

## What Will EPA's Ozone Rule Mean for the Energy Sector?

On September 16th, 2015, OurEnergyPolicy.org hosted “What Will EPA's Ozone Rule Mean for the Energy Sector?” a panel event at the National Press Club in Washington, DC. The panel discussed potential impacts of EPA's expected new standard for ground level ozone on the energy sector. Topics covered include the benefits, costs and impact of the potential rule on public health, the economy and manufacturing.

### *Introduction:*

- **Bill Squadron**, President, OurEnergyPolicy.org

### *Speakers:*

- **Ross Eisenberg**, Vice President of Energy and Resources Policy, National Association of Manufacturers
- **John Walke**, Director, Climate & Clean Air Program, Natural Resources Defense Council
- **Sarah Magruder Lyle**, Vice President, Strategic Initiatives, American Fuel & Petrochemical Manufacturers
- **Alan Krupnick**, Co-Director and Senior Fellow, Center for Energy and Climate Economics, Resources for the Future
- **Mark Drajem**, Editor, Bloomberg’s First Word Energy (Moderator)

## **-Original Transcript-**

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For more information about OurEnergyPolicy.org, please e-mail Sandra Dickison:

[sdickison@ourenergypolicy.org](mailto:sdickison@ourenergypolicy.org)

**BILL SQUADRON:** Good morning. I'm Bill Squadron. I'm the president of Our Energy Policy Foundation. And I'd like to welcome all of you to this event this morning. This is, of course, the real debate today. I know they're talking about another one tonight, but I guess we're going to have more significant discourse this morning, so we'll see. But certainly some disagreement, I suspect, although possibly not as lively as what we'll see tonight.

In any event, we are very pleased to have an extremely distinguished group of panelists to discuss what is a very important issue, one that may not have gotten quite as much attention to date, but I think will be getting a great deal of attention going forward. The ozone regulation from the EPA has potentially very significant ramifications. And we're going to be hearing from everyone this morning about the different factors associated with those consequences.

For those of you that are not that familiar with our organization, [OurEnergyPolicy.org](http://OurEnergyPolicy.org), please go to the site, get involved, register. We are committed on a nonpartisan basis to substantive civil discourse on energy matters, with the overall objective of really making OurEnergyPolicy process work better and help this country move toward more coherent and sound energy policy for the future.

We have a lot of involvement from members of Congress increasingly using the platform to stimulate discussion and receive input. For those of you who haven't registered as expert participants, we urge you to do so, get your networks involved. We have over 1000 expert participants in a community around the country that discuss energy issues on a regular basis across the wide spectrum. And we look forward to having participation as well.

The discussion this morning will actually continue online. So after our panel has discussed the issue this morning, the transcript will be available at [OurEnergyPolicy.org](http://OurEnergyPolicy.org). We will then have an online discussion among the community, including all of you here today who will be able to weigh in. And the ability to then take that, summarize it and circulate that summary, executive branch, legislative branch, media, and so forth, with the goal, of course, of having a very significant civil discussion about these issues, help to advance understanding of them, and make the entire process work better.

So I'm going to turn it over to our exceptional moderator, Mark Drajem, who's been with Bloomberg News for 14 years, doing extraordinary coverage in the energy environmental field. We're delighted to have him moderate this morning.

And once again, thank you.

The last point I want to make is that we're live tweeting this event. So #OEPOzone for all of you that want to be involved with that. We're going to be doing all morning.

Mark, thank you very much.

**MARK DRAJEM:** Thanks, Bill. Good morning, everyone. I'm happy to be here. Amid all of the fights over environmental regulation under the Obama administration, perhaps none has been as wide-reaching as the one over ozone. I think many people in this room will remember back in

2011, when all of the largest business lobbying groups in Washington went in to the White House, had a meeting with the chief of staff – then it was Bill Daley – and a few weeks later, President Obama issued this extraordinary decision not to go forward with issuing new ozone standards. And that one, I think everyone here on this panel kind of remembers that day as a pretty landmark moment of Obama's first administration in terms of environmental regulation.

Things are changing now. EPA's back. There's a proposal that's in at the White House. And every indication is that this time they're not going to punt on the issue.

What does that mean though? And that's what we're going to get into today. What are the ramifications for lowering the ozone standard, both on the manufacturers and producers of energy, and also on the public and human health and the environment here in our country.

So we've got a great panel here today with very wide-ranging views to talk about this. The first person who's going to talk about it is Ross Eisenberg. Ross is vice president for energy and natural resources at the National Association of Manufacturers. And he's a former lawyer and official at the US Chamber of Commerce.

John Walke is a senior attorney and director of the clean air programs at the Natural Resources Defense Council. And he's a former EPA lawyer.

Sarah Magruder Lyle is vice president for strategic initiatives at the American Fuel and Petrochemical Manufacturers Association. And she's also a former US Chamber consultant, and a former Department of Energy official in the Bush administration.

Alan Krupnick is a senior fellow at Resources for the Future here in Washington, and co-director of RFF's Center for Energy and Climate Economics. He focuses on analyzing the cost and benefits of regulation. So he's going to go last on our panel today and kind of give a broader overview of both the cost and the benefits of what's being talked about and where we go from here.

So we're going to start with Ross. Ross is going to give us a broad overview first of what ozone and smog is, and how it's caused. And then give us a take on where the NAM feels this rule is going, and should go.

**ROSS EISENBERG:** Thanks, Mark. Good morning, everybody. So Mark did promise me an extra minute to give a very spin-free overview of what we're talking about today. And I promise it will be spin-free.

So here's what ozone is. Ozone is smog. It's caused by the interaction of two pollutants – oxides of nitrogen, NO<sub>x</sub>, and volatile organic chemicals, VOCs, with sunlight. You get smog. It comes from natural sources, like fires and plants. It comes from burning fossil fuels, generally speaking, manmade sources. And then it travels short distances; it travels long distances. And it mixes together and you get the present ozone level.

EPA, under the Clean Air Act, is required every five years to go in and reevaluate whether the existing standard is adequate to protect public health and welfare. We are at the end of one of those five-year cycles now. The last time they did it was 2008. They moved the standard from 84 parts per billion to 75 parts per billion, which is where it stands today.

As Mark mentioned, the administration took that up again in an out-of-cycle review in 2009 and decided not to move forward. And so, now we're at the end of one of those statutory cycles. And they have till October 1<sup>st</sup> to finish this. And as Mark said, I think everybody in this room probably agrees that they are going to finish this thing in some capacity.

So that's essentially where we are in this debate. We're the National Association of Manufacturers. We represent 14,000 manufacturing sector companies, from the largest Fortune Five international manufacturers, to the five-person machine shop in Skokie, Illinois. We represent all of them. We bring the manufacturing voice to Washington.

Now, manufacturing is not what a lot of us think manufacturing was a long time ago. It's not your grandfather's manufacturing anymore. The plants, the fleets, the facilities that we have have transformed, they've evolved. They are not the sort of old, stodgy kinds of manufacturing plants that we all think of. They are technology-driven, they are state-of-the-art, they are sleek facilities. And they are the foundation of communities. Quite frankly, every dollar invested in manufacturing gives you a 1.30, or a 1.37, I think, into the economy. It's the highest multiplier of any sector.

So manufacturing's good. We care about communities. We want to be there. We live there. We have our children there. We have our grandchildren there. It's important that we are there. And so, that's why we care about the environment. At the end of the day, we want clean air, just like everybody else, because we deserve it and because our communities deserve it.

Now, I actually went in last night and I pulled the Clean Air Act Amendments of 1990 and the signing ceremony statement that the President made the day it was signed. When he signed that into law, he said, "This is going to be a landmark law. And it was. Because it will reduce NOx emissions by two million tons till 2000. Well, he was actually wrong. He was completely wrong.

It actually reduced NOx emissions by a solid 12-13 million tons, all the way till today. So we went from 25 million tons of NOx at that point to 12 million where we are today. So he was off by a factor or six.

That's a really, really good story. At the same time, ozone levels have dropped dramatically. We are at a point now where we have reduced in that same time ozone levels 33%, NOx emissions are down, as I said, 13 million tons, which is more than 50%. VOC emissions are down 70%. We've made remarkable, remarkable progress.

And that's a really great story. But it also raises some interesting problems. The first is that when we're debating this issue, we sort of fall into a trap of not looking at the big picture. And here, the big picture is really, really, really good. We're operating better machinery. We're driving better cars. We're using cleaner fuels. We're doing things that are better, and better for the environment.

There are literally dozens of regulations on the books that EPA pointed out in its own regulation that are already reducing NOx and are going to continue to do it through 2018, through 2020, through 2025. So we're going to continue this progress, regardless of what EPA does on October 1<sup>st</sup>.

And manufacturers are doing our part, too. I literally went and just pulled a couple companies off the Web last night that are in our membership, that are our board members just to see what they're doing on the environment. BSF Corporation reduced its NOx emissions by 23% and VOCs by 62% since 2002. New Core Steel introduced a while new mill that reduces its NOx emissions by 71%. Volvo Group North America, the truck manufacturer, reduced its energy consumption at its plants by 26.8%. They had meant to get to 25% by 2020; they beat it by five years. USG Corp. has taken steps to reduce the carbon footprint of its products by 35%. Eastman Chemical is on a 2020 goal process to reduce NOx by 20% and VOCs by 15%.

So manufacturers are doing our part. We will continue to do so. But with these achievements come real, actual costs. We spent in the manufacturing sector, on average, about \$10,000 per employee, per year to comply with environmental regulations. The smaller you get, when you get to a less than 50-person manufacturer, it goes up to \$20,000 per employee, per year, to comply with regulations in the environmental space.

So when you start tacking on new regulations, you're tacking them on to a very significant base that manufacturers have to pay for. And so, that raises the other problem that we run into consistently here. We're getting to the point where maybe, just maybe we are butting up against what is technologically achievable and commercially reasonable. And realistically achievable. Even EPA recognizes this.

A significant portion of the controls that are needed to comply with this regulation are what EPA calls unknown controls. And that literally means just that – they don't know what they are.

The difference in cost, between what we think this regulation is going to cost, which is 140 billion per year, and what EPA thinks this regulation could cost, which is somewhere around 15 billion per year, comes down to effectively what the cost of those unknown controls is. You're essentially modeling the unknown.

And so, I expect that we'll be sitting here for the next hour, hour-and-a-half, debating whether or not our study is right or EPA's study is right, or our numbers are better than EPA, or EPA's numbers are better than ours. And while I certainly assure you that our numbers are better than EPA's, at the end of the day we are effectively really arguing over the same thing – whether our study that says this will be the most expensive regulation ever is more right than their study, which says this will still be the most expensive regulation ever.

And so, by fighting over this minutiae, we're ignoring the real debate, which is whether our manufacturing sector can actually take another very, very large, possibly massive set of costs. Now, you obviously by now know how I feel about that. Frankly, if you can turn on the television, you probably know how my organization feels about the ozone regulation. So instead

I'm going to focus on what everybody else is saying and why this matters to some of the other voices that matter in this country.

Twenty-four states, including 22 governors have asked EPA to pump the brakes on this regulation. Three others said that if they go down at all, they should go no lower than 70. Just a few weeks ago, Governor Hickenlooper in Colorado signaled some pretty significant unhappiness with where EPA is headed.

Similarly, over 200 mayors and local leaders have weighed in with EPA, from cities like Las Vegas, and Chattanooga, and Richmond, and Green Bay, and St. Petersburg, and Cedar Rapids. They've all asked EPA in some way, shape or form to slow down with this thing.

I want to highlight one in particular. I'm going to read it to you because it was really, really interesting to me. So Karen Freeman-Wilson, the mayor of Gary, Indiana, wrote an op-ed in the *Indianapolis Star* a couple months ago. And it's longer than this, but I want to read the relevant portion of this. She wrote:

At first glance, it may seem negligible to change the standard from 75 parts per billion to between 65 and 70. From a public health perspective, the benefits gained from improving air quality are greater than any cost associated with a higher standard. In fact, earlier this year, I joined a group of government colleagues in making a similar argument in a letter to EPA Administrator Gina McCarthy. Then the bleeding started in my own front yard. One of the coke plants closed at U.S. Steel, leading to the layoff and/or permanent termination of more than 300 workers. This closure has a direct impact on Gary's economy in a variety of ways, from lost tax revenue to jeopardizing the stability of families in a city that has lost nearly half of its property tax base in the past seven years. The property tax loss comes on the heels of losing half our population.

This has caused me [Karen Freeman-Wilson] to take another look at the EPA's proposal to reduce the ozone standard because it is clear that the effort to achieve compliance will trigger significantly higher costs, which will harm our businesses, the workers they employ and the families they represent. It would also create permitting hurdles on new and existing businesses that are already making it difficult for new manufacturers and other businesses to come to town. This would impair economic recovery in a city that has long trailed the rest of the country.

And that's essentially what we're here to talk about. That's our conundrum. Manufacturers support efforts to reduce ozone, and we support ozone regulations. We just don't think we need to keep moving the chains when we haven't even complied with the existing ones that are on the books from 2008.

But don't just take it from me. Take it from my members. We polled our members. We poll our members pretty regularly. And we asked them about this issue. Almost 80% of our members said they would likely not proceed or were uncertain about proceeding with a new construction or major modification in an area that fell into ozone non-attainment. More than 80% say they're

concerned about increasing costs for energy, equipment and other input costs due to this regulation. Two-thirds cited concerns over additional administrative burdens. More than half are concerned with direct compliance costs. And almost 40% are worried about increased air-permitting time and the time to get their air permits.

So let me end, again, with the big picture. This administration, whether you like it or not, has accomplished a lot on environmental issues in a relatively short amount of time. They got fuel economy. They got MATS. They got CSAPR. They got boiler MACT. They got cement MACT. They got WOTUS. And most recently, they got the Clean Power Plan. They've done a lot; we can all agree on that.

So practically speaking – I'm an Eagles fan and still probably a little upset from a couple nights ago – practically speaking, they're in the end zone. Right? They scored the touchdown. Do they really need to spike the ball? Because that's effectively what they're going to be doing here with those.

And know that if they do spike that ball, if they do that end zone dance, they're going to be doing that on the backs of the 12 million men and women who work in manufacturing. That's why the NAM cares about this issue. That's why we take it so seriously. And that's why we're very pleased to be here today talking about this.

Thanks.

**MARK DRAJEM:** John?

**JOHN WALKE:** Good morning. I am John Walke, the clean air director for the Natural Resources Defense Council. When I arrived here, you may have noticed my placard was at the end of the table, which is where I'm used to being placed, on the far left, on a panel like this. [laughter] But I'm happy to see that Mark moved me. And you should from now on view me as the centrist in this debate. [laughter] So just bear that in mind during my remarks.

Let me get down to brass tacks. EPA is not going to maintain the unsafe current standard of 75 parts per billion for an ozone health standard. That level has never been defensible. It has never been plausible. After the agency issued its proposal and declared it squarely unprotective, it rightly pointed to unanimous recommendations from EPA science advisors, the American Medical Association, all the nation's top medical organizations. And those views have really been consistent since 2004. And the administrative record that EPA has before it now is greatly stronger than that with over 1000 studies showing that standard to be safe and the need for safer standards.

So the real question, then, is whether EPA is going to adopt a safer standard than the worst standard it has actually proposed – 70 parts per billion. Will EPA adopt a safer standard where it needs to be that saves thousands of lives, as compared to 70; that avoids hundreds of thousands of asthma attacks, as compared to 70, its worst proposal; and that provides an adequate margin of safety as the law requires for vulnerable populations like children, the elderly and kids with asthma?

Mark rightly began this conversation by pointing to the President's blocking of safer standards in 2011. So will the White House decide that that is the controversy they want to remind the public of and court a second controversy, leaving a legacy of unsafe air when it leaves office at the end of its second term? Will the administration fail to save thousands of preventable deaths, saving lives, and avoid hundreds of thousands of asthma attacks?

Now, as Ross, I think, correctly summarized, industry has been mounting a very forceful public campaign to urge EPA to maintain a standard that is considered unsafe by all those medical organizations, and I can't help but note something that Mark did not say. And in fact, something that none of the NAM ads, or the American Petroleum Institute ads, or the other ads you might see on television say. They don't say the current standard is safe. They don't say that there is adequate medical science supporting the protectiveness of that standard. They don't counter the medical science that shows the standard needs to be far safer. And that's because that's not where they're playing out the debate; that's not the field they are playing on.

What they talk about instead are costs. I probably don't need to remind a sophisticated audience, but the Clean Air Act squarely prohibits economic cost, compliance cost and the like from influencing the setting of safe air standards under the Clean Air Act, a unanimous opinion authored by Supreme Court Justice Scalia in 2001. A raging liberal, the guy. Said that EPA may not consider those factors.

Ross, in his remarks, referred indirectly or directly to costs 14 times. And that pretty much summarizes the way that the ad campaign has been run. I just want to invite the audience for the remainder of this date to take little notes any time costs are referred to directly or indirectly. I have been working on clean air issues for over 20 years in Washington, and I cannot recall another campaign that has been mounted by industry opposing safe air with such transparent appeals to unlawful influences. Transparent appeals for EPA to break the law. It's really quite extraordinary. And I've been in a lot of battles.

The other aspect of this, which directly informs this unlawful angle, is the extent to which really in a quite extraordinary fashion outright falsehoods and misrepresentations of industry's own materials have proven to be the foundation of their campaign. NAM has issued a report, which Ross correctly predicted we would be talking about, and that report asserts that the cleanup costs would be 1000 times higher than they are today for cleaning up nitrogen oxide emissions. They get to that, not by pointing to any actual evidence, but instead making an analogy to a program that you may all remember from 2009, an economic stimulus program called Cash for Clunkers. Short lived, about nine months. Congress stopped funding it and it went away.

But what NAM's consultants did, it looked back at that and said, We think the cost of reducing a ton of NO<sub>x</sub> from this economic stimulus program would be \$500,000 per ton, when the cost of NO<sub>x</sub> controls relied upon by EPA in its Cross-State Rule for the power sector was \$500 a ton.

Just yesterday, helpfully, a consulting firm that's actually used by EPA and a lot of people in the energy sector as well, called Synapse, came out with a 40-page report that absolutely shredded the consultants' report that was prepared for NAM. It pointed out that a single math error was



responsible for \$70 billion per year in annual compliance costs; they were overinflated. They double counted the cleanup cost from the power sector. There was 700% increase in expected overall compliance costs. Et cetera, et cetera, et cetera.

But again, what I think we should really be talking about since 75 is just not something that's going to happen, is what would it mean to give up an opportunity in the second half of a Democratic administration for standards that aren't updated every five years as the law requires. The last update from '97 to 2008 took 11 years. Now we're at the tail end of seven years. There's no reason to believe that the next standard's going to be updated any quicker than the seven- or ten-year history that we've already had. We've had consistent science since 2004 or '3 that have shown thousands of lives saved by setting the standard at levels in the 60s, lower than 70 parts per billion. Why would this administration leave office, leaving that many Americans suffering from asthma and premature mortality?

So I think the question is, is the administration going to cheerfully walk into this controversy and be reminded by public health groups and the media of what happened in 2011 with history repeating itself? The reality of this debate is that the Clean Air Act requires the American people to be told honestly and truthfully, is the air safe to breathe or not? That question may be determined based only on medical science and not influenced by eventual compliance costs for meeting a safe standard.

And the industry campaign, in addition to being based upon these transparently unlawful influences, is also, at bottom, about denying American people the right to safe air and the right to be told truthfully whether the air is safe. The real question is whether the administration is going to tumble to that campaign a second time. Or, instead, will the administration adopt safer standards that do in fact save thousands of lives compared to the worst option they propose, protects hundreds of thousands of kids from annual asthma attacks, and is truthful with the American people.

Thank you.

**MARK DRAJEM:** Thanks, John. Sarah?

**SARAH MAGRUDER LYLE:** Thanks, Mark. Good morning. Well, I think that those of us that read the news last night certainly thought that this study was going to be part of the conversation; in fact, most of it. But before we get into that, let me tell you a little bit about who I am and who I represent.

I'm Sarah Magruder Lyle. I'm with American Fuel and Petrochemical Manufacturers. We represent virtually all the refining capacity and petrochemical manufacturing in this country. And certainly we consider ourselves manufacturers. And we've talked a lot about manufacturers and the impact on cost. But I think something that we need to talk about in this debate is what cost means and connecting the dots. Because we certainly have thrown a lot of numbers out there, and we all do that as industry – it's this many jobs, it's this much impact, it's this compliance cost.

But what we really haven't talked about yet is what does that actually mean? And how does that actually affect people? So let me just take a moment to talk about impacts. And I can certainly talk about the impacts on my industry, which is what Mark asked me to do. So I can sum that up relatively quickly:

At the proposed level, I can tell you what will happen. Manufacturing will leave this country once again, as it did previously. There will be no refining expansions. There will be no additional petrochemical facilities. There will be no potential \$6 billion investments in places like Ohio. There will be jobs lost.

But what does that actually mean? Because we talk a lot about how EPA cannot consider cost for these analyses. And that is correct. But we're not talking about who actually has to bear that cost. And it's the consumer. The consumer is the person that bears that cost. And there are plenty of studies there that say when people have to choose between paying their energy bill and buying food, or paying for their energy bill and buying medication, those are things that actually affect health. And certainly here in the Beltway we are very good at talking in our own little tunnels. I will talk about oil and gas. Ross will talk about manufacturing. John will talk about health benefits. But rarely do we actually sit down and connect all of those dots together. And we really have to think about how do these policies affect those that John pointed to, the most vulnerable in our society – the poor, the elderly, children, minorities.

So a couple of points I want to address. The key here is unintended consequences. What are these consequences? And these are things that often when we talk about these numbers in these studies that we don't put together. Let's talk about some of the things that will happen to consumers and states if they have to get to these levels. And let's back up a minute and talk about natural ozone. Two-thirds of the ozone produced in this country is naturally occurring. And in places like New Mexico, where they don't have a lot of offsets and they actually can't control that, they're going to be in non-attainment.

And what does that mean? That means they won't be able, as much as they want to, to attract new industry, to attract business. And it's not just about industry and business; it is about what those industry and businesses provided those communities and what those communities can do, and how it increases and benefits their lives. And gives them an opportunity for healthier lives, and gives them an opportunity for their children.

So when we talk about children and asthma and all of those things, those are very emotional issues. But we really have to think about it. For instance, something that's often ignored about my industry is that literally everything, nearly everything you touch every day is made from a petrochemical: Your clothes, your shoes, your glasses. The things that when you walk into the emergency room or a doctor's office with your child help protect you and keep you healthy.

We have seen a tremendous resurgence of manufacturing in our industry here in this country. Two-hundred-forty US chemical investment projects are planned, \$145 billion in value. That's 60% from direct foreign investment. What does that mean? That means that we have now become a venue for investment. And as those of you in this room know, we were not always that; manufacturing long left our country. And because we have low cost feed stock, we have

competitive labor, and because we at this point have a regulatory environment that companies can operate in, people are looking to invest here.

We do not want to have things like what's happening in Baton Rouge happen. The Baton Rouge Chamber of Commerce said that because of the proposed rule – not even a final rule, but just because of the proposed rule – they've lost four large investments, 2000 direct jobs. But when we think about jobs, it's not just the job, it's not just the cost. It is the impact those jobs have on communities, have on their families, and the benefits that it provides. And we have to think about that.

Certainly, I know some of you here know Dr. Brenner's study. But let's talk about what income means to health. Income is one of the key predictors of health and life expectancy that is observed in epidemiological studies of the impact of socioeconomic status on illness and mortality rates for all causes in the US and other industrialized countries. People's wealth and health status— this is from EPA, pardon me. People's wealth and health status measured by mortality, morbidity and other metrics are positively correlated. Hence, those who bear regulations compliance cost may also suffer a decline in their health status. And if the costs are large enough, these increased risks might be greater than the direct risk reduction benefits of regulations.

So, we really have to have a realistic discussion. What is the health benefit? Is there really a health benefit by making those who are unable to pay their electricity bill choose between medicine and power? Is it really in the benefit that we actually cause all of this potential manufacturing to leave our shores again and become dependent on other countries? We really have to think globally about what that is.

And so, while we talk a lot about cost and numbers, what we really need to think about is what that actually translates into for the consumer. Because the consumer is the one that will bear the ultimate cost.

A couple of other things I just want to point out before I step down. Air quality in this country, as Ross noted, has progressed tremendously. We've made tremendous progress in our air quality. So the low-hanging fruit is gone. And because we're becoming increasingly stringent, it becomes increasingly expensive. And hence, we go down the road again. What does that mean?

When EPA talks about these unknown controls and the things that we have to rely on, we've had plenty of experience with betting the farm on things that don't exist. And it doesn't work out very well for us. Because if those things don't exist, and we're forced to find a way to comply, guess what happens? The cost of energy goes up. And that is not beneficial to the person that we should be talking about, which is the consumer, the citizen.

Now, something that we haven't touched on is if you look at a map, and since we don't have PowerPoint, just envision with me, a map of the United States, and we all know that shale has just created a tremendous manufacturing renaissance in this country. It's created lots of jobs. And it has certainly helped many states through the recession. Six out of seven of the most productive

shale plays in the country that have accounted close to 100% of domestic natural gas production over the last three years will be unable to meet the proposed more stringent ozone rule.

In many of those places, energy is their largest industry. And in some places, it's their only industry. And again, it's not just about the company; it's about the community and what happens to those people.

I want to point out a couple of statistics on those who are most vulnerable. Twenty-nine percent of households, 36 million people, earn less than \$30,000 before taxes. They allocate 23% of their after-tax income to energy cost. And 37% of those people will forego medical or dental care to pay for energy. Those high energy costs fall disproportionately on families in fixed income households.

So again, when we talk about health and we talk about impacts, we really need to think about what the big picture is.

Thank you.

**MARK DRAJEM:** Thanks, Sarah. Alan?

**ALAN KRUPNICK:** Hi, folks. It's a pleasure to be here. As Mark said, I'm kind of playing cleanup. And I'm the only economist on the panel. So I'm going to give a bit of a different perspective than you've heard so far. And I will kind of, as economists, on the one hand; on the other. I'm sort of going to be that as well.

So first, to talk about the Clean Air Act itself. John brought this up a little bit, but I wanted to emphasize some things. First of all, EPA is in a bind. They've been in a bind since the day the Clean Air Act was passed when they've been required by Congress to set standards to protect public health with a margin of safety. Now, the problem with doing that is that if you look at the epidemiological literature and the clinical literature, the relationship between ozone and health is pretty much a linear one. And it pretty much goes down to background levels.

So what does it mean to protect health with a margin of safety? How do you do that when there's effects at any level of ozone? And the Clean Air Scientific Advisory Committee, who recommends these standards, has been wrestling with this since I got into this business in 1980, actually.

And so, as economists would say it, there's really no stopping rule on where you set these standards. So we've been arguing for years. We were arguing that we should use cost/benefit analysis to help decide where the appropriate standards should be. Well, the Supreme Court made it really clear they didn't care at all about costs, that the Clean Air Act required that costs not be considered. So this is why the agency is in such a bind to set standards when there's no clear thresholds below which there are no health effects.

So that's sort of the fundamental problem. Another important thing to keep in mind in the Clean Air Act is that EPA will do its part to set national controls to bring NO<sub>x</sub> emissions and VOC

emissions down. But a lot of this responsibility goes back to the states through their state implementations plans. So it's not like the states don't have any control over how they reduce their costs and how they allocate those costs across different sectors. For its part, I'm sure EPA will do a lot to improve things.

The second is to look at the two proposals for standards that are on the table. One is to go from 75, the current standard, to 70 parts per billion. The second is to go even further to 65. The effects of these two standards are vastly different. In the first standard, if they go to 70 from 75, four areas of the country that are already in non-compliance for the 75 standard, and are very used to dealing with these problems, because they've been in non-compliance since the Clean Air Act began – this is Houston, Dallas, the New York City area, and most of Southern California – they're going to be further out of compliance because of this standard. But the impacts on the country would be relatively small.

If you went to a 65 standard, you're talking about much more widespread effects. So we would go from 13 counties in the first case, the 70 case, to 67 counties in the 65 ppb case.

And then in addition to that, there would be areas of the country brought into non-compliance that would violate this new 65 ppb standard that have never been in non-compliance before – parts of Nevada, parts of Utah, Northern Colorado, other areas that have never seen the SIP process affect them for ozone. So that would be disruptive.

Now, overall, leaving that question now aside, let's talk overall about the costs and benefits, recognizing that costs cannot be considered in setting standards. Nevertheless, the EPA is required by an executive order to make these comparisons.

And what we find there is really interesting. As you move from 75 to 70 ppb, there are net benefits to the country from moving to that level. That's because the health effects, when they're valued in monetary terms, exceed the cost. When we go to 65, the net benefits actually are larger than they are at 70.

And why does that happen? Well, first of all, the costs get bigger, too. Benefits get bigger, costs get bigger. But so many more areas go into non-compliance and have to do things to reduce their ozone, if you go to 65, that the benefit, there's so much population that's affected by a 65 ppb standard, that the benefits of meeting that standard grow very great.

So that's why the net benefits get bigger and bigger as you tighten the standard. So that's another critical fact.

And finally, I wanted to say a couple of words about costs. So the first thing is, that whether the costs result in plant closures, job losses and the like really depends, in a way, on how broadly these effects are felt. As, I think, one of our speakers just said, costs are likely to be passed on to consumers. And that means that we wouldn't have the closures, we wouldn't have the job losses; it would just be the American public that would pay those costs.

We've already seen from the EPA study that the benefits to health outweigh those costs. So that's okay by a benefit/cost analysis. We have net benefits, nevertheless.

The second thing is, EPA did themselves quite a disservice, and it's not the first time they've done this. By not trying harder to figure out how you can meet these standards, they have— just under 50% of the costs in EPA's analysis are unknown, have unknown technologies or unknown ways of meeting those standards. So EPA has to figure out some way of estimating costs, even though they don't know how those costs will— they don't want the technologies will be for meeting those costs.

The industry study, which was done by NERA, had the same problem. How do you cost out something when you don't know what technologies will be there to reduce these emissions? And so, EPA took one approach; NERA took another.

I don't think the NERA study is a bad study. They tried as hard as they could. It's a very technical study. They did a lot of good work. EPA's study, incredibly technical, they did a lot of good work. We have our own study that's going to come out in a couple of days. We think we did some good work, too. And where we come out is actually closer to EPA than to NERA.

I can talk about more of that later, but I think the key differences between EPA and NERA's study, one is that NERA didn't consider the Clean Power Plan, which is going to give you a large number of tons, about 300,000 tons of NOx reductions. So those costs are all on the Clean Power Plan; they're not on ozone standards.

And another thing is – this is kind of wonky, but it's important – where NERA used a baseline, their key analysis year of 2022, where EPA used 2025. And that ends up making a big difference in the cost. That's another 300,000 tons of NOx that NERA needs to find technologies for that EPA doesn't. So these little wonky things in the weeds make a big difference.

So I think I'll stop there and we'll take more on questions, get into more of the details on these cost differences. Thanks.

**MARK DRAJEM:** Thanks so much. I think that was a great lay of the land of where everything is. And I want to remind everyone, I'm sure it's always happening widespread, that we're live tweeting this, #OEPOzone. I hope I got that hash tag right.

I want to start by asking something, and it's kind of been referred to in many of the different talks, is when EPA put its proposal out, there were two different maps that went along with it. And we actually put it in our newsletter this week. One shows that if EPA were to set the standard at 70 parts per billion, what parts of the country would be in non-attainment as of today, or as of a couple years ago? And the other showed what happens in 2025, given all the other rules that are coming into place, and what the impact of that would be. And it showed, as Alan mentioned, that just really four main areas of the country would be in non-attainment.

And so, maybe we'll ask Sarah to start this out. If that's the case, what's the big deal? What are the costs, really, of these four areas that are already in non-attainment today, would just be in non-attainment in 2025?

**SARAH MAGRUDER LYLE:** Well, I think we also have to think about we are not the only destination for investment. I just have to disagree that there's not going to be job loss. We've seen it. We had an entire manufacturing industry leave our country, for a long time, because we weren't competitive. So just to say because those areas are all going to be in non-attainment that we're leveling the playing field with those four areas really doesn't consider what those companies can do with their investments. They can just certainly go some place else.

So I think that we really have to think carefully about this when we talk about it. We can look at the map of the United States and where attainment and non-attainment is. But the fact of the matter is, business will just simply go elsewhere.

I think it's a pretty straightforward answer.

**MARK DRAJEM:** John?

**JOHN WALKE:** Mark, what your question helpfully highlights is that setting the standard at 70 parts per billion effectively does not take one beyond the status quo. It is a standard that will be achieved from the enforcement of standards already on the books, within the legally required attainment deadlines for the vast majority of the country.

And so, that is why setting the standard at 70 would be an utter failure of responsibility and leadership. It would leave thousands more Americans losing their lives, and hundreds of thousands more suffering asthma attacks than setting a safe health standard based upon the medical science that goes beyond that business-as-usual status quo.

I do just want to mention one thing that I forgot to mention, but that my colleague helpfully reminded me. When you get back to your offices, take a look at Footnote 2 in the NERA report. It helpfully clarifies that the report found no job losses. No job losses. Despite the way that report has been characterized by NAM, the Chamber of Commerce and others, including in op-eds by NAM's CEO, Footnote 2 shows that it found no job losses.

Thank you.

**ROSS EISENBERG:** Sounds like a good time for me to hop in. So backing up to the original question. I believe that the numbers are counties that would be in non-attainment is really basically monitored counties. There's a much larger picture than that, because EPA also models counties in non-attainment. So the numbers are a lot larger, either at 70 or at 65. If you've seen the maps at 65, they light up like a Christmas tree. And it's because of that monitor-versus-model stuff; they actually extrapolate it, and the maps out there use that same extrapolation. So it wouldn't just be four areas. So that's number one.

Number two, to John's point, he's quibbling over the term "job equivalent." So instead of saying this many exact jobs will go, NERA uses an economic convention that most economists use that basically figures out from reduced hours, reduced wages, they sort of calculate it all up into one big ball say it is the equivalent of 1.4 million jobs. So a detail, but not necessarily a relevant one, because it's still people not working.

At the end of the day, to your original question, what is the big deal at 70? The big deal at 70 or 65 or 68, or whatever you want to set it at, is a couple things for manufacturers. And I'm speaking really just because this is who I represent here. Number one, on October 2<sup>nd</sup> – so this thing goes into law on October 1<sup>st</sup>. On October 2<sup>nd</sup>, you can't build something without meeting the new standard. So on October 2<sup>nd</sup>, you basically, to get your air permit, are going to have to start modeling attainment with the new standard. And there are limited carveouts, if you're very, very, very close to the end of the permitting process that EPA put in there. But relatively speaking, you're going to have to get there.

We're already seeing it from our members as being a challenge in some places. My team and I actually went down to North Carolina. Had a very good day working with EPA on trying to figure out how one of our manufacturers building green roofs, actually, could actually build that plant to manufacture that product, given that in the middle of Minnesota somewhere were having problems modeling attainment.

And so, you can get there, but it's really, really, really hard. And so, that was why I said 80% of our members see that as a tremendous deterrent. Generally speaking, the people at their companies that do this, that say "hey, you should build a plant here or there or somewhere else," they're just going to say don't do it, because it's really, really hard to get there, particularly if you wind up in one of those non-attainment areas.

The other side of it is, obviously, if you have places with non-attainment, and I think at 70, you're looking at somewhere around 17 states that have non-attainment areas in them going forward, maybe a few more, that's a real barrier. It's just a barrier. It's meant to be a barrier because you need to get the ozone out. But it operates as a barrier.

Again, look at the big picture here. At the end of the day, this winds up being sort of a wealth-shifting kind of thing. States without non-attainment areas get the business; states with them don't. And so, we're saying there's got to be a better way to do this, particularly if, as John and, frankly, Administrator McCarthy say, you can probably get there pretty far close to where they're trying to go just using existing regulations on the books. Why have the permitting mess from now until then?

The last thing on the differences on the study and why we picked 2022, it's because this thing goes into place before 2025. There's costs before 2025. States propose attainment designations October 1 of next year; they're finalized a year later; SIPs are due three years later. This process doesn't start in 2025; this process starts on October 2<sup>nd</sup>. So that's why we actually tried to measure the costs that would start happening after October 2<sup>nd</sup>, not 2025, which is, frankly, a much rosier picture.



So I think I'll stop there. I think there probably a lot more time to go, but anyway, wanted to get at least some of that.

**MARK DRAJEM:** Thanks. I know Alan wants to jump in, but I want to ask Alan a question, then you can maybe pick up on some of these econometric issues. Back in 1996/'97, there was a similar debate over ozone and setting a new standard for ozone, this same kind of health benefits we need to get versus the job losses we could see. Once that standard went into effect, what have we seen? What have the impacts been?

**ALAN KRUPNICK:** There's been a large number of studies that have been reviewed by OMB, by EPA, by academics that have looked at the effect on costs and benefits of a variety of EPA regulations, and regulations of other agencies. Unfortunately, to my knowledge, there hasn't been one on the .12 standards. But there have been studies on other environmental regulations.

And the bottom line on those studies is very interesting as well, which is that costs tend to be overestimated, so the industry gets all exercised, as they are here, about very high costs. The costs tend to be lower; partly because technological change gets stimulated. The ingenuity of the American people, the ingenuity of American industry operates very well to try to lower the costs below what they otherwise thought they were going to be.

What's actually more interesting, in a way, is that the benefits also seem to be overestimated from these studies. So things are kind of overestimated on both sides. So that's what I would say, broadly speaking, on what the future is likely to hold.

I did want to jump in a little bit though on some of these comments. One is that the academic literature on looking at the effects of regulations on industry and on moving, mobility of industry, location decisions suggests broadly that the environmental costs are a pretty small fraction of the costs that industry needs to bear in the decisions that they have to make about what location to locate new plants or even move old plants. Moving old plants is even a harder decision. So these environmental costs would have to be really, really large to cause major dislocations.

And just a word on oil and gas, particularly. We've been benefiting tremendously from natural gas fracking revolution. Costs of natural gas have come way down, giving us an industrial renaissance, as Sarah was saying. And that's great. But it's also created a lot of profitability, particularly if gas prices rise a bit from where they are right are, that maybe the companies can have a little bit of breathing room to pay some of the costs of these reductions.

And in terms of the oil side of the things, the effect of world oil prices, which have halved in the six to nine months, is by far the biggest impact on the industry. The environmental issues seen in that light are just pretty trivial.

**MARK DRAJEM:** Thanks so much. We're going to open it up for questions from you all. There are two requests: One that your question be a question. And the second, that you wait for the microphone to get there so your point can go out. So who wants to jump in first?

**NEIL McCABE:** My name's Neil McCabe. I'm with One America News. The question is to John Walke. How active were you in drafting the EPA regulations for NOx and ozone?

**JOHN WALKE:** Completely absent, completely uninvolved, not active. I did not have a second of time devoted to a task that the law requires EPA to perform, and that EPA performed.

**MARK DRAJEM:** Who's next? Do I have to call on people?

**ETHAN GOFFMAN:** I'm Ethan Goffman from SSPP Blog. I'm hearing some race to the bottom international trade issues echoing here, that companies will up and leave because there are other countries with lower environmental standards. And therefore, we can't increase our environmental standards and have healthier air for people if China and India aren't doing the same thing.

So does this suggest any problems with the way world trade has been structured, that we have a global trade system, but we don't have any kind of global mechanisms for regulating the environment?

**ROSS EISENBERG:** I can take a crack. So I certainly don't want to suggest that because of an ozone regulation everybody's going to jump ship and move somewhere else. I think Dr. Krupnick's probably right, that it is one of many decisions. But it's a big decision, which is why 80% of our members actually say that, yeah, it's going to impact the decisions that we make on where we locate a facility. It's kind of hard to argue with that.

That being said, you're dancing around, I think, an issue that I made some headlines about recently when I said we ought to take another look at the Clean Air Act, which is, we are operating in a global marketplace with a statute that is very, very good and very effective, but maybe needs a refresh, to deal with some of these changing conditions. I don't know that anyone expects our leaders to get that kind of international arrangement, as effective as it might be. But maybe we can at least take a harder look at our own statutes and regulations, and try to just modernize them.

Again, to get the same good goals, but make sure that we're doing it in a better way so that John and I aren't up here fighting every five years about this issue, and maybe can work collaboratively on getting to the same place at a different time.

**SARAH MAGRUDER LYLE:** I definitely want to address that, because I certainly was not saying that this ruling in and of itself would make industry leave. It is this rule, with all of the other rules, with all of the other regulations. We have to be global about what we're thinking about. We cannot just look through our tunnel, on our continent, in our country about where business is going to operate.

And the idea that we would say, well, if everybody has to pay more, it's not going to matter. It is going to matter. And this is not an industry position. We've seen it happen. We have seen industry leave this country before.

So I am a bit stunned that people would say, Well, there's no economic impact. There's a lot of things. Is there a friendly regulatory regime? What are the labor costs? What are the power costs? And while we're certainly talking about compliance costs here, all of these regulations – ozone, Clean Power Plan, you name it – are going to have an impact on how much energy costs. It's one of the largest costs to our companies – how much is energy going to be? What's it going to cost to power our facility?

And so, we are– also, the other thing I want to point out, I'm not saying there should be no regulation. I'm saying we need to have effective regulation. And we shouldn't just regulate to regulate; regulate because we're trying to complete an agenda that we couldn't complete in the first term, or regulate to something because for a legacy. We have to really think about what the long-term impacts are about these rules and what they are. And we really have to think globally about it and not just about in this one little tunnel.

And I think we really have to change the discussion here, which goes to the point about regulatory reform as well. A lot of the things that we need to consider we don't consider when we're creating these rules.

**JOHN WALKE:** So federal law guarantees Americans the right to safe air, and has done so since 1970, based on medical science alone, with an adequate margin of safety. And I think it should continue to do so, regardless whether other countries deliver that same legal right to their own citizens. There's no reason to take that right away from Americans.

Ross referred to supporting modernization of the Clean Air Act, and what NAM has supported, and some of the other campaigners against the safe air standards in this current round, is a bill that repeals the health foundation of the Clean Air Act, and imports compliance costs to deliver a, frankly, dishonest and unprotective standard for whether the air is safe and that blocks the current standard-setting process. It's a bill called the CASE Act, by Senator Thune. That is not a way to modernize the law.

The last point I'll make is just as to this question of businesses supposedly not expanding or locating in feared non-attainment areas. The Baton Rouge Chamber of Commerce was referred to earlier with its claim that there were four manufacturers that declined to locate or expand, actually, in Baton Rouge, because they feared the standard would be strengthened.

I have asked and challenged the Baton Rouge Chamber of Commerce repeatedly and publicly to substantiate those claims, to identify those companies, to back it up, and they refuse. As far as I'm concerned, it is untrue. Okay? Until they show me otherwise, it is not true.

It's the type of fear mongering that has occurred throughout this campaign. I'm happy to be proven wrong. But I have asked them and challenged them repeatedly and they have refused to do so.

**MARK DRAJEM:** Let's move on to some more questions. Someone back there?

**ALAN KRUPNICK:** This is the problem battling cleanup.

**MARK DRAJEM:** Sorry, Alan. You get the first answer.

**NICK:** I'm Nick from Congressman Garrett's office. One of the things I look at is it looks like we're basically talking about detrimental economic impacts versus potential health benefits. But if over 50% of the controls to get those health benefits are unknown, are we going to get them? And so, if not, then should we even move forward at this point?

**ALAN KRUPNICK:** I really take issue with the term "unknown." I wish EPA didn't use that. Better would have been something like "unspecified." Because there are in fact ways of getting reductions. We could have, for instance, tighter automobile tailpipe standards. We could have gas taxes or congestion taxes. These could be for other reasons; they don't just have to be for ozone. That would cut vehicle miles traveled, and cutting vehicle miles traveled would reduce both VOCs and NOx. Remember, it takes two to tango there.

We could have other programs to encourage adoption of electric vehicles, recognizing though that there are emissions from electricity generation that you have to count as well to offset that zero-EV.

So I think that there actually are— EPA could have gone further. And in fact, NERA could have gone have further to try to specify these reductions. What they in fact did use was, to sort of anchor the unknown analysis, NERA used scrappage, a program that was mentioned by John. They're actually in their follow-up analysis. They went down to \$235,000 a ton from 500,000. They went down a half. We think it's maybe closer to 90,000 a ton, which still sounds like a lot per ton.

Another thing that was not done that would reduce costs was thinking about trading. We've had a lot of success in SO<sub>2</sub> trading in this country among utilities. If you had NO<sub>x</sub> trading, tighter NO<sub>x</sub> standards and then NO<sub>x</sub> trading to meet these standards, you could significantly cut costs, even from what EPA was estimating. So there are approaches to doing this.

And one other, I guess, unspecified technology, in quotes, would be reductions from China. NAM's had this ad on TV about the damage that Chinese ozone pollution is having on the Western United States. And that's actually true. There is recent article, and there's been a couple of articles in scientific journals talking about the flow of ozone created in China, also particulates, that come across the Pacific and affect our air quality.

But this works both ways. The Chinese government is finally really concerned about local air pollution, where in many days you can't even see across the street, across a single highway. And so, to the extent they reduce their ozone pollution, that's going to actually be a free benefit to the United States. So another one of these possible unknowns.

**MARK DRAJEM:** Ross?

**ROSS EISENBERG:** Two follow-ups. First of all, I think that's the absolutely right question to be asking, is the question we're asking. So half the controls, EPA doesn't know what they are. So

essentially everybody who takes a look at this is essentially modeling hope, right? Again, fully legal. Technology [01:07:41] this is all 100% legal. But common sense kind of tells you, okay, we're modeling whether or not we can come up with it.

That's a real challenge. The reason why NERA picked Cash for Clunkers and vehicle scrappage to anchor the top of that cost curve – and again, the top of a cost curve that they very rarely made it up – was because that's being used. It's been used in California. It's been used in California for ozone compliance since 1990, something called the VAVR. It's been used in Texas for ozone compliance in something called AirCheckTexas Drive a Clean Machine.

So again, this is real. This is what we're doing. It's in the places with the toughest challenges. But we're getting to a point where we made such progress on it, that everybody's got a tough challenge because we're butting up against what's there naturally.

So at the end of the day, that's really the challenge. We've done a heck of a lot. The low-hanging fruit is gone. One of my colleagues likes to say, the low-hanging fruit is gone, but the high-hanging fruit is gone, too. And this is something, so Sherwin-Williams and WD40 both testified before Congress on this and they both said, "Look, we've reduced our VOC content from 75, or 100% in some cases, all the way down to 10%. We're driving it even lower. But we don't even know how we're going to get there."

In the case of WD40, he said, "Look, when we get to 10% VOCs and below, what we're making doesn't smell like WD40, it doesn't act like WD40. It's a formula that basically isn't the product."

So that's where we are now. And that's the discussion that I'm asking us to be having. Because really, we want to keep doing this. You heard me talk about these companies that are all doing it with and without regulation, and they're trying. But do we really need to be beaten over the head again and again and again to get to somewhere where even EPA can't tell us how to get there?

And that's, in a nutshell, why we've got such a challenge here, why we've been pushing so hard.

**BRAD TOWNSEND:** My name is Brad Townsend. I'm with OurEnergyPolicy.org. I'm going to read a question from one of the experts at OEP. So Mark led a discussion a couple weeks ago, preparing some questions, and Henry Goldberg, who is an independent consultant and a former professor at Stanford – this is slightly modified – asks about the context of broader climate action. Alan mentioned the Clean Power Plan; obviously their CAFE standards or a number of other regulatory initiatives that will impact this rule. So I was just hoping that you could speak to what that context should be, how we should be thinking about the impact of other regulations on attainment.

**SARAH MAGRUDER LYLE:** As I mentioned earlier, there is certainly an onslaught of regulation coming down the pike right now. And I think, again, looking at those globally and what those mean, can be very daunting for business. The Clean Power Plan is certainly going to have an effect on, again, one of our largest costs, which is power, in the manufacturing sector, both in oil and gas; and generally in business including small business. We have to think about those things when we talk about this.

Ross mentioned California. Let's talk about California for a minute. Strictest air quality rules in the country. And the highest adult unemployment rate. The majority of the state is in non-attainment. And businesses are simply fleeing the state. And so are its citizens; more people are leaving California than moving in. You simply cannot move into California in most major metropolitan areas and be in the middle class. I mean, we certainly have case studies in this country about what these things mean and what the unintended consequences are. So we very much have to think about those.

And certainly, we're seeing an onslaught of these rules. As was mentioned earlier, the current administration declined to address ozone right before the previous election, and it declined to address some other energy issues right before the election.

So we really need to think about why are we doing this? Is it effective? What do all of these rules mean? The Clean Power Plan certainly is going to have a tremendous impact. Much of coal country has been decimated already by a lot of the rules that are here. And those are not made up numbers. I'm from Kentucky, I am from coal country. There is no Appalachia coal industry anymore. It is devastating.

So we really have to think about what these things mean, and what these things mean to the consumer. Those people are now trying to decide, What am I going to spend money on? Am I going to buy my child clothes? Am I going to pay my energy bill? Am I going to go to the doctor? What am I going to do?

We have got to quit talking about this just as a business cost. It's a consumer cost. And a lot of these things we can do to help reach attainment, they're going to be a cost to the consumer. Parking space taxes. Time of day tolls. Lower speed limits. Increases for vehicle registration. All of those things are the cost on the consumer.

And so, all of these rules have to be considered in total and globally. And we have to think about the ultimate bearer of those costs.

**JOHN WALKE:** Just three quick points. First, fuels and other activities that reduce carbon dioxide emissions have the very happy co-benefit of coming with lower nitrogen oxide, particulate matter, VOC emissions that deliver health benefits. And EPA found a lot of direct and indirect health benefits from its Clean Power Plan. And the course that your questioner is asking about would yield lower benefits. And as Dr. Krupnick said, building those into the baseline, as NERA did not, would reduce the cost attributed to the ozone standard.

Second point. And it's almost weird that I find myself needing to say this by the tenor of the conversation, but enforcing the law is not like ordering from an a la carte menu. All of these responsibilities are ones that EPA has been instructed to carry out by Congress. And if the populace or lobbyists are unhappy with that, then, by all means, try to weaken the law. Go to Congress, seek to amend the statute. But in the meantime, EPA's not moving any goalpost. EPA is carrying out its legal responsibilities to enforce the law based upon what the science and the

law require. So if anyone's upset, it's actually Congress and the statute that are responsible for what's happening right now.

The third point is just to put into context some dates. The areas that Dr. Krupnick mentioned that will still be in non-attainment with a standard that is lower than 70 are overwhelmingly areas that have until the mid-2030s to attain a standard. And that's why these unspecified controls are completely reasonable and realistic and supported by historic examples, to expect that there will be control measures that are developed in those instances.

The last date I want to mention is just that EPA does not identify areas of the country that will fail to meet strengthened standards until 2017 or 2018, under the law. To be sure, there will be costs borne between now and then. But those areas will have plenty of time and notice to begin control measures that, under the law, will be developed in SIPs, state implementation plans, following that 2017/2018 period.

**MARK DRAJEM:** Okay, Ross and then Alan.

**ROSS EISENBERG:** I'll be short, I promise. So I actually had a chance to meet with the mayor of Fresno recently, who told me a story about the glass manufacturer that came to try to locate in their area. Everything was working fine. Fresno's in severe non-attainment. And they met with the air quality management districts, realized there was absolutely no way they could possibly get there, and that was that. They still have manufacturing, but not glass and heavy manufacturing that requires a lot of permits and a lot of energy.

I think that's an excellent question on sort of the combination of things. NERA did look at this. As was stated, NERA did not include the Clean Power Plan in its baseline because they put it out in February and there was no final Clean Power Plan in February of 2015.

That being said, we knew it was coming. We knew it would change. We know it was coming. So we asked them to take a look at it. They said qualitatively it really only results in about a 10% difference in cost. So instead of 1.1 trillion in compliance cost, it's probably about 1 trillion in compliance cost.

And they've actually done some work since, which I think is, since this is an energy panel, it's probably worth talking about. Texas Commission on Environmental Quality took a look at this after we did, and they worked with NERA on this. And one of the things that NERA's model does is it tries to figure out the cheapest cost-per-ton reduction. So right off the bat, retired a whole lot of coal-fired power plants, which is where some of that overlap would be with the Clean Power Plan. Not a lot of it, but some of it.

TCEQ took a look and said, Wait a minute. Those power plants have controls on them already. They've reduced their NOx by 90% already. So we need them. Particularly because we're retiring a whole bunch of the other ones from the Clean Power Plan. So we're not just going to blanket retire them, even if it is the cheapest cost-per-ton right off the bat.

And what that means is, you then go to more expensive costs-per-ton, which wind up being manufacturing, wind up being oil and gas, wind up being kind of other things. And again, it starts to get more expensive, it starts to get more challenging.

It affects energy in that way. I don't want to speak for them, but a big reason that API is involved in this is because they're worried that some of these non-attainment— a lot of these non-attainment areas are where they're trying to get oil and gas out of the ground. So that continued energy advantage, we may not have that so much anymore if we can't actually get it out because you're in non-attainment. It affects energy in a material way.

The last thing I'd say is cost. So you take out Clean Power Plan, you put Clean Power Plan back in. We're still bearing those costs, right? Let's look at the big picture here. So it doesn't matter; if it comes from ozone or it comes from Clean Power Plan, we're all still paying for it. It doesn't mean that we're not; we're still absolutely paying for it. We're just paying for it under a different regulation.

And so, I agree, we've got to look at these things holistically. NERA tried to do their best. EPA frankly does try to do their best in establishing a baseline here. We really need to do a better job of it, but it's good that we're talking about it like this.

**ALAN KRUPNICK:** That's great. We've just had a civil discussion here. EPA and NERA both tried to do their best. And I think that really is good. Thanks, Ross.

So just to try to go Brad's question about the bigger picture. We've already talked about the CPP. Another rule that's coming down the pike, that's just been finalized is the Methane Rule. So when the oil and gas sector for new wells and other new plants in the lifecycle of natural gas and oil are put in, they're going to have meet tighter methane standards. And coming along with those methane standards will be volatile organic compound reductions, VOC reductions. So that should help reduce ozone. And this wasn't included in either of these two analyses.

Another thing that's going to be coming down the pike is further regulation of CO2 emissions. So now we've got automobiles and trucks with CAFE phase two truck regulations for fuel economy. We've got the CPP, the Clean Power Plan, for electric utilities. So next on the block's going to be refineries, manufacturing. And when you control CO2, when you're reducing CO2 emissions there, you're also going to be reducing these other pollutants.

So that's kind of the big picture.

And then one specific thing that I think Ross raised. In the analysis that NERA did, and EPA for that matter, they didn't look at trading possibilities – I mentioned this before – within the electric power sector to try to reduce NOx further. And we have a model, electric utility model, called Haiku that also tries to find the least cost approaches to reducing emissions to meet emissions standards or caps. And so, allowing that trading can reduce, I think NERA's study has a cost of \$16,000 a ton, to reduce NOx. With the trading allowed, that goes down to about \$6000 a ton, according to our analysis.



So not that EPA would actually implement a trading program, perhaps, but if they did, you could reduce costs quite a bit below what NEAR estimated. EPA came in around \$8000 a ton. So it's in that same ballpark.

**MARK DRAJEM:** Great. I'm sorry, we're at the end here. And we've heard everyone's views about what they would like EPA to do. So at the end of this panel, I would like everyone to say what they think EPA is going to issue in terms of the standard. Ross, you go first.

**ROSS EISENBERG:** What I think? That is a loaded question. What I think EPA is going to do; so I think they're going to land somewhere in the range they proposed. I can't tell you where that is.

**MARK DRAJEM:** Which is 65 to 70.

**ROSS EISENBERG:** Yeah.

**MARK DRAJEM:** John's going to be a little more specific.

**JOHN WALKE:** I don't know if I am. I don't disagree with that. My fear is that there are some within the administration who just want to call it a day and set the worst standard they proposed at 70. And we vehemently oppose that. I also think that there are those within the administration who want to do better than that and recognize the health benefits and political benefits of saving more lives in asthma attacks. I don't know what the standard is now since we have a package at the White House from EPA. And I don't know where they're going to land. I think Ross is right, and it's a real question of whether a safer standard of 70 emerges by October 1<sup>st</sup>.

**MARK DRAJEM:** Sarah?

**SARAH MAGRUDER LYLE:** So I can tell you what I'm hearing. And I think that what I'm hearing around town is probably where we're going to end up, which is part of the administration wants 68 and part of it wants 70. So I think we're going to end up in a range that they've proposed. And I think we'll just have to see.

**MARK DRAJEM:** Alan?

**ALAN KRUPNICK:** I'd love to have something profound to say here, but [laughter] but the answer is, I have no idea. I think what Sarah says is likely as any, that maybe there's a compromise in here in the 68/67 range. It will really matter a lot on how many areas go out of attainment. So one can imagine splitting the baby like that. It's not a policy we've never seen in Washington, right?

**MARK DRAJEM:** Bill?

**BILL SQUADRON:** I guess what we all know is, no one likes to predict elections, football games or ozone standards. That's one thing we've definitely learned this morning.

Could we have a big hand for our panel? I think this was an excellent discussion. And I'd really like to thank Alan, Sarah, John, Ross, and of course Mark for the discussion this morning. Once again, I encourage all of you to go to our *OurEnergyPolicy.org*. Not only will the video of this event be up by next week– it'll take us a couple of days, but by early next week, we'll have our entire community able to extend this discussion and be able to add whatever color, opinions, thoughts and facts that they have.

As Sarah said earlier, a large part of what we're about here is connecting all the dots and not having people just speak to themselves, or speak in silos, but rather having them able to engage, because we believe that doing that in the sunshine is the best way to move policy in a proper direction.

So we really appreciate everyone being here today. I'd like to thank those people on our staff at *OurEnergyPolicy.org* – Brad Townsend, Sandra Dickenson and Sam Burn – for their hard work in putting this together.

And I wish all of you a great day. Thanks again.

END