASAC indicated it would review such effects at the agency's request.<sup>18</sup>

Given these uncertainties, the NAM and its members sought a more reliable estimate of the costs of a stricter ozone NAAQS than has been provided by the EPA to date.

The NAM retained David Harrison, Jr., Ph.D, and Anne E. Smith, Ph.D, of National Economic Research Associates (NERA) Economic Consulting to model the impacts of a new ozone regulation set at 65 ppb. Their analysis confirmed our worst fears: the EPA's proposed ozone NAAQS would be the most expensive regulation ever, costing states tens of billions of dollars annually in potential compliance costs. Specifically, NERA found that a 65 ppb ozone standard could:

- Reduce U.S. GDP by about \$140 billion per year on average from 2017 through 2040 and about \$1.7 trillion total over that period in present value terms;
- Place 1.4 million jobs (i.e., job-equivalents) in jeopardy each year; and
- Reduce annual household consumption by an average of \$830 per household per year.

NERA's cost estimates differ from those suggested by the EPA for a standard of 65 ppb; it is worth explaining why. NERA based its analysis on the EPA's Regulatory Impact Analysis (RIA), which sets forth in great detail the specific

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<sup>18</sup> *Id.*

technologies the EPA believes can be required, by sector, to comply with a stricter ozone NAAQS.

EPA has identified a suite of “known controls” for power plants, manufacturers, commercial and residential consumers, and on-road and off-road vehicles. These technologies are all expensive. However, application of all existing known controls will still fall short of attainment of an ozone standard set at 60, 65 or even 70 ppb. The remaining reductions will have to be met with what the EPA calls unknown controls. These are exactly as they appear: EPA cannot identify what the controls are.

Attaining a tighter ozone standard will require large reductions in NO<sub>x</sub> and VOC emissions from power plants, manufacturing facilities and mobile sources, such as cars, trucks and off-road vehicles. These reductions come at a high cost per ton because significant investments have already been made to reduce emissions, leaving few low-cost control options as the ozone standard tightens.

The EPA projects that existing, on-the-books regulations will cut NO<sub>x</sub> emissions from levels of 12.9 million tons in 2013 to 8.2 million tons in 2025, a 36 percent reduction. However, to attain a 65 ppb standard, another 2.8 tons of NO<sub>x</sub> must be removed from the environment, representing an *additional* 34 percent in reductions. However, only one ton of the 2.8 needed can be addressed through known controls. The other 1.8 tons come from, as EPA calls them, unknown controls. The EPA assigns a value of \$15,000 per ton for unknown controls, which is only marginally higher than many of the known controls—a difficult

estimate to accept, given that the figure refers to controls that the EPA does not even know exists.

NERA's model assumed the same costs per ton as EPA for known controls, but differed sharply on the cost of unknown controls. NERA concluded that removal of the 1.8 million tons of NO<sub>x</sub> covered by unknown controls would require some power plants, manufacturing facilities and vehicles, along with other industrial, commercial, agricultural and even residential equipment, to be shut down or scrapped. The aggressive reductions needed to attain 65 ppb spared few industries or sectors.

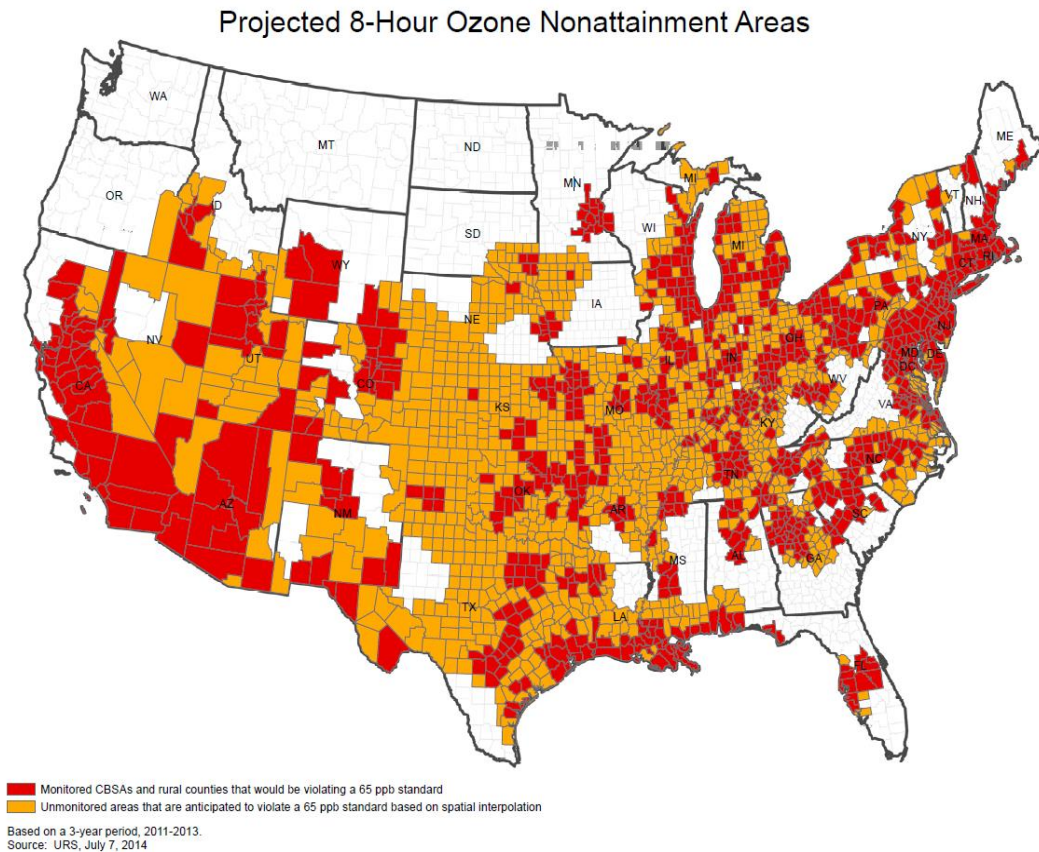
NERA performed an evidence-based approach to draw its cost curve for unknown controls. It used information on the cost per ton to reduce NO<sub>x</sub> from existing literature—specifically, studies done on the retirement of coal-fired power plants and an analysis done by Dr. Christopher Knittel of the Massachusetts Institute of Technology on the “cash for clunkers” automobile program<sup>19</sup>—and developed a more informed curve of the potential costs of unknown controls.

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<sup>19</sup> Knittel, Christopher, “The Implied Cost of Carbon Dioxide Under the Cash for Clunkers Program,” Center for the Study of Energy Markets, UC Berkeley (2009). *Article available at [www.ucei.berkeley.edu/PDF/csemwp189.pdf](http://www.ucei.berkeley.edu/PDF/csemwp189.pdf); spreadsheet available at <http://web.mit.edu/knittel/www/papers/CfC.xls>.*

## Nonattainment Means No Growth

A new ozone standard means that, as soon as 2017, many new areas across the United States will be thrust into “nonattainment.”



The map above, which assesses attainment of a 65 ppb standard, looks substantially different than the one the EPA produced when it rolled out the rule in November. The EPA’s map is what the Agency projects attainment to look like in 2025—10 years after the rule is finalized and 8 years after initial attainment designations are made. It only accounts for counties with monitored data. The map above uses current monitored data as well as modeling projections of air



quality and is a more accurate reflection of how the map would look in 2017 when counties are designated nonattainment.

Why does this matter? Because nonattainment is a significant barrier to growth. Nonattainment deters manufacturers from building or expanding in an area because the permits are so difficult to obtain versus an attainment area. The poll conducted with NAM members last week confirmed this reality, as more than half stated they would not continue with a project in a nonattainment area.

Companies building or expanding facilities in nonattainment areas are required to install specific technologies regardless of cost, and projects cannot move forward unless ozone is reduced from other sources. These offsets are neither cheap nor easy to obtain. Currently, offset prices in the Houston-Galveston-Brazoria Non-Attainment area are close to \$175,000 per ton of NO<sub>x</sub> and \$275,000 per ton of VOC. Offset prices in southern California nonattainment areas are approaching \$125,000 per ton of NO<sub>x</sub>. Rural areas, which could become new nonattainment areas under a tighter standard, may lack offsets altogether, making the requirement a total barrier to new projects.

Even manufacturers not looking to expand will be subject to restrictive new regulations in nonattainment areas. For instance, in the Houston nonattainment area referenced above, the Highly Reactive VOC (HRVOC) rule outlines additional controls for existing facilities, and combustion units, such as boilers and ethylene crackers, must install selective catalytic reduction (SCR) systems and low-NO<sub>x</sub> burners. In the most severe cases, states with nonattainment areas could lose federal highway and transit funding.

## **Implementation of the Current Standard Has Barely Begun**

Even though the EPA finalized the current standard in 2008, the Agency stopped implementing it from 2010 to 2012 while it pondered an out-of-cycle rulemaking that would make it more stringent. The EPA did not restart implementation until early 2012, six months after the White House rejected the more stringent ozone standard.

The EPA's delay put state implementation of the 2008 ozone standard well behind the normal schedule. States did not find out which of their counties would be designated nonattainment under the 2008 standard until April 2012. The implementing regulations from the 2008 standard needed for submission of State Implementation Plans (SIPs) were only released by the EPA a few months ago.

States are committing time and money to meet the 2008 ozone standard, yet the EPA now wants to move the goal posts in the middle of the game, straining limited state resources for implementation and not giving states a chance to meet the current NAAQS.

## **EPA's Proposed Standard Is Approaching Background Ozone Levels**

The chemistry and formation of ozone is complex. Ozone is formed at ground level due to chemical interactions involving solar radiation and VOCs, NO<sub>x</sub>, methane (CH<sub>4</sub>) and carbon monoxide (CO). Precursor emissions leading to ozone formation result from manmade sources like power plants, factories and cars, but also natural sources like forest fires and plant life. Additionally, ozone

from the stratosphere that protects us from ultraviolet rays can migrate to ground level.<sup>20</sup> Wind can transport ozone hundreds or even thousands of miles across state and national borders. As the EPA notes in its proposed rule, “some locations in the U.S. can be substantially influenced by sources that may not be suited to domestic control measures. In particular, certain high-elevation sites in the western U.S. are impacted by a combination of non-local sources like international transport, stratospheric O<sub>3</sub>, and O<sub>3</sub> originating from wildfire emissions.”<sup>21</sup> The EPA also notes that analysis suggests that in some parts of the country and at certain times, background concentrations of ozone approach or even exceed the current 75 ppb standard.<sup>22</sup> The EPA’s proposal is so stringent that the Grand Canyon would fail the proposed 70 ppb standard, and Yellowstone National Park would fail the proposed 65 ppb standard. The National Oceanic and Atmospheric Administration (NOAA) released a study in 2013 showing that Las Vegas would exceed the EPA’s proposed range of ozone NAAQS almost entirely due to background ozone.<sup>23</sup> The EPA’s models for determining background ozone came under scrutiny again this month from NOAA, which published a paper in the journal *Science* calling into question EPA’s ability to enforce a more stringent standard using the agency’s existing background modeling tools.<sup>24</sup> The problem is particularly relevant in the

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<sup>20</sup> EPA Proposed Rule, National Ambient Air Quality Standards for Ozone, Pre-Publication, p. 32 (2014).

<sup>21</sup> EPA Proposed Rule, p. 33 (2014).

<sup>22</sup> EPA Proposed Rule, p. 33 (2014).

<sup>23</sup> [www.gfdl.noaa.gov/cms-filesystem-action/user\\_files/m11/Langford\\_etal\\_AE\\_2014.pdf](http://www.gfdl.noaa.gov/cms-filesystem-action/user_files/m11/Langford_etal_AE_2014.pdf).

<sup>24</sup> Cooper, O., et al., “Challenges of a Lowered U.S. Ozone Standard,” *Science*, Vol. 348 no. 6239, at 1096-7 (June 5, 2015), available at [www.sciencemag.org/content/348/6239/1096.summary](http://www.sciencemag.org/content/348/6239/1096.summary).

Intermountain West, where background levels at higher elevations sometimes exceed the EPA's proposed range of 65 to 70 ppb.

Further, the relationship between precursor emissions, which regulation from NAAQS policies ultimately target, and ozone formation are nonlinear. As EPA notes in the proposed rule, "In some areas, such as urban centers where NO<sub>x</sub> emissions typically are high, NO<sub>x</sub> leads to the net destruction of O<sub>3</sub>, making O<sub>3</sub> levels lower in the immediate vicinity."<sup>25</sup> The inverse has also been demonstrated: as NO<sub>x</sub> emissions are reduced in some areas, ozone levels actually increase.

## **Conclusion**

Manufacturers have established a strong record of environmental protection and strive to reduce the environmental footprint of our operations and to become more sustainable. A high standard of living depends upon a healthy environment, robust economic growth, and an adequate and secure supply of energy at globally competitive prices. There must be a balance.

The EPA's proposed new ozone NAAQS fails to achieve this balance. This proposal is likely to be the most expensive regulation ever and comes at a time when manufacturers are busy complying with dozens of other new regulations that will drive major reductions in ozone. At some point the constant threat of billions of dollars of capital expenditures driven by new regulations will

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<sup>25</sup> EPA Proposed Rule, p. 33 (2014).

shut down our nation's job creators. Manufacturers are in the midst of a major comeback—they just need some balance from Washington.