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OVERSIGHT OF REGULATORY IMPACTS ANALYSES FOR U.S. ENVIRONMENTAL PROTECTION AGENCY REGULATIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON SUPERFUND, WASTE MANAGEMENT, AND REGULATORY OVERSIGHT

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

OCTOBER 21, 2015

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OVERSIGHT OF REGULATORY IMPACT ANALYSES FOR U.S. ENVIRONMENTAL PROTECTION AGENCY REGULATIONS

WEDNESDAY, OCTOBER 21, 2015

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON SUPERFUND, WASTE MANAGEMENT, AND
REGULATORY OVERSIGHT
Washington, DC.

The committee met, pursuant to notice, at 10:02 a.m. in room 406, Dirksen Senate Office Building, Hon. Mike Rounds (chairman of the subcommittee) presiding.

Present: Senators Rounds, Markey, Vitter, Crapo, Boozman, Sullivan, Inhofe, Carper, Merkley, Booker and Boxer.

OPENING STATEMENT OF HON. MIKE ROUNDS, U.S. SENATOR FROM THE STATE OF SOUTH DAKOTA

Senator ROUNDS. Good morning, everyone.

Senator Markey, the ranking member, is on his way. He said it was OK with him if we begin early.

At the same time I think Senator Inhofe will have to leave. As Senator Inhofe may indicate we have multiple committees.

Senator INHOFE. Thank you, Mr. Chairman. We do have a problem, and I am saying this for the benefit of our five witnesses, many of whom have come a long ways and gone to a lot of inconvenience. I appreciate their being here.

In this committee and the Armed Services Committee we have an overlap, I think, of eight members, so we finally have an agreement that they are going to have their committee hearings on Tuesday and Thursday; we would have ours on Wednesday. However, because of the unique situation of the availability of a witness, we are meeting right now at the same time. So that is the reason we don't have that many. They will be trickling in as they participate in the Senate Armed Services Committee.

Thank you, Mr. Chairman.

Senator ROUNDS. Thank you, sir.

In the meantime, we will get started and try to do it on time to your benefit as well. We appreciate your being here.

The Environment and Public Works Subcommittee on Superfund, Waste Management and Regulatory Oversight is meeting today to conduct a hearing on Oversight of Regulatory Impact Analyses for the United States Environmental Protection Agency Regulations.

Since President Obama took office in January 2009, the EPA has issued more than 3,300 new regulations. These regulations impact every U.S. citizen and every U.S. industry, from agriculture to domestic manufacturing and energy production, industries that provide jobs for millions of Americans.

Unfortunately, it is those same Americans who shoulder the burden of these broad, overreaching EPA regulations. According to the Office of Management and Budget, over the last 10 years, EPA regulations have imposed an estimated $42 billion in annual costs on this Country, costs paid for by American taxpayers and businesses.

In this Congress, the Environment and Public Works Committee has taken a pointed look at the various regulations being promulgated by the EPA, such as WOTUS and the Clean Power Plan. Further, this subcommittee has specifically looked at the science used by the EPA in their rulemaking process and the impact that lawsuits have on the regulatory process.

Today we will be taking a step back to analyze the EPA's rulemaking process as a whole. Our witnesses today will testify to the systematic issues and concerns they are continually seeing in the EPA's regulatory process.

The EPA routinely fails to fully monetize the costs versus the benefits of their regulations, imposes unfunded mandates onto State and local governments, ignores the impacts of regulations on small businesses, and over-relies on ancillary benefits to justify their regulations.

EPA is required to conduct Regulatory Impact Analysis, commonly known as RIAs, of their regulations to provide both the public and the agencies with accurate information on the costs and benefits of the proposed regulations. However, a July 2014 report by the independent Government Accountability Office, the GAO, found the EPA failed to conduct a clear, thorough, and accurate analysis of the cost and benefits of, or alternatives to, major regulatory actions. Notably, the GAO concluded that "EPA has not fulfilled its responsibility to provide the public with a clear explanation of the economic information supporting its decisionmaking."

As a result, EPA regulations that cost the United States economy, small businesses, and American taxpayers billions of dollars are being made by Washington bureaucrats who, rather than conducting a thorough, accurate, and public analysis of the impacts these regulations will have, are simply rubber-stamping major regulations that drastically reshape segments of the United States economy. This impacts American businesses ability to do business on a daily basis, to compete globally, and employ Americans in steady, well-paying jobs.

The EPA is also imposing unfunded mandates on States and local governments at an increasing rate. Often, these regulations are finalized with little input by the affected States and local governments, yet these entities are required to use their limited funds and increasingly tight budgets to comply with these new Federal regulations. Furthermore, the EPA's failure to use accurate information to monetize the cost of these regulations provides the States with little guidance or ability to estimate the compliance costs of regulations.

In October, in its last decision of the term, the Supreme Court ruled in Michigan v. EPA that the United States Environmental Protection Agency unreasonably failed to consider costs when deciding to regulate mercury emissions from power plants. Because of these exorbitant regulatory costs, the EPA has attempted to justify their air regulations by identifying ancillary benefits, which the EPA refers to as "co-benefits" to help outweigh the cost of regulations. These co-benefits allow the Administration to claim a dramatic increase in the net benefits of the EPA regulations, regardless of the cost of the regulation.

Everybody desires clean air and clean water, but we have to ask whether there is a better way to achieve it without imposing burdensome regulations in which the costs outweigh the benefits. Due to the EPA's failure to clearly and accurately quantify the costs and benefits of regulations, agencies are unable to make well-informed decisions. Even more troubling, the public, American businesses, and State and local governments are prevented from understanding the real impact of the regulation and meaningfully participate in the rulemaking process.

I would like to thank our witnesses for being with us today, and I look forward to hearing their testimony.

Now, as I shared earlier, Senator Markey was on his way in. We appreciate his being here and I would like to recognize my friend, Senator Markey, for a 5-minute opening statement, if you are ready to go, Senator.

Senator MARKEY. I am ready to go. Thank you.

Senator ROUNDS. Very good.

[The prepared statement of Senator Rounds follows:]

STATEMENT OF HON. MIKE ROUNDS, U.S. SENATOR
FROM THE STATE OF SOUTH DAKOTA

The Environment and Public Works Subcommittee on Superfund, Waste Management, and Regulatory Oversight is meeting today to conduct a hearing on "Oversight of Regulatory Impact Analyses for U.S. Environmental Protection Agency Regulations."

Since President Obama took office in January 2009, the EPA has issued more than 3,300 new final regulations. These regulations impact every U.S. citizen and every U.S. industry—from agriculture to domestic manufacturing and energy production—industries that provide jobs for millions of Americans.

Unfortunately, it is those same Americans who shoulder the burden of these broad, overreaching EPA regulations. According to the Office of Management and Budget, over the last 10 years, EPA regulations have imposed an estimated $42 billion in annual costs on this country—costs paid for by American taxpayers and businesses.

In this Congress, the Environment and Public Works Committee has taken a pointed look at the various regulations being promulgated by the EPA, such as WOTUS and the Clean Power Plan. Further, this subcommittee has specifically looked at the science used by the EPA in their rulemaking process and the impact that lawsuits have on the regulatory process.

Today we are taking a step back to analyze the EPA's rulemaking process as a whole. Our witnesses today will testify to the systematic issues and concerns they are continually seeing in EPA's regulatory process.

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The EPA is required to conduct Regulatory Impact Analyses, commonly known as RIAs, of their regulations to provide both the public and the agencies with accurate information on the costs and benefits of proposed regulations. However, a July 2014 report by the independent Government Accountability Office (GAO) found the EPA

failed to conduct a clear, thorough and accurate analysis of the cost and benefits of, or alternatives to, major regulatory actions. Notably, the GAO concluded that "EPA has not fulfilled its responsibility to provide the public with a clear explanation of the economic information supporting its decisionmaking'

As a result, EPA regulations that cost the U.S. economy, small businesses and American taxpayers billions of dollars are being made by Washington bureaucrats who, rather than conducting a thorough, accurate and public analysis of the impacts these regulations will have, are simply rubber-stamping major regulations that drastically reshape segments of the U.S. economy. This impacts American businesses ability to do business on a daily basis, to compete globally, and employ Americans in steady, well-paying jobs.

The EPA is also imposing unfunded mandates on states and local governments at an increasing rate. Often, these regulations are finalized with little input by the affected states and local governments, yet these entities are required to use their limited funds and increasingly tight budgets to comply with these new Federal regulations. Furthermore, the EPA's failure to use accurate information to monetize the cost of these regulations provides the states with little guidance or ability to estimate the compliance costs of regulations.

In October, in its last decision of the term, the Supreme Court ruled in Michigan v. EPA, that the U.S. Environmental Protection Agency unreasonably failed to consider costs when deciding to regulate mercury emissions from power plants.

Because of these exorbitant regulatory costs, the EPA has attempted to justify their air regulations by identifying ancillary benefits, which the EPA refers to as "co-benefits" to help outweigh the cost of the regulations. These co-benefits allow the administration to claim a dramatic increase in the net benefits of EPA regulations, regardless of the cost of the regulation.

Everybody desires clean air and clean water, but we have to ask whether there is a better way to achieve it without imposing burdensome regulations in which the costs outweigh the benefits.

Due to the EPA's failure to clearly and accurately quantify the costs and benefits of regulations, agencies are unable to make well-informed decisions. Even more troubling, the public, American businesses and State and local governments are prevented from understanding the real impact of the regulation and meaningfully participating in the rulemaking process. I'd like to thank our witnesses for being with us here today and I look forward to hearing your testimony.

OPENING STATEMENT OF HON. EDWARD J. MARKEY, U.S. SENATOR FROM THE STATE OF MASSACHUSETTS

Senator MARKEY. Thank you, Mr. Chairman, very much. Thank you for having this very important hearing.

The Clean Air Act is one of the most effective public health laws in American history. It has cut air pollution from power plants, from factories, and from vehicles. As of 2010, these regulations saved more than 164,000 adult lives and prevented tens of millions of lost work days due to fewer pollution related illnesses like asthma. And the United States gross domestic product rose 234 percent since President Nixon signed the 1970 Clean Air Act.

The same is true of the 1972 Clean Water Act. It has stopped millions of tons of toxic pollution from degrading our waters and has increased the number of waterways that are safe for fishing, safe for swimming.

We are here today discussing how the EPA develops Regulatory Impact Analysis, a tool used to estimate the costs and the benefits of regulation. This is an inherently challenging task because in many cases putting a dollar value on the benefits and costs of pollution is not straightforward.

For example, scientists figured out that a majority of kids in the 1970's had an unsafe level of lead in their blood, and that this was largely caused by the use of leaded gasoline in cars. But how do you put a price on the cognitive impairment caused by elevated blood lead levels in a 5-year old? Or how about the price of lost

schools days due to illnesses like asthma that are aggravated by ground level ozone?

The diminished productivity caused by these childhood exposures may be subtle and span their entire lives. But that doesn't mean that complex and hard-to-quantify environmental and health impacts are not both real and important at the same time.

History has shown that the benefits of environmental regulations are enormous compared to economic costs. Yet, whenever the EPA proposes a new regulation, the impacted industries always, always cry foul.

In 1974, a Ford executive argued that if automobile fuel economy standards became law, the Ford product line could consist of all sub-Pinto sized cars. In 2001, GM's chief spokesman predicted that if the standard for trucks went up three miles per gallon, three miles per gallon, to 23.7 miles per gallon, they might have to stop making SUVs, four-wheel drive pickups, full-sized vans, and some two-wheel drive pickups. That is the top people at General Motors.

From what I saw on my commute to work this morning, this just hasn't happened. There are SUVs still on the street, even though the goal is 54.5 miles per gallon by the year 2025. In fact, the projected fuel economy standard of light trucks itself in 2016 is 28.9 and 38.2 for automobiles. That is for 2016. We are well on our way to meeting the highest goals ever, 54.5 miles per gallon.

Industry also said the sky was falling when the EPA established the acid rain program. To respond to the harm sulfur dioxide was causing to public health and the environment, Congress amended the Clean Air Act in 1990. In response, the EPA issued a rule on sulfur dioxide and nitrogen oxide emissions from fossil fuel burning power plants and other sources. The Edison Electric Institute and Peabody Coal Company estimated that complying with the acid rain program would cause $4 billion to $5 billion per year.

By 2002, the acid rain concentrations in the Midwest were down by over 50 percent. Most Americans saw their electricity bills decrease. And in the end the Energy Information Administration found that the actual industry compliance costs were only about $836 million, one-fifth of the industry predictions.

The health benefits of EPA regulations are clear and they are big. If the EPA hadn't taken action to protect the air and the water, our cities would still be thick with smog like China's are now. Our rivers would still be at risk for catching on fire. No critique of the EPA's Regulatory Impact Analysis can undermine the four decades of environmental regulatory successes. The fact of the matter is that the EPA is doing its job protecting us from harmful toxins and pollution, and the value of a healthy, thriving society at the same time is priceless.

Thank you, Mr. Chairman.

Senator ROUNDS. Thank you, Senator Markey.

Our witnesses joining us for today's hearing are Diana Furchtgott-Roth, Senior Fellow and Director of Economics21 at the Manhattan Institute for Policy Research, welcome. William Kovacs, Senior Vice President in Environment, Technology & Regulatory Affairs at the United States Chamber of Commerce, welcome. Sam Batkins, Director of the Regulatory Policy at the American Action Forum, we welcome you today. Mary B. Rice, M.D., MPH, Instruc-

tor at Harvard Medical School, welcome. And Rena Steinzor, Professor at the University of Maryland Carey Law School, welcome today.

Now we will turn to our first witness, Dr. Diana Furchtgott-Roth, for 5 minutes.

Dr. Furchtgott-Roth, you may begin.

STATEMENT OF DIANA FURCHTGOTT-ROTH, SENIOR FELLOW AND DIRECTOR, ECONOMICS21, MANHATTAN INSTITUTE FOR POLICY RESEARCH

Ms. FURCHTGOTT-ROTH. Thank you very much, Mr. Chairman, but you flatter me, I am not a doctor. So I should just say that right for the record.

Senator ROUNDS. Thank you. I will correct the record.

Ms. FURCHTGOTT-ROTH. I am the author of five books, but I am not a doctor, at least not yet.

Well, as you said before, everyone wants cleaner air, and the question is what is the balance. Under current Federal regulations, the air is getting cleaner every year, as old equipment is replaced by new. Greenhouse gas emissions from power plants declined by 15 percent from 2005 to 2013. The carbon intensity of the economy has fallen by 23 percent since 2005, continuing a long decline since the end of the World War II.

Absent heavy regulatory intervention, the United States is already making great strides toward a cleaner economy. Sales of pickup trucks and SUVs, by the way, have soared precisely because they have a different miles per gallon fuel standard than do smaller cars, which is why Senator Markey saw so many of them on his way to work this morning.

Over the past 2 years, EPA has issued proposed or final regulations on emissions of mercury, ozone, and carbon. I would like to discuss the problems with the cost-benefit analysis used for these regulations. I will first discuss the problems with the calculations of the benefits, then the calculations of the costs, and then with the discount rate.

The main problem with the calculations of the benefits are that the co-benefits of other substances are included. The carbon rule's putative benefits exceed its claimed costs not from reductions in carbon dioxide, say from the carbon rule, but from reductions in other substances, such as particulate matter, sulfur oxides, and nitrogen oxides. Without these alleged health benefits of these other substances, the rule would fail EPA's cost-benefit tests.

As can be seen by the table I provided in the testimony, the benefits listed for the Clean Power Plan in EPA's Regulatory Impact Analysis, which I have right here, by the way, all 500 pages of it, are about $15 billion in 2025. But these benefits shrink to $3.6 billion if the health benefits of other substances are removed. In the mercury rule, benefits shrink from about $61 billion to less than $100 million when the co-benefits of other substances are removed. For the ozone rule, benefits shrink from about $29 billion to $8.7 billion when benefits of other particulates are emitted.

These benefits, the net benefits, in other words, are accounting for the costs, are actually negative for mercury and ozone, and barely positive for carbon.

While many States and localities are already in compliance with established national ambient air quality standards for NOx, SOx, and particulate matter, by claiming benefits from further reducing below the established safe level, EPA is in effect lowering the established standard without going through the legal requirements of a rulemaking focused on the relevant standard.

EPA is adopting a regulation for carbon, mercury, and ozone that does not yield enough benefits to justify the cost. Instead, the agency is using supposed other benefits. And as we all know, particulate matter, SOx and NOx, are already regulated under other rules.

Other problems are a double counting of health benefits from particulates. It is not clear that EPA is accurately accounting for all of its claims of particulate matter reduction benefits across many rulemakings. If, for example, there are health benefits, such as reductions in asthma, from one rule, one cannot count those benefits as reductions from a second rule because they will have already taken place. And it is not clear that double counting is not taking place.

Third, there is the assumption that benefits that all particulates are equally harmful and some particulates might be more harmful than others.

Fourth, there is the assumption that reductions in particulates have equal value independent of their base level, basically saying that reductions in particulates in New York City are equally valuable from reductions in particulates up in New York State, which has less levels of emission.

It is very important that there is reliance on benefits from reductions in asthma, because over the past 25 years, as the air has got cleaner, incidents of asthma has arisen. Asthma is associated with obesity and lack of exercise, and if these trends are not reversed, then it is not clear that there will be any further reductions in asthma from particulate matter.

There are also problems with the costs, major ones being that future increases in electricity prices are not accounted for. The EPA analysis specifically says there will be no effects on small business. They do not account effects of increases in electricity prices in small business.

They omit the cost of energy-intensive industries going offshore. In other words, if we regulate them here, the EPA assumes that the emissions are going to disappear. But if they go to China or they go to Mexico, the emissions are going to stay the same and we are not going to have climate benefits. In fact, they might be even worse because China and Mexico have lower clean air regulations than we do.

There are also problems with the discount rates that EPA uses, which are below the standard business rates. Business rates are often in the range of 10 percent. EPA uses discount rates that are 3 percent and 7 percent, and the benefits are discounted at a lower rate from the costs, which wouldn't be allowed in most analyses.

Thank you very much for giving me the opportunity to testify today.

[The prepared statement of Ms. Furchtgott-Roth follows:]

The Environmental Protection Agency's Flawed Cost-Benefit Analysis Methodology

Diana Furchtgott-Roth
Senior Fellow and Director, Economics21
Manhattan Institute for Policy Research

Subcommittee on Superfund, Waste Management, and Regulatory Oversight
U.S. Senate Committee on Environment and Public Works
October 21, 2015

The Environmental Protection Agency's
Flawed Cost-Benefit Analysis Methodology

Chairman Rounds, Ranking Member Markey, Distinguished Members of the Subcommittee, thank you for the opportunity to testify today. I am a senior fellow at the Manhattan Institute, where I direct the Institute's economics portal, Economics21. I am a former chief economist of the U.S. Department of Labor under Secretary Elaine L. Chao, and a former chief of staff of the Council of Economic Advisers in the White House under President George W. Bush.

I am especially honored to testify today because regulatory oversight is an important function of Congress. With the annual U.S. economic costs of federal regulation having been conservatively estimated at $1.9 trillion,[1] the need for a more responsible approach to regulation has never been more critical. Unfortunately, the cost-benefit analyses in the Environmental Protection Agency's latest rules on carbon, ozone, and mercury do not live up to reasonable economic standards of cost-benefit analysis in the private sector.

Congress needs to ensure that government agencies live up to the highest standards of cost-benefit analysis. If the cost of doing business in America rises as a result of burdensome regulations, all Americans suffer. EPA's regulations will disproportionately affect Americans living in energy-producing states, and the Committee should be particularly careful about these geographic effects.

Cost-benefit analysis performed by government agencies is especially important because the government is imposing regulations on the public, and the public has nowhere else to go. If a private company errs in its cost-benefit calculations, it may make an investment that turns out to be unprofitable. The company may even go out of business, with management, employees, and shareholders suffering financial and job losses. But if a government agency makes mistakes in cost-benefit analysis, the entire country potentially loses, and no government employees lose their jobs.

Everyone wants cleaner air, but most people also want the security of employment that comes from economic activity. Most would agree on the need

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[1] Clyde Wayne Crews (2015). "Ten Thousand Commandments 2015." *Competitive Enterprise Institute.* https://cei.org/10kc2015

to strike the right balance between the economy and the environment. The question is: What is that balance?

Under current federal regulations, the air is getting cleaner every year, as old equipment is replaced by new. Greenhouse-gas emissions from power plants have declined by 15 percent from 2005 to 2013, according to the Energy Information Administration.[2] Do the benefits associated with yet more federal regulations justify their costs?

Over the past two years EPA has issued proposed or final regulations on emissions of mercury, ozone, and carbon. I will first discuss the problems with calculation of the benefits, then the problems with the costs, and finally with the discount rate. The final section addresses why Americans should care about such an esoteric issue.

Problems with Calculations of Benefits

1. Co-Benefits of Other Substances

The carbon rule's putative benefits exceed its claimed costs not from reductions in carbon dioxide, but from reductions in other substances, such as particulate matter, sulfur oxides (SOx) and nitrogen oxides (NOx). Without the alleged positive health effects of these other substances, the rule would fail EPA's cost-benefit test.

As can be seen in the table below, the benefits listed for the Clean Power Plan in EPA's Regulatory Impact Analysis are about $15 billion in 2025, but those benefits shrink to $3.6 billion if the health benefits of other substances are removed.[3] In the mercury rule, benefits shrink from about $61 billion to less than $100 million when co-benefits from reductions in particulate matter, SOx, and NOx are removed.[4] For the ozone rule, benefits shrink from about $29 billion to $8.7 billion even with EPA's analysis when benefits of other particulates are

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[2] Energy Information Administration (2014). "U.S. Energy-Related Carbon Dioxide Emissions, 2013." http://www.eia.gov/environment/emissions/carbon/

[3] U.S. Environmental Protection Agency (2015). "Regulatory Impact Analysis for the Clean Power Plan Final Rule." http://www.epa.gov/airquality/cpp/cpp-final-rule-ria.pdf

[4] U.S. Environmental Protection Agency (2011). "Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards."
http://www.epa.gov/ttnecas1/regdata/RIAs/matsriafinal.pdf

omitted.[5] The net benefits without other reductions are negative for mercury and ozone, and barely positive for carbon.

Cost-Benefit Analysis for Three EPA Rules, With and Without Health Benefits from Particulate Matter, SO_2, and NOX Reductions (billions of 2011 dollars)

	Carbon Rule	Mercury Rule	Ozone Rule
Costs	$3.0	$10.4	$15
Benefits	$10-$19	$36-$88	$19-$38
Benefits w/o other reductions	$3.6	<$0.1	$6.4-$11
Net Benefits	$7-$16	$26-$78	$4-$23
Net Benefits w/o other reductions	$0.6	($10.4)	($4.0)-($8.6)

Notes: 7% discount rate used.
Carbon Rule: 2025 estimates for mass-based reductions. Source: "Regulatory Impact Analysis for the Clean Power Plan Final Rule," Environmental Protection Agency, August 2015 (Tables ES-5 & ES-8).
Mercury Rule: 2016 estimates. Source: "Regulatory Impact Analysis for Final Mercury and Air Toxics Standards," Environmental Protection Agency, December 2011 (Tables ES-1 & ES-4).
Ozone Rule: 2025 estimates. Source: "Regulatory Impact Analysis of the Proposed Reductions to the National Ambient Air Quality Standards for Ground-Level Ozone," Environmental Protection Agency, November 2014 (Tables ES-6 & 5-1).

Many states and localities are already in compliance with established national ambient air quality standards (NAAQS) for NOx, SOx and particulate matter. By claiming benefits from further reducing these below the established safe level, EPA is, in effect, lowering the established standard without going through the legal requirements of a rulemaking focused on the relevant standard. EPA is adopting a regulation for carbon, mercury, or ozone that does not yield enough benefits to justify the cost. Instead, the agency is using supposed benefits from reduction of NOx, SOx, or PM to justify the cost. In so doing, EPA is taxing localities that are already in compliance with the established NAAQS and forcing on these communities further reductions not justified by independent safety and health considerations.

Particulate matter, SOx, and NOx, are already regulated under their own sets of rules. If EPA believes that levels of these substances should be lower, it should propose rules to lower them, and it should follow federal administrative law by providing public notice and incorporating public comment on their cost-benefit analyses.

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[5] U.S. Environmental Protection Agency (2014). "Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone." http://www.epa.gov/ttnecas1/regdata/RIAs/20141125ria.pdf

2. Double-Counting of Health Benefits from Particulates

It is not clear that EPA is accurately accounting for all of its claims of particulate matter reduction benefits across its many rulemakings that rely on PM co-benefits. The national PM inventory published by EPA is finite, and EPA needs to account for how much of that inventory has been prospectively eliminated by each of its rulemakings. Without better EPA bookkeeping, we have no assurance that they are not double counting reductions.

For instance, even if reductions in particulates can be counted as one of the health benefits of reducing mercury, the first of three major rules put in place by EPA, the agency cannot then count these same reductions as a benefit from subsequently reducing carbon dioxide and ozone. The benefits will already have accrued, and so cannot be counted as a benefit from reducing the other substances. Yet EPA seems to be using the same set of benefits to justify multiple rules.

Excess PM (above the NAAQS) is present only in certain places and at certain times, and EPA has not established that the PM reductions they are counting as co-benefits correspond to the appropriate places and times. Reducing PM somewhere that it is already low is not much of a benefit if the excessive PM elsewhere is unaffected. EPA seems to be taking a scatter-shot approach to a problem where careful targeting would be more economically efficient and appropriate

3. Assumption that All Particulates Are Equally Harmful

EPA makes oversimplifying assumptions with regard to particulates which inflate the benefits of the Clean Power Plan. Namely, the agency assumes that all particulates are equally harmful. The Regulatory Impact Analysis for the Clean Power Plan states: "[W]e assume that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality." That is because "the scientific evidence is not yet sufficient to allow differentiation of effect estimates by particle type."[6] If the scientific evidence is inconclusive on particulates, why put in place costly regulations that raise energy costs?

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[6] U.S. Environmental Protection Agency (2015). "Regulatory Impact Analysis for the Clean Power Plan Final Rule." http://www.epa.gov/airquality/cpp/cpp-final-rule-ria.pdf

4. Assumption that Reductions in Particulates Have Equal Value Independent of Base Level

EPA is supposed to set standards at the levels most protective of human health, including a margin for safety. When EPA set the PM 2.5 annual average standard at 15 micrograms per cubic meter, the implication is that levels below that are safe. If EPA claims health co-benefits for reductions in areas where the starting level was already below 15, it seems to be saying that the real standard should be lower than 15. If that is so, EPA should initiate a rulemaking proceeding to lower the PM standard with public notice and comment.

Instead, EPA in these new rules is implicitly saying that the current PM standard, the result of public notice and comment, is wrong. Yet nowhere in the new rules does EPA explain why the standard of 15 is wrong, much less what the new standard should be. By setting no threshold and counting reductions in PM no matter the initial level, EPA is implicitly saying the standard should be zero – which is of course unattainable. EPA also has no evidence or rule to justify this level. Does EPA mean that we should live our lives in plastic bubbles because free air is unsafe to breathe?

EPA assumes that reductions in particulates have the same effect in polluted areas as clean ones. EPA appears to say that the same health benefits are achieved by reducing particulates by a given percentage starting from a high level of emissions as starting from a low level of emissions. This leads to the conclusion than a reduction in particulates in upstate New York, which has few emissions, is equal to those in New York City, which has greater emissions.

5. Reliance on Benefits from Reductions in Asthma

The benefits, calculated at $36 billion to $88 billion each year[7] from the mercury rule, $19 billion to $38 billion from ozone, and $10 billion to $19 billion from carbon, supposedly come from improvements in Americans' health, mostly from decreases in asthma. But these projected benefits are "guesstimates," gains that are hard to specify given that other factors, such as obesity and lack of exercise, are in play.

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[7] These figures are in 2011 dollars for consistency with the other EPA estimates.

These vast projected savings from asthma constitute the bulk of benefits from EPA's new rules. However, America's air has been gradually getting cleaner since 1980, as EPA's own data show, but the number of children with asthma has risen. According to the Centers for Disease Control, 3.6 percent of children had asthma in 1980, and more than twice that percentage, 7.5 percent, in 1995.[8] In 2009, using a slightly different measure, 10 percent of children had asthma.[9] CDC acknowledges that "the causes of asthma remain unclear and the current research paints a complex picture."[10] Yet EPA forecasts 130,000 fewer asthma cases from its new mercury rule,[11] 320,000 from ozone,[12] and 48,000 from carbon,[13] mostly from fewer particulates.

Many studies suggest that obesity increases the prevalence of asthma.[14] If recent trends in obesity and lack of exercise continue, then further improvements in air quality might not have an effect in reducing asthma.

Problems with Costs

EPA understates the costs of the Clean Power Plan. In its Regulatory Impact Analysis, EPA distinguishes between social costs, which are "the total economic burden of a regulatory action," and compliance costs, which are the costs that companies have to spend conforming to the Clean Power Plan. The only costs included are compliance costs. EPA states: "The social costs of a regulatory action will not necessarily be equivalent to the expenditures associated with compliance. Nonetheless, here we use compliance costs as a proxy for social costs."[15]

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[8] Lara Akinbani (2006). "The State of Childhood Asthma, United States, 1980-2005." *Centers for Disease Control.* http://www.cdc.gov/nchs/data/ad/ad381.pdf

[9] Ibid.

[10] Ibid.

[11] U.S. Environmental Protection Agency (2011). "Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards."
http://www.epa.gov/ttnecas1/regdata/RIAs/matsriafinal.pdf

[12] U.S. Environmental Protection Agency (2014). "Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone."
http://www.epa.gov/ttnecas1/regdata/RIAs/20141125ria.pdf

[13] Energy Information Administration (2014). "U.S. Energy-Related Carbon Dioxide Emissions, 2013." http://www.eia.gov/environment/emissions/carbon/

[14] J Delgado et al. (2008). "Obesity and Asthma." *U.S. National Library of Medicine.*
http://www.ncbi.nlm.nih.gov/pubmed/19123432

[15] Energy Information Administration (2014). "U.S. Energy-Related Carbon Dioxide Emissions, 2013." http://www.eia.gov/environment/emissions/carbon/

1. Future Increases in Electricity Prices Not Fully Accounted For

A major economic cost of the rule is energy-price increases caused by shifting from cheaper forms of energy, such as coal and natural gas, to more expensive sources, such as wind and solar power. Although EPA admits that "energy-efficiency expenditures may be borne by end-users through direct participant expenditures or electricity-rate increases, or by producers through reductions in their profits," those costs are not counted in the cost-benefit analysis.[16]

Moreover, higher energy costs translate into a smaller American economy with lower economic growth and fewer American jobs. EPA does not discuss, much less calculate, the broader economic costs of higher energy prices.

2. Neglect of Effects on Small Business

EPA's analysis also shows misleading effects on small businesses. Since EPA does not count the increase in electricity prices and the consequent lower economic growth and reduction in jobs as costs, EPA Administrator Gina McCarthy erroneously states in the Clean Power Plan final rule that "I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA [Regulatory Flexibility Act]. This action will not impose any requirements on small entities."[17]

But small entities will be affected in many ways under the new rules. For instance, as electricity prices rise, all businesses, including small businesses, will face higher costs and thus reduced activities. Reduced business activity means fewer businesses, and fewer employees for those businesses, including small businesses, that remain open. Fewer new businesses, including small businesses, will be formed. Some companies dependent on energy might relocate offshore.

The indirect effects from higher electricity prices are also substantial. With fewer employed workers in the economy, there will be less demand for even non-energy-intensive services such restaurants and entertainment.

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[16] U.S. Environmental Protection Agency (2015). "Carbon Pollution Emission Guidelines for Existing Stationary Sources." http://www2.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule.pdf

[17] U.S. Environmental Protection Agency (2015). "Carbon Pollution Emission Guidelines for Existing Stationary Sources." http://www2.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule.pdf

3. *Use of Maximum Achievable Control Technology*

Maximum Achievable Control Technology means that plants and boilers have to use the most stringent methods possible to get the heavy metals out of the air, even if these methods cost billions of dollars and the benefits are worth far less – as is the case with the new utility rule. MACT, as it is known, does not have to account for costs and benefits. That's why many productive plants will have to close.

Mercury and arsenic are well-known to the public as toxic, and in certain doses can be lethal. But the new EPA mercury rules would push emissions caps unnecessarily low, driving up generating costs and the price of power to industry and households, and forcing some boilers and plants to shut down.

Susan Dudley, director of the Regulatory Studies Center at George Washington University, writing about the proposed mercury rule, said, "If the enormous public benefits EPA predicts from these mercury standards were real, they would justify the cost to Americans of almost $11 billion per year. Unfortunately, they are not."[18]

4. Omits Costs of Energy-Intensive Industry Going Offshore

EPA's object in reducing amounts of greenhouse gasses emitted by the United States is to counteract climate change. The benefits in EPA's analysis assume that all of these emissions disappear from the globe and that the certain sources of energy for electricity production and manufacturing, such as coal, will be replaced by renewables such as solar and wind energy.

It is far more likely that a large amount of manufacturing will leave the United States than use more-costly renewables. Activity will shift offshore, to countries with fewer emissions controls, such as China, India, and Latin America. Some of these countries, such as China, not only have fewer emissions regulations but dirtier coal, with more lignite. The United States has benefitted from an influx of energy-intensive manufacturing from Germany – this activity can easily move again. Capital is mobile in a global economy.

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[18] Susan Dudley (2011). "EPA Misrepresents Mercury Rule Benefits." *National Journal.* http://energy.nationaljournal.com/2011/12/sizing-up-epas-mercury-rules.php#2138722

Should this occur, greenhouse gas emissions not only would not decline, but might actually increase. This should be included in EPA's calculations.

Problems with Discount Rate

When investments are made over a multi-year period, investors evaluate the project by "discounting" the future costs and benefits to the present. This is because a dollar is not worth the same to an investor in the future as it is in the present. You would not spend a dollar today to get a dollar's worth of benefits in 2025, because a dollar invested today in the stock market could grow to $2.59 in 2025.[19] Most businesses use a discount rate that primarily reflects their cost of capital. For example, the cost of capital for Apple, one of the largest corporations in America, was 9.85 percent on October 19, 2015.[20] Although businesses have different costs of capital and different discount rates, smaller and privately-held firms would tend to have higher discount rates than larger, publicly held companies such as Apple. Some firms use higher rates, and some use lower rates, but none would undertake long-term investments at artificially low discount rates based on dubious long-term projections.

The Office of Management and Budget allows EPA to makes two changes to standard business procedures. First, OMB allows the use of two low nominal rates, 7 percent and 3 percent.[21] Few firms would use such low rates, particularly the 3 percent rate.

Second, OMB allows EPA to present its cost-benefit analysis with the costs discounted, but not the benefits.[22] This is an extraordinary error, one that a college freshman in an economics class would not make. The result is not only wrong, but it makes the rules appear less damaging than they are.

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[19] This calculation is based on a 10-year average return over the past 50 years.
[20] See gurufocus.com, accessed October 19, 2015, at http://www.gurufocus.com/term/wacc/AAPL/Weighted%252BAverage%252BCost%252BOf%252BCapital%252B%252528WACC%252529/Apple%2BInc.
[21] U.S. Office of Management and Budget (2011). "Regulatory Impact Analysis: A Primer." https://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf
[22] Ibid.

1. Discount rates are below standard business rates

Consider first the low rates. With a discount rate of 3 percent, a $100 million cost today would have costs of $134 million in 2025, 10 years hence. With a discount rate of 7 percent, the $100 million cost today would be $197 million in 2025. However, if a more accurate rate is 10 percent, the project has higher costs in the future and would have to yield $259 million in benefits to be worthwhile. The lower the discount rate, the better the EPA rules look on paper.

2. Benefits are discounted at different rates

EPA discounts climate benefits and health co-benefits at different rates. While health benefits are estimated at discount rates of 3 percent and 7 percent, as recommended by the Office of Management and Budget, EPA does not apply any discount rate higher than 5 percent to the climate benefits.

This is critical because, by EPA's own admission, the so-called "social cost of carbon" used to quantify climate benefits is highly sensitive to the discount rate used. For example, a metric ton of carbon will impose $51 in economic costs in 2025 using a 3 percent discount rate, but only $16 using a 5 percent rate.[23] Using a higher discount rate would reduce estimated benefits substantially.

EPA justifies this by admitting that climate benefits are sensitive to discount rates, and also claiming that "no consensus exists on the appropriate rate to use in an intergenerational context."[24] The Office of Management and Budget, which issues guidelines to regulatory agencies on how to perform cost-benefits analysis, admits this but still recommends that regulatory agencies estimate costs and benefits using both 3 percent and 7 percent discount rates.[25] With regard to climate benefits, however, EPA neglects this second recommendation.

According to Kevin Dayaratana of the Heritage Foundation, using the OMB-recommended 7 percent discount rate for the social cost of carbon would reduce

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[23] U.S. Environmental Protection Agency (2015). "Social Cost of Carbon." http://www3.epa.gov/climatechange/Downloads/EPAactivities/social-cost-carbon.pdf
[24] U.S. Environmental Protection Agency (2015). "Regulatory Impact Analysis for the Clean Power Plan Final Rule." http://www.epa.gov/airquality/cpp/cpp-final-rule-ria.pdf
[25] U.S. Office of Management and Budget (2011). "Regulatory Impact Analysis: A Primer." https://www.whitehouse.gov/sites/default/files/omb/inforeg/regpol/circular-a-4_regulatory-impact-analysis-a-primer.pdf

the estimated benefits of carbon reduction to less than $10 per metric ton.[26] Under a reasonable set of changes to assumptions, the social cost of carbon becomes negative, suggesting that there are benefits to carbon dioxide emissions. This underscores the high unreliability of social cost of carbon estimates and calls into question whether such estimates should be incorporated into cost-benefit analysis at all.

Why Cost-Benefit Analysis Matters

Cost-benefit analysis may appear to be some arcane methodology practiced by economists, but its results have real consequences. EPA's flawed cost-benefit analysis has the effect that costly rules are imposed on the public without sufficient understanding of the consequences. These consequences include a decline in economic activity and, as a result, employment. President Obama has frequently voiced his opposition to offshoring jobs, and threatened to punish companies for doing so, but EPA's new rules will give firms a new incentive to take energy-intensive manufacturing offshore.

This decline in economic activity is measurable, and is not uniform across states. According to EPA's own calculations, Midwestern states will be required to reduce emissions by up to 37 percent from 2005 levels from the carbon rule alone, while coastal states such as Washington and California will be allowed to increase emissions.[27] Republican states have to reduce emissions the most, and Democratic states will have to reduce them the least. This can be seen in the table below.

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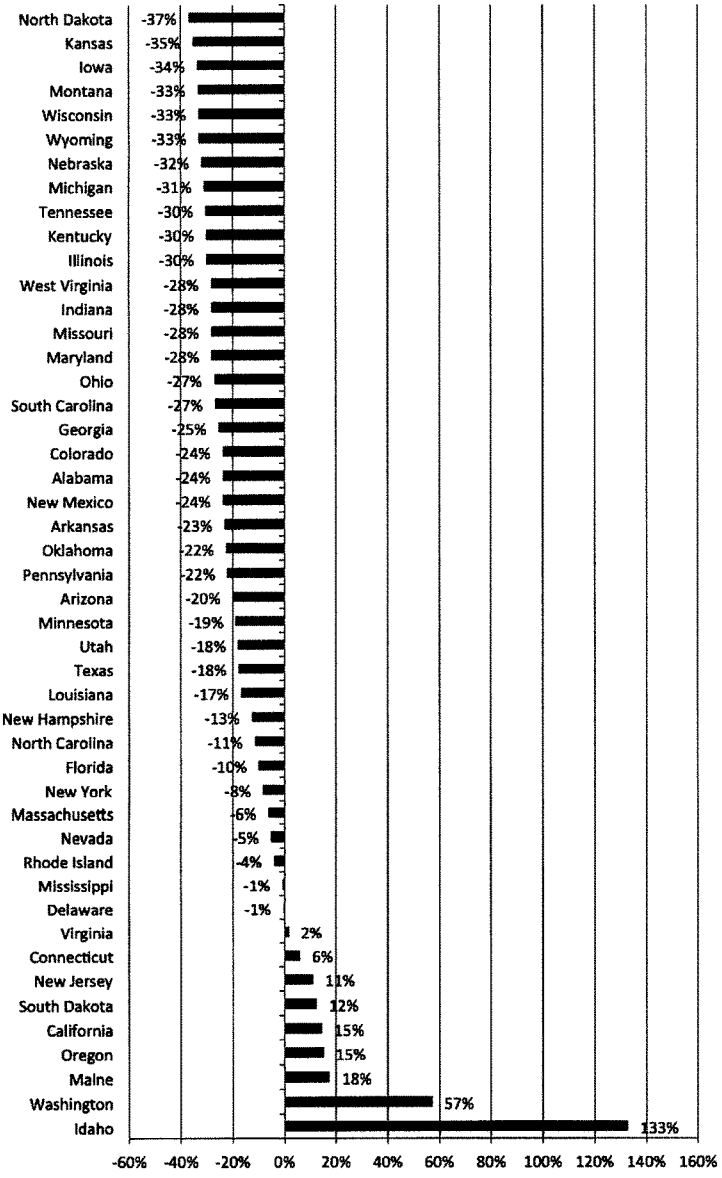
[26] Kevin Dayaratana (2015). "An Analysis of the Obama Administration's Social Cost of Carbon." *Testimony before Committee on Natural Resources, United States House of Representatives.* http://naturalresources.house.gov/uploadedfiles/dayaratnatestimony.pdf

[27] Preston Cooper (2015). "The Disparate Effect of Clean Power Plan Goals." *Economics21.* http://economics21.org/commentary/disparate-effect-clean-power-plan-goals. Sourced from U.S. Environmental Protection Agency (2015). "Clean Power Plan State-Specific Fact Sheets." http://www2.epa.gov/cleanpowerplantoolbox/clean-power-plan-state-specific-fact-sheets

Change in CO2 Emissions Under Clean Power Plan, 2012-2030



Of the 38 states that will be forced to reduce emissions, reductions vary from 37 percent in North Dakota to 1 percent in Delaware and Mississippi. Nine states, such as Idaho, Washington, Maine, Oregon, and California will be able to increase their CO2 emissions. Hawaii and Alaska are exempt from the program.

Of the 10 states which will have to reduce emissions the most, 7 voted for Romney in 2012, and the others all voted for Obama by a margin of less than 10 percent. Of the 10 states which will have to reduce the least (or have leeway to increase emissions), 8 voted for Obama in 2012.

Employment in these Republican states will decline, and employment in Democratic states will increase. This means fewer voters in Republican states and more voters in Democratic states.

The decline in employment would occur for the following reason. EPA gives states choice of a "rate-based approach," where states reduce emissions from their power plants, or a "mass-based approach," where other sources of carbon, such as from manufacturing, can be lowered to count towards the reductions needed for power plants. States can combine in regions for the "mass-based approach" and it is less expensive to follow. States can meet the targets by reducing consumer demand or investing in more costly renewable energy such as wind and solar power. These impose real costs on the economy, such as fewer factories, trips, and jobs. Electricity made from solar power costs twice as much as electricity made from natural gas.

Coal-fired electricity generation accounted for 39 percent of total U.S. electricity generation in 2013, according to the Energy Information Administration.[28] It expects the role of coal to decline only slightly in the years ahead, to 34 percent in 2035. To meet the rules, new coal plants would have to incorporate carbon capture and sequestration technology, at a cost of billions of dollars a year for consumers. Many would close. Raising the cost of energy would be particularly tough on Midwestern states' residents, who get much of their electricity from coal.

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[28] Energy Information Administration (2015). "Annual Energy Outlook 2015." http://www.eia.gov/forecasts/aeo/pdf/0383(2015).pdf

Such job declines were forecast five years ago by the Congressional Budget Office when Congress was debating the cap-and-trade plans proposed by Senators John Kerry and Joe Lieberman and Representatives Ed Markey (now a Senator, and ranking Member on this Committee) and Henry Waxman. These bills did not pass even in a Democratic Congress with a Democratic president who supported them. Now EPA has instituted the essence of the cap-and-trade bills through regulation.

In May 2010, CBO issued a report entitled How Policies to Reduce Greenhouse Gas Emissions Could Affect Employment.[29] It concluded that "job losses in the industries that shrink would lower employment more than job gains in other industries would increase employment, thereby raising the overall unemployment rate."

The CBO report shows that emissions reduction programs would cause job losses in coal mining, oil and gas extraction, gas utilities, and petroleum refining. In addition, workers' wages adjusted for inflation would be lower than otherwise because of the increase in prices due to a cap and trade program. CBO concludes that some workers, therefore, would leave the labor market, because at the new lower wages they would prefer to stay home.

According to CBO, "While the economy was adjusting to the emission-reduction program, a number of people would lose their job, and some of those people would face prolonged hardship." Workers laid off in declining industries would find it hard to get new jobs. This is not in the interests of many Americans, especially when the labor market is weak and air quality is continuing to improve.

Then, in December 2013, another CBO report stated, "Imposing an economy-wide carbon tax or cap-and-trade program would put the U.S. firms most affected—those that are emission-intensive—at a competitive disadvantage relative to their competitors in other countries unless those countries implemented similar policies."[30]

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[29] Congressional Budget Office (2010). "How Policies to Reduce Greenhouse Gas Emissions Could Affect Employment." http://www.cbo.gov/publication/41257

[30] Congressional Budget Office (2013). "Border Adjustments for Economywide Policies That Impose a Price on Greenhouse Gas Emissions."
http://www.cbo.gov/sites/default/files/cbofiles/attachments/44971-GHGandTrade.pdf

CBO explained, "Such a policy would impose costs on domestic firms, allowing foreign producers from countries with less stringent policies, or no policy at all, to charge less for their goods than U.S. producers."

EPA's Stationary Sources report for the carbon rule spells out some job losses. According to the report, "EPA recognizes as more efficiency is built into the US power system over time, lower fuel requirements may lead to fewer jobs in the coal and natural gas extraction sectors..."[31]

EPA estimates that the rule could result in a net decrease of approximately 31,000 full-time jobs in 2030 for the final guidelines under the rate-based illustrative plan approach and approximately 34,000 full-time jobs under the mass-based approach. In addition, 52,000 to 83,000 jobs would be lost in 2030 due to lower demand from the higher electricity prices.[32]

These job-loss projections are likely to be a substantial underestimate. The economic consulting firm NERA estimated that EPA's carbon rule alone would cause delivered electricity prices to rise by an average of 17 percent. Over a fifteen-year period, this would increase consumer energy costs by a cumulative $479 billion.[33] Reducing ozone and mercury would increase the costs still further. Rather than continuing the trend of manufacturing returning to America, EPA's rules would reverse it by discouraging energy-intensive manufacturing.

Some might say that the factors I have discussed above are unimportant. But with EPA's goal of reducing carbon emissions from the utility sector by 32 percent from 2005 levels by 2030,[34] reducing atmospheric concentration of ozone to 70 ppb,[35] and preventing 90 percent of the mercury stored in coal from being

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[31] U.S. Environmental Protection Agency (2015). "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units." http://www.epa.gov/airquality/cpp/cpp-final-rule.pdf

[32] U.S. Environmental Protection Agency (2015). "Regulatory Impact Analysis for the Clean Power Plan Final Rule." http://www.epa.gov/airquality/cpp/cpp-final-rule-ria.pdf

[33] David Harrison Jr. et al. (2014). "Potential Energy Impacts of EPA Proposed Clean Power Plan." *NERA Economic Consulting.* http://www.nera.com/content/dam/nera/publications/2014/NERA_ACCCE_CPP_Final_10.17.2014.pdf

[34] U.S. Environmental Protection Agency (2015). "Overview of the Clean Power Plan." http://www.epa.gov/airquality/cpp/fs-cpp-overview.pdf

[35] U.S. Environmental Protection Agency (2015). "National Ambient Air Quality Standards for Ozone." http://www3.epa.gov/ozonepollution/pdfs/20151001fr.pdf

emitted into the air,[36] it is vital to have an accurate evaluation of the benefits and costs. If emissions exceed EPA's requirements, a state or group of states would be required to shut down power plants or other energy-intensive manufacturing.

Although greenhouse-gas emissions from power plants declined 15 percent from 2005 to 2013, EPA is using flawed cost-benefit analysis to make further changes seem worthwhile. The carbon intensity of the economy—a measure of carbon emissions per dollar of GDP—has fallen by 23 percent since 2005, continuing a long decline since the end of the Second World War.[37] Absent heavy regulatory intervention, the United States is already making great strides towards a cleaner economy.

EPA uses faulty methodology to justify its rules. It claims that the rule is justified, but its regulatory impact analysis minimizes the costs and exaggerates the benefits. Congress should act to control the costs of regulation.

Thank you for allowing me to testify today.

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[36] U.S. Environmental Protection Agency (2015). "Mercury and Air Toxics Standards for Power Plants." http://www3.epa.gov/mats/pdfs/20111221MATSsummaryfs.pdf

[37] Energy Information Administration (2014). "U.S. Energy-Related Carbon Dioxide Emissions, 2013." http://www.eia.gov/environment/emissions/carbon/

Senator ROUNDS. Thank you, Ms. Furchtgott-Roth. Thank you.
Now we will hear from Mr. William Kovacs.
Mr. Kovacs, you may begin.

STATEMENT OF WILLIAM L. KOVACS, SENIOR VICE PRESIDENT, ENVIRONMENT, TECHNOLOGY & REGULATORY AFFAIRS, U.S. CHAMBER OF COMMERCE

Mr. KOVACS. Thank you, Mr. Chairman, Ranking Member Markey, and members of the committee for inviting me to testify today on the oversight of Regulatory Impact Analysis for EPA Regulations.

Regulations are needed for an orderly society to protect health and the environment. But we must keep in mind that agencies are not an independent branch of government; they are not a fourth branch. Rather, they were created by Congress to implement congressional policy.

In 1946, Congress enacted the Administrative Procedure Act, which is the bible of the administrative State, which delegates legislative and judicial powers to agencies. Over time, Congress passed numerous ambitious and broad bills that required agencies to fill in more and more of the details. Also over the same period of time, courts granted more and more deference to agency action.

The result of this expanded gap-filling authority and greater judicial deference created a shield around agency action. In short, while the Constitution made your job in the Congress to legislate very difficult, as we now know, Congress and the courts made legislating by agencies very, very easy.

For several decades, Congress has tried to reign in this growing power of agency through the passage of numerous, but toothless, statutory requirements like the Unfunded Mandates Act Reform, Information Quality, Regulatory Flexibility. Presidents from Jimmy Carter forward have issued executive orders to rein agencies in and instruct them how to do their job, all to no avail.

The requirement for the Regulatory Impact Analysis comes from this effort. If used correctly, these tools assist regulators to understand the need for regulation, available regulatory alternatives, the costs and benefits of the regulation, the best available facts and how to get them, the impact of the regulation on jobs, and whether a regulation imposes unfunded mandates on State and local governments.

Considering that the Administrative Procedure Act has not been amended since 1946, and the agencies have published over 200,000 regulations, I must State that the APA, for routine regulations, generally works well. However, in the last few decades regulations have been issued that are extremely complex, costing billions of dollars annually, and impacting large segments of the economy.

When agencies aggressively legislate, that is, when the agencies expand a few words or a few hundred words in a State into thousands of pages of regulatory mandates, the agency is legislating. It is that simple. And when legislating, the agency should be required to use all the tools provided by Congress and executive orders if it is to be given any court deference.

Citizens should also be able to hold agencies in check and challenge the agency for failing to use these RIA type tools.

And since today's focus is on EPA, it must be stated that EPA issues more rules costing over $1 billion a year than all other agencies combined. Between 2000 and 2014, all executive branch agencies issued 31 rules costing over $1 billion a year, and EPA issued 18 of those.

In the last 5 months, EPA has issued three more mega-rules: Waters of the United States, Clean Power, and Ozone, without the use of many of the RIA tools. Had EPA undertaken a cumulative impact analysis of the three rules, examined the unfunded mandates it was imposing on State and local governments, hosted a small business review panel, evaluated the impacts on employment, the agency would have had a much deeper appreciation of the massive requirements it was imposing on State and local governments and the private sector.

For example, States implement approximately 96 percent of all EPA's delegated programs, and the Federal Government pays 25 percent of that cost. Therefore, the States find themselves literally commandeered by EPA to simultaneously implement WOTUS, CPP, and ozone. And when you try to implement three major acts, one covering the air, one covering the water, you have a lot of moving parts, and where you might be regulating waters you are finding out you have to put a new gas line and you may need a dredge and fill permit. So it is not as simple as that.

So to address this issue there are several things. I think the Senate should pass the Regulatory Accountability Act or some equivalent that codifies the RIA requirements into environmental law.

Thank you very much. I would be glad to answer any questions.

[The prepared statement of Mr. Kovacs follows:]

Statement of the U.S. Chamber of Commerce

ON: Hearing on Oversight of Regulatory Impact Analyses for U.S. Environmental Protection Agency Regulations

TO: U.S. Senate Environment and Public Works Committee, Subcommittee on Superfund, Waste Management and Regulatory Affairs

DATE: October 21, 2015

1615 H Street NW | Washington, DC | 20062

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations. The Chamber is dedicated to promoting, protecting, and defending America's free enterprise system.

More than 96% of Chamber member companies have fewer than 100 employees, and many of the nation's largest companies are also active members. We are therefore cognizant not only of the challenges facing smaller businesses, but also those facing the business community at large.

Besides representing a cross-section of the American business community with respect to the number of employees, major classifications of American business—e.g., manufacturing, retailing, services, construction, wholesalers, and finance—are represented. The Chamber has membership in all 50 states.

The Chamber's international reach is substantial as well. We believe that global interdependence provides opportunities, not threats. In addition to the American Chambers of Commerce abroad, an increasing number of our members engage in the export and import of both goods and services and have ongoing investment activities. The Chamber favors strengthened international competitiveness and opposes artificial U.S. and foreign barriers to international business.

BEFORE THE SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, SUBCOMMITTEE ON SUPERFUND, WASTE MANAGEMENT AND REGULATORY OVERSIGHT

Hearing on Oversight of Regulatory Impact Analyses for U.S. Environmental Protection Agency Regulations

Testimony of William L. Kovacs
Senior Vice President, Environment, Technology & Regulatory Affairs
U.S. Chamber of Commerce

October 21, 2015

Good morning, Chairman Rounds, Ranking Member Markey, and distinguished Members of the Committee. My name is William L. Kovacs and I am senior vice president for Environment, Technology and Regulatory Affairs at the U.S. Chamber of Commerce. I am pleased to appear before you to discuss the U.S. Chamber's views on "Oversight of Regulatory Impact Analyses for U.S. Environmental Protection Agency Regulations." This is an appropriate topic in light of three high-impact regulations issued by the U.S. Environmental Protection Agency within the last five months, as discussed below.

Let me first state that the U.S. Chamber of Commerce recognizes the importance of regulation. Regulations are essential to the orderly running of society, the protection of health and environment, and to the operation of a free market for business and job creation. To this end, the goal of the regulatory process should be to produce regulations that implement the intent of Congress in the most efficient way possible.

To properly implement congressional intent, agencies must develop regulations with a process that is accountable and transparent, so the American public can trust in its integrity. Considering that agencies have used a "New Deal"-era regulatory process to issue almost 200,000 regulations since the 1946 Administrative Procedure Act (APA), the regulatory process has generally worked well in managing routine matters.

Unfortunately, however, the system breaks down for the most complex and costly regulations. Congress needs to pay far more attention to how agencies develop these multi-billion dollar rules because they control major, often critical segments of the nation's activities. It is for this reason that a Regulatory Impact Analysis ("RIA") is such an important tool. The RIA guides agencies on how to examine and understand the need for the regulation, the alternative mechanisms for implementing it, the benefits and costs to society, and it provides an understanding of the resources state and local governments will need to implement it and its impact on jobs and the economy.[1]

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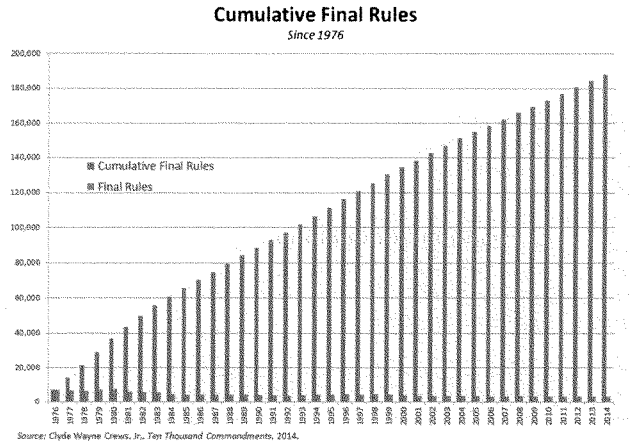
[1] The RIA is not a statutory term. Rather it is a term of art that came into widespread use following the creation of the Office of Management and Budget's Office of Information and Regulatory Affairs ("OIRA") in 1980.

Agencies should want to understand all these factors so they can understand what the regulation will do when implemented in the real world. Unfortunately, agencies often fail to gather the type of information needed to develop the best regulatory product for the most costly and complex regulations. The remainder of my testimony will focus on the types of impacts analyses that agencies fail to conduct.

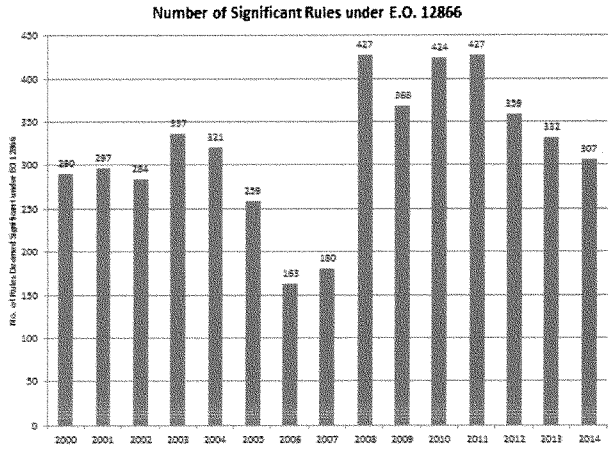
I. HISTORICAL IMPACTS OF THE REGULATORY PROCESS

The U.S. Chamber has spent several years examining the federal regulatory process in detail.[2] Our research reveals that each year, federal agencies churn out thousands of new regulations. The cumulative number of federal regulations since 1976 is now approximately 185,000.



[2] See U.S. Chamber of Commerce, *Truth in Regulating: Restoring Transparency to EPA Rulemaking* (Apr. 2015) (*available at* https://www.uschamber.com/sites/default/files/021935_truthinregulating_opt.pdf;); U.S. Chamber of Commerce, *Charting Federal Costs and Benefits* (Aug. 2014))(*available at* https://www.uschamber.com/sites/default/files/021615_fed_regs_costs_benefits_2014reportrevise_jrp_fin_1.pdf;); U.S. Chamber of Commerce, *Sue and Settle: Regulating Behind Closed Doors* (May 2013) (*available at* https://www.uschamber.com/sites/default/files/documents/files/SUEANDSETTLEREPORT-Final.pdf;); U.S. Chamber of Commerce, *Impacts of Regulations on Employment: Examining EPA's Oft-Repeated Claims that Regulations Create Jobs* (Feb. 2013) (*available at* https://www.uschamber.com/sites/default/files/documents/files/020360_ETRA_Briefing_NERA_Study_final.pdf;); U.S. Chamber of Commerce, *EPA's New Regulatory Front: Regional Haze and the Takeover of State Programs* (July 2012) (*available at* https://www.uschamber.com/sites/default/files/documents/files/1207_ETRA_HazeReport_lr_0.pdf;); U.S. Chamber of Commerce, *Project No Project, Progress Denied: A Study on the Potential Economic Impact of Permitting Challenges Facing Proposed Energy Projects* (Mar. 2011) (*available at* http://www.projectnoproject.com/wp-content/uploads/2011/03/PNP_EconomicStudy.pdf.).

Putting aside the tens of thousands of small, "run-of-the-mill" rules, there is a smaller subset of rules that impose annual compliance costs of $100 million or more.[3] These rules are at times referred to as "economically significant" or "major" rules that are subject to the preparation of an RIA and review by the Office of Information and Regulatory Affairs within the Office of Management and Budget.



Beginning in the late 1990s, a new category of rules was finalized – those having an annual cost of over $1 billion. Proposed legislation in this Congress has termed a rule in this category a "high impact rule" because they are very costly and impact critical segments of the activities of the nation and they impact most citizens.[4]

From 2000 to 2014, a total of **31** rules were promulgated by Executive Branch agencies, each with a cost of more than **$1 billion** per year. Those same rules are now imposing nearly **$110 billion** in costs each year on the U.S. economy.[5]

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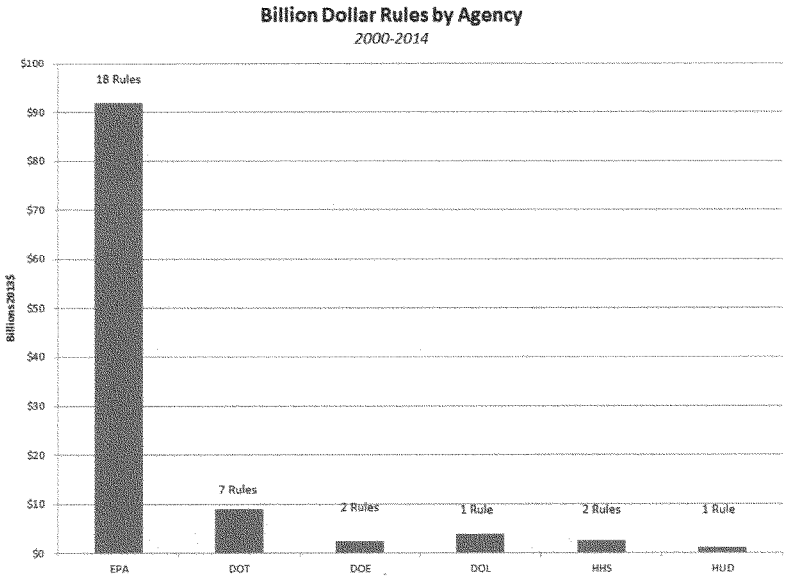
[3] Executive Order 12,866, "Regulatory Planning and Review," 58 Fed. Reg. 51,735 (Sept. 30, 1993).

[4] *See* H.R. 185 (114th Congress, 1st Session); S. 2006 (114th Congress, 1st Session).

[5] Independent regulatory agencies (e.g. the Federal Communications Commission (FCC), Securities and Exchange Commission (SEC), and Commodities Futures Trading Commission (CFTC)) are not subject to Executive branch oversight by the Office of Management and Budget (OMB) and do not routinely perform RIAs as directed by OMB Circular A-4 guidance on cost-benefit analysis. Consequently, even in the cases when independent regulatory agencies estimate the costs and benefits of their regulations, they generally do not adhere to the standards established and enforced by OMB and the. As a result, their cost estimates are often not complete or comparable.

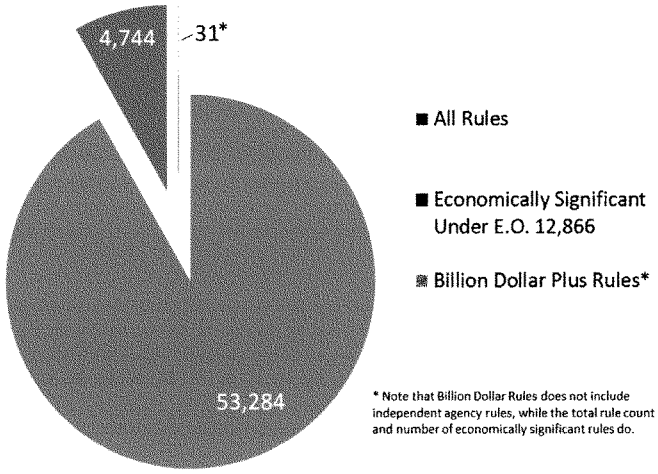


While the high cost of these rules is important, these rules typically are also highly complex and burdensome. Regulated entities—including small businesses and small governmental entities like city and county governments—must spend time and resources to comprehend what is required by a new regulation and to take steps to comply. These billion dollar rules are far more intrusive than smaller rules because they have the potential to have profound effects (often unintentional) on fundamental sectors of our national economy (e.g., energy, financial institutions, healthcare, education, and the Internet).

Requiring agencies to provide greater care and analysis in the development of these high impact billion dollar rules will not be a burden on agencies. As the chart below shows, these billion dollar rules with nationwide impact constitute less than a fraction of a percent of all rules promulgated.

Billion Dollar Rules as a Share of All Final Rules: 2000-2014

There were 58,090 rules finalized between 2000 and 2014, of which 4,775 were considered "economically significant" under E.O. 12,866 and 31, or 0.0005% of the total, imposed annual compliance costs of $1 billion or more.



Significantly, 18 out of 31 of the $1 billion or more per year rules issued by federal Executive Branch agencies were issued by the EPA. Based on the government's data, the 18 EPA rules made up 82.5% of the cost of all 31 rules.[6]

One agency in particular—the U.S. Environmental Protection Agency (EPA)—uses its regulatory power to issue more multi-billion dollar rules than all other executive agencies combined. And there is no end in sight given that EPA has issued three additional multi-billion dollar rules in just the last five months:

- On May 27, 2015, the EPA finalized the "waters of the United States" (WOTUS) definition rule under the Clean Water Act. The rule dramatically expands federal jurisdiction over land uses, usurps state and local water quality programs, and threatens property rights across the country.

- On August 3, 2015, the EPA released final regulations for greenhouse gas emissions from power plants in the U.S.[7] These rules, in which the EPA asserts unprecedented authority over the way energy is used within states, could adversely impact the reliability and affordability of electricity in this country.

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[6] *See* U.S. Chamber of Commerce, Charting Federal Costs and Benefits (Aug. 2014) available at: https://www.uschamber.com/sites/default/files/021615_fed_regs_costs_benefits_2014reportrevise_jrp_fin_1.pdf.

[7] These rules have not yet been published in the Federal Register; until they are published in the Federal Register, the rules are not final.

- On October 1, 2015, the EPA lowered the ozone National Ambient Air Quality Standard from 75 ppb to 70 ppb. This new standard will cause many counties across the country to be classified as "non-attainment" areas for ozone.[8] A nonattainment designation can make it very difficult for areas to attract new business and grow existing businesses, which translates into a loss of jobs as well as an inability to grow our economy and compete globally.

All of this means that within a period of five months, the EPA will have issued three high-impact, complex, and very costly regulations intended to push the boundaries of federal authority further than they have ever been extended. The result could be significant negative impacts on our economy, our ability to create jobs, and the ability of states to implement these new standards.

With all of this regulatory activity in a very short period of time, the immediate question that comes to mind is – ***how did we get here?*** How did we get to the point at which a single federal agency of unelected officials is regulating not only environmental protections, but land use, economic development, and the country's energy portfolio? The short answer is: the regulatory process for complex and costly regulations is broken and it has proven difficult for Congress to fix. As discussed below, several factors contribute to the current dysfunction in the process used to develop high impact regulations.

For the most costly and impactful new rules, informal rulemaking procedures are simply not adequate because of the following factors:

- ***Agencies make unwarranted and unproven assumptions without factual basis.*** Recent EPA rulemakings have relied upon factual assumptions that are speculative or unproven, yet these assumptions are often the foundation upon which the RIA rests. The ordinary notice-and-comment rulemaking process gives stakeholders virtually no real opportunity to question these assumptions. Instead, agencies only have to show that they have considered an adverse comment and are essentially free to disregard its substance, even if it is factually accurate and contrary to an assumption the agency relied upon.[9]

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[8] According to the American Petroleum Institute, based upon ozone data from 2012-2014, there are 217 counties in the United States that are measured or projected to be out of attainment or in metropolitan areas that do not meet the 2008 75 ppb standard. At a 70 ppb standard – the number that EPA finalized earlier this month – the number of counties in nonattainment increases fourfold to 958. *See* http://www.api.org/news-and-media/news/newsitems/2015/september-2015/epa-data-show-absurdity-of-changing-ozone-standards.

[9] *See e.g.Environmental Protection Agency, Regulatory Impact Analysis: Proposed Brick and Structural Clay Products NESHAP, available at http://www3.epa.gov/ttn/atw/brick/20141120-brick-proposal-ria.pdf (July 2014).*" For example, in the recent Brick and Structural Clay Products NESHAP rulemaking, EPA contended in its RIA that virtually all covered sources could meet the proposed mercury emissions standard without having to install control devices. This assumption was critical because the mercury control devices represent the vast majority of the costs from the rulemaking. By making this unsupported assumption, based on a sample of only one source, that virtually all sources could meet the most expensive part of the standard, EPA reduced the estimated compliance costs in the RIA by as much as 80% below what they otherwise would have been.

- ***The public (and very often the agency itself) does not have enough information to fully understand how a rule will work in real life.*** Federal agencies frequently fail to grasp the impact that a large new regulation – added to prior rules and those of ***other agencies*** – has on businesses, communities, and the economy as a whole.

- ***30-, 60-, or 90-day comment periods are too short to allow stakeholders to develop detailed comments about complex or opaque proposed rules.*** By the time a full analysis of a rule's impact can be completed, the comment period has closed and/or the rule is final and has already taken effect.

- ***The information agencies rely upon is often of poor quality, or is not verifiable.*** Agencies often rely upon data that is difficult to obtain or verify independently, that is based on too few data points, or that was developed using improper methodology. For example, the House Committee on Science, Space, and Technology issued a subpoena for data maintained by Douglas W. Dockery and C. Arden Pope, III, which has been relied upon by EPA for decades to justify regulations on air pollution. Members of the Senate Environment and Public Works Committee raised concerns that studies such as those by Pope and Dockery calculated extraordinarily high benefits for costly regulations. Pope and Dockery have refused to release the data based on privacy grounds. The privacy justification for refusing to turn over the data is specious because the U.S. Department of Health and Human Services issued guidelines for de-identifying personal data and has worked with institutions producing data upon which EPA has relied.[10]

- ***Agencies are required by law to consider the impacts a new rule will have on regulated entities,[11] but these reviews are limited, rushed, or ignored altogether.*** Agencies have to take shortcuts to meet tight rulemaking deadlines, and often do not complete the research or analyses necessary to develop a rule that accomplishes its purpose without inflicting unnecessary harm.

Sections II and VI below set forth what the Chamber believes to be the cause of this regulatory dysfunction.

II. THE EPA REGULARLY MISSES ITS STATUTORY DEADLINES

Under several of the major environmental laws, such as the Clean Air Act and the Clean Water Act, the EPA is required to promulgate regulations or review existing standards by statutorily-imposed deadlines. Without a doubt, the EPA more often than not misses those deadlines. For example, according to a 2014 *Harvard Journal of Law & Public Policy* article,

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[10] United States Senate Committee on Environmental and Public Works, Minority Staff Report, EPA's Playbook Unveiled: A Story of Fraud, Deceit, and Secret Science (2014) *available at* http://www.epw.senate.gov/public/_cache/files/2d30f39e-2fde-4b37-8810-32fa21b6e6bd/epaplaybookunveiled.pdf.

[11] Executive Order 12,866, "Regulatory Planning and Review," 58 Fed. Reg. 51,735 (Sept. 30, 1993).

"[i]n 1991, the EPA met only 14% of the hundreds of congressional deadlines" imposed upon it.[12]

Another study by the Competitive Enterprise Institute (CEI) examined the EPA's timeliness in promulgating regulations or reviewing standards under three programs administered under the Clean Air Act: the National Ambient Air Quality Standards, the National Emissions Standards for Hazardous Air Pollutants, and the New Source Performance Standards.[13] The CEI study concluded that since 1993, "98 percent of EPA regulations (196 out of 200) pursuant to these programs were promulgated late, by an average of 2,072 days after their respective statutorily defined deadlines."[14] When the EPA misses these deadlines, its subsequent actions are what can cause the real harm.

a. Citizen Suits and Sue and Settle Agreements

Once a deadline is missed, outside groups, using the "citizen suit" provisions in twenty environmental statutes,[15] will sue the agency for failure to promulgate the subject regulation or to review the standard at issue. While limited resources, budgetary constraints, and time restrictions may play into some of these missed deadlines, the EPA consistently fails to argue in opposition that it is using its discretion in determining which environmental regulation or standard should be addressed in a preferential order. Instead, the Agency many times will enter into a "sue and settle" agreement, the effect of which is to allow private advocacy groups to set agency policy through court supervised orders, negotiated, in secret, behind closed doors.

Our research shows that from 2009 to 2012, a total of 71 lawsuits were settled under circumstances such that they can be categorized as sue and settle cases under the Chamber's

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[12] Henry N. Butler and Nathaniel J. Harris, *Sue, Settle, and Shut Out the States: Destroying Environmental Benefits of Cooperative Federalism*, HARVARD JOURNAL OF LAW & PUBLIC POLICY, Vol. 37, No. 2 at 599 (2014) (*available at* http://www.harvard-jlpp.com/wp-content/uploads/2014/05/37_2_579_Butler-Harris.pdf) (citing Richard J. Lazarus, *The Tragedy of Distrust in the Implementation of Federal Environmental Law* 54 LAW & CONTEMP. PROBS. 311, 323 (1991) (*available at* http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1158&context=facpub). According to Lazarus, "the 14% compliance rate refers to all environmental statutory deadlines, 86% of which apply to EPA." *Id.* at 324 (citing *Statutory Deadlines In Environmental Legislation: Necessary But Need Improvement* 13-14 (ENVIR. & ENERGY STUDY INST. AND ENVIR. L. INST., 1985)).

[13] William Yeatman, *EPA's Woeful Deadline Performance Raises Questions about Agency Competence, Climate Change Regulations, "Sue and Settle"* (July 10, 2013) (*available at* https://cei.org/web-memo/epas-woeful-deadline-performance-raises-questions-about-agency-competence-climate-change-re).

[14] *Id.*

[15] Act to Prevent Pollution from Ships 33 USC § 1910; Clean Air Act 42 USC § 7604; Clean Water Act 33 USC § 1365; Superfund Act 42 USC § 9659; Deepwater Port Act 33 USC § 1515; Deep Seabed Hard Mineral Resources Act 30 USC § 1427; Emergency Planning and Community Right-to-Know Act 42 USC § 11046; Endangered Species Act 16 USC § 1540(g); Energy Conservation Program for Consumer Products 42 USC § 6305; Marine Protection, Research and Sanctuary Act 33 USC § 1415(g); National Forests, Columbia River Gorge National Scenic Area 16 USC § 544m(b); Natural Gas Pipeline Safety Act 49 USC § 60121; Noise Control Act 42 USC § 4911; Ocean Thermal Energy Conservation Act 42 USC § 9124; Outer Continental Shelf Lands Act 43 USC § 1349(a); Powerplant and Industrial Fuel Use Act 42 USC § 8435; Resources Conservation and Recovery Act 42 USC § 6972; Safe Drinking Water Act 42 USC § 300j-8; Surface Mining Control and Reclamation Act 30 USC § 1270; Toxic Substances Control Act 15 USC § 2619.

definition.[16] These cases include EPA settlements under the Clean Air Act and the Clean Water Act, along with key Fish and Wildlife Service settlements under the Endangered Species Act. Significantly, settlement of these cases directly resulted in more than 100 new federal rules, many of which are "significant regulatory actions" estimated to cost more than $100 million annually to comply with.

Examples of Sue and Settle Agreements Create Costly Federal Rules
1. Utility MACT rule - up to **$9.6 billion** annual costs[17]
2. Lead Repair, Renovation & Painting rule - up to **$500 million** in first-year costs[18]
3. Oil and Natural Gas MACT rule - up to **$738 million** annual costs[19]
4. Florida Nutrient Standards for Estuaries and Flowing Waters - up to **$632 million** annual costs[20]
5. Regional Haze Implementation rules: **$2.16 billion** cost[21]
6. Chesapeake Bay Clean Water Act rules - up to **$18 billion** cost to comply[22]
7. Boiler MACT rule - up to **$3 billion** cost to comply[23]
8. Standards for Cooling Water Intake Structures - up to **$384 million** annual costs[24]
9. Revision to the Particulate Matter ($PM_{2.5}$) NAAQS - up to **$350 million** annual costs[25]
10. Reconsideration of 2008 Ozone NAAQS - up to **$90 billion** cost[26]

b. *Chevron* Deference Allows for More Aggressive Regulation

The U.S. Supreme Court's decision in *Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984) ("*Chevron*") has played an important role in the expansion of federal agencies' regulatory missions and claimed authority. As Justice Scalia noted in a subsequent case, "[u]nder *Chevron* . . . if a statute is unambiguous the statute governs; if, however, Congress' silence or ambiguity has 'left a gap for the agency to fill,' courts must defer to the agency's interpretation as long as it is 'a permissible construction of the statute.'"[27]

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[16] U.S. Chamber of Commerce, *Sue and Settle: Regulating Behind Closed Doors* (May 2013) (*available at* https://www.uschamber.com/sites/default/files/documents/files/SUEANDSETTLEREPORT-Final.pdf.)
[17] Letter from President Obama to Speaker Boehner (August 30, 2011), Appendix "Proposed Regulations from Executive Branch Agencies with Cost Estimates of $1 Billion or More.
[18] 75 Fed. Reg. 24,802, 24,812 (May 6, 2010).
[19] Fall 2011 Regulatory Plan and Regulatory Agenda, "Oil and Natural Gas Sector-NSPS and NESHAPS," RIN: 2060-AP76.
[20] EPA, *Proposed Nutrient Standards for Florida's Coastal, Estuarine & South Florida Flowing Waters,* available at http://ncpis.epa.gov/Exe/ZyPDF.cgi/P100MQID.PDF?Dockey=P100MQID.PDF
[21] William Yeatman, *EPA's New Regulatory Front: Regional Haze and the Takeover of State Programs* (July 2012).
[22] Sage Policy Group, Inc., *The Impact of Phase I Watershed Implementation Plans on Key Maryland Industries* (April 2011); *Chesapeake Bay Journal* (Jan. 2011).
[23] Letter from President Obama to Speaker Boehner, *supra* note 17.
[24] 2012 Regulatory Plan and Unified Agenda, "Standards for Cooling Water Intake Structures," RIN: 2040-AE95.
[25] EPA, "Overview of EPA's Revisions to the Air Quality Standards for Particle Pollution (Particulate Matter) (2012).
[26] Letter from President Obama to Speaker Boehner, *supra* note 17.
[27] *Stinson v. United States*, 508 U.S. 36, 44 (1993).

It should come as no surprise that agencies have invoked *Chevron* to pursue increasingly aggressive regulatory agendas, claiming Congress vested them with policy-making power through alleged "ambiguities" in statutes written in the 1970s and 1980s. Unfortunately, some courts have agreed with them, finding so-called "gaps" in statutes where Congress did not intend them. The exceptionally broad deference afforded agency decision-making by some courts clearly diminishes the ability of both Congress and the courts to effectively oversee agency action. The result is that poorly-conceived and poorly-drafted rules too often survive legal challenges and take effect. If Congress desires to regain even minimal control over agencies, the scope of court deference to agency interpretations of statutes must be clearly delineated and limited.

III. *STATES* IMPLEMENT MOST FEDERAL ENVIRONMENTAL REGULATIONS, NOT THE EPA

The real victims of these missed deadlines and the consequential sue and settlement deals are the states. States implement approximately **96.5%** of the environmental laws that are delegated to them.[28] As a result, the success of EPA-issued rules depends on the states, to which the Agency provided $3.6 billion in 2013 for the administration of its programs.[29] That means that in 2013, federal grants represent between 26% - 29% of the environmental budgets of the states.[30] The bottom line: states continue to do the lion's share of the implementation of federal environmental programs without being fully compensated.

The management of federal environmental programs is a tremendous burden for states, particularly from a time, money and resource perspective. To add to the difficulties that states face, according to the Environmental Council of States (ECOS), states have seen a trend in declining funds from the federal government to implement these programs.[31] Federal budget documents confirm that the EPA's State and Tribal Assistance Grants (STAG) budget has decreased significantly in recent years.[32] While the largest funding source for state environmental agencies is permit fees, federal funding is the second largest source[33]. ECOS reports that "[d]ecreasing funds from the federal government jeopardize states' ability to implement federally delegated programs and policies."[34] These problems will be significantly compounded by the fact that now the states now have to administer the EPA's WOTUS rule, the Clean Power Plan and new Ozone Standards.

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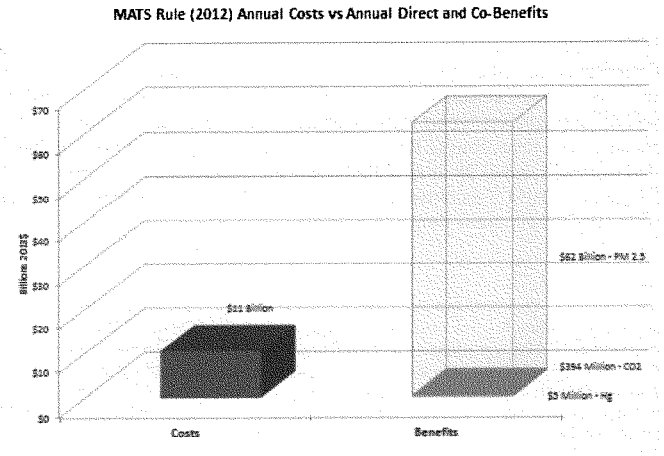
[28] "Environmental Council of the States, E-Enterprise for the Environment, What it is, why it matters, *available at* http://www.exchangenetwork.net/ec/EEnterprise_What_it_is_Why_it_Matters_July2014.pdf (July 2014).
[29] *See* EPA FY 2014 Budget in Brief, p. 87 (http://www2.epa.gov/planandbudget/fy2014).
[30] *See Steven Brown, Environmental Council of the States, ECOS Green Report, Status of State Environmental Agency Budgets, 2011-2013, available at http://www.ecos.org/section/green_reports/ (Sept. 2012).*
[31] *Id.*
[32] *Id.*
[33] See Appendix Table 1 at p.6 in http://www.ecos.org/files/4157_file_August_2010_Green_Report.pdf.
[34] *See* Steven Brown, *supra* note 28.

IV. The EPA Misleads the Public About the True Goals of its Regulations

The first step in a well-functioning rulemaking process is for the agency to clearly tell the public which pollutant (or pollutants) it is trying to reduce and what value those targeted reductions will have to the public. The EPA in recent years has obscured important, basic information to the general public. This pattern consists of the agency first claiming it intends to regulate one (or more) specific pollutants. The EPA then writes a proposed rule that has extremely high costs, but is offset by even higher calculated benefits and so-called "co-benefits."

What the agency fails to tell the public is that almost all of the rule's calculated benefits actually come from purely incidental reductions in only one pollutant—fine particulate matter (PM2.5). The EPA has relied on estimated PM2.5 reductions in almost every major Clean Air Act rulemaking since 2000, and for one important reason: the calculated co-benefit of each ton of PM2.5 reduced is so high that the agency can always rely upon PM2.5 reductions to "show" that any enormously costly rule has benefits that far outweigh its costs.

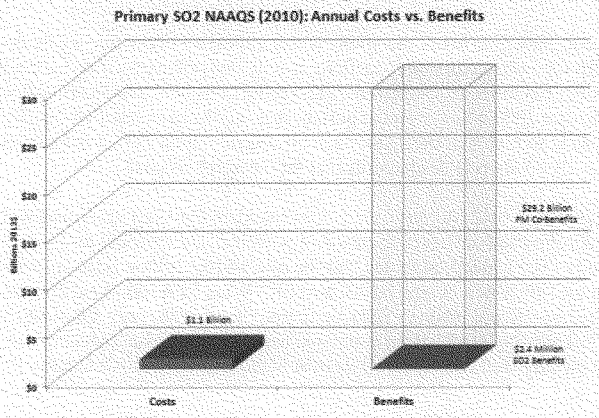
For instance, the 2012 Mercury Air Toxics Standard (MATS) rule[35] was widely touted by the EPA and environmental advocacy groups as a powerful and essential tool to reduce mercury from power plants. The agency estimated that the rule's $10.6 billion price tag was more than justified by at least $60 billion in new health benefits. What EPA didn't explain, however, was that the calculated benefits of mercury reductions from the rule are only about **$4 to 6 million**. As the chart below shows, 99.4% of the estimated benefits come from reductions in PM2.5—a pollutant that is already well controlled by its own National Ambient Air Quality Standard (NAAQS).



[35] 77 Fed. Reg. 9,304 (February 16, 2012).

In a recent decision involving a legal challenge to the MATS rule, where the billions of dollars in "co-benefits" from PM2.5 and CO2 reductions were cited by the EPA, the U.S. Supreme Court questioned the use of co-benefits in a standard specifically designed to reduce an entirely different pollutant—mercury.[36]

In the 2010 NAAQS standard for sulfur dioxide (SO2), all but $2.4 million in benefits from a rule ostensibly designed to reduce SO2 actually come from PM2.5 reductions.



The MATS and SO2 NAAQS rules reliance on co-benefits is in no way unique. On the contrary, they illustrate how the EPA chooses to obscure the true costs and benefits of its rules. Indeed, the Chamber evaluated all EPA rules issued between 2000 and 2014 which contained an RIA and found that 97.1% of all calculated benefits actual come from estimated PM2.5 reduction benefits.[37] According to a recent report by the Congressional Research Service (CRS), "co-benefits" associated with reductions in PM 2.5 emissions accounted for more than half the benefits used to justify 21 out of 28 of the EPA's economically significant regulations promulgated from 2004-2011.[38] In other words, relying on PM 2.5 co-benefits, and according to CRS, 75% of the major regulations cannot be justified.

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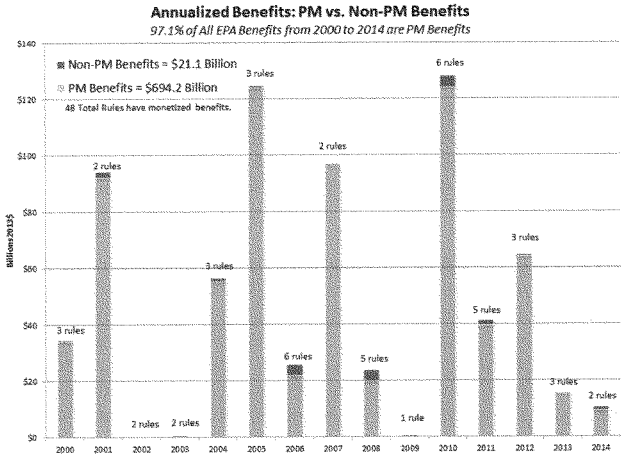
[36] *Michigan v. EPA*, 576 U.S. (2015). At oral argument, Chief Justice Roberts goes so far as to question the legitimacy of using collateral benefits. *See* Transcript, *Michigan v. EPA*, at 64 (Mar. 25, 2015)

[37] The Chamber examined all EPA regulations from 2000 through 2014 for which the agency prepared an RIA or other economic analysis. The findings of this analysis (see Charting Federal Costs and Benefits) revealed that for the 48 rules for which EPA estimated monetized benefits, 97.1% of the total value of those benefits came from a single pollutant, fine particulate matter or PM2.5. The source of the data for the Chamber study was EPA RIAs for cost-benefit analyses and Federal Register notices for regulatory preamble text.

[38] Mem. from James E. McCarthy, CRS, to House Committee on Science, Space, and Technology Subcommittee on Energy and Environment ("House Subcommittee"), at 3 (Oct. 5, 2011), App. To Letter from House Subcommittees to Cass R. Sunstein, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget (Nov. 15, 2011) (hereinafter referred to as "CRS 2011 Report").



To accomplish needed transparency and accountability in its regulatory decision-making, the EPA needs to:

- Return to its former policy of telling the public exactly what pollutants are being targeted by each regulation;
- Return to its former policy of telling the public how much the reductions in those targeted pollutants will cost;
- Inform the public how much the targeted pollutant(s) will actually be reduced, and how those specific reductions will benefit the public; and
- Move away from relying on inflated benefits estimates for purely incidental "co-benefits" like PM2.5 reductions.

For the American public to have confidence that the EPA is choosing the "right" level of regulatory protection, the EPA needs to provide more information about why it ultimately chose one level of stringency in a final rule over other alternatives available to it.

V. AND NOW, THE PERFECT REGULATORY STORM

Within just a five-month time span of 2015, EPA issued three massive, sweeping regulatory programs. Each of these new programs has the potential to profoundly affect people in every region of the country, and in virtually every community.

A. *Ozone NAAQS Revision*

The EPA recently concluded its five-year review of the NAAQS for ground-level ozone. On October 1, 2015 (as part of a court order), the EPA tightened the national ozone standard to

70 parts per billion (ppb).[39] In December 2014, the Agency had proposed lowering the ozone NAAQS from its current level of 75 ppb to a range between 65-70 ppb. Lowering the ozone standard to those levels could lead to nonattainment designations for many areas of the country. A nonattainment designation can severely hamper economic development and construction in an area. According to the American Petroleum Institute, based upon ozone data from 2012-2014, there are 217 counties in the United States that are measured or projected to be out of attainment or in metropolitan areas that do not meet the 2008 75 ppb standard.[40] At a 70 ppb standard – the number that EPA finalized earlier this month – the number of counties in nonattainment increases fourfold to 958.[41]

During the recent ozone NAAQS review, the Chamber, along with other business and industry stakeholders, advocated for EPA to retain the 2008 ozone standard (75 ppb) for a number of reasons. Most notably, the 2008 standard still has not been fully implemented due to EPA's self-inflicted delays. Counties were not designated as nonattainment under the 2008 standard until April 2012. Also, EPA did not finalize the 2008 implementation guidance until just recently in February 2015. States have been committing time and resources to meet the 75 ppb standard; the new 70 ppb standard will strain limited state resources and fail to give states a chance to meet the 75 ppb standard.

Other concerns with the new tightened standard include EPA's failure to justify the need for a lower standard in the record, its failure to address the fact that a tightened standard is approaching natural background levels of ozone in certain areas, and its failure to consider significant evidence showing the movement of ozone from foreign sources, including Asia, Canada and Mexico. Having failed to address these issues, EPA likely set a new ozone standard with which it will be difficult, if not impossible, for many areas of the country to comply.

B. *The Waters of the United States Rule*

The revised definition of "Waters of the United States" issued jointly on May 27, 2015 by the EPA and the U.S. Army Corps of Engineers (Corps), expands federal Clean Water Act jurisdiction far beyond the limits explicitly established by Congress and affirmed by the courts. The rule will, for the first time, give federal agencies direct permitting and enforcement authority over many land use decisions that Congress intentionally reserved to the States. It will intrude so far into traditional State and local land use authority that it is difficult to imagine that any discretion would be left to State, county and municipal governments.

The WOTUS rule will affect many sectors of the U.S. economy, including construction, homebuilding, agriculture, transportation, real estate, energy production and transmission, and manufacturing. The rule will have a chilling effect on project development and force property owners to hire consultants, specialists, and lawyers to understand how they will be impacted and whether current or planned land uses will trigger federal permitting or enforcement. The rule

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[39] *See* http://www3.epa.gov/airquality/ozonepollution/pdfs/20151001fr.pdf .
[40] *See* http://www.api.org/news-and-media/news/newsitems/2015/september-2015/epa-data-show-absurdity-of-changing-ozone-standards.
[41] *Id.*

puts heavy new burdens on states and localities to comply with federal requirements, including having to wait for federal approval before undertaking critical infrastructure maintenance projects. In sum, the WOTUS rule creates confusion and an unwillingness to move forward with ordinary activities and projects for businesses, property owners, and state and local governments.

To date, 31 states and state agencies have filed lawsuits challenging the final WOTUS rule. On October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit issued a nationwide stay of the rule until that court has decided whether it has jurisdiction or if the federal district courts have jurisdiction. The court's order states that petitioners challenging the rule have a "substantial probability of success on the merits."[42]

C. *Proposed Greenhouse Gas Regulations on Power Plants*

In August 2015, the EPA released its final rule for regulating greenhouse gas emissions from new power plants.[43] The rule's emission limit for new coal-fired power plants is still stringent enough that any new coal-fired power plant will require at least partial carbon capture and sequestration (CCS) technology in order to comply. The EPA, however, failed to show that CCS is a commercially-viable and adequately-demonstrated technology for new coal-fired power plants. This regulation also has raised serious concerns about the ability to maintain a diverse energy supply in order to ensure steady and reliable streams of electricity to power the country.

The EPA also released in August 2015 the final "Clean Power Plan (CPP)," a rule under the Clean Air Act that will regulate greenhouse gas emissions from existing power plants.[44] The rule sets a goal of a 32% nationwide reduction of 2005 GHG emission levels by 2030. Using Section 111(d) of the Clean Air Act, the CPP creates state-specific reduction goals that "reflect the EPA's calculation of the emission reductions that a state can achieve through the application of 'best system of emissions reduction (BSER).'"[45] Portions of those reduction goals would have to be met on an interim basis in 2022, and then the full reductions achieved by 2030.[46]

There are many significant concerns with the legality of EPA's Clean Power Plan and the impacts that it will have on reliable and affordable electricity in the U.S. for industrial and residential consumers. From a legal perspective, the Clean Air Act does not authorize the EPA to regulate GHG emissions from existing power plants under Section 111(d) because these same power plants are already regulated by the EPA under Section 112 of the Clean Air Act. Even if the EPA believes it has the basic authority to regulate existing facilities already regulated under Section 112, the CPP violates the Clean Air Act because it imposes "standards of performance" for the entire energy sector and not for individual sources as the Act requires.[47]

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[42] Order of Stay, *Ohio v. U.S. Army Corps of Eng'rs,* No. 15-3799, at 4 (Oct. 9, 2015), ECF No. 49-2.
[43] *See* http://www2.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants.
[44] *Id.*
[45] *Id.*
[46] Altering its approach from the proposed CPP, EPA developed the state-specific goals in the final rule using three "building blocks": (1) heat rate improvements at coal-fired electricity generating units (EGUs); (2) replacing coal-fired electricity with increased generation at existing natural gas combined cycle EGUs, although on a lower scale and under a delayed timetable than that used in the proposed CPP; and (3) increasing renewable EGU capacity.
[47] Clean Air Act §111(a)(3).

Moreover, the only way to achieve the emission reductions required by the CPP is to shift generation away from coal-fired power plants to gas-fired power plants and particularly to new renewable sources. That shifting requires actions that cannot be implemented by the rule's regulated sources themselves, but with other sources that are not subject to regulation under the CPP rule. These are just two examples of numerous legal issues that have been raised regarding the CPP.

Economically, the CPP threatens to cause serious harm to the U.S. economy, raising energy prices. Regarding electric reliability, the EPA has failed to conduct much-needed comprehensive and independent reliability analyses to determine the impacts of the proposed CPP on the country's electrical grids. This is particularly critical given that the EPA itself projects that the proposal would cause significant coal-fired electric generating capacity to retire by 2022. Despite the extension of compliance deadlines, the final CPP still suffers from rushed timelines and deadlines. Serious questions remain about whether the infrastructure needed to comply with the CPP can be built within the rule's deadlines.

VI. THE EPA HAS NOT CONSIDERED THE INCONSISTENT AND INCOMPATIBLE IMPACTS OF THE THREE REGULATORY ACTIONS

Since the first agency was established, Congress has attempted to control agency rulemakings through legislation, oversight and funding, but with little to no impact. Many of the adverse impacts of the regulations being discussed today would have been addressed by the EPA (or at least identified) had it merely implemented congressional mandates concerning the impact on jobs, the use of the best data in rulemakings, the impact of the regulations on small business, state and local governments, and the cumulative impact of regulations.

Before taking the unprecedented step of issuing three such sweeping and complex new programs within months of one another, the agency should have taken the time to fully understand how each of these rules would complement—or conflict with—the others. Congress has mandated such consideration numerous times but the EPA refuses to comply with the direction being given by Congress.

A. The EPA Failed to Conduct the Congressionally Mandated Ongoing Employment Impacts Evaluation

Congress has debated whether regulations cause adverse impacts on industry, communities and job loss since at least 1970. In the 95th Congress (1977-1978) the debate over the employment impacts of regulation was clear, direct, and extensive. The Committee noted:

> Among the issues which have arisen frequently since the enactment of the 1970 Amendments is the extent to which the Clean Air Act or other factors are responsible for plant shutdowns, decisions not to build new plants, and consequent losses of employment opportunities.
>
> * * *

> [I]t has been argued that environmental laws have in fact been responsible for significant numbers of plant closings and job losses.
>
> In any particular case in which a substantial job loss is threatened, in which a plant closing is blamed on Clean Air Act requirements, or possible new construction is alleged to have been postponed or prevented by such requirements, the committee recognized the need to determine the truth of these allegations. For this reason, the committee agreed to . . . a mechanism for determining the accuracy of any such allegation.[48]

The Committee went on to state:

> [T]he Administrator is mandated to undertake an ongoing evaluation of job losses and employment shifts due to requirements of the act. This evaluation is to include investigations of threatened plant closures or reductions in employment allegedly due to requirements of the act or any actual closures or reductions which are alleged to have occurred because of such requirements.[49]

In conference, the Senate concurred with the House employment effects provision that addressed the EPA Administrator's evaluations and investigations of loss of employment and plant closure.[50]

Subsequently, in the Clean Air Act Amendments of 1977, Congress enacted a provision, now codified as section 321(a) of the Clean Air Act, which reads:

> **(a) Continuous evaluation of potential loss of shifts of employment**
>
> The Administrator shall conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of the provision of this chapter and applicable implementation plans, including where appropriate, investigating threatened plant closures, or reductions in employment allegedly resulting from such administration or enforcement."[51]

Over the years, the EPA has chosen to ignore this Congressional mandate. As a result, the debate over the impacts on jobs due to regulations has continued without the EPA ever providing Congress with the mandated information, which is critical for effective oversight of the agency.

In 2009 when a large number of regulations were being issued by the EPA, six U.S. Senators wrote to the EPA requesting the results of its continuing Section 321(a) evaluation of potential loss or shifts of employment which may result from the suite of regulations the EPA

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[48] 95 Cong. House Report 294; CAA77 Leg. Hist. 26 at 227.
[49] *Id.*
[50] 95 Cong. Conf. Bill H.R. 6161; CAA77 Leg. Hist. 24.
[51] Section 321(A) of the Clean Air Act; 42 U.S.C. § 7621. This section became law as part of the 1977 Amendments to the Clean Air Act.

had proposed or finalized.[52] On October 26, 2009, the EPA responded to the six Senators stating "EPA has not interpreted CAA section 321 to require the EPA to conduct employment investigations in taking regulatory actions."[53]

Therefore, a debate that started 45 years ago and which resulted in Congress directly mandating a study of the employment effects of regulations so as to determine the truth of conflicting allegations about whether regulations adversely impact jobs is still unresolved due to EPA's refusal to reform the evaluation of potential shifts in employment due to its regulations. The EPA, the agency charged with doing the continuous evaluation of potential loss or shifts in employment due to its regulations, has steadfastly refused to conduct such an evaluation.

If the EPA had been conducting Section 321(a) employment evaluations since 1977, Congress would be in a much better position to understand how the three new rules—taken individually or in combination with one another—would affect the lives of ordinary Americans. Congress and the public would have a baseline against which new regulatory actions could be measured.

The EPA must comply with its statutory obligation under section 321(a) of the Clean Air Act and conduct a continuing evaluation of the employment impacts of CAA regulations.

B. The EPA Failed to Utilize the Information Quality Act

Perhaps the most effective mechanism for ensuring federal agencies use high quality data in their rulemakings is to vigorously implement the Information Quality Act (IQA).[54] The IQA was designed to impose greater transparency and improve the quality of agency information, especially with respect to non-regulatory information disseminated by administrative agencies with respect to scientific and statistical matters. It requires:

- Compliance with OMB's information quality guidelines that mandate transparency, full disclosure of all data and reports used to justify or formulate an agency position on a given topic, and full disclosure of all uncertainties or error sources so that a member of the public may evaluate and reproduce the results of an agency analysis or study.

- Use of the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices and data collected by accepted methods or best available methods.

- For claims, statements or policies regarding human health or environmental risks, the agency must specify (1) each population addressed by any estimate of public health

[52]Letter from Senators Vitter, Risch, Johanns, Inhofe, Ensign and Hatch to EPA Administrator Lisa Jackson, October 13, 2009.
[53] Letter from EPA Assistant Administrator Gina McCarthy to Senator Inhofe (October 26, 2009) at 2.
[54]44 U.S.C. §§ 3504(d)(1), 3516.

effects; (2) the expected risk or central estimate of risk for the specific populations; (3) each appropriate upper-bound or lower-bound estimate of risk; (4) each significant uncertainty identified in the process of the assessment of public health effects and studies that would assist in resolving the uncertainty; and (5) peer-reviewed studies that support, are directly relevant to, or fail to support any estimate of public health effects and the methodology used to reconcile inconsistencies in the scientific data.[55]

- A procedure to allow affected persons to "seek and obtain" correction or disclosure of information that fails OMB information quality requirements.

Unfortunately, federal agencies have taken the position that they need not comply with the IQA because there is no private right of action to enforce the statute.[56]

The EPA should follow the IQA by fully disclosing data and reports used to justify its positions and utilizing the best peer-reviewed science.

C. The EPA Failed to Comply with the Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act ("UMRA") requires federal agencies to assess the effects of the rule on state and local governments and the private sector before imposing mandates on them of $100 million or more per year without providing federal funding for state and local governments to implement the mandate. In essence, UMRA is intended to prevent federal agencies from shifting the costs of federal programs to the states. In the WOTUS rule, the EPA and the Corps certified that "[t]his action does not contain any unfunded mandate under the regulatory provisions of Title II of the Unfunded Mandates Reform Act of 1995, (12 U.S.C. §§ 1531-1538), and does not significantly or uniquely affect small governments."[57] This definitive statement is clearly at odds with the facts, however. For example, according to the National Association of Counties, 1,542 of the 3,069 counties in the nation (50%) have populations of less than 25,000,[58] are considered "small governments" and are therefore protected by both the UMRA and RFA.

These counties are responsible for building and maintaining 45% of the roads and associated ditches in 43 states,[59] which is where some of the largest permitting impacts of the WOTUS rule are expected to be felt. As a result of the WOTUS rule, these counties will be

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[55] Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and integrity of Information Disseminated by Federal Agencies; Republication, 67 Fed. Reg. 8452, 8457-58 (Feb. 22, 2002).
[56] *Harnoken v. Dep't of Justice*, No. C 12-629 CW. 2012 U.S. Dist. LEXIS 17145, at *24 (N.D. Cal. Dec. 3, 2012) (ruling on the DOJ and OMB's assertion that IQA does not provide a private right of action or judicial review).
[57] U.S. Environmental Protection Agency & U.S. Department of the Army, Economic Analysis of the EPA-Army Clean Water Rule (May 2015), at 61, *available at* http://www2.epa.gov/sites/production/files/2015-05/documents/final_clean_water_rule_economic_analysis_5-15_2.pdf. *See also* Definition of "Waters of the United States" Under the Clean Water Act; Proposed Rule, 79 Fed. Reg. 22,220 (April 21, 2014).
[58] Testimony of Warren Williams, General Manager, Riverside County Flood Control & Water Conservation District, submitted on behalf of the National Association of Counties, before the House Transportation and Infrastructure Committee, Subcommittee on Water Resources and Environment (June 11, 2014) at page 2.
[59] *Id.*

required to bear the cost of obtaining Clean Water Act permits in greatly-expanded areas, but will receive no additional federal funding for the increased responsibility imposed by the rule.

The EPA should fulfill its statutory obligation under UMRA by not imposing unfunded mandates over $100 million on state and local governments without providing funding.

D. The EPA Failed to Comply with the Regulatory Flexibility Act

Congress passed the Regulatory Flexibility Act ("RFA") in 1980 to give small entities a voice in the federal rulemaking process.[60] Put simply, the RFA requires federal agencies to assess the economic impact of their planned regulations on small entities and to consider alternatives that would lessen those impacts. The RFA requires each federal agency to review its proposed and final rules to determine if the rule in question will have a "significant economic impact on a substantial number of small entities."[61] If the rule is expected to have such an impact, the agency must assess the anticipated economic impacts of the rule and evaluate whether alternative actions that would minimize the rule's impact would still achieve the rule's purpose.

Since 1996, the EPA specifically has been required to conduct Small Business Advocacy Review Panels when a planned rule is likely to have a significant impact. Small entity representatives —who speak for the sectors that are likely to be affected by the planned rule— advise the Panel members on real-world impacts of the rule and potential regulatory alternatives. The Panel process is the best opportunity for the EPA to get face-to-face interaction with small entities and get a sense of the ways that small entities differ from their larger counterparts in their ability to comply with regulatory mandates. Because the Panel occurs early, before the planned rule is publicly proposed, it also represents the best opportunity for small entities to have real input into the final design of a rule.

In the case of the CPP, the EPA argues that the "emissions guidelines established under CAA Section 111(d) do not impose any requirements on regulated entities and, thus, will not have a significant economic impact upon a substantial number of small entities,"[62] so the RFA does not apply. Electricity prices – one of the largest concerns of small businesses – will go up as a result of this proposal.[63] It is also very possible that small businesses themselves (e.g., small refiners) will be called upon to shoulder some of the compliance burden for the proposal. If individual states as part of their State Implementation Plan choose to go beyond EGUs to achieve emissions reductions under the rule, small businesses, particularly industrial and manufacturing facilities, could be faced with the expenses associated with reducing emissions from their

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[60] 5 U.S.C. §§ 601-612.
[61] 5 U.S.C. §605(b).
[62] 79 Fed. Reg. 34,947 (June 18, 2014).
[63] ERCOT releases report on potential Clean Power Plan impacts available at http://www.ercot.com/news/press_releases/show/76880 (Oct. 16, 2015). *See also* ERCOT Analysis of the Impacts of the Clean Power Plan, *available at* http://www.ercot.com/content/news/presentations/2015/ERCOT_Analysis_of_the_Impacts_of_the_Clean_Power_Plan-Final_.pdf (Oct. 16, 2015).

facilities. These are all issues that the EPA is required by law to evaluate and analyze through the RFA and a Small Business Advocacy Review Panel process.

Likewise, the EPA certified without any factual evidence that the WOTUS rule actually represents a *reduction* in the regulatory burdens affecting small entities, and that the rule would not have a substantive or direct regulatory effect on any small entity, so the RFA doesn't apply. Yet, because the WOTUS rule defines "tributaries" to include ditches, flood channels, and other infrastructure, businesses and small governmental jurisdictions will be subject to section 404 permitting requirements for work in ditches, on roads adjacent to ditches, on culverts and bridges, etc. that disturbs soil or otherwise affects the "tributary." These permits can take more than a year to obtain, at a median cost of $155,000.[64] This is why the U.S. Small Business Administration's Office of Advocacy has publicly advised the EPA and the Corps that they improperly certified the WOTUS proposal under the RFA.[65]

The EPA should satisfy its statutory obligations under the RFA by convening a Small Business Advocacy Review Panel for important proposed regulations, like the Clean Power Plan and the WOTUS rule.

E. The EPA Failed to Examine Inconsistent or Incompatible Regulations as Required by Executive Order 12,866

Executive Order 12,886[66] requires federal agencies to conduct several analyses prior to proposing or finalizing new regulations. The Executive Order makes agencies responsible to ensure that a new regulation will not conflict with other requirements, specifying that "each agency shall avoid regulations that are inconsistent, incompatible, or duplicative with its other regulations or those of other Federal agencies."[67]

In the case of the three rules at issue, the EPA should have fully considered how each rule, if finalized, might affect regulated entities' ability to comply with the other two. For example, as noted above, the EPA itself projects that the Clean Power Plan will cause significant coal-fired electric generating capacity to retire by 2022. To replace this generating capacity, utilities will need to construct fuel delivery infrastructure such as pipelines, storage, railroad track, and improved roads. In order to compensate for a lack of generating capacity, these infrastructure projects will have to be completed before the existing coal-fired generating units are taken off-line. Yet these projects will be subject to more extensive permitting and reviews by virtue of the WOTUS rule. The EPA did not properly account for the increased costs and delays that utilities, pipeline companies, railroads, and other companies will face in complying with the

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[64] EPA and U.S. Army Corps of Engineers, *Economic Analysis of Proposed Revised Definition of Waters of the United States* (March 2014) at 12.

[65] Letter from Winslow Sargeant, Chief Counsel for Advocacy, to Gina McCarthy, Administrator, EPA and General John Peabody, Deputy Commanding General, Corps of Engineers, on Definition of "Waters of the United States" Under the Clean Water Act (October 1, 2014) at 4.

[66] Executive Order 12,866, "Regulatory Planning and Review," 58 Fed. Reg. 51,735 (Sept. 30, 1993).

[67] *Id.* at section 1(b)(10).

WOTUS rule, which is made necessary because of the need to comply with the Clean Power Plan or the ozone rule.

The EPA should consider whether a conflict exists regarding regulated entities' ability to comply with stricter ozone standards, the redefinition of WOTUS, and the Clean Power Plan at the same time pursuant to Executive Order 12,866.

F. The EPA Failed to Analyze the Cumulative Impacts of the Regulations as Required by Executive Order 13,563

Executive Order 13,563, issued by the Obama administration in 2011,[68] even more clearly calls on federal agencies to review and understand the cumulative impacts of their regulatory programs. Section 1(b)(2) provides that each agency must, among other things, "tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives, *taking into account, among other things, and to the extent practicable, the costs of cumulative regulations*."[69] Again, the EPA should have complied with this Executive Order when it planned to develop three massive rulemakings that would be timed to take effect virtually one on top of the other.

The EPA should conduct a cumulative review of costs imposed on regulated entities by stricter ozone standards, the redefinition of WOTUS, and the Clean Power Plan pursuant to Executive Order 13,563.

G. What the EPA Would Have Discovered If It Had Used Congressionally and Executive Mandated Analytical Regulatory Tools

If the EPA had not chosen to ignore the vast array of analytical requirements under the Clean Air Act section 321, Unfunded Mandates Reform Act; the Information Quality Act; and the Regulatory Flexibility Act, as well as Executive Orders 12,866 and 13,563, it would have discovered serious inconsistencies and conflicts between its three rules. Here are a few examples of those inconsistencies:

- As noted above, the massive new infrastructure requirements that are at the heart of the Clean Power Plan will be complicated and delayed by the expanded number of Clean Water Act permits required by the WOTUS rule. In addition to the cost of applying for federal permits, infrastructure developers will have to pay mitigation costs for wetlands restoration, which often approach or exceed all other project costs.

- When the EPA was estimating the attainment area impact of Ozone NAAQS, it completely ignored the probable shifts in criteria pollutant levels resulting from the Clean

[68] Executive Order 13,563, "Improving Regulatory and Regulatory Review," 76 Fed. Reg. 3,821 (Jan. 18, 2011).
[69] *Id.* at 3,821 (emphasis added).

Power Plan. Because the CPP requires such a massive reorganization of the nation's electric generation infrastructure, reshuffling of the deck will dramatically shift the current map of criteria pollutant concentrations as power companies site new generation facilities away from existing sites. In particular, this could undermine the ability of many air districts to meet the current standards, let alone the tightened Ozone NAAQS standards the EPA finalized around the same time as the CPP.

- This reshuffling will make it extremely difficult for states to properly model their ozone reduction efforts. The Ozone NAAQS will also make the job of obtaining preconstruction permits for new power plants under Section 165 of the Clean Air Act much more difficult and costly, because more areas will either be classified in non-attainment—thus requiring costly offsets (if they are available)—or the area will be much closer to non-attainment. More extensive modeling and air monitoring will be required to show that a new project made necessary by the CPP can be built, adding significantly to the cost and delays for each project.

- In its economic analysis of the WOTUS rule, the EPA based its conclusion that the rule would only increase the amount of federal jurisdictional waters under the CWA by 2.84% to 3.65% on a *very* small sample of negative determinations from two preceding years, essentially using just a tiny slice of pre-WOTUS determinations. The EPA ignored conflicting evidence from federal and state authorities that the rule could impose anywhere from a 300% to 800% increase in federal jurisdictional waters. By ignoring these congressional mandates for developing effective regulations, the EPA fails to secure an understanding of the real world impacts of its rules.

Undoubtedly, more examples of inconsistencies will be discovered as these three major regulations continue to move through the regulatory process and eventually must be implemented. Much of the confusion and deficiencies stemming from these inconsistencies could have been avoided had the EPA conducted a more thorough analysis of the cumulative impacts of these regulations.

VII. LEGISLATIVE RECOMMENDATIONS

A. The Regulatory Accountability Act (H.R. 185)

A modernized Administrative Procedure Act is needed to restore the kinds of checks and balances on federal agency action that the 1946 Administrative Procedure Act—the "bill of rights" for the regulatory state—intended to provide the American people. Congress has a huge stake in getting the rulemaking process right if it is to preserve its Article 1 Constitutional Responsibility. H.R. 185, the "Regulatory Accountability Act of 2015" 114th Congress, 1st Session, which passed the House on January 13, 2015, would address this deficiency. The Senate version of this legislation, S. 2006, the "Regulatory Accountability Act of 2015," 114th Congress, 1st Session, was introduced on August 6, 2015. The legislation would put balance and accountability back into the federal rulemaking process, without undercutting vital public safety and health protections. The bill focuses on the process agencies must use when they write the

biggest regulations. Compelling agencies to carefully follow this process will produce better substance, which results in better regulations.

The Act would require federal agencies do a better job of explaining the rationales for new rules and being more open and transparent when they write those rules. The Act simply requires additional process to ensure a better rulemaking product; it does ***not*** compel any particular rulemaking outcome. The Act will bring the Administrative Procedure Act of 1946 into a modern era where Congress must oversee more than 425 agencies and hundreds of thousands of rules, and now these new high impact rules that have nationwide impact. The Regulatory Accountability Act recognizes that the Administrative Procedure Act of 1946 works well for 3,000 plus routine regulations issued each year. However, for the few (1-5) high impact regulations, agencies must undertake more detailed analysis to fully understand that these rules implement the intent of Congress.

B. The Sunshine for Regulatory Decrees and Settlements Act (H.R. 712)

On February 4, 2015, the Sunshine for Regulatory Decrees and Settlements Act of 2015 was introduced in the House as H.R. 712 and in the Senate as S. 378. The bill would (1) require agencies to give notice when they receive notices of intent to sue from private parties, (2) afford affected parties an opportunity to intervene *prior to the filing* of the consent decree or settlement with a court, and (3) publish notice of a proposed decree or settlement in the *Federal Register* and take (and respond to) public comments at least 60 days prior to the filing of the decree or settlement. The bill also would require agencies to do a better job of showing that a proposed agreement is consistent with the law and in the public interest.

VIII. CONCLUSION

The goal of a regulatory agency should be to produce regulations that implement the intent of Congress in the most efficient way possible. Congress has provided significant guidance as to the analyses agencies must undertake to achieve Congressional intent. The analyses required by Congress are to guide the agency to make decisions based on fact, sound science and economic reality.

Unfortunately, over the decades, the EPA has ignored the guidance given by Congress and Executive Order for developing rules in a cost-effective manner that achieve congressional intent. The result of such conduct is an agency that issues unrestrained mandates that the states and the business community must implement regardless of cost. By ignoring the Congressional mandates and Executive guidance concerning the types of analyses to be performed, provided by Congress and the Executive as to how to develop regulations, the EPA fails to provide Congress with the information it needs to legislate. While that is a travesty, Congress has the ability to protect itself.

There is an even deeper harm inflicted by the EPA's failure to fully analyze the impact of its regulations. That harm is the deliberate avoidance of any attempt to reach out to the people and the communities that will be adversely impacted by its actions. If the goal of every agency

is to produce quality rules that implement the intent of Congress, why would an agency fail to evaluate job impacts, the cumulative impacts of regulations, or develop regulations using peer reviewed studies, the best science and economics?

Thank you for allowing me to testify today and I look forward to answering your questions.

Senator ROUNDS. Thank you for your testimony, Mr. Kovacs.
Our next witness is Mr. Sam Batkins.
Mr. Batkins, you may begin.

STATEMENT OF SAM BATKINS, DIRECTOR OF REGULATORY POLICY, AMERICAN ACTION FORUM

Mr. BATKINS. Chairman Rounds, Ranking Member Markey, and members of the committee, thank you for the opportunity to appear today. In this testimony I wish to highlight the following points:

First, by virtually any metric, regulatory activity has increased at EPA. This is due to a variety of factors, but recently the Agency has finalized five regulations that impose more costs than benefits.

Second, the Nation appears to be experiencing declining returns in air quality investments. Despite $12 billion in investments from the Obama administration, air quality gains have not been as pronounced as in the past.

And, third, the rise of particulate matter and the social cost of carbon has made it easier for EPA to justify regulation. For example, in 2010, PM2.5 generated 100 percent of the benefits from four air quality regulations.

The Office of Information and Regulatory Affairs, OIRA, recognizes EPA as the No. 1 regulator in the Federal Government. From 2003 to 2013, the Agency has issued 34 major rules, or 21 percent more than the next closest agency. As measured by rules that attribute the Unfunded Mandates Reform Act, EPA has increased from the pace of 1.75 annually to 3.1.

The amount of paperwork EPA imposes has also increased, from 142 million hours in Fiscal Year 2004 to more than 163 million hours today, a 15 percent increase. These burdens have benefits to the American people, but, in a recent trend, the Agency has finalized five rules where costs exceed the benefits.

The Supreme Court recently reaffirmed the general principle that regulatory benefits should justify the costs. Every executive order since the Carter administration has affirmed this goal, and as Justice Scalia wrote in Michigan v. EPA early this year, no regulation is appropriate if it does significantly more harm than good. Yet, five recent EPA measures could impose $1.3 billion in annual costs, compared to just $700 million in benefits.

On the declining returns on air quality investments, despite at least $12 billion in clean air rules since 2009, the rate of improvement has slowed in recent years. EPA describes very unhealthy days as health warnings of emergency conditions. For this category, the national air quality has not improved. In 2005, there were 46 very unhealthy days; in 2014, there were also 46 very unhealthy days.

Now, there are likely a variety of factors behind this figure, but these extreme days recent regulation has not alleviated the problem. Air quality gains have also slowed somewhat recently. For example, from 2005 to 2009, the rate of unhealthy days per jurisdiction declined by 20 percent. Compare this for the recent decline during the Obama administration of 9 percent. The slowing improvement in air quality under the Obama administration is in concert, of course, with a more, not less, active EPA.

On the rise of PM2.5 and the social cost of carbon, the Agency, and the Federal Government as a whole, is increasingly reliant on particulate matter co-benefits to justify regulation in other areas, as has been mentioned. For example, the 2008 NAAQS for ozone derived 70 percent of its benefits from reductions in particulate matter. Notably, in 2010, PM2.5 generated 100 percent of the benefits from four air quality regulations.

Perhaps most famously, the Agency's Mercury Air Toxic Standard, or MATS rule, derived more than 99 percent of its benefits from the reduction of particulate matter. Even though the goal of the regulation was the control of mercury, toxic gases, and other heavy metals, mercury contributed just 0.007 percent of the rule's benefits.

On the social cost of carbon, the Administration has generally ignored longstanding guidance and excluded a 7 percent discount rate from its analysis. As Circular A–4 states, "As a default position, a real discount rate of 7 percent should be used as a base-case for regulatory analysis." Using lower discount rates on the social cost of carbon allows EPA to more easily justify a variety of regulatory action. For comparison, the United Kingdom uses a central case discount rate of 6 percent and a higher rate of 10 percent for sensitivity purposes.

I would also like to point out that we are getting a sort of steady stream of retrospective studies that have called into question some of EPA's regulatory assumptions, including a recent one on greenhouse gas regulations for heavy duty trucks. A Resources for the Future study concluded that EPA underestimated the rebound effect of increased truck efficiency. This higher rebound effect, in the words of the study, lowers projected long-run fuel savings and greenhouse gas emission reductions. In the end, the actual rebound effect was four to six times larger than what EPA had assumed.

Thankfully, this research might inform EPA's final rule for the second round of heavy-duty truck regulation, which has a projected total cost of more than $31 billion. But how many other regulations have regulators and scholars missed over the years, and what is the ultimate impact of those regulatory errors? How do we learn from these past mistakes and false assumptions to shape the future of regulatory policy?

Thank you for your time, and I look forward to answering your questions.

[The prepared statement of Mr. Batkins follows:]

"Oversight of Regulatory Impact Analyses for U.S. Environmental Protection Agency Regulations"

United States Senate
Committee on Environment & Public Works
Subcommittee on Superfund, Waste Management, and Regulatory Oversight

Sam Batkins, Director of Regulatory Policy*
American Action Forum

October 21, 2015

*The views expressed here are my own and not those of the American Action Forum.

Chairman Rounds, Ranking Member Markey, and Members of the Committee, thank you for the opportunity to appear today. In this testimony, I wish to highlight the following points:

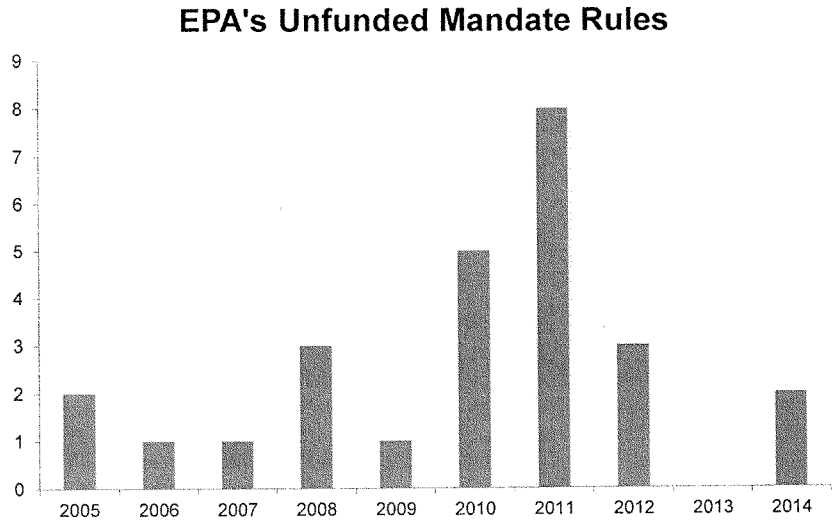
- For a variety of reasons, regulatory activity has increased at the Environmental Protection Agency (EPA). Measured through rules that contain unfunded mandates, the cost of new rules, or the agency's paperwork burden, EPA is more active. As an outgrowth of this activity, the agency has issued five rules since 2012 where the costs easily exceed the benefits.
- Although air quality continues to improve in the U.S., the amount Americans pay for cleaner air continues to grow more expensive. Despite at least $12 billion in clean air rules since 2009, the rate of improvement in air quality has slowed in recent years.
- Regulators, including EPA, continue to rely on the co-benefits of fine particulate matter ($PM_{2.5}$) and the Social Cost of Carbon (SCC) to justify expensive new regulations. Ten years ago, both of these measures were rarely incorporated into Regulatory Impact Analyses (RIA), but now they can generate a majority of monetized benefits.
- The failure of cabinet agencies to apply a uniform methodology to the Regulatory Flexibility Act (RFA) has led to inconsistent evaluation in major rules. EPA generally has a threshold for determining whether a rule imposes a "significant economic impact on a substantial number of small entities," but failing to label rules with such an impact has led to criticism from the Small Business Administration and other entities.

EPA's Recent Regulatory Activity

In part because of a presidential prerogative to regulate carbon dioxide and other greenhouse gases (GHG), EPA's regulatory output has expanded. For example, the Office of Information and Regulatory Affairs (OIRA) recognizes EPA as the most aggressive regulatory agency in terms of total costs and benefits.[1] From 2003 to 2013, EPA imposed roughly $42 billion in annual costs, compared to approximately $507 billion in benefits (2010 dollars). During this time, the agency has issued 34 major rules with costs and benefits exceeding $100 million annually; this is 21 percent more than the next closest agency.

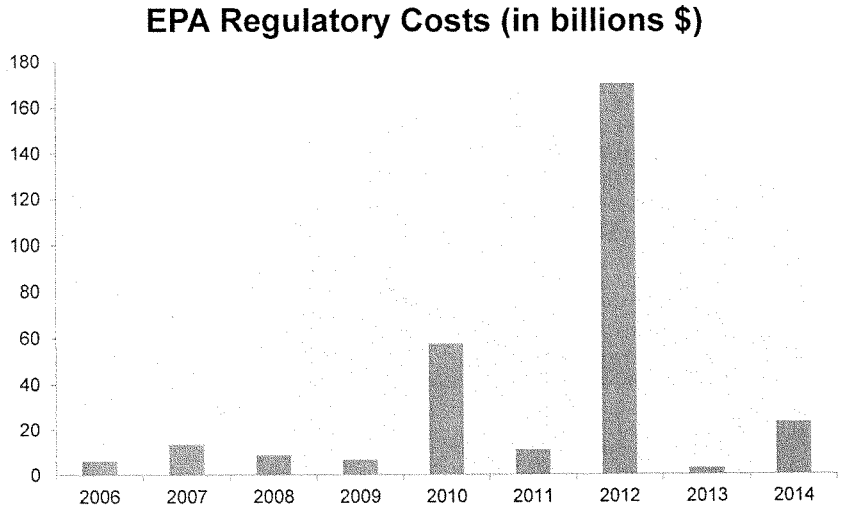
In addition, the number of EPA rules that contain private-sector or intergovernmental mandates has grown significantly, as shown in the graph below.

[1] Office of Information and Regulatory Affairs, "2014 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities," available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/2014_cb/2014-cost-benefit-report.pdf.



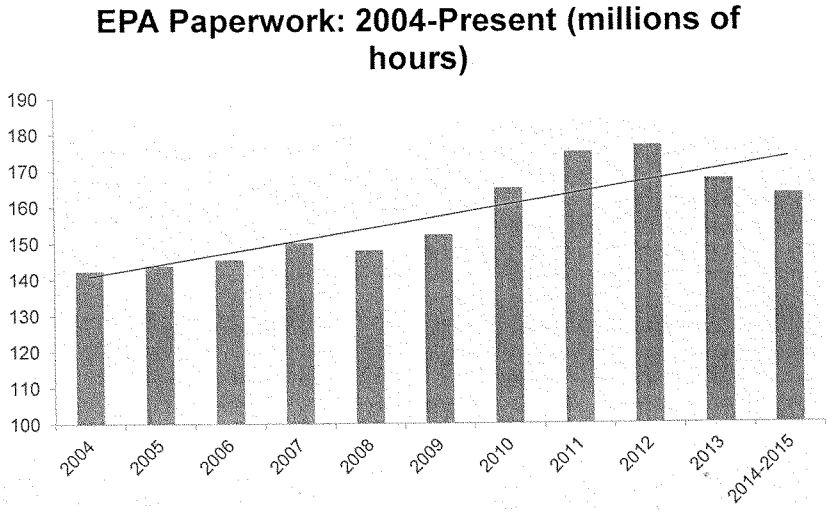
From 2005 to 2008, EPA produced seven regulations that triggered the Unfunded Mandates Reform Act (UMRA), an average of 1.75 a year. From 2009 to 2014, the agency issued a total of 19 rules that contained costly unfunded mandates, an average of 3.1 annually. This includes 2013, when EPA did not finalize a rule triggering UMRA.

As measured by total regulatory costs, EPA's burdens are also steadily increasing. From 2006 to 2014 (years in which the American Action Forum (AAF) has data), the agency has imposed a total burden of $299 billion, as shown in the chart below.



From 2006 to 2008, the average annual figure was $9.3 billion. From 2009 to present, that amount increased to $45.2 billion, an increase of 480 percent. Given the recently-finalized "Clean Power Plan" and ozone rule, expect these trends to continue into 2015.

EPA has also aggressively increased its aggregate paperwork burden during the last decade. According to OIRA data, the agency now imposes more than 163 million hours of paperwork. To put this in perspective, it would take 81,650 employees working full-time (2,000 hours a year) to complete one year of EPA's paperwork. The graph below charts the growth since 2004:



During this time, the agency has increased its paperwork burden on Americans by more than 21 million hours, or almost 15 percent. According to OIRA data, the agency set a record in FY 2012 by imposing 176.9 million hours of paperwork.[2] EPA has subsequently cut its paperwork burden, but it remains higher than at any time prior to FY 2011. The linear trendline above reveals the general direction of EPA-imposed paperwork requirements.

All of the burdens above must be taken into context. There are of course benefits to federal regulatory action. During the course of the Clean Air Act, some regulatory actions have resulted in significant increases in air and water quality. Generally, this is in part due to presidential priorities emphasizing a balance between costs and benefits. The Obama Administration has asked agencies to "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs."[3] The Supreme Court reaffirmed this general principal earlier this year. As Justice Scalia wrote, "No regulation is 'appropriate' if it does significantly more harm than good."[4] Although a debate will always take place over the *ex ante* costs and benefits of regulatory action, Americans and Congress can generally rest assured that an agency will certify the benefits exceed the costs. Yet, a troubling trend has run contrary to President Obama's executive orders.

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[2] Office of Management and Budget, "Information Collection Budget of the United States Government 2014," available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/icb/icb_2014.pdf.
[3] 76 Fed. Reg. 3,821, available at http://www.federalregister.gov/a/2011-1385/p-3.
[4] Supreme Court of the United States, *Michigan v. EPA*, available at http://www.supremecourt.gov/opinions/14pdf/14-46_bqmc.pdf.

Since 2012, there have been at least five EPA measures (part of 19 total rules from the Obama Administration) that have imposed more costs than benefits, including one egregious example of EPA finalizing a rule with "environmental disbenefits." In one instance, EPA issued a rule for biomass-based diesel fuel requirements. The agency noted food prices could escalate under the Renewable Fuels Standard by "$10 per person per year." In addition, there were $381 million in higher fuel prices generated by the rulemaking. There were some benefits from the rule, but according to EPA, there are environmental "disbenefits" of $52 million from adoption of the measure. From the text of the regulation: "Impacts on water quality, water use, wetlands, ecosystems and wildlife habitats are expected to be directionally negative." In other words, there are hundreds of millions of dollars in direct costs from the regulation and little to no benefits. Even the White House's 2013 "Report to Congress on the Benefits and Costs of Federal Regulations" admits this relationship between the costs and benefits.[5]

Many of the EPA rules that impose more costs than benefits are recent, imposed in the last two years, and most involve Clean Water Act implementation. Combined, these four measures could impose $1.3 billion in annual costs, compared to just $700 million in benefits. Below is a snapshot of the rules and their annual costs and benefits, as reported by EPA.

Regulation	**Annual Cost (in millions)**	**Annual Benefit (in millions)**
Coal Combustion Residuals	$509	$236
Effluent Limitation Guidelines	$471	$432
Cooling Water Intake	$297	$29
Pesticide Worker Protection	$66	$2
Totals	**$1,344**	**$700**

Granted, in many instances benefits can be difficult to quantify and monetize, but it would take several erroneous assumptions for the aggregate benefits of these measures to trump the aggregate costs. As with many issues in the regulatory sphere, additional research will be needed to analyze the *ex post* figures. In the interim, the administration appears to be increasingly willing to issue new rules where the stated burdens exceed the benefits. This is generally a rare occurrence, but it is growing more frequent, especially at EPA.

Return on Clean Air Investments

During the past decade, the U.S. has gradually increased its air quality, reduced greenhouse gas emissions, and even before federal regulation, reduced methane emissions. For instance, in 2005, the average jurisdiction experienced 196 days labeled "good" by EPA. In 2014, that number grew to 251 "good" days, an increase of 28 percent in one decade.

However, the number of "very unhealthy" days has remained constant and the cost of reducing air pollution is more expensive than under the previous administration, even excluding the Clean Power Plan and the recently-finalized ozone rule. On hazardous air pollution, EPA describes

[5] Office of Information and Regulatory Affairs, "2013 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities," available at https://www.whitehouse.gov/sites/default/files/omb/inforeg/2013_cb/2013_cost_benefit_report-updated.pdf.

"very unhealthy" days as "health warnings of emergency conditions." For this category, the national air quality has not improved. In 2005, there were 46 "very unhealthy" days in the entire U.S. (not just for the average jurisdiction); in 2014, there were also 46 "very unhealthy days." There are likely a variety of factors behind this figure, but for these extreme days, recent regulation has not alleviated the problem.

There is also the question of what the nation is paying for these clean air investments. Based on recent data, it's becoming clear Americans are spending more for less. From 2005 to 2009, the rate of unhealthy days per jurisdiction declined 20.7 percent. Compare this to the recent decline during the Obama Administration: 9.2 percent. The slowing improvement in air quality under the Obama Administration is in concert with a more, not less, active EPA.

The agency has issued several important clean air regulations during the last decade aimed at improving air quality across the U.S. To monetize these investments, AAF looked at five of the most significant air quality regulations (by effective date):

- 2006 Particulate Matter Rule: $5.4 billion in annual costs;
- 2011 Heavy-Duty Truck Efficiency Rule: $600 million in annual costs;
- 2012 Mercury Air Toxics Standard (MATS): $9.6 billion in annual costs;
- 2013 Particulate Matter Rule: $350 million in annual costs; and
- 2014 Tier 3 Fuel Sulfur Rule: $1.5 billion in annual costs.

Combined, these measures have imposed $17.4 billion in annual costs to achieve air pollution goals. Obama Administration regulators have imposed $12 billion of this figure or 69 percent. Yet, the rate of air pollution decline continues to stagnate. This list of five major air regulations is hardly exhaustive. Indeed, in EPA's recent ozone regulation, the agency listed roughly a dozen major air regulations that have contributed to lower particulate matter and ground-level ozone. However, there is little doubt that regulatory activity at EPA has increased substantially and Americans are paying more to achieve only slight improvements in air quality.

Because of these air quality improvements, regulators now heavily rely on $PM_{2.5}$ as one way to justify new regulation. As other criteria pollutants decline in concentration, $PM_{2.5}$ is now one of the leading pollutants, even as its concentrations fall nationwide. EPA tracks days when particulate matter is the dominant pollutant and the trend points toward a gradual increase. In 2005, $PM_{2.5}$ was the main pollutant for 110 days for the average jurisdiction. By 2014, that number increased 29 percent, to 142.5 days. As other pollutants gradually decline, particulate matter is becoming an attractive source for regulatory benefits.

Rise of Social Cost of Carbon and Co-Benefits

According to EPA, there are six criteria pollutants for which the Clean Air Act requires the agency to set National Ambient Air Quality Standards (NAAQS): ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead. However, a review of government-wide RIAs, and EPA's specifically, reveals a heavy reliance on particulate matter.

Although EPA sets NAAQS for particulate matter, and did so as recently as 2013, the agency typically counts $PM_{2.5}$ benefits in regulations where the regulated purpose is not designed to address particulate matter. The agency refers to this as a "co-benefit" because although $PM_{2.5}$ isn't directly regulated, general pollution cuts can also reduce the concentration of particulate matter. For example, the 2008 NAAQS for ozone derived 70 percent of its benefits from reductions in particulate matter. Notably, in 2010, $PM_{2.5}$ generated 100 percent of the benefits from four air regulations.[6] Perhaps most famously, the agency's MATS rule derived more than 99 percent of its benefits from the reduction of particulate matter, even though the goal of the regulation was the control of mercury and other heavy metals. Mercury contributed just 0.007 percent of the rule's benefits, with GHG contributing an additional 0.4 percent. The Supreme Court heavily scrutinized this aspect of EPA's RIA in both the oral argument and opinion vacating the rule.

Co-benefits are increasingly becoming a tool for EPA to generate incredibly high benefit claims from regulation that it is not designed to regulate $PM_{2.5}$. As former White House counsel C. Boyden Gray has observed, "Particulate matter and ozone seem to offer EPA an inexhaustible well of regulatory co-benefits."[7] As mentioned, NAAQS already cover $PM_{2.5}$ and the agency has certified the levels are "requisite to protect the public health" with "an adequate margin of safety." The particulate matter concentrations are already safe in the U.S., but that hasn't stopped EPA from assuming no level of exposure is safe and any cut in $PM_{2.5}$ will generate the same level of benefits.

As the agency mentioned when it last revised particulate matter standards, "EPA's task is to establish standards that are neither more nor less stringent than necessary."[8] However, every time the agency acts to further reduce $PM_{2.5}$, it presumes the previous standards were not stringent enough or else the agency would have set the acceptable limit at or near zero. EPA's own science did not support a lower threshold than the 2013 standard, but the agency increasingly relies on the support of $PM_{2.5}$ benefits to justify new regulation.

Compared to the rest of the world, Americans are exposed to some of the lowest levels of particulate matter. According to World Health Organization data, the U.S. bests many Western European countries.[9] The graph below illustrates the progress the nation has made limiting $PM_{2.5}$.

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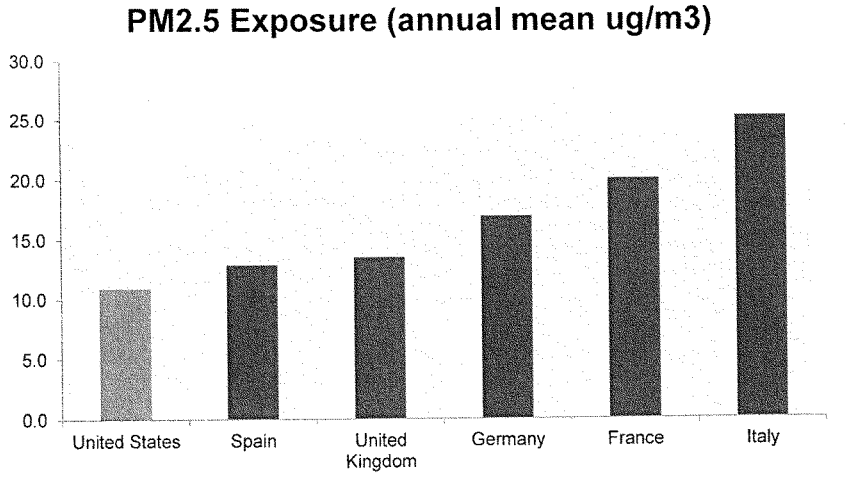
[6] Regulation Magazine, "OMB's Reported Benefits of Regulation: Too Good to be True?," available at http://object.cato.org/sites/cato.org/files/serials/files/regulation/2013/6/regulation-v36n2-4.pdf.

[7] The Federalist Society, "EPA's Use of Co-Benefits," available at http://www.fed-soc.org/publications/detail/epas-use-of-co-benefits.

[8] 78 Fed. Reg. 3,090, available at http://www.federalregister.gov/a/2012-30946/p-210.

[9] World Health Organization, "Annual Mean PM2.5 by Country," available at http://www.who.int/entity/phe/health_topics/outdoorair/databases/OAP_database.xls?ua=1&ua=1.



In addition to particulate matter, EPA is also reliant on the "Social Cost of Carbon (SCC)." The administration assumes a SCC of $40 in 2015, with a three percent discount rate. The importance of the discount rate cannot be overstated. For example, assuming the Clean Power Plan reduces 265 million tons of GHG in 2025 and the SCC is $51 at a three percent rate, the regulation should yield $13.5 billion in global climate benefits. A higher discount rate, even five percent, would reduce these climate benefits to $4.2 billion. For perspective, the Clean Power Plan will cost roughly $8.4 billion annually.

Discount rates are important in climate analysis because while costs are typically incurred initially, during the first five to ten years of implementation, benefits could accrue generations into the future. A higher discount rate for these benefits will produce a lower SCC and the White House and EPA recognize this reality. Stated regulatory guidance lists favored discount rates of three and seven percent. As Circular A-4 states, "As a default position … a real discount rate of 7 percent should be used as a base-case for regulatory analysis." Interested parties searching EPA analyses for a seven percent discount rate for SCC will look in vain for that figure.[10] EPA omits it. The agency typically uses the three percent discount rate figure, but if it were interested in even an average of the preferred discount rates, the five percent rate (average of three and seven) would offer a more defensible midpoint.

Instead, EPA and the administration have incentives to use the lowest discount rate possible and they even developed one rate, "3% 95th percentile," which represents the most catastrophic potential impacts from climate change.[11] This unlikely, but potentially disastrous outcome,

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[10] Environmental Protection Agency, "The Social Cost of Carbon," available at http://www3.epa.gov/climatechange/EPAactivities/economics/scc.html.
[11] Id.

represents one probability, but the agency has failed to provide the other end of the probability distribution: minor impacts from climate change. Although both outcomes may prove unlikely, EPA nevertheless placed an emphasis on the worst possible outcome, with a higher monetized figure that makes it easier to justify new regulation. For comparison, the United Kingdom uses a "central case" discount rate of 6 percent and a higher rate of 10 percent for "sensitivity purposes."[12]

Much of EPA's work depends on its assumptions: the effects of climate change decades from now, whether particulate matter benefits are linear, and how the market will react to regulatory intervention. These assumptions matter because if a major figure from EPA is overestimated, the actual costs of a regulation might trump the actual benefits. New research on the agency's climate change portfolio of regulation suggests EPA might routinely overestimate benefit figures.

In 2011, EPA issued its first round of GHG standards for heavy-duty engines and vehicles, at a total program cost of $8.1 billion. Earlier this year, the agency proposed a second round of efficiency standards for heavy-duty engines and trucks, with a potential program cost of $31.1 billion. The agency plans to finalize this proposed rule sometime in January 2017 during the middle of the "Lame Duck" period.

In both rounds, EPA claims the benefits of the measures will greatly exceed the costs. However, new research from Resources for the Future casts doubt on the agency's benefit claims.[13] In "Fuel Costs, Economic Activity, and the Rebound Effect for Heavy-Duty Trucks," four authors use micro data on miles traveled per truck and the number of operating trucks to calculate the "rebound" effect of increased efficiency. The rebound effect refers to how regulated entities respond to changes in efficiency; as trucks become more efficient and cheaper to operate, firms can operate them more frequently, thus increasing emissions and reducing benefits. EPA accounts for this, but not nearly enough compared to the actual data from the paper.

The authors found EPA overestimated "projected long-run fuel savings and greenhouse gas emissions reductions from the standards."[14] This is due to a larger rebound effect from heavy-duty trucks. The larger the rebound effect, the lower the benefits. The authors also found that EPA assumed miles traveled were proportional to economic activity. This might make intuitive sense, but the results indicate miles were less than proportional. As the paper notes, "This suggests that future miles traveled will be lower than the agencies assume, and hence the benefits of a particular reduction in the fuel consumption rate will be smaller."

In other words, these two erroneous assumptions likely led EPA to overstate the benefits of regulation and the errors were hardly trivial. The authors concluded the rebound rate for tractor

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[12] United Kingdom Department of Energy & Climate Change, "Updated Short-Term Traded Carbon Values Used for UK Public Policy Appraisal," available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360277/Updated_short-term_traded_carbon_values_used_for_UK_policy_appraisal__2014_.pdf.

[13] Resources for the Future, "Fuel Costs, Economic Activity, and the Rebound Effect for Heavy-Duty Trucks," available at http://www.rff.org/research/publications/fuel-costs-economic-activity-and-rebound-effect-heavy-duty-trucks.

[14] Id.

trailers was four to six times larger than the figure EPA assumed. Thankfully, this research might inform EPA's final rule for the second round of heavy-duty truck regulation. Erroneous assumptions in EPA analyses shouldn't come as a surprise. According to the Mercatus Center's "Regulatory Report Card," the agency's average grade on regulatory analyses since 2008 has averaged just 15.9 out of 30 or roughly an "F."

Application of Regulatory Flexibility Act

The RFA, designed to protect small businesses during the regulatory process, has largely failed. This is one reason why Congress has developed reform legislation aimed at improving some of the glaring defects of the law. Across all cabinet agencies, there is no firm threshold for determining whether a rule imposes a significant economic impact on a substantial number of small entities. EPA has a range to determine status under the RFA, but it is applied far less than many might believe given the agency's outsized status in the regulatory world.

Examining the ten largest EPA rules from the Obama Administration reveals that only two included a final RFA analysis: Tier 3 sulfur emissions standards and MATS. For other major EPA rules, such as CAFE standards, cooling water intake structures, and effluent limitation standards, EPA did not conduct a final analysis. Generally, EPA adheres to a range of what constitutes "significant economic impact" when regulatory costs as a percentage of revenue exceed one percent or three percent. For example, for its Tier 3 rule, 14 small entities would incur costs as a percentage of revenue between one and three percent; six entities would bear regulatory burdens exceeding three percent of revenue. In other words, for Tier 3 alone, 20 entities face a "regulatory tax" of one percent or greater.

For MATS, EPA found 40 entities would incur costs of greater than one percent of revenue and 35 would exceed three percent. EPA was also forthright, noting that three small businesses might close rather than attempt to comply with the regulation. In the agency's words, there were three "entities projected to withdraw all affected units as uneconomic."[15] The RFA has allowed the public to highlight the potential impact on small entities, but it has done little to prevent or curtail agency regulation of small business.

Although there is a general range for "significant economic impact," it does not appear EPA has a set definition for "substantial number of small entities." In its guidance, EPA notes, "No bright line exists for determining whether a given set of economic impacts constitutes a SISNOSE." For the "substantial number" figure, EPA generally uses a 100, 1,000, or 20 percent range. As noted, the lack of consistent cabinet-wide standards for RFA application is one of many reasons why Congress has sought to reform the law.

Even though EPA might not conduct a final RFA analysis, a regulation could still impose regressive impacts. Often, regulatory costs are fixed, and as small entities have a smaller pool of assets, regulatory burdens can be regressive. For example, in its GHG reporting rule, the agency noted the smallest entities would incur a cost-to-sales ratio of 1.32 percent. For the largest

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[15] Environmental Protection Agency, "RIA for Final Mercury and Air Toxics Standards," available at http://nepis.epa.gov/Adobe/PDF/P100DDP2.PDF.

competitors in the market, however, this figure fell to 0.02 percent.[16] Put simply, the small entities under the reporting rule bear a regulatory burden 65 times greater than their largest competitors.

With all issues of regulatory reform, it's a matter of whether agencies consistently and faithfully follow the law. Whether it's compliance with the RFA, the Paperwork Reduction Act, or White House guidance, reform only works if agencies comply. With the RFA, the Small Business Administration (SBA) asked EPA to withdraw its controversial "Waters of the United States" regulation and convene a small business review panel.[17] SBA argued that EPA applied an incorrect baseline and imposed significant direct costs on small entities. EPA largely ignored these pleas and finalized the rule earlier this year. Now, two federal courts have stepped in to block the rule. In general, regulations can suffer in court for lack of initial analysis and EPA is hardly immune to this reality.

Conclusion

Undoubtedly, when EPA is directed by Congress to regulate, it has a difficult task. It must balance the concerns of environmentalists, regulated industries, and Congress when implementing rules with far-reaching, often billion-dollar impacts. To accurately assess the costs and benefits of regulation affecting the nation for generations is a difficult, but critical exercise for all agencies. Sound analysis of both the prospective and retrospective impact of EPA regulation is vital to ensuring regulators impose regulations that, on net, benefit the nation and carry out the intent of Congress.

Thank you. I look forward to answering your questions.

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[16] 75 Fed. Reg. 74,481, available at http://www.federalregister.gov/a/2010-28655/p-450.
[17] Small Business Administration, "Letter to Administrator McCarthy and Major General Peabody," available at https://www.sba.gov/sites/default/files/Final_WOTUS%20Comment%20Letter.pdf.

Senator ROUNDS. Thank you, Mr. Batkins.

We will now hear from our next witness, Dr. Mary Rice.

Dr. Rice, you may begin.

STATEMENT OF MARY B. RICE, M.D., MPH, INSTRUCTOR IN MEDICINE, HARVARD MEDICAL SCHOOL, PHYSICIAN, DIVISION OF PULMONARY, CRITICAL CARE & SLEEP MEDICINE, BETH ISRAEL DEACONESS MEDICAL CENTER

Dr. RICE. Chairman Rounds, Ranking Member Markey, and members of the subcommittee, thank you for the opportunity to testify today. My name is Dr. Mary Rice, and I am a pulmonary and critical care physician at Beth Israel Deaconess Medical Center at Harvard Medical School, and I care for adults with lung disease, most of whom have severe asthma or emphysema. I also care for critically ill adults in the intensive care unit.

You have my written testimony before you and there are a few points that I would like to emphasize today.

First, it is now well established that exposure to outdoor air pollution, including ozone, particulate matter, mercury, and other air pollutants regulated by the EPA, is bad for human health. This has been known for decades. I will focus just on two of these pollutants, ozone and particulate matter, because their health effects are so extremely well described through hundreds and hundreds of research studies.

Ozone is a respiratory irritant that is particularly harmful for people with lung disease, including people with asthma and emphysema; and ozone also harms the lungs of babies and young children, and even healthy adults. Research, including my own work with colleagues at Harvard, has shown that normal adults, when exposed to ozone at levels above 60 parts per billion have lung function that is not as good as when the ozone levels are lower. And for the elderly and those with heart and lung disease, ozone increases the risk of death.

Particulate matter pollution has been recognized as a cause of premature death since the early 1950's, and today it is clear that particulate matter also aggravates respiratory disease, including asthma and emphysema, and is a major trigger for devastating cardiovascular events such as heart attack, stroke, and heart failure.

Second, the research evidence that has accumulated over the past three decades for these health effects of air pollution is comprehensive and consistent. Studies have used multiple scientific methods, including animal toxicology, human exposure, observational epidemiology, and natural experiments; and together these studies clearly show that exposure to ozone and particulate matters, at many cases at levels permissible by the EPA, is bad for children and adults.

Third, our experience here in the United States has confirmed that when air pollution levels go down, health improves. A steel mill closed for a few months in Utah Valley, and the number of bronchitis and asthma emissions for preschool-aged children in that Valley fell by 50 percent. Traffic and ozone levels declined sharply during the 1996 Atlanta Olympics and fewer kids had asthma attacks in the city of Atlanta.

Particulate matter levels declined dramatically in Southern California, and children with and without asthma experienced greater growth in lung function. And, nationwide, particulate matter levels declined in the 1990's and 2000's, and this added months to U.S. life expectancy. When air pollution goes down, health improves and people live longer.

Fourth of all, these are real people I am talking about. I focus a lot on asthma because I am a lung doctor and because it is abundantly clear that air pollution makes asthma worse. One of my patients, for example, is a 24-year-old African-American man who came to the city of Boston from the rural Midwest where he was a star athlete in college and he landed himself a brilliant job in finance in the city. And ever since coming to Boston, this young man has been struggling with asthma attacks every few weeks.

Boston is a city that is generally compliant with EPA clean air standards, and he had to quit exercise for a month during peak ozone levels this summer due to labored breathing. He had severe coughing fits at work that forced him to walk out of meetings, and just keeping up with all the nebulizer treatments, doctor visits, and x-rays have caused him to miss a lot of work since starting his new job. He also feels exhausted and short of breath and miserable during these asthma attacks. This young man has an incredibly bright future ahead of him, and asthma attacks are getting in the way of that future.

My older patients with severe asthma or emphysema can't continue to work when their disease gets worse. They go to the emergency room and are often hospitalized. Air pollution increases the risk of hospitalization for my patients and for people across the United States with lung disease. When air pollution goes down, their risk of getting sick goes down too.

Last, is it any surprise that the benefits of EPA regulation to reduce air pollution are so great that they exceed costs? We breathe the outdoor air. Therefore, the health benefits of cleaner air are enjoyed by millions.

While economists may debate the dollar value of avoided asthma medications, emergency room visits, hospital stays, or even the value of additional months of life that are brought by cleaner air, these health benefits are real, they are measurable, and they are clearly supported by the science.

Thank you. I would be very happy to answer questions.

[The prepared statement of Dr. Rice follows:]

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Comments from the American Thoracic Society
Presented by Mary B. Rice MD MPH
Before the Senate Environment and Public Works – Superfund, Waste Management and Regulatory Oversight Subcommittee
on
The Benefits of EPA's Clean Air Standards
Oct 21, 2015

Mr. Chairman, Mr. Ranking member, my name is Dr. Mary Rice. I am an adult pulmonologist and critical care physician at Beth Israel Deaconess Medical Center and Harvard Medical School in Boston, and also Vice Chair of the Environmental Health Policy Committee of the American Thoracic Society. When I am not caring for patients, I am engaged in research on the respiratory health effects of ambient pollution exposure in children and adults. On behalf of the American Thoracic Society, I want to thank you for the opportunity to share with the Subcommittee information about the tremendous public health benefits that Americans enjoy from the EPA's Clean Air standards.

I am testifying today on behalf of the American Thoracic Society, a medical professional organization with over 15,000 professionals and patients who are dedicated to the prevention, detection, treatment and cure of respiratory disease, critical care illnesses and sleep-disordered breathing. We pursue our mission through research, clinical care, education and advocacy.

Research has consistently shown that exposure to air pollution causes a wide range of serious health effects that harm children and adults across America. These health effects include respiratory effects like asthma attacks and chronic obstructive pulmonary disease (COPD) hospitalizations, worse lung function in adults, slower lung growth in children, and premature death. While my expertise is in respiratory medicine, air pollution (like tobacco) also impairs other parts of the body. Non-respiratory effects include heart attacks, stroke, lower birth weights, and cognitive impairment in children and adults.

The accumulation of decades of scientific research, including hundreds of peer-reviewed publications, provides clear and consistent evidence that air pollution is bad for human health. These studies include multiple scientific methods, including animal toxicology studies, human exposure studies, observational epidemiology studies, and natural experiment studies. The evidence **overwhelmingly** indicates that exposure to air pollutants, including ozone and particulate matter, is harmful for health.

While a variety of air pollutants have adverse health effects, my testimony will focus on ozone and particulate matter.

Ozone

It has been known for a long time that ground-level ozone, a component of smog, is a potent oxidant that irritates and damages the airways and lungs. The American Thoracic Society is pleased the EPA recently issued a more protective ozone standard of 70 ppb, but we are disappointed the EPA did not adopt a standard of 60 ppb, which would prevent even more adverse health effects and premature deaths.

For several years, the American Thoracic Society has encouraged the EPA to issue a more protective ozone standard. When the standard was reviewed in 2007 under the Bush Administration, we recommended a standard of 60 ppb based on the available evidence at that time[1]. When the Obama Administration first reconsidered this standard in 2010, we again urged 60 ppb[2]. While the recommended standard endorsed by the physician community has not changed during this time, the scientific evidence supporting this recommendation has significantly strengthened. Recent studies provide an even greater understanding of the health effects of ozone, including greater risk of respiratory hospitalization in infants and children, worse lung function in healthy adults, increased hospitalization for asthma and chronic obstructive lung disease, and increased mortality among older adults.

Ozone exposures have adverse physiologic effects across the entire age spectrum—from newborn infants to the elderly. Several lines of evidence demonstrate dose-response relationships between ozone exposure above 60 ppb and childhood asthma hospital admissions and emergency room visits[3–6]. A new study of emergency department visits by preschool children in Atlanta, found that each 30 ppb increase in the three-day average of ozone was associated with an 8% higher risk of pneumonia[7].

Adults are also harmed by ozone. Research has shown that for each incremental rise in ozone, adult emergency room visits and hospitalizations for severe asthma attacks increase[6,8,9]. Similar associations have been found for chronic obstructive pulmonary disease[10,11] and pneumonia admissions[11]. In my own work in the Framingham Heart Study, we examined lung function in more than 3,000 generally healthy adults and found that lung function was substantially lower (by 55 mL) when ambient ozone ranged from 60 to 75 ppb compared to days with levels under 60 ppb[12]. This analysis did not even include any days with levels above our current standard of 75 ppb. Controlled human exposure studies have re-affirmed lung function decrements in healthy adults after exposure to 60 ppb to 70 ppb of ozone[13,14]. Numerous animal toxicology studies have demonstrated damage to the lung tissue after ozone exposure, including evidence of lung damage at levels in the 60 to 70 ppb range[15,16].

Perhaps of greatest concern, there is now stronger evidence from large, multi-city studies that there are thousands of excess American deaths each year resulting from ozone[17–19], particularly among the elderly and those with chronic disease[20–22]. A study published by investigators at the Johns Hopkins School of Public Health estimated the annual numbers of ozone-related premature

deaths that could be avoided with full attainment of an ozone standard of 75 ppb, 70 ppb and 60 ppb[23]. If all non-attainment areas in 2005 to 2007 were instead in full compliance with the current 75 ppb standard, an estimated 1500 to 2500 premature deaths would be avoided each year. This increases to 2500 to 4100 premature deaths at 70 ppb, and 5200 to 8000 premature deaths at an attained ozone standard of 60 ppb. This study also estimated that 10 million cases of acute respiratory symptoms and 3.5 million lost school days would be avoided nationally if we attained a standard of 60 ppb of ozone.

Particulate Matter (PM)

Particulate matter or PM is another major pollutant and consists of tiny inhalable particles that are released during combustion processes. Particles less than 2.5 microns in diameter ($PM_{2.5}$) are so small that they deposit all the way in the terminal air sacs of the lung (the alveoli) where gas exchange takes place.

The deadly effects of particulate matter first became evident during the Great Smog of December 1952, when the city of London documented thousands of excess deaths and cases of illness during a major smog event. Now, more than 60 years later, hundreds of studies in the U.S. and around the world have confirmed that elevations in particulate matter, including exposure levels within current EPA standards, result in excess deaths and a number of other serious respiratory and cardiovascular health effects[24–27]. These health effects include:

- Worse lung function in healthy children and adults[12,28–30]
- Slower lung growth in children[31,32]
- Aggravated asthma[33–37]
- Hospitalization for chronic obstructive pulmonary disease (COPD)[37,38]
- Congestive heart failure symptoms and hospitalization[26,39–41]
- Stroke[42,43]
- Heart attacks and survival after heart attacks[26,27,41,44]
- Irregularities of the heartbeat[45,46]
- Higher mortality[27,47–49]

Particulate pollution can cause health problems for anyone, but certain people are especially susceptible. Children, the elderly, and people who already have cardiovascular disease, chronic lung disease or diabetes are among the groups most at risk[50]. Even healthy adults who are more heavily exposed, for example because they work outdoors or live close to a major road, power plant or other source of pollution, face higher risk.

Reducing Air Pollution Improves Health

While many Americans have suffered and continue to suffer from the health effects of air pollution, experience has repeatedly shown that **when pollution levels decrease, human health improves**. Below are a few illustrative examples of the benefits of lower pollution:

1. **Fewer Asthma and Bronchitis Events in Children**

   In 1996, Atlanta hosted the summer Olympics. Olympic organizers took steps to reduce the air pollution levels during the games. Peak daily ozone levels decreased from 81 ppb during the baseline period to 59 ppb during the Olympic Games and peak weekday morning traffic counts dropped by 22.5%[51]. This created a natural experiment allowing researchers to study medical claims and emergency visits for child asthma attacks during the Olympic Games, and compare them to baseline rates. During the Olympic Games, the number of asthma acute care events in the Georgia Medicaid claims file for children aged 1 to 16 decreased by 41.6% in the 5 central counties of Atlanta, a decrease that was statistically significant[51].

   Another natural experiment happened when a steel mill in the Salt Lake valley was closed for several months due to a strike. When the steel mill closed and PM levels declined sharply in Utah Valley, the number of bronchitis and asthma admissions for preschool-age children in Utah Valley fell by approximately 50%[52]. No parallel changes were observed in neighboring communities.

2. **Improved Children's Lung Function Growth**

   In a landmark paper published this year in our nation's most prestigious medical journal, the *New England Journal of Medicine*, declining levels of PM between 1994 and 2011 were associated with improvements in lung function development in children with and without asthma in Southern California[31]. This indicates that American children, including the most vulnerable with asthma but also normal children, have on average larger, healthier lungs thanks to successful lowering of air pollution over the past decade.

3. **Slower Lung Function Decline in Adults**

   After the age of about 35, the lung function of adults declines by about 30 mL each year. A recent study in Europe found that improvements in air pollution exposure from 1990 to 2001 slowed down this yearly loss of lung function in adults[53].

4. **Prolongation of U.S. Life Expectancy**

   Improvements in air quality, particularly reductions in PM, have allowed investigators to examine how these improvements affect life expectancy. An extended follow-up of the original Harvard Six Cities Study (a study published in 1993 that identified a link between pollution and mortality in six U.S. cities[54]), found that from 1979 to 1998, $PM_{2.5}$ decreased in all 6 U.S. cities, particularly in the most polluted cities (up to 7 $\mu g/m^3$ per decade). Each 10 $\mu g/m^3$ decrease in $PM_{2.5}$ during this 19 year interval reduced the relative risk of death by 27%[55]. Nonetheless, associations between $PM_{2.5}$ and increased

risk of death persist at these lower pollution levels, particularly for cardiovascular and lung cancer mortality[48].

Scientists recently looked at changes in life expectancy in 211 counties in 51 metropolitan areas across the U.S. and calculated that for every 10 $\mu g/m^3$ in $PM_{2.5}$ between 1980 and 2000, average lifespan was extended by approximately 5 months[56]. The counties with the greatest reductions in $PM_{2.5}$ benefitted from the greatest increases in life expectancy. Reductions in $PM_{2.5}$ accounted for 15% of the overall increase in life expectancy in these U.S. counties during the 20 year period.

A recent study examined reductions in $PM_{2.5}$ in 545 U.S. counties from 2000 to 2007. During these years, $PM_{2.5}$ has continued to decline but at a slower rate. Scientists found a 4.2 month increase in average U.S. life expectancy from 2000 to 2007 per 10 $\mu g/m^3$ decline in $PM_{2.5}$[57].

Cost/Benefit Estimates of EPA Air Regulations

Mr. Chairman, as you know, the OMB issues an annual report that estimates the cost and benefits of major federal regulations. This annual report gives policy makers and the public a sense of how federal regulations are impacting the overall economy. For the past 10 years, in both Republican and Democratic Administrations, the OMB has determined that the benefits of EPA regulations far exceed the costs. In fact, the OMB has reported that over the past 10 years, the benefits of EPA regulations exceed costs at a minimum of 2-1, and possibly by as much as 20-1 (see testimony attachment 1). The health benefits of the EPA's clean air regulations are a major part of the large benefits enjoyed by the American people as a result of EPA public health protections.

Countless scientific studies over many decades have demonstrated and quantified the harmful health consequences of air pollution exposure. With this clear and comprehensive scientific evidence, the EPA has consistently found that cleaner air standards provide far more benefits than the costs of implementation. Progress in the United States has resulted in reductions in pollution levels, and our experience has confirmed that reducing air pollution improves human health and saves lives.

I would be happy to answer any questions.

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Attachment 1
Report to Congress on the Costs and Benefits of Federal Regulations
Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules (Reports for 2005-2015)

2005:

2005 Report to Congress on the Costs and Benefits of Federal Regulations

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules, October 1, 1994 to September 30, 2004 (millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	5	2,837-5,923	1,586-1,608
Department of Education	1	632-786	349-589
Department of Energy	6	5,194-5,260	2,958
Department of Health and Human Services	17	10,226-19,714	3,817-3,992
Department of Homeland Security (Coast Guard)*	2	60	869
Department of Housing and Urban Development	1	190	150
Department of Labor	4	1,138-3,440	349
Department of Transportation	11	4,979-7,742	3,591-5,617
Environmental Protection Agency	41	44,381-233,730	21,166-23,284
Total	**88**	**69,638-276,846**	**34,836-39,416**

*Presented here are the costs and benefits of two Coast Guard rules that pre-date the establishment of DHS. These totals do not include the 7 major homeland security regulations adopted in 2004 by DHS and HHS. These regulations imposed costs of approximately $1.8 billion to $3.7 billion per year, and are presented in more detail in Table 1-5.

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2005_cb/final_2005_cb_report.pdf

2006:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules, October 1, 1995 to September 30, 2005 (millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	7	3,530-6,747	2,215-2,346
Department of Education	1	633-786	349-589
Department of Energy	6	5,194-5,260	2,958
Department of Health and Human Services	19	21,313-33,268	3,853-4,029
Department of Homeland Security (Coast Guard)	1	44	305
Department of Housing and Urban Development	1	190	150
Department of Justice	1	275	108-118
Department of Labor	4	1,138-3,440	349
Department of Transportation	13	2,913-4,948	3,212-6,622
Environmental Protection Agency	42	58,670-394,454	23,572-26,200
Total	**95**	**93,899-449,412**	**37,071-43,665**

Table 1-2 provides additional information on aggregate benefits and costs for specific agency programs. In order for a program to be included in Table 1-2, the program needed to have finalized three or more rules in the last 10 years with monetized costs and benefits.

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2006_cb/2006_cb_final_report.pdf

2007:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules, October 1, 1996 to September 30, 2006 (millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	6	3,454-3,692	2,106-2,215
Department of Education	1	633-786	349-589
Department of Energy	6	5,194-5,260	2,958
Department of Health and Human Services	17	20,746-32,946	3,781-4,071
Department of Housing and Urban Development	1	190	150
Department of Justice	1	275	108-118
Department of Labor	5	1,173-4,302	611-620
Department of Transportation	15	3,913-6,147	3,879-7,377
Environmental Protection Agency	39	62,917-430,004	25,235-28,055
Total	**91**	**98, 492-483,603**	**39,176-46,152**

Table 1-2 provides additional information on aggregate benefits and costs for specific agency programs. In order for a program to be included in Table 1-2, the program needed to have finalized three or more rules in the last ten years with monetized benefits and costs.

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/assets/omb/inforeg/2007_cb/2007_cb_final_report.pdf

2008:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules, October 1, 1997 - September 30, 2007 (Millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	6	906-1,315	1,014-1,353
Department of Education	1	633-786	349-589
Department of Energy	5	4,834-5,209	3,033-3,080
Department of Health and Human Services	18	20,565-32,850	3,834-4,331
Department of Housing and Urban Development	1	190	150
Department of Justice	1	275	108-118
Department of Labor	6	1,085-4,215	449-458
Department of Transportation	15	10,407-18,149	5,029-8,756
Environmental Protection Agency[10]	40	83,298-592,567	32,252-35,058
Total	**93**	**122,190-655,556**	**46,219-53,894**

and a more consistent regulatory environment. OMB expects that as more agencies adopt our recommended best practices, the benefits and costs we present in future reports will become more comparable across agencies and programs. OMB is working with the agencies to ensure that their impact analyses follow the new guidance.
[9] In many instances, agencies were unable to quantify all benefits and costs. We have conveyed the essence of these unquantified effects on a rule-by-rule basis in the columns titled "Other Information" in Appendix A of this and previous Reports. The monetized estimates we present necessarily exclude these unquantified effects.
[10] These totals include EPA's March 2005 final "Clean Air Interstate Rule." On July 11, 2008, the D.C. Circuit vacated this rule; however, in response to EPA's petition, the Court on December 23, 2008, remanded the rule without vacatur, which keeps it in effect while EPA conducts further proceedings consistent with the Court's July 11 opinion

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/assets/information_and_regulatory_affairs/2008_cb_final.pdf

2009:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 1998 - September 30, 2008 (millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	6	906-1,315	1,014-1,353
Department of Education	1	633-786	349-589
Department of Energy	6	4,954-5,391	3,067-3,118
Department of Health and Human Services	18	20,522-32,426	3,879-4,387
Department of Homeland Security	1	20-29	13-99
Department of Housing and Urban Development	1	190	150
Department of Justice	1	275	108-118
Department of Labor	6	481-1605	320-347
Department of Transportation	18	11,256-19,098	5,218-8,968
Environmental Protection Agency[11]	40	87,042-601,469	36,853-40,851
Total	**98**	**126,277-662,584**	**50,973-59,978**

[11] These totals include EPA's March 2005 final "Clean Air Interstate Rule." On July 11, 2008, the D.C. Circuit vacated this rule; however, in response to EPA's petition, the Court on December 23, 2008, remanded the rule without vacatur, which keeps it in effect while EPA conducts further proceedings consistent with the Court's July 11 opinion.

[12] The 2007 Report is available at http://www.whitehouse.gov/omb/inforeg/regpol/reports_congress/. We note that there are ongoing discussions regarding the scientific assumptions underlying the benefits per ton numbers that we use to monetize benefits that were not monetized. If, for instance, assumptions similar to those described at http://www.epa.gov/air/benmap/bpt.html were used, these estimates would be somewhat higher.

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/assets/legislative_reports/2009_final_BC_Report_01272010.pdf

2010:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 1999 - September 30, 2009 (millions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	6	906-1,315	1,014-1,353
Department of Energy	8	6,251-8,500	3,328-3,856
Department of Health and Human Services	20	21,895-44,435	4,651-6,232
Department of Homeland Security	1	20-29	13-99

Agency	Number of Rules	Benefits	Costs
Department of Housing and Urban Development	1	2,303	884
Department of Justice	1	275	108-118
Department of Labor	5	252-1,375	301-327
Department of Transportation	23	14,158-24,983	6,603-12,502
Environmental Protection Agency[12]	30	81,903-533,066	25,789-29,227
Total	**95**	**127,962-616,282**	**42,700-54,597**

[12] These totals include EPA's March 2005 final "Clean Air Interstate Rule." On July 11, 2008, the D.C. Circuit vacated this rule; however, in response to EPA's petition, the Court on December 23, 2008, remanded the rule without vacatur, which keeps it in effect while EPA conducts further proceedings consistent with the Court's July 11 opinion.

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/legislative/reports/2010_Benefit_Cost_Report.pdf

2011:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 2000 - September 30, 2010 (billions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	6	0.9 to 1.3	1.0 to 1.34
Department of Energy	10	8.0 to 10.9	4.5 to 5.1
Department of Health and Human Services	18	18.0 to 40.5	3.7 to 5.2
Department of Homeland Security	1	< 0.1	< 0.1
Department of Housing and Urban Development	1	2.3	0.9
Department of Justice	4	1.8 to 4.0	0.8 to 1.0
Department of Labor	6	0.4 to 1.5	0.4 to 0.5
Department of Transportation (DOT)	26	14.6 to 25.5	7.5 to 14.3
Environmental Protection Agency (EPA)[15]	32	81.8 to 550.7	23.3 to 28.5

[15] The 2006 Report is available at http://www.whitehouse.gov/omb/inforeg_regpol_reports_congress/. We note that there are ongoing discussions with respect to the scientific assumptions underlying the benefits per ton numbers that we use to monetize benefits that were not monetized. If, for instance, assumptions similar to those described at http://www.epa.gov/air/benmap/bpt.html were used, these estimates would be higher.

[16] This total includes the impacts of EPA's 2005 Clean Air Interstate Rule. On July 11, 2008, the DC Circuit Court vacated the rule; however, in response to EPA's petition, the court on December 23, 2008, remanded the rule without vacatur, which keeps this rule in effect while EPA conducts further proceedings consistent with the court's July 11 opinion. On August 2, 2010, EPA published in the Federal Register the proposed rule titled "Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone." This rule, once finalized, will replace the Clean Air Interstate Rule. This total also includes the impacts of EPA's 2006 PM NAAQS which was inadvertently dropped from last year's aggregates.

This total excludes the impacts of two rulemakings we inadvertently neglected to remove from the 10-year aggregates in previous reports. The first rule is EPA's 2005 "Clean Air Mercury Rule--Electric Utility Steam Generating Units." On February 8, 2008, the D.C. Circuit vacated a precursor EPA rule removing power plants from the Clean Air Act list of sources of hazardous air pollutants, and at the same time vacated the Clean Air Mercury Rule. The second rule is EPA's 2004 —National Emission Standards for Hazardous Air Pollutants: Industrial Commercial Institutional Boilers and Process Heaters." On June 19, 2007, the United States Court of Appeals for the District of Columbia Circuit vacated and remanded this rule to EPA.

Agency	Number of Rules	Benefits	Costs
Joint DOT and EPA	1	3.9 to 18.2	1.7 to 4.7
Total	**105**	**131.7 to 655.0**	**43.7 to 61.7**

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/inforeg/2011_cb/2011_cba_report.pdf

2012:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 2001 - September 30, 2011 (billions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	5	0.9 to 1.3	0.8 to 1.2
Department of Energy	10	6.5 to 12.0	3.3 to 4.7
Department of Health and Human Services[13]	16	15.8 to 38.5	2.2 to 4.1
Department of Homeland Security	1	< 0.1	0 to 0.1
Department of Housing and Urban Development	1	2.3	0.9
Department of Justice	4	1.8 to 4.0	0.8 to 1.0
Department of Labor	7	6.8 to 19.8	2.1 to 5.0
Department of Transportation (DOT)[14]	27	16.1 to 27.9	7.9 to 15.7
Environmental Protection Agency (EPA)[15]	30	84.8 to 565.0	22.3 to 28.5

[12] The 2006 Report is available at: http: www.whitehouse.gov omb inforeg_regpol_reports_congress . We note that there are ongoing discussions regarding the scientific assumptions underlying the benefits per ton numbers that we use to monetize benefits that were not monetized. If, for instance, assumptions similar to those described at http: www.epa.gov air benmap bpt.html were used, these estimates would be somewhat higher.
[13] The draft version of this Report included HHS's Cigarette Warning Label Statements rule. On August 24, 2012, however, a divided panel of the U.S. Court of Appeals for the District of Columbia Circuit vacated the graphic labeling requirements of this rule. On December 5, 2012, the D.C. Circuit denied FDA's petition for rehearing en banc, and FDA has not sought further review. Accordingly, we have excluded the rule from the total costs and benefits presented in Chapter 1 of this Report.
[14] This total excludes FMCSA's 2010 Electronic On-Board Recorders for Hours-of-Service Compliance rule. The rule was vacated on August 26, 2011, by the Court of Appeals. To avoid double counting, this total also excludes FMCSA's 2009 Hours of Service rule, which finalized the provisions of the 2005 final rule included in the final count of rules.
[15] This total includes the impacts of EPA's 2005 Clean Air Interstate Rule (CAIR). CAIR was initially vacated by the U.S. Court of Appeals for the District of Columbia Circuit, see *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008) (per curiam); but in a later decision on rehearing the court modified the remedy to remand without vacatur,

Agency	Number of Rules	Benefits	Costs
Joint DOT and EPA	2	6.1 to 20.7	2.0 to 5.2
Total	**103**	**141.0 to 691.5**	**42.4 to 66.3**

Oct 21, 2015

Reference link:
https://www.whitehouse.gov/sites/default/files/omb/inforeg/2012_cb/2012_cost_benefit_report.pdf

2013:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 2002 - September 30, 2012 (billions of 2001 dollars)

Agency	Number of Rules	Benefits	Costs
Department of Agriculture	5	$0.9 to $1.3	$0.8 to $1.2
Department of Energy	12	$8.2 to $15.3	$3.6 to $5.5
Department of Health and Human Services	19	$16.6 to $40.2	$2.4 to $5.2
Department of Homeland Security	2	$0 to $0.5	$0.1 to $0.3
Department of Housing and Urban Development	1	$2.3	$0.9
Department of Justice	4	$1.8 to $4.0	$0.8 to $1.0
Department of Labor	8	$7.3 to $21.4	$2.3 to $5.1
Department of Transportation (DOT)[15]	29	$16.2 to $27.6	$7.9 to $14.1
Environmental Protection Agency (EPA)[16]	32	$112.0 to $637.6	$30.4 to $36.5
Joint DOT and EPA	3	$27.3 to $49.6	$7.3 to $14.0
Total	**115**	**$192.7 to $799.7**	**$56.6 to $83.7**

[15] This total excludes FMCSA's 2010 Electronic On-Board Recorders for Hours-of-Service Compliance rule. The rule was vacated on Aug. 26, 2011, by the U.S Court of Appeals for the Seventh Circuit. To avoid double counting, this total also excludes FMCSA's 2009 Hours of Service rule, which finalized the provisions of the 2005 final rule included in the final count of rules.

[16] This total includes the impacts of EPA's 2005 Clean Air Interstate Rule (CAIR). CAIR was initially vacated by the U.S. Court of Appeals for the District of Columbia Circuit, see *North Carolina* v. *EPA*, 531 F 3d 896 (D.C. Cir. 2008) (per curiam), but in a later decision on rehearing the court modified the remedy to remand without vacatur, thus allowing EPA to continue to administer CAIR pending further rulemaking, see *North Carolina* v. *EPA*, 550 F.3d 1176 (D.C. Cir. 2008) (per curiam). On July 6, 2011, EPA finalized the Cross-State Air Pollution Rule (CSAPR), which responded to the remand in *North Carolina* and was designed to replace CAIR. On August 21, 2012, a divided panel of the D.C. Circuit vacated CSAPR while again keeping CAIR in place pending further EPA action. See *EME Homer City Generation, L.P.* v. *EPA*, 696 F.3d 7 (D.C. Cir. 2012). On April 29, 2014, however, the Supreme Court reversed and remanded the D.C. Circuit decision. Once the status of the final CSAPR has been resolved, OMB will consider changes to our method of attributing and accounting for the benefits and costs of the two rulemakings.

Reference link:

https://www.whitehouse.gov/sites/default/files/omb/inforeg/2013_cb/2013_cost_benefit_report-updated.pdf

2014:

Table 1-1: Estimates of the Total Annual Benefits and Costs of Major Federal Rules by Agency, October 1, 2003 - September 30, 2013 (billions of 2001 or 2010 dollars)[17]

Agency	Number of Rules	Benefits		Costs	
		2001$	2010$	2001$	2010$
Department of Agriculture	4	$0.9 to $1.2	$1.0 to $1.4	$0.8 to $1.2	$1.0 to $1.4
Department of Energy	14	$9.1 to $16.6	$11.0 to $20.1	$3.9 to $5.8	$4.7 to $7.0
Department of Health and Human Services	18	$16.2 to $37.4	$19.6 to $45.2	$2.4 to $5.1	$2.9 to $6.2
Department of Homeland Security	2	$0 to $0.5	$0 to $0.6	$0.1 to $0.3	$0.1 to $0.3
Department of Housing and Urban Development	1	$2.3	$2.8	$0.9	$1.1
Department of Justice	4	$1.8 to $4.0	$2.1 to $4.8	$0.8 to $1.0	$1.0 to $1.3
Department of Labor	8	$7.3 to $21.4	$8.9 to $25.8	$2.3 to $5.1	$2.7 to $6.2
Department of Transportation (DOT)[18]	28	$15.2 to $26.7	$18.5 to $32.2	$6.5 to $12.7	$7.9 to $15.3
Environmental Protection Agency (EPA)[19]	34	$136.4 to $703.1	$164.8 to $849.5	$31.6 to $38.2	$38.2 to $46.1

[18] This total excludes FMCSA's 2010 Electronic On-Board Recorders for Hours-of-Service Compliance rule. The rule was vacated on Aug. 26, 2011, by the U.S Court of Appeals for the Seventh Circuit. To avoid double counting, this total also excludes FMCSA's 2009 Hours of Service rule, which finalized the provisions of the 2005 final rule included in the final count of rules.

[19] This total includes the impacts of EPA's 2005 Clean Air Interstate Rule (CAIR). CAIR was initially vacated by the U.S. Court of Appeals for the District of Columbia Circuit, see *North Carolina* v. *EPA*, 531 F.3d 896 (D.C. Cir. 2008) (per curiam), but in a later decision on rehearing the court modified the remedy to remand without vacatur, thus allowing EPA to continue to administer CAIR pending further rulemaking, see *North Carolina* v. *EPA*, 550 F.3d 1176 (D.C. Cir. 2008) (per curiam). On July 6, 2011, EPA finalized the Cross-State Air Pollution Rule (CSAPR), which responded to the remand in *North Carolina* and was designed to replace CAIR. On August 21, 2012, a divided panel of the D.C. Circuit vacated CSAPR while again keeping CAIR in place pending further EPA action. See *EME Homer City Generation, L.P.* v. *EPA*, 696 F.3d 7 (D.C. Cir. 2012). On April 29, 2014, The U.S. Supreme Court reversed the DC Circuit opinion vacating CSAPR. On June 26, 2014, the U.S. government filed a motion with the U.S. Court of Appeals for the D.C. Circuit to lift the stay on CSAPR. On Oct 23, 2014, the U.S. Court of Appeal for the D.C. Circuit ordered that EPA's motion to lift the stay of CSAPR be granted. The U.S. Supreme Court recently sent the case back to the D.C. Circuit to entertain arguments that had not been decided earlier. EPA is currently awaiting a final decision from the D.C. Circuit. OMB will consider changes to our method of attributing and accounting for the benefits and costs of the two rulemakings in an upcoming report.

Agency	Number of Rules	Benefits		Costs	
		2001$	2010$	2001$	2010$
Joint DOT and EPA	3	$27.3 to $49.6	$33.0 to $59.9	$7.3 to $14.0	$8.9 to $16.9
Total	**116**	**$216.6 to $862.5**	**$261.7 to $1,042.1**	**$56.7 to $84.2**	**$68.5 to $101.8**

Reference link:

https://www.whitehouse.gov/sites/default/files/omb/inforeg/2014_cb/2014-cost-benefit-report.pdf

Senator ROUNDS. Thank you, Dr. Rice.
Our next witness is Ms. Rena Steinzor.
Ms. Steinzor, you may begin.

STATEMENT OF RENA STEINZOR, PROFESSOR, UNIVERSITY OF MARYLAND CAREY LAW SCHOOL AND MEMBER SCHOLAR AND PAST PRESIDENT, CENTER FOR PROGRESSIVE REFORM

Ms. STEINZOR. Thank you, Mr. Chairman, Ranking Member Markey, and members of the subcommittee. I appreciate the opportunity to testify today.

EPA's work on cost-benefit analysis is the gold standard for all other government agencies. Its elaborate and meticulous studies conclude that benefits exceed costs. In fact, in the case of the Clean Air Act rules that Dr. Rice was just talking about, which are reserved for especially irrational condemnation by regulated industries, benefits exceed costs by a margin of 30 to 1. Rather than focus on the few marginal improvements that the GAO has recommended and that EPA is already addressing, I urge the subcommittee to applaud the Agency's diligent, thorough, and creative efforts to carry out one of the most difficult elements of its mission to preserve environmental quality.

Few agencies have a more important role in improving public health than EPA. Just ask anyone whose children escaped brain damage because the agency took the lead out of gas, who turns on the faucet knowing the water will be safe, or who is unfortunate enough to live in an area afflicted by smog and is counting on EPA to lower the emissions that aggravate the asthma that afflicts so many Americans.

As for the charge that an EPA-induced regulatory tsunami will cause irrevocable damage to the economy, the truth is that these rules and the civil servants who write them do not sweep industries' hard-earned money into a pile and set it on fire for no good reason. The regulations impose costs, and it is certainly appropriate to consider estimates of these financial burdens when deciding whether to promulgate a rule.

Yet, as illustrated by Clean Air Act protections, EPA rules also deliver tremendous benefits. Ignoring these benefits has become standard practice in every one of the multiple fora organized by regulated industries to demonstrate EPA's perfidy.

This approach is both biased and unsupportable from any objective perspective. The rules are required by statute. The appropriate remedy is to amend the law if you disagree with the statute, not cripple the Agency by stealth through budget cuts and excessive and redundant analytical requirements.

Because of the business community's perception that EPA's popular mandate to clean up pollution would produce expensive rules, the Agency has experienced intensive scrutiny from its inception and was a pioneer in developing cost-benefit analysis. It performs such analyses today with sophistication, doing its best to produce reliable numbers from a methodology that is anything but precise.

In fact, the most significant flaws inherent in cost-benefit analysis as it is practiced today are the pronounced understatement of benefits and significant overstatement of costs. Costs are inflated because EPA analysts have little choice but to rely upon companies

they propose to regulate for the empirical data that underlies cost estimates, and such parties have ample incentives to inflate those numbers, as Senator Markey explained so eloquently at the beginning of the hearing.

As for the propensity of cost-benefit analyses to underState benefits, the problem arises because EPA often confronts benefits that are difficult to monetize or turn into dollar amounts. What is the value of avoiding a severe asthma attack that does not require hospitalization, for example? The person experiencing such an attack is miserable for a time and may suffer some increment of long-term adverse effects on her health, but she does ultimately recover from the attack. EPA has great difficult when it attempts to monetize this suffering.

EPA and other agencies have encouraged by OIRA to describe such implications without crunching numbers, but the reality is that any value not translated into a number most often gets lost in the shuffle. The Agency staff can write eloquently about brain damage suffered by infants, the likelihood that key elements of an aquatic system too small to be cooked for dinner will disappear as a result of water pollution, or the effects of sea level rise on iconic American cities. None of this narrative has anything close to the impact of a number crunched in a comparable fog of uncertainty.

Thank you.

[The prepared statement of Ms. Steinzor follows:]

TESTIMONY OF

Rena Steinzor
Professor, University of Maryland Carey School of Law
and
Member Scholar, Center for Progressive Reform (www.progressivereform.org)

before the

Committee on Environment and Public Works
Subcommittee on Superfund, Waste Management, and Regulatory Oversight
U.S. Senate

Hearing on
Regulatory Impact Analyses Conducted by the Environmental Protection Agency

October 21, 2015

Mr. Chairman, ranking member Markey, and members of the subcommittee, I appreciate the opportunity to testify today on how the Environmental Protection Agency (EPA) conducts Regulatory Impact Analyses (RIA), more commonly known as cost-benefit analyses.

Introduction and Overview

EPA's work in this area is the gold standard for all other government agencies. Its elaborate studies invariably conclude that benefits exceed costs. In fact, in the case of the Clean Air Act rules reserved for especially irrational condemnation by regulated industries, benefits exceed costs by a margin of 30 to one. Rather than focus on the few marginal improvements that the Government Accountability Office (GAO) has recommended and that EPA is already addressing, I urge the Subcommittee to applaud EPA's diligent, thorough, and creative efforts to carry out one of the most difficult elements of its mission to preserve environmental quality.

I am a law professor at the University of Maryland Francis King Carey School of Law and a founder and past president of the Center for Progressive Reform (CPR) (http://www.progressivereform.org/). CPR is a network of sixty scholars across the nation dedicated to protecting health, safety, and the environment through analysis and commentary. We have a small professional staff funded by foundations. I joined academia mid-career, after working for the Federal Trade Commission for seven years, the House Energy and Commerce Committee for five years, and as a lawyer for municipal governments at Spiegel & McDiarmid, a local law firm. My work on health, safety, and environmental regulation includes five books, and over thirty articles (as author or co-author). I have served as consultant to the EPA and testified before Congress many times.

Few agencies have a more important role in improving public health than EPA. Just ask anyone whose children escaped brain damage because the agency took lead out of gas, who turns on the faucet knowing the water will be safe, or who is unfortunate enough to live in an area afflicted by smog and is counting on EPA to lower the emissions that aggravate the asthma that afflicts so many Americans. EPA's regulations are among the most economically beneficial safeguards the U.S. regulatory system has ever produced.

A 2011 EPA analysis assessing Clean Air Act regulations found that in 2010 these rules saved 164,300 adult lives and prevented 13 million days of work loss and 3.2 million days of school loss due to pollution-related illnesses such as asthma. By 2020, the annual benefits of these rules will include 237,000 adult lives saved as well as the prevention of 17 million work loss days and 5.4 million school loss days.[1] Even the most conservative practitioners of cost-benefit analysis, including John Graham, President George W. Bush's regulatory czar,

[1] *See* ENVTL. PROTECTION AGENCY, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT FROM 1990 TO 2020 (Mar. 2011), *available at* http://www2.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act-1990-2020-second-prospective-study.

acknowledge what an amazing bang for the buck these regulations deliver in relationship to the costs they impose.

As for the charge that an EPA-induced regulatory "*tsunami*" will cause irrevocable damage to the economy, the truth is that these rules, and the civil servants who write them, do not sweep industry's hard-earned money into a pile and set it on fire for no good reason. The regulations impose costs and it is certainly appropriate to consider estimates of those financial burdens when deciding whether to promulgate a rule. Yet, as illustrated by Clean Air Act protections, EPA rules also deliver tremendous benefits. Ignoring those benefits has become standard practice in every one of the multiple fora organized by regulated industries to demonstrate EPA's perfidy. This approach is both biased and unsupportable from any objective perspective.

Because they do not confine themselves to an empirical approach toward predicting costs and benefits, special interests assault every rule that EPA issues. They demand that Congress cripple the agency by cutting its budget, subjecting it to relentless oversight, and passing so-called regulatory reform legislation that will make it even harder for EPA to do its job. Their arguments are premised on the false assumption that EPA administrators over four decades, acting under presidents of both parties, have indulged their personal fantasies of how to make the world a better place by persecuting job creators. Nothing could be further from the truth. Instead, all of these dedicated men and women have worked to satisfy exceptionally detailed statutory mandates that instruct EPA when and how to impose more stringent controls on chemical and power plants, automobile fuel, industrial boilers, sewage treatment plants, oil refineries, and scores of other sources of harmful pollution. Congress passed these laws and Congress has the full authority to amend them. Appropriately, the buck stops with you. Instead

of considering provisions to induce further paralysis-by-analysis, a formula that will continue to cripple the agency by stealth, I hope you will consider returning to the regular order of amending the law if you believe the American people are dissatisfied with it.

My testimony today makes four specific points about EPA's track record with respect to Regulatory Impact Analyses specifically and environmental regulation in general:

- ***The benefits achieved by EPA rules are of tremendous value to the American people and our economy.***
- ***Because of the business community's perception that EPA's popular mandate to clean up pollution would produce expensive rules, the agency has experienced intensive scrutiny from its inception and was a pioneer in developing cost-benefit analysis. It performs such analysis today with sophistication, doing its best to produce reliable numbers from a methodology that is anything but precise.***
- ***The most significant flaws inherent in cost-benefit analysis as it is practiced today are the pronounced understatement of benefits and significant overstatement of costs.***
- ***GAO is undoubtedly correct when it points out that EPA does not "use [RIAs] as the primary basis for selecting the final regulatory action."[2] This outcome is the right one because the agency's authorizing statutes do not embrace cost-benefit analysis as the determinative factor in making such decisions.***

Tangible Benefits

In addition to the benefits delivered by Clean Air Act rules I described earlier, please consider the following:

- EPA regulation of the discharge of pollution into water bodies nearly doubled the number of waters meeting statutory water quality goals from around 30 to 40 percent in 1972 (when the modern Clean Water Act was first enacted) to around 60 to 70 percent in 2007.[3]
- EPA regulations protecting wetlands reduced the annual average rate of acres of wetlands destroyed from 550,000 acres per year (during the period from the mid-

[2] GAO-14-2019, ENVIRONMENTAL REGULATION, EPA SHOULD IMPROVE ADHERENCE TO GUIDANCE FOR SELECTED ELEMENTS OF REGULATORY IMPACT ANALYSES at 10 (July 2014).
[3] G. Tracy Mehan, *The Clean Water Act: An Effective Means To Achieve a Limited End*, WATER ENVIRONMENT & TECHNOLOGY, Oct. 2007, *available at* http://www.wef.org/publications/page_wet.aspx?id=4692&page=ca&section=CWA%2035th%20Anniversary.

1950s to the mid-1970s) to 58,500 acres per year (during the period from 1986 to 1997), a nearly 90-percent reduction.[4]

- Working together, the EPA and the state of California have reduced the number of Stage 1 Smog Alert days in Southern California from 121 days in 1977 to zero days since 1997.[5]
- EPA regulations phasing out lead in gasoline helped reduce the average blood lead level in U.S. children aged 1 to 5 from 14.9 micrograms of lead per deciliter of blood (μg/dL) during the years 1976 to 1980 to 2.7 μg/dL during the years 1991 to 1994. Because of its harmful effect on children's brain development and health, the Center for Disease Control considers blood lead levels of 10 μg/dL or greater to be dangerous to children. During the years 1976 to 1980, 88 percent of all U.S. children had blood lead levels in excess of this dangerous amount; during the years 1991 to 1994, only 4.4 percent of all U.S. children had blood lead levels in excess of 10 μg/dL.[6]

Moreover, contrary to special interest claims, EPA rules have brought great benefit to the United States without any significant economic dislocation. Several convincing economic studies regarding the employment impact of environmental regulations all found either that environmental regulations have a net neutral effect on jobs or lead to a net increase in employment. (See Table 1 below.) These findings should not be surprising. After all, money spent on regulation contributes to the economy, because firms must buy equipment and labor services in order to comply with regulation. In some cases, regulations can also increase employment by making the affected industry more profitable and more productive.

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[4] William L. Andreen, *Water Quality Today—Has the Clean Water Act Been a Success?*, 55 ALA. L. REV. 537, 584-85 (2004).

[5] South Coast Air Quality Management District, State of California, About South Coast AQMD: Progress So Far, http://www.aqmd.gov/aqmd/index.html#progress (last visited June 14, 2011); Air Res. Bd., California Envtl. Protection Agency, Fact Sheet: Reducing Emissions from California Vehicles, *available at* http://www.arb.ca.gov/msprog/zevprog/factsheets/reducingsmog.pdf.

[6] U.S. Envtl. Protection Agency, Blood Lead Level, http://cfpub.epa.gov/eroe/index.cfm?fuseaction=detail.viewInd&lv=list.listbyalpha&r=224030&subtop=208 (last visited June 15, 2011); Rena Steinzor et. al., *A Return to Common Sense: Protecting Health, Safety, and the Environment Through "Pragmatic Regulatory Impact Analysis"* 17-18 (Ctr. for Progressive Reform, White Paper 909, 2009), *available at* http://www.progressivereform.org/articles/PRIA_909.pdf.

Table 1: Impact of Environmental Regulation on Employment

Source	Segment of Economy Affected by Environmental Regulation	Net Impact on Employment
Bezdek et.al. (2008)[7]	Entire economy	• Increase
Morgenstern et.al. (2000)[8]	Four polluting industries	• Increase in petroleum and plastics • No statistically significant impact in pulp and paper and steel
Berman & Bui(2001)[9]	Los Angeles area (Clean Air Act)	• No evidence of decrease • Probable slight increase
Goodstein (1999)[10]	Entire economy	• 7 of 9 available studies found increase • 1 study found decrease • 1 study found mixed results

EPA's History with Cost-Benefit Analysis

EPA was created in the context of a wave of reform catalyzed by young people's protests against the Vietnam War, the publication of Rachel Carson's landmark book *Silent Spring,* and the spectacle of such environmental disasters as the Cuyahoga River burning. The industries subject to this significant expansion of the regulatory state appear to have been caught by surprise, and they did not muster any effective opposition to the agency's birth and rapid expansion. They recovered quickly, however, and the seeds of centralized White House review controlled by economic advisers at the highest levels were planted in the early days of the Nixon administration when Maurice Stans, President Nixon's Secretary of Commerce, persuaded chief domestic policy advisor John Ehrlichman to establish a taskforce to oversee EPA's regulatory activities.

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[7] Roger H. Bezdek, Robert M. Wendling, & Paula Di Perna, *Environmental Protection, the Economy, and Jobs: National and Regional Analyses*, 86 J. ENVTL. MGMT. 63 (2008).
[8] Richard D. Morgenstern, William A. Pizer, & Jhih-Shyang Shih, *Jobs versus the Environment: An Industry-level Perspective* (Resources for the Future, Discussion Paper 99-01-REV, 2000), *available at* http://www.globalurban.org/Jobs_vs_the_Environment.pdf.
[9] Eli Berman & Linda T.M. Bui, *Environmental Regulation and Labor Demand: Evidence from the South Coast Air Basin*, 79 J. PUB. ECON. 265 (2001).
[10] EBAN GOODSTEIN, THE TRADE-OFF MYTH: FACT AND FICTION ABOUT JOBS AND THE ENVIRONMENT (1999).

William Ruckelshaus, EPA's first Administrator and a committed environmentalist, pleaded his case for particularly controversial rules to the press and to sympathetic members of Congress, including Democratic Senator Edmund Muskie, the presidential candidate who is largely credited with having provoked Nixon into creating EPA by executive order. This outside game was more than matched by regulated industries' inside game, including the demand that regulatory agencies carefully quantify the probably costs of their actions.

Eventually, industry, regulators, and the White House negotiated a *détente* and agreed that both the costs and the benefits of new rules should be estimated. Over time, the methodology for conducting such analyses became more and more complex, a trend that accelerated dramatically with the creation of the Office of Information and Regulatory Affairs (OIRA) within the Office of Management and Budget (OMB) under the 1980 Paperwork Reduction Act. OIRA's statutory mission was limited to reviewing any proposal by a government agency or department to require the completion of additional paperwork by citizens, state or local government, or private sector entities. But OIRA's far more important role in reviewing the substance of regulations was soon fleshed out in a series of executive orders.

Under Executive Order 12,291 issued by President Reagan and superseded by Executive Order 12,866, which is still in effect today, Executive Branch agencies must:

1. Refrain from taking action unless potential benefits justify potential costs.
2. Consider regulatory alternatives that involve the lowest net cost.
3. Prepare a Regulatory Impact Analysis containing their cost-benefit analysis for each "economically significant" rule, defined to include any proposal that would have an annual effect on the economy of $100 million or more.

Because EPA was forever in the crosshairs of regulated industries' advocacy at the White House, the agency was an early guinea pig for regulatory review. It was among the first agencies

to hire economists interested in the practice of cost-benefit analyses and it soon became accustomed to defending those documents during OIRA's increasingly strict review. Its staff expanded and became more and more sophisticated as it developed new approaches to demonstrating that the costs imposed by its rules were amply justified by their benefits.

In fact, an empirical study[11] I conducted with colleagues at the Center for Progressive Reform (CPR) documents that EPA is the subject of a disproportional amount of attention from OIRA. The study examined each of the 6,194 separate OIRA reviews of regulatory proposals and final rules from October 16, 2001until June 1, 2011. During this roughly ten-year period, OIRA officials met 1,080 times with 5,759 participants. True to its origin and institutional history, the study revealed that OIRA has continued to serve as a court of last resort for aggrieved business representatives. We were not surprised to discover that 65% of the attendees at these meetings represented industry, about five times the number of people who appeared on behalf of public interest groups. We were surprised to learn that EPA regulatory matters accounted for 442 of the 1,080 meetings even though the agency accounted for only 11% of the matters reviewed by OIRA. According to its own internal figures, OIRA changed 84% of the rules forwarded by EPA, in comparison to a 65% change rate for other agencies.

In sum, since it was founded in 1970, EPA has endured 45 years of supervision by White Houses committed to the rigorous review of the economic burdens required by the regulations it is required by statute to write. This scrutiny has produced a level of sophistication in its understanding of the nuances of the uncertain art of cost-benefit analysis that is a pace-setter for the remainder of the federal government.

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[11] Rena Steinzor, James Goodwin, and Michael Patoka, Ctr. for Progressive Reform, BEHIND CLOSED DOORS AT THE WHITE HOUSE: HOW POLITICS TRUMPS PROTECTION OF PUBLIC WORKER SAFETY, AND THE ENVIRONMENT (Nov. 2011).

Flaws in Cost-benefit Analysis

Cost-benefit analysis as practiced today has two significant flaws that affect both sides of their deceptively precise mathematical equations: inflation of costs and deflation of benefits.

Costs are inflated because EPA analysts have little choice but to rely upon companies they propose to regulate for the empirical data that underlies costs estimates, and such parties have ample incentives to inflate those numbers. Compounding these mistakes is the reality that when the agency estimates costs, it has difficulty anticipating how market dynamics will serve to lower such expenses over time. For example, simply by creating compelling an industry to use a specific kind of pollution control equipment, EPA establishes both a market and an opportunity for competition within that market that drives competition down.

An article published in the *Texas Law Review*[12] by law professor Thomas McGarity and economist Ruth Ruttenberg examined available evidence on the reliability of such cost estimates:

> The first broad conclusion is that ex ante cost estimates have usually been high, sometimes by orders of magnitude, when compared to actual costs incurred. This conclusion is not at all surprising in light of the strategic environment in which the predictions are generated. In preparing regulatory impact assessments for proposed rules, agencies are heavily dependent upon the regulated entities for information about compliance costs. Knowing that the agencies are less likely to impose regulatory options with high price tags (or to support them during the review process), the regulatees have every incentive to err on the high side. Beneficiary groups can complain about the magnitude of cost projections, but they rarely have the wherewithal to second-guess regulatee-generated estimates. The only entities with both the economic incentive to exert a leavening influence and the information and expertise necessary to back it up are the occasional independent vendors of the safety and environmental cleanup technologies. These entities are themselves frequently only subsidiaries of the larger regulated entities or in any event cannot risk alienating their potential customers by demonstrating the excessiveness of the cost projections in a public forum, hence the unremarkable conclusion that the regulatory process routinely yields ex ante cost projections that are likely to be biased upward.

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[12] Thomas O. McGarity & Ruth Ruttenberg, *Counting the Cost of Health, Safety, and Environmental Regulation*, 80 TEX. L. REV. 1997 (2001-2002)

> [After a regulation has gone into effect] it is usually extremely difficult and frequently impossible to arrive at accurate retrospective assessments of the resources that regulated entities have devoted to compliance with particular regulatory interventions. This is due primarily to practical limitations on empirical analysis of relatively subtle behaviors of companies operating in complex and rapidly evolving competitive environments. It is also attributable, however, to the fact that no important economic actor has an incentive to find out how much regulations actually did cost once the strategic battle over the proposed regulation has ended and the companies and the agency have moved on to other things.[13]

As for the propensity of cost-benefit analyses to understate benefits, the problem arises because EPA often confronts benefits that are difficult to "monetize," or turn into dollar amounts. What is the value of avoiding a severe asthma attack that does not require hospitalization, for example? The person experiencing such an attack is miserable for a time and may suffer some increment of long-term adverse effects on her health. But she does ultimately recover from the attack. EPA has great difficulty when it attempts to monetize this suffering. As GAO points out in a recent report,[14] this difficulty affects many RIAs. For example, time and resource constraints make it quite difficult to estimate the aggregate adverse water quality impact of growing biofuels, and simply left this important element of the decision out of its effort to number crunch the benefits of the rule. In a rule to control hazardous air pollutants, EPA lacked firm emissions data from the sources to be regulated and was unable to quantify the adverse health effects that exposure to these clearly dangerous substances would cause. For more on the GAO's recent report review EPA's cost-benefit analysis and how it highlights the inherently difficult nature of conducting such analyses for environmental and public health regulations, see the first article attached to this testimony.

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[13] *Id.* at 1998.

[14] GAO-14-2019, ENVIRONMENTAL REGULATION, EPA SHOULD IMPROVE ADHERENCE TO GUIDANCE FOR SELECTED ELEMENTS OF REGULATORY IMPACT ANALYSES at 20 (July 2014).

EPA and other agencies are encouraged by OIRA to describe such implications without crunching numbers. But the reality is that any value not translated into a number most often gets lost in the shuffle. The agency staff can write eloquently about brain damage suffered by infants; the likelihood that key elements of an aquatic ecosystem too small to be cooked for dinner will disappear as a result of water pollution, potentially jeopardizing the viability of this critical natural resource; or the effects of sea level rise on iconic American cities as a result of climate change. None of this narrative has anything close to the impact of a number crunched in a comparable fog of uncertainty. The unfortunate truth is that what gets counted might have some chance of getting addressed, assuming that political forces that work relentlessly to kill environmental regulations do not overcome such analysis. For more on the problems that arise when EPA and other agencies are unable to assign monetary value to the benefits their regulations create, see the second article attached to this testimony.

Subjecting EPA RIAs to rigorous scrutiny is a process that has a 45-year history, compelling the agency to adapt and become expert in drafting the most elaborate cost-benefit methodologies in the government. But in the end, attacks on EPA regulation do not depend on imperfect calculations, but instead are effective for reasons related to political clout and campaign contributions and not reasoned debate.

How EPA Makes Regulatory Decisions

The environmental statutes are extraordinarily detailed and complex because Congress worked hard during the period between 1970 and 1990 to ensure they mediated the interests of a diverse group of stakeholders, including regulated industries, without defeating their ultimate goals: protecting public health and preserving natural resources. The laws were drafted with costs in mind, but none require the kind of number-crunching that the White House under seven

presidents has advocated. Instead, the laws adopt two fundamentally different approaches. Statutes like the Clean Air Act's provisions on establishing National Ambient Air Quality Standards for such common pollutants as ozone (or smog) require EPA to set limits on the levels of such substances in the ambient air, considering public health as its sole focus. Alternatively, the statutes typified by the Clean Water Act require the agency to choose the best available cleanup technology and require that it be installed on polluting sources.

RIAs may be helpful in crafting rules that allow for the consideration of costs. They are extra-legal when considered in the crafting of standards when Congress has prohibited the consideration of costs. Requiring these crude tools to become more and more elaborate in the fruitless search for a single magic number will not produce more rational decision-making. Instead, it will serve to further delay a rulemaking process already crippled by the multiple analyses EPA is forced to prepare.

I fully understand why Congress has proven so hesitant to amend the environmental laws. Writing such legislation in any way that achieved support from a critical mass of stakeholders in the current atmosphere of political polarization would be quite challenging. Members would have great difficulty if they try to strengthen aspects of the laws or to expand their coverage to encompass climate change. Members who oppose the laws would experience a severe political backlash once their intentions were publicized by the 24/7 news cycle. The stalemate produces frustration on both sides.

But being frustrated is not a good excuse for browbeating the civil service because quantifying costs and benefits in any honest way is supremely difficult. If Congress is unwilling or unable to amend the law, it should realize that EPA is doing the best it can with shrinking resources and an expanding workload.

Thank you. I'd be pleased to answer any questions you may have.

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August 27, 2014

No, the GAO Didn't Say EPA's Cost-Benefit Analyses are Bad —But Here's What We Should Take Away from Their Report

by **James Goodwin**

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If you're an antiregulatory, anti-environment member of Congress, such as Sen. David Vitter (R-LA) or Darrell Issa (R-CA), how do you get the Government Accountability Office (GAO) to issue a report that criticizes the cost-benefit analyses that the Environmental Protection Agency (EPA) has performed on some of its recent rules? That's easy—you simply ask for one. Then, when the GAO issues the report, like it did a few weeks back, you can begin issuing press releases filled with invective and righteous indignation. The report's findings, you can assert, are smoking-gun evidence that the EPA is running amok, issuing burdensome rules that are harming small businesses and families. And just like that, you've conjured the latest antiregulatory, anti-EPA scandal du jour out of thin air.

Vitter and Issa have followed this playbook to a T and will no doubt continue trying to spin political gold out of this meaningless hay as part of the Republican's broader strategy of using antiregulatory rhetoric to undermine the work of the Obama Administration while simultaneously boosting their electoral prospects in the fast approaching mid-term elections. "Rather than using a fair and open rulemaking process, EPA pushed through regulations using sloppy analysis without sufficiently informing Congress or the

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public of the economic impact," Issa predictably huffed following the report's release.

Even for a manufactured controversy, though, this one is a complete Nothing-Burger. With a side of Yawn-Fries. Washed down with a "Who Cares"-Milkshake. Vitter and Issa ordered the GAO to review the EPA's recent cost-benefit analyses and identify faults. Because the GAO must do what members of Congress tell them to do, the GAO attempted to comply as best as they could. What they came back with were some of the most picayune nitpicks that were ever nitpicked. For example, the GAO found that the Executive Summary for many of the EPA's cost-benefit analyses could be improved if the agency included such things as clearer statements of the problem the regulation will solve or a summary of the analyses' results. (In nearly all cases, this information was available in the body of the cost-benefit analysis or in the rule's preamble.) Note that this criticism relates to the analysis's style, rather than its substance, and in no way calls into question the results of the analysis or, indeed, the quality of the underlying rule.

When the GAO report did pass judgment on the substance of the EPA's cost-benefit analyses, the criticisms were meek at best. For example, the GAO noted that the EPA did not always perform full quantitative analyses of the alternative policy options that the agency considered. Circular A-4, a White House Office of Management Budget (OMB) guidance document that outlines best practices for conducting cost-benefit analyses, does recommend that agencies perform such analyses on their larger rules but, as the GAO report noted, also leaves it up to agencies to exercise their judgment whether to do so in light of practical considerations, such as limited resources and data.

Similarly, the GAO also observed that the EPA did not always monetize key benefits for their rules. In addition, the GAO was concerned that the EPA was relying on old studies to assess the employment impacts of its rules. Again, as the GAO report recognized, Circular A-4 anticipates that agencies cannot monetize all benefits due to lack of data and resources. As for the employment impact analyses, Circular A-4

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provides no guidance for how this task is to be performed at all. Tellingly, the GAO could provide no specific advice for how the EPA could improve its employment impact analyses, since it recognized that the studies the agency was using were the best that are currently available and that the EPA is currently working to develop new tools to inform these analyses.

When understood in context, the GAO criticisms of the EPA are revealed to be quite modest—if indeed they can be framed as criticisms at all. In conducting its review, the GAO recognized that the EPA faces real barriers in how the agency performed its cost-benefit analyses and that these barriers are far beyond the agency's control. The GAO also acknowledged that cost-benefit analysis is far from an exact science and that Circular A-4 directs agencies to exercise their judgment in the amount of detail or thoroughness they achieve in their analyses given the practical resource and data constraints they face. If anything, the GAO's recommendations to the EPA can best be read as parroting Circular A-4's advice to agencies that they should seek to achieve a proper balance between these competing demands of thoroughness and practical constraints when conducting their analyses. As the GAO found no evidence that the EPA isn't already working to achieve this proper balance, it's hard to find much in the way of a strong critique of the agency's performance in conducting cost-benefit analyses.

Just because the GAO report didn't find what Vitter and Issa said it did doesn't mean that it offers no useful information, however. Based on my reading, the report imparts two important lessons.

First, it clearly illustrates the dangers that would result from efforts by conservatives to enact legislation, such as the Regulatory Accountability Act or the House Unfunded Mandates Information and Transparency Act, that would make cost-benefit analysis a judicially reviewable legal requirement for agency rules. After all, even when agencies do a pretty good job on these analyses, it's still possible to find problems with them. That's because, as noted above, cost-

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benefit analysis is hardly an exact science—despite what its proponents claim. One of the biggest impediments to performing a cost-benefit analysis is that the necessary data are not always available to make meaningful conclusions about a rule's potential impacts. Sometimes, it's because the data cannot possibly exist, such as a coherent monetary "value" of saving a human life. In some cases, the data are prohibitively expensive to obtain, likely wouldn't impact the analyses' overall results, or both. In other words, performing cost-benefit analysis—and especially what is included and what is left out—requires the exercise of judgment on the part of agencies, as both Circular A-4 and the GAO report acknowledge. If cost-benefit analysis was a judicially reviewable legal requirement, as conservatives are pushing for, then businesses that don't like the EPA's regulations could challenge them by attacking how the agency exercised its judgment in performing the underlying cost-benefit analysis.

At best, legal challenges to the EPA's rules would descend into irrelevant and unhelpful squabbles over the minutiae of the cost-benefit analysis, while more important issues—such as whether or not the rule is adequately protecting people and the environment—would get ignored. At worst, these legal challenges would provide activist conservative judges with virtual carte blanche to strike down rules they disagree with.

Second, the GAO report's conclusions unwittingly highlight the essential indeterminacy of cost-benefit analysis—and its essential uselessness as an analytical tool. Take, for example, this statement: "Without enhancements to its review process targeted at improving adherence to [Circular A-4], EPA cannot ensure that its [cost-benefit analyses] provide the public with a clear understanding of its decision making." (See page 28.) This statement suggests that improvements to the EPA's internal management processes governing the conduct of cost-benefit analysis are a necessary (though perhaps not a sufficient) condition for helping the public to understand why its rule turned out the way it did. This statement is demonstrably false, since such enhancements are not necessary for achieving this result, and indeed may run counter to its

achievement. In practice, cost-benefit analysis does not clarify agency decision-making; rather, it obscures it behind technical economic formulas and theories that are well beyond the ken of most citizens. To make matters worse, this economic analysis is almost invariably irrelevant to or even prohibited by the various statutes under which the EPA's rules are promulgated. As such, more or this analysis or "improvements" to it will do nothing to help regular people understand why the EPA has designed its regulations in a particular way.

Or take this statement: "However, when EPA does not monetize key benefits and costs, the [cost-benefit analysis] may be limited in their usefulness for helping decision makers and the public understand economic trade-offs among different regulatory alternatives." (See pages 28-29.) Again, this statement asserts that more monetization of costs and benefits is a necessary condition for helping people understand whether a rule does more good than harm. And again, this statement is demonstrably false, since monetization is actually detrimental to promoting this kind of understanding. Telling an average person that preventing a death is worth only $10.8 million or that preserving a child's IQ point is only worth $1,100 doesn't help them evaluate a particular regulation. Rather, it serves only to confuse. Understandably, they'll want to know how you came up with those numbers, and the explanation that you provide (wage premiums, willingness-to-pay surveys) is more likely to horrify than elucidate. More to the point, the average person will want to know whether a particular regulation represents our best efforts to protect lives and IQ points. Monetization cannot answer that question now, just as more monetization cannot do that in the future.

I wouldn't expect the GAO to weigh in on such a politically charged question as "should the EPA being doing cost-benefit analysis at all?" Based on the evidence outlined in its recent report, though, the GAO could build a strong case that the answer should be a resounding "no."

Let's hope other policymakers are paying attention to these more important lessons of the recent GAO report, and not falling victim to

Vitter's and Issa's misrepresentations about the report's findings.

***James Goodwin**, Senior Policy Analyst, Center for Progressive Reform. Bio.*

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March 25, 2015

Carry the Zero: The Polluters' Flawed Arithmetic in the EPA's Hazardous Air Pollution Rule

by **James Goodwin**

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In the run-up to this morning's oral arguments before the Supreme Court on the Environmental Protection Agency's rule to limit hazardous air pollutants from fossil-fueled power plants—and indeed throughout the oral arguments themselves—opponents repeatedly pointed out that the benefits of the rule in reducing mercury pollution were "only" between $4 million and $6 million. Putting aside the ethically problematic question of trying to put a dollars-and-cents value on achieving improved public health and environmental protection, it is worth pondering this number and what it reveals about the significant methodological flaws that are endemic to cost-benefit analysis. (For the record, this number is supposed to represent the "value" of lost earning potential of children that the rule would protect against IQ point degradations. Do you see what I mean about ethically problematic?)

Opponents of the rule claim that this $4-million figure is the only valid benefit estimation of the rule that the EPA should able to count in evaluating its mercury rule. In making this argument, their real beef is that the EPA has also counted the co-benefits of the rule—that is, benefits that the rule achieves as an incidental byproduct of what is really trying to achieve. In this case, EPA's rule is meant to address mercury and other "hazardous" air pollutants, but along the way would significantly reduce particulate matter and ozone, which are classified as- "non-hazardous" air

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pollutants, but are still known by scientists to cause a host of environmental and public health problems.

Even if we exclude the value of the rule's co-benefits, that doesn't mean the rule's benefits are only worth $4 million, as the corporate polluters would have you believe. Instead, this value captures (poorly) just one aspect of one part of the benefits of reducing one of the many hazardous air pollutants covered by the rule. Yes, the rule would protect children against reduced IQ degradation, but does anyone believe that "lost earning potential" is the only negative consequence to flow from IQ degradation? Other negative consequences might include the lost quality of life the child experiences or the extra money that his family might have to spend to get him through remedial classes. And those, of course, are just the tip of the iceberg.

On top of that, impaired brain function isn't the only public health threat that comes from mercury pollution. This pollution has also been linked to heart disease and damaged kidneys in human adults. Plus, this doesn't include the damage that mercury pollution causes to plants, animals, and the healthy functioning of affected ecosystems.

And there's more still to consider. Mercury is just one of the many hazardous air pollutants covered by the EPA's rule. It also reduces power plant emissions of acid gasses and dioxin. Each of these air pollutants causes an array of negative human health and environmental effects as well.

In short, that $4-million figure covers just a fraction of a fraction of a fraction of all of the direct benefits provided by the EPA's rule.

So, why aren't all of these other benefits counted? By and large, it's because we lack adequate data to translate these benefits into dollar amounts. And, when this happens, the default rule of cost-benefit analysis is to arbitrarily treat these benefits as if they are worth $0. Of course, this default rule makes no sense. After all, even though we don't know what these benefits are "worth," the one thing we are sure of is that they're not worth $0. This irony notwithstanding, this is just how the "game" of cost-benefit analysis is played.

With things like $0-default-rule going in the background, it's easy to see why polluters like cost-

benefit analysis so much, and push for Congress to institute new requirements on agencies to include even more cost-benefit analysis. When there's any uncertainty about a benefit whatsoever, it's simply removed from the calculation as if it didn't exist at all. Note that nothing analogous to this ever happens on the cost side of the ledger. Of course, this default rule gives polluters plenty of incentive to manufacture uncertainty about regulatory benefits, too. With enough effort and creativity, they are able to kick just about all of the benefits out of the calculation—hoping to emulate what has happened with the EPA's hazardous air pollution rule. What's left is a highly skewed analysis that all but guarantees that the rule will look like a terrible policy.

The more one looks at cost-benefit analysis, the clearer it becomes that it in no way resembles common sense, as its defenders contend. Let's hope the Supreme Court uses this morning's oral arguments as an important learning moment about this and the many other methodological and ethical defects of cost-benefit analysis that the case reveals.

***James Goodwin**, Senior Policy Analyst, Center for Progressive Reform. Bio.*

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Senator ROUNDS. Thank you for your testimony, Ms. Steinzor.

Senators will now each have 5 minutes for questions, and I will begin.

For Mr. Kovacs, in the Chevron deference by the courts, it has allowed the agencies to promulgate increasingly broad and wide-ranging regulations so long as they are not arbitrary and capricious. What, if any, impact do you believe King v. Burwell could have on the amount of deference the courts show agencies in the future when their regulations are challenged?

Mr. KOVACS. Well, the King v. Burwell was really the first time in decades that the court has set a different type of standard other than deference for agency review, and it took the position that on those broad-ranging cases where there is deep political and social change, that the court was actually going to almost do a de novo review; and that is really welcomed because for the last 30 or 40 years the difficulty has been that when Congress delegates authority to the agencies to fill in the gaps and then the agencies fill in more and more gaps, and then the courts, through deference, give away their power to interpret laws, you end up in a position where the agencies really are not accountable.

So the Burwell case, for the first time, brings the court back in and says at least for those mega type regulations we are going to take a much more detailed view and we are not going to grant the deference. So we welcome that.

Senator ROUNDS. What, if any, impact will the recent ruling in Michigan v. EPA have in the way that the EPA goes about conducting economic analysis for future regulations?

Mr. KOVACS. I think the Michigan case, for the first time, gets rid of the assumption that no matter what happens, no matter what EPA does, it doesn't have to look at costs. And for certain types of regulations, and granted, these are the toxics, it indicated that appropriate and necessary had to include under any reasonable set of circumstances costs. It really goes to what we would call truth in regulating.

What we are hoping that the agencies will do is just be honest. And the reason why we need that is because if they are overregulating in one area, it means they are not spending money in another area that might need it. And if you have truth in regulating, the agency, for the first time, would have said in the Michigan case 4 percent, 5 percent of all the benefits went to mercury and the other 96 percent initially went to SO2 and then the converted that to PM2.5. And what we are saying is go back to really the Clinton administration, where they said we are looking at this particular particulate and it costs this much per ton to take it out of society, so that you have some idea of what it is that we are getting for the money we are spending.

Senator ROUNDS. Thank you.

Ms. Furchtgott-Roth, in your testimony you say that in the Clean Power Plan specifically EPA is understating the costs of the regulation to the U.S. economy. Can you elaborate on what the costs the EPA is underestimating and explain how you believe the regulation would be different if the EPA had accurately stated all aspects of the costs of the regulation to the economy?

Ms. FURCHTGOTT-ROTH. The major cost that is omitted is the cost to small businesses and businesses from the increased cost of electricity, the rise in the cost of the electricity. So here is this Regulatory Impact Analysis and on page 7–7 it says the EPA certifies that this action will not have a significant economic impact on a substantial number of small entities. And this action does not contain an unfunded mandate of $100 million or more.

Well, here is a situation where States or groups of States, depending if they use rate-based or mass-based, are going to have to cut back on their emissions-producing industries, power plants, energy-intensive factories. This is definitely going to have an economic effect, not just because these entities cut back their activities, but also because there are other firms, such as restaurants, dry cleaners, you can imagine, movie theaters, that depend on the activities of these large entities that are going to be cut back.

In my testimony I show a chart based on EPA data that shows how much emissions are going to have to be cut back in different States. And, in fact, Mr. Chairman, your State actually is a winner. Your State is actually going to be able to increase its amount of carbon, but it is one of the few States that vote Republican that does. Most of the cutbacks are in Republican States, and most of the States where increases are allowed are Democratic States.

Senator ROUNDS. Yes. And the unfortunate part for my consumers living in South Dakota is that they purchase their power from the States around them, which are going to have to have increases in costs passed on to them.

Ms. FURCHTGOTT-ROTH. Right. Exactly.

Senator ROUNDS. Thank you for your testimony.

My time has expired. Senator Markey.

Senator MARKEY. Thank you, Mr. Chairman, very much.

Professor Steinzor, it is my understanding that the Office of Management and Budget guidance for Regulatory Impact Analysis directs, directs Federal agencies to count the additional co-benefits of regulations and accounting co-benefits has been the longstanding practice of Republican and Democratic administrations alike. Is that true?

Ms. STEINZOR. Yes.

Senator MARKEY. So in order for the EPA to do their Regulatory Impact Analysis correctly, they need to count the additional co-benefits of the Clean Power Plan, the mercury rule, the ozone rule, is that correct?

Ms. STEINZOR. Yes.

Senator MARKEY. OK. So that means that if reducing ozone and particulate matter have real benefits to public health, even if those reductions come from regulations targeting other pollutants like mercury.

Ms. STEINZOR. Yes. And it is also worth noting that they also subtract costs that are imposed by other rules. They don't do it in a one-sided way.

Senator MARKEY. So, in other words, if there is a rule that says that a company has to reduce the amount of mercury it is sending up into the atmosphere, and simultaneously that rule also has the simultaneous benefit of reducing the amount of smog that is going up into the air or soot that is going up into the air that could wind

up in the lungs of children and cause harm, the EPA could count that, and both Democrat and Republican administrations have counted that as a co-benefit. Even though you are trying to reduce the mercury, you are reducing this material that can go into the lungs of children, attach themselves to the lungs of children. We call it soot, we call it smog, or you can call it sulfur dioxide. You can get technical, but what ordinary people call it, it is a benefit, right?

Ms. STEINZOR. Yes.

Senator MARKEY. And there isn't really a debate at any OMB that it should be counted, is that correct?

Ms. STEINZOR. No.

Senator MARKEY. Oh. Well, that is important for us to know, because there are a lot of people who don't want to count those co-benefits, but that is really not the practice. And it is obvious why it is not the practice, because the benefits are so obvious if children are protected from these harms. If asthmas aren't as frequent from these harms, you have to add that up because that is going to be factored into how much it cost that company to keep the mercury from going into the sky. And if you add up the total benefit in that area, it is obviously going to be quite significant.

So let's just talk to you, Dr. Rice. How does increased exposure to ozone impact the health of children and other vulnerable populations?

Dr. RICE. Thank you, Senator Markey. That is an issue of great concern to me and other doctors in the field of respiratory medicine because the evidence, as I mentioned, is very clear that exposure to particles and to ozone increases the risk of a number of bad respiratory health effects in children and also in adults.

Just to give you a few examples, it is now clear that exposure to ozone increases the risk of respiratory emissions for very small babies in the first month of life.

Senator MARKEY. And, again, ozone is?

Dr. RICE. Smog.

Senator MARKEY. Smog. Right. Go ahead. Keep going.

Dr. RICE. At levels that we experience today.

Senator MARKEY. So if we put babies into smog, it is going to cause real problems. Is that what you are saying?

Dr. RICE. That is what the evidence shows and that is what our experience has demonstrated when we look at the data of the exposure to ozone and the rates of hospital emissions in children.

It also affects young kids, not just babies, but school-aged children. It increases the risk of having an asthma attack, landing in the emergency room for asthma attacks. There is evidence that children born to African-American mothers are at even higher risk of having an asthma attack when ozone levels go up.

Senator MARKEY. Thank you.

Professor Steinzor, EPA ranked fifth out of the 22 U.S. regulatory agencies in report card comparison on cost-benefit analysis performed by the conservative Mercatus Center at George Mason University. Professor Steinzor, do you agree that the EPA produces some of the most sophisticated cost-benefit analysis in the entire Government?

Ms. STEINZOR. Yes, I do, and I think the reason for that is that because the agency has been subject of special focus at the White House since President Nixon was elected, it has endured trial by fire and it has been perfected, it has been rigorously criticized and has responded, and does an excellent job.

Senator MARKEY. God bless Richard Nixon and the fantastic job he did on these environmental issues.

Ms. STEINZOR. Well, he created EPA.

Senator MARKEY. God bless him. And we thank God he did that. So I just want to get that out on the record as well.

[Laughter.]

Senator MARKEY. And I want to thank all of the witnesses for being here. I would also note that since 1990 Massachusetts has reduced its greenhouse gases by 40 percent and increased its GDP by 70 percent, just so that you can see the huge disconnect between the reduction in the harmful stuff and the increase in the beneficial job creation simultaneously.

Thank you, Mr. Chairman.

Senator ROUNDS. Senator Inhofe.

Senator INHOFE. Thank you, Mr. Chairman.

Senator Markey and I were both in the House at the time of the Clean Air Act amendments in 1990. You could use the same analogy here to say that if we are doing such a good job, why do we have to go into such a huge cost for the American people to come up with more regulations.

I had requested, when I had to go down to Armed Services and come back up here, this document. It is from the EPA and this kind of fortifies what you are saying. It says that between 1980 and 2014, gross domestic product increased 147 percent, vehicle miles traveled increased 97 percent, energy consumption increased 26 percent, and U.S. population grew by 41 percent. During the same period, total emissions of the six principal air pollutants dropped 63 percent. That is there. And I think we have been doing a very good job. I was a cosponsor, as I suggest you were too, at that time.

So some good things are happening and it seems like the people on the left will always talk about how dirty everything is and really don't talk about the successes that we have had, and I appreciate Senator Markey talking about those successes.

Mr. Kovacs, in the last subcommittee hearing Senator Rounds held, we received testimony on the EPA's rampant use of sue and settle tactics to achieve its aggressive regulatory agenda. That is the subject of this hearing today. Even GAO confirmed sue and settle agreements can lead to gaps in EPA's cost-benefit calculations. So I would ask you to make a comment on what impact the sue and settle deadlines have on the EPA's cost-benefit calculations.

Mr. KOVACS. Well, one of the difficulties with sue and settle is that if EPA is putting out 400 rules in the course of a year and they are sued on, let's say, 15 of those and they enter into a sue and settle agreement. What happens once the court enters the consent decree is EPA is really under a court order to push those 15 regulations to the front of the line. Many times when they are put in the front of the line they are on extremely tight deadlines, Boiler MACT, for example, even Utility MACT. What happens is they are

taking a very complex issue and jamming it into a short period of time.

What usually happens is they avoid forming the small business advisory panels; they avoid doing an analysis of what it is going to do to the States and unfunded mandates; they avoid doing Information Quality Act. What they do is they push it out and then the litigation continues. I think that is one of the reasons why there is so much litigation with EPA, is because they are constantly jammed and constantly missing deadlines.

Senator INHOFE. OK, I appreciate that. I have two other questions. I am going to try to get them out kind of quickly. The next one is for you. Today's hearing is important to understanding how EPA decides the who and the what, the where, the when, the why prior to issuing a regulation, because once it is final it may be too late. The best example of that is this summer the EPA Administrator McCarthy shrugged off concerns over a court potentially vacating the mercury rule because "the investments have been made." Another way of saying that is the damage has already been done. So in the case of the mercury rule we know what has happened with that.

I would ask you, how robust was the RIA in making the case for the final regulation, which we now know has been overturned by the Supreme Court?

Mr. KOVACS. Well, I think just look at the testimony, really, or the letter from small business council of advocacy. They made it very clear that EPA did not really talk to small business; they did not really try to understand what the impact was going to be on States. What happens when you have a regulation, a regulation, in my mind, is harder to get rid of than a law, because you can sue under it even if you change it.

What happens is once the process goes into effect, it is there until it is overturned. They have tried, on Utility MACT, for example, several times to get a stay of it and they could not get a stay. So what happens is the regulation is in effect, the industry and the regulator community is going to be implementing that.

Senator INHOFE. And in the case of Utility MACT the damage was done.

Mr. KOVACS. It was done. And when the Supreme Court decided to send it back, at that point in time there was nothing that could be done, the damage was done. And I just put in a push for the Coats bill, which says that on those few large mega regulations, those over $1 billion that have national impact, and there are only a few a year, that there should be some mechanism to allow the regulated community to get a stay.

Senator INHOFE. Well, and I know a lot of the people who were already hurt not just because it had gone into effect, but because they were anticipating it was going to be going into effect, so they had done their fuel switching and everything else, anticipating that.

The other thing I wanted to bring up, and you can just answer it real quickly, this is for Mr. Batkins. I was the bad guy, as Senator Markey knows, back in 2002, and 2003, and 2004, and 2005 when they first started coming to the world coming to an end, global warming and all that. I actually, at that time, was the majority

and chair of the subcommittee that Senator Rounds chairs now, and at that time I thought that was probably true until I found out the cost of this thing.

At that time it was from Senator Markey's own MIT came out with the cost. The cost range at that time was between $300 billion and $400 billion, and that was for the legislation that had been introduced. At that time it was introduced by McCain and Lieberman, I guess it was. And then Charles Rivers came along, they came along with the same approximate cost.

So we know it is a very costly thing. So I think it was necessary for those on the other side to come up with something to offset that argument, so they came up with the social cost of carbon.

Now, I would like to ask you, Mr. Batkins, the figure to claim alleged benefits of its climate regulations, what are some of the shortcomings with the current SCC figure?

Mr. BATKINS. Well, there is a lot of tension between the social cost of carbon on Circular A–4 and the Clean Air Act. What you will see broadly is, again, climate change, global climate change, so these are going to be generally global benefits accruing. So we have a majority of the benefits going overseas. For example, the Clean Power Plan, according to EPA's estimate, had $8.4 billion in costs.

These costs are borne domestically, but a majority of the benefits are borne internationally. Again, it is a difficult task when we talk about projecting costs and benefits out to 2100 or 2300. We are talking about generations.

There is also the issue of the discount rate. I mentioned Circular A–4 generally prefers a discount rate of 3 and 7 percent; other nations have slightly higher. And for this discount rate, just to give you an example of the range that we can have in social cost of carbon, depending on the discount rate, this year the social cost of carbon could be $12 per ton or $120 per ton. So there is generally a lot of tension between the social costs of carbon and what you will see with Circular A–4 and the Clean Air Act.

Senator INHOFE. Good answer. Thank you.

Senator ROUNDS. Senator Vitter.

Senator VITTER. Thank you, Mr. Chairman.

And thanks to all of you for your testimony.

Ms. Furchtgott-Roth, thank you for your testimony. Back in 2013, when I was ranking member of the committee, I procured a commitment for EPA's Science Advisory Board to pull together a group of economists to review how the Agency does economic modeling and a cost for cost and benefits, and it has taken them forever to get organized, but they finally are convening their first panel of experts this week. There are at least a few on the panel, I am happy to say, who seem truly independent.

What would be the top three or four things you would suggest those experts focus on in terms of how EPA currently quantifies costs and benefits?

Ms. FURCHTGOTT-ROTH. With regard to the co-benefit issue, if ozone and mercury have harmful effects, as other witnesses were saying, we should be able to see that in the cost-benefit analysis without the co-benefits. If EPA thinks that we have levels of particulates that are too high, then it should be able to issue a separate rule and look at those separately, because right now, according to

EPA, the level of particulates, that standard is fine. Many places all over the Country are in attainment. So by saying that we are getting benefits from different levels of particulates, EPA is implicitly saying that its standard is not correct. So that is one particular error.

I think also the costs of increased electricity prices have not been factored in. The costs on small businesses have been minimized. NERA, an economic consulting firm, says that the costs of electricity would rise by 17 percent, causing about $473 billion of damages.

Most important, the climate benefits, we will not see these climate benefits if firms just relocate, because the same emissions will go out in the air and we won't have any reduced effect on global warming. We might have a greater effect, in fact, because other countries don't have as strict standards as we do, and those, right now, are not counted in the analysis. It is just assumed that emissions, if we regulate them, are going to go away. Same with the health benefits. We know that dirty air also travels.

Senator VITTER. OK, thank you very much.

Dr. Rice, thank you for being here as well. I have a pretty simple question that I think you can speak to as a doctor. It is my understanding that there is ample evidence and research that shows that there are real human health impacts from unemployment increases, areas with high unemployment. Some of those impacts include increased rates of alcoholism, child neglect and abuse, impacts on mental health.

So my question is simply this: Do you believe it is accurate that there can be human health impacts from increases in unemployment, someone losing their job, potentially not being able to care adequately for their family?

Dr. RICE. Thank you for that question, Senator Vitter. As I also mentioned in my testimony, when people don't have their health, that impairs their ability to work and to perform well and to get sleep and to keep their job because of doctor appointments that they might have. So you are absolutely right, there is a complicated intersection between health and employment. And I hope I have answered your question.

Senator VITTER. I don't think you really have. So do you think there is a clear relationship between higher unemployment and negative health impacts on the population?

Dr. RICE. I am a pulmonary doctor and I am not an expert on employment specifically as an exposure. But I agree generally that the better people are doing in all kinds of ways, and there are all kinds of exposures that affect health, and when people don't have their health they also can't work as well. So it is a complicated issue.

Senator VITTER. OK. I would point to, in particular, there are lots of studies, but one is an American Academy of Pediatrics study that was presented at an exhibition in San Francisco that goes directly to this. In fact, one of the top predictors of health is income, employment, economic status.

Could I have a little bit more time, Mr. Chairman?

Senator ROUNDS. Certainly.

Senator VITTER. Thank you.

Just one other question for Mr. Kovacs. Another agreement I procured from EPA back in 2013 as ranking member was that they would finally provide the scientific data underlying the key studies that go to some of their past regulatory actions and would de-identify personal information so that data would be available and could be independently reviewed. Now, they have done a little bit of that and they have stonewalled on a lot of that, saying that they somehow can't de-identify data, can't take personal information out.

Do you believe it is credible in 2015, with current technologies, that it is not possible to de-identify datasets, particularly datasets developed in the 1980's, to protect truly confidential patient information, but make these de-identified datasets available for independent analysis so we can judge and folks independently can judge if they really justify what EPA has pushed forward in terms of regulation?

Mr. KOVACS. Well, it is certainly my understanding that even HHS de-identifies data and shares it with researchers. That I am fairly confident of and that happens every day. What you are referring to is the Pope and Dockery study. The reason this entire issue has become so contentious is because the Pope and Dockery studies in the late 1990's became the basis for literally all the studies that are going on today. And when Congress passed the Information Quality Act, it required that the data be peer-reviewed and that it be reproducible.

And the difficulty that we are facing as we talk about all these outcomes, and why I have tried to get the regulations right as opposed to worrying about the outcome, is that no one can really determine whether or not, if this data is not correct, without getting the information to the public for checking on reproducibility, we are all sort of stuck and we are arguing about something we may not know the answer to, but it is easy to find.

Now, EPA has been asked for the data and they said they don't own it, they say Harvard owns it, and we have been fighting over this for, I don't know, 20 years and this is the difficulty. And if there is anything that I can communicate in terms of my testimony, it is the regulatory process works for Congress and citizens, not for agencies, and we need to be able to have a process where we are open and transparent, and the data can be put on the table and we can actually deal with what is right, what is wrong.

If we are going to regulate PM2.5, we have a statute where we can regulate it. If we are going to regulate SO2, we have a statute under NAAQS. And if you are going to regulate mercury, you have two, you have 111 and 112. But let's do it right and let's do it honest and let's do it transparently.

Senator VITTER. Thank you very much.

Dr. RICE. Senator Vitter, may I comment on that issue of the air pollution studies in Pope and Dockery? Would that be all right?

Senator ROUNDS. Quickly.

Dr. RICE. There have been hundreds and hundreds of studies on the issue of air pollution and mortality. Pope and Dockery was one of them. That was one of the earliest ones. I am not quite sure what Witness Kovacs means by the basis for all the other air pollution studies. There have been studies using all sorts of methodologies, and not all of them have taken place in the United States;

some excellent studies in Europe and Asia as well. And this evidence overwhelmingly supports that there is an association between particulate matter exposure and death.

Senator VITTER. Well, just to clarify, I think the point was correct that study in particular is a huge basis for both major EPA action and other related studies, and we have never gotten the data sets de-identified so that can be independently reviewed. I think that is the major point.

Senator ROUNDS. Thank you, Senator Vitter.

The purpose for this oversight hearing in the first place is to look at the analysis which is done by an agency within the Federal Government, the EPA. Whether you believe in the processes, as Senator Markey shared, whether you look at the impacts and the costs to the actual economy, as Senator Inhofe has shared, there is a common theme here that I think we would all agree on. That is, to be able to point at a process which provides confidence to the American public, one that you look at and you review and you find out what is working correctly and what may not be working correctly. That is when you begin to put together the confidence necessary for laws to be implemented and accepted.

So today's hearing is as much about looking at the processes and finding ways to make them even better in the future than what they are today. When there are shortcomings identified, then we should work for both points of view to make it better than what it was in the past. I think that works to the benefit of both sides, when you can look at it and identify what is fact and what is a supposition or a proposition.

So from my perspective today you have been very helpful, and I want to thank all of the members of the witnesses here, all of the witnesses that have come in today and helped us in our process as well.

And I want to thank Senator Markey for his participation. It would be great to see some more members here as well. I understand that there are other conflicts as well.

Senator Markey, do you have any closing thoughts?

Senator MARKEY. Thank you, Mr. Chairman, very much. I ask unanimous consent to include in the record this explanation of the social cost of carbon from the New York University School of Law, which shows that the social cost of carbon uses a 3 percent discount rate, which Mr. Batkins said was the preferred rate of OMB.

Senator ROUNDS. Without objection.

Senator MARKEY. Thank you.

[The referenced information follows:]

WHAT IS THE SOCIAL COST OF CARBON POLLUTION?

Scientists predict that climate change will lead, and in some cases has already led, to negative consequences such as the spread of disease, decreased food production, coastal destruction, and many more. The social cost of carbon pollution calculates the economic cost of these problems and estimates the damage done by each ton of carbon dioxide[1] that is spewed into the air. The current estimate is around $40.[2]

HOW IS THE SOCIAL COST OF CARBON POLLUTION USED?

The social cost of carbon pollution is used in official benefit-cost analyses of federal regulations that reduce greenhouse gas emissions. It allows us to compare the costs of limiting our pollution to the costs of climate change. In benefit-cost analyses, agencies use social cost of carbon pollution to measure the monetary benefits of regulations that reduce carbon emissions, and weigh them against the costs of the regulation.[3]

Decades of economic research have demonstrated that the "cost-free" behavior of using fossil fuels and emitting carbon dioxide has led to an over-reliance on fossil fuels. The social cost of carbon pollution removes that bias by accounting for the costs of pollution.

Many other nations use the social cost of carbon pollution (estimated independently from the U.S. number) or similar concepts in making regulatory decisions, including Canada, France, Germany, Mexico, Norway, and the United Kingdom. Some U.S. states also use the social cost of carbon pollution. Minnesota[4] recently used the U.S. social cost of carbon pollution to determine the value of solar energy.

Companies also use a cost of carbon pollution, but in a different way: the private sector considers climate change in financial planning. According to the London-based Carbon Disclosure Project (CDP), 29 companies based (or doing business) in the United States reported in 2013 that they use an internal price on carbon pollution in their financial planning to help weigh the risks and opportunities related to climate change.[5]

HOW IS THE SOCIAL COST OF CARBON POLLUTION ESTIMATED?

Economists estimate the social cost of carbon pollution by linking together a global climate model and a global economic model. The resulting models are called Integrated Assessment Models, or IAMs. This integration helps economists take a unit of carbon emissions (such as from driving a car or burning coal in a power plant) and translate that into an estimate of the cost of the impact that emissions have on our health, well-being, and quality of life in terms of dollars. The models are based on the best available science and economics from peer-reviewed publications.

The three most–cited models are William Nordhaus' **DICE model** (Yale University), Richard Tol's **FUND model** (Sussex University), and Chris Hope's **PAGE model** (Cambridge University).

In the United States:

President Obama formed the Interagency Working Group (IWG) on the Social Cost of Carbon in 2010 and again in 2013. To estimate the social cost of carbon pollution used in the United States, the IWG used: Nordhaus' DICE model, Tol's FUND model, and Hope's PAGE model.

The IWG made several slight changes to the models based on the most current economic and scientific literature. It then ran the three models using five different socio-economic and emission trajectories: four average (business as usual) trajectories and one best-case (optimistic) trajectory.[6] Averaging the results across the models and trajectories, the IWG produced four different social cost of carbon pollution estimates. All four are available for government agencies to use. The central estimate—around $40 for a unit of emissions in 2015—uses a 3 percent discount rate.

WHY ARE THERE MULTIPLE ESTIMATES?

The IWG produced four different social cost of carbon pollution estimates by using different discount rates. The discount rate is how economists measure the value of money over time—the tradeoff between what a dollar is worth today and what a dollar would be worth in the future.[7] Economists often measure the discount rate using various market interest rates, including the savings rate at your bank and the 30-year U.S. Treasury bond.

The current social cost of carbon pollution estimates for a unit of emissions in 2015 are $57, $37, and $11 using discount rates of 2.5 percent, 3 percent, and 5 percent, respectively. The fourth social cost of carbon pollution estimate of $109 uses a 3 percent discount rate and describes the 95th-percentile value for the social cost figure, in an attempt to capture the damages associated with extreme climatic outcomes. The estimate of $37, which uses a 3 percent discount rate, is considered the "central" estimate for a unit of emissions in 2015.[8] That $37 value is denoted in 2007 USD and equals around $40 in today's dollars.

The social cost of carbon pollution estimate decreases as the discount rate increases because a higher discount rate implies that people care less about future generations than they do about the present.

HOW ACCURATE IS THE SOCIAL COST OF CARBON POLLUTION?

The central social cost of carbon pollution estimate of around $40 is our best available estimate for now. Of

course, there is uncertainty over the science and economics of climate change. This uncertainty is partly due to the complexity of the climate system, the imprecision of placing a monetary value on environmental services, the long-term time horizon over which climate change occurs, and the unprecedented rate of carbon emissions and level of carbon concentration that has entered the atmosphere since the industrial revolution. As science and economics improve and progress, this uncertainty will decline, but is unlikely to be eliminated.

IS THE SOCIAL COST OF CARBON POLLUTION UPDATED OVER TIME?

The U.S. government updates the social cost of carbon pollution estimates over time to account for new scientific and economic information. In 2013, the Interagency Working Group on the Social Cost of Carbon updated its 2010 estimates in line with updated versions of DICE, FUND, and PAGE. The IWG made no other changes to its modeling process between 2010 and 2013.

WHY DOES THE SOCIAL COST OF CARBON POLLUTION INCREASE OVER TIME?

As the effects of climate change intensify over time as more carbon fuels are used and more carbon is emitted, the social cost of carbon pollution increases. In this way, the cost of carbon pollution increases over time because the amount of carbon in the atmosphere increases over time. By 2050, the central estimate from the 2013 Interagency Working Group will be around $70.

DOES THE SOCIAL COST OF CARBON POLLUTION ESTIMATE CAPTURE ALL RELEVANT DAMAGES?

No. The models used by the Interagency Working Group on the Social Cost of Carbon omit several types of climate impacts; these omissions are often due to a lack of monetary damage estimates for many climate impacts to integrate into these underlying models Some of the omitted damages are the effects of climate change on fisheries; the effects of increased pest, disease, and fire pressures on agriculture and forests; and the effects of rising sea levels and resource scarcity due to migration. Additionally, these models omit the effects of climate change on economic growth and the rise in the future value of environmental services due to increased scarcity.

Although the models also fail to account for some climate benefits, omitted negative impacts are almost certainly to overwhelm omitted benefits. As a consequence, $40 should be interpreted as a lower-bound central estimate.

ARE THERE BENEFITS TO CARBON AND ARE THESE ACCOUNTED FOR?

Yes and yes. There are benefits to carbon and some of these benefits that are the result of climate change, such as potential increases in agricultural yields, are captured in the social cost of carbon pollution estimate; these benefits reduce the magnitude of the social cost of carbon pollution. Other benefits that are the result of climate change are omitted, including the lower cost of supplying renewable energy from wind and wave sources, the increased availability of oil due to higher temperatures in the Arctic, and fewer transportation delays from snow and ice are excluded. However, omitted negative impacts are almost certainly to overwhelm omitted benefits. As a consequence, $37 should be interpreted as a lower-bound central estimate.

The other benefits from the use of carbon fuels that are unrelated to climate change (such as economic output) are omitted from the social cost of carbon pollution, but they are *always* included in any analysis in which the

social cost of carbon pollution is used. In a benefit-cost analysis, the cost of regulations, such as the potential loss of output, is always balanced against the benefits of carbon reductions as partially measured by the social cost of carbon pollution.

NOTES

[1] There are many ways to measure a ton (2000 pounds) of carbon dioxide. In its simplest sense, a ton of carbon dioxide is the amount of carbon dioxide that the average U.S. car emits in 2 to 2.5 months. An important distinction is that, because carbon dioxide consists of carbon and oxygen, 3.67 tons of carbon dioxide is equivalent to 1 ton of carbon.

[2] The precise, central value for a ton of carbon dioxide emitted in 2015 is $37, in 2007 USD (http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf).

[3] In addition to considering the benefit of carbon reductions, benefit-cost analyses consider the cost of reduced use of carbon fuels, such as potential lost economic output and higher energy costs, which are not accounted for in the social cost of carbon pollution. Additionally, the social cost of carbon pollution includes the benefits from climate change. In this way, the costs of a regulation are always weighed against the social cost of carbon pollution and other regulatory benefits.

[4] See: http://www.midwestenergynews.com/2014/03/12/minnesota-becomes-first-state-to-set-value-of-solar-tariff/

[5] These companies include Microsoft, General Electric, Walt Disney, ConAgra Foods, Wells Fargo, DuPont, Duke Energy, Google, Delta Air Lines, Walmart, and PG&E. The Exxon Mobil Corporation uses $80 for a metric ton of CO_2 emissions in 2040 (http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf); this exceeds the central U.S. SCC estimate for 2040.

[6] A socio-economic and emission trajectory consists of specifying GDP, population, and greenhouse-gas-emission paths over time.

[7] If offered $1 now or $1 in a year, almost everyone would choose to receive the $1 now. Most individuals would only wait until next year if they were offered more money in the future. The discount rate is how much more you would have to receive to wait until next year. Similarly, if individuals were asked to pay $1 now or $1 next year, most individuals would choose to pay $1 later. Most individuals would only pay now if they were asked to pay more money in the future. The discount rate is how much more you would have to pay in the future to be willing to pay $1 in the present.

[8] $37 is considered the central estimate because it uses the central (i.e. middle) discount rate and is based on an average, rather than worse-than-expected, climate outcome; the average climate outcome is the standard assumption made by the IWG.

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EDF Environmental Defense Fund — Finding the ways that work

Institute for Policy Integrity — new york university school of law

NRDC — The Earth's Best Defense

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Senator MARKEY. I would also like to say that historically this area doesn't really factor in the weight of innovation in the technology sector. The industry itself tends to be very, very pessimistic about what they can do; that is, the existing generation of executives just doesn't think they can do it. So that is what they testify to.

For example, back in 2001, 2003, 2005 I kept making the same amendment on the floor of the House of Representatives, saying that the auto industry should average 35 miles per gallon by the year 2020 with their vehicles. The industry said we can't do that, you will bankrupt us; we can't do that, the technology just isn't there. So finally, in 2007, my law passed over in the House of Representatives that said 35 miles per gallon by the year 2020.

Then the industry basically suffered a tremendous collapse in 2008 and 2009. They dropped all the way down to just 9 million vehicles which they sold in the United States. Nine million is a very low number. And President Obama then promulgated the rules, saying they had to meet this much higher standard.

Well, this is unbelievable. They are not going to have 35 miles per gallon by the year 2020; they are going to have pretty close to 35 miles per gallon by 2016. So the industry dramatically underestimated how quickly they could move. They said they couldn't even meet that deadline of 2018, 2019, 2020. They are meeting it in 2016.

Moreover, here is the big news: they are selling 16 million vehicles this year, these newer, more efficient vehicles out there that the public loves because they are saving money on gasoline and, by the way, sending up less pollution into the air; less carbon dioxide, less soot, less smog. It is just a completely win-win-win-win situation. But it does reflect how conservative these companies are.

The utilities are the same way. The chairman of the full committee made reference to the 1990 Clean Air Act and how much more quickly the technology moved and how much greater the benefits were.

So a lot of this kind of reflects, to a certain extent, the conservative view, which is understandable, of CEOs of companies in terms of what can happen after they are the CEOs of the company. That is just the way it is. But the truth is another generation taking another view of the same issues, bringing in perhaps younger technologists, younger scientists who have a more innovative spirit invariably, invariably results in dramatically faster implementation of new technologies and dramatically higher benefits that flow from the reduction in pollution that goes up into the atmosphere.

So that has been my observation over my career, while also stipulating that I understand that motivation of the existing group of CEOs, but they are almost always wrong about the future, as right as they might be about the present. But the future has always been, from my perspective, a very elusive thing for the existing CEOs to grasp, especially if they have been on the same job for a prolonged period of time. They almost have a stake in the status quo and their vision being validated, because they don't have to worry about the future.

So I thank you, Mr. Chairman, and I yield back the balance.

Senator ROUNDS. Thank you.

Senator INHOFE. The balance of what?

[Laughter.]

Senator ROUNDS. The chair is going to take prerogative on this and allow the chairman of the full committee to make a comment before we close.

Senator INHOFE. Well, no, I learned a long time ago, and this surprises a lot of people. I used to say it and it really surprised them, that Barbara Boxer and I are good friends. This guy and I are good friends, and we have the kind of relationship that is a very honest relationship. He has every right to be wrong.

And I really believe that when you look at the overregulation, the direct relationship between overregulation and jobs that are lost and the cost of the economy, we have all those figures, we have used them. You mentioned Utility MACT. Look at the number of people who have lost their jobs in anticipation of what would happen.

So, anyway, we have a nice relationship and we will continue this, and that is one of the most significant things about this committee, I think. Anyhow, I will yield back.

Senator ROUNDS. Thank you.

Once again, I would just like to take this opportunity to thank our witnesses for the time to be with us today. I would also like to thank my colleagues who attended this hearing for their thoughts and their questions.

The record for this meeting will be open for 2 weeks, which brings us to Wednesday, November 4th. With that, this hearing is adjourned. Thank you.

[Whereupon, at 11:18 a.m. the committee was adjourned.]

[Additional material submitted for the record follows.]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Thank you Subcommittee Chairman Rounds for convening today's oversight hearing, and thank you to our witnesses for being here to testify. At a time when the U.S. Environmental Protection Agency (EPA) is advancing an unprecedented regulatory agenda on top of mounting court challenges, today's hearing on regulatory impact analyses (RIAs) is absolutely critical to assessing the integrity of EPA's tools for developing regulatory actions.

RIAs were designed to provide Federal agencies a framework for weighing the costs and benefits of a particular regulatory action and alternatives—prior to issuing a rule. In theory, robust RIAs should improve an agency's decisionmaking process and result in efficient actions. However, as witnesses today will testify, the deep flaws in recent EPA RIAs call into question many of EPA's recent rules. Specifically, testimony today will highlight several deficiencies across EPA RIAs that warrant congressional oversight, including: an over reliance on alleged benefits that are unrelated to the subject of the rule, such as benefits from reductions in fine particulate matter ($PM_{2.5}$) in rules addressing other pollutants. Additional flaws include the use of a global estimate of the social cost of carbon to manufacture alleged climate benefits here in the United States and the recurring failure to conduct robust economic analyses of regulatory impacts in accordance with regulatory guidance, executive orders, and statutes designed to protect small businesses as well as state, local, and tribal governments.

These shortcomings reveal a troubling pattern under the Obama EPA—where its tools for developing RIAs are highly speculative and deviate from the long-standing established regulatory process—in an effort to seemingly mold the RIA to fit a predetermined regulatory outcome.

I co-sponsored the Clean Air Act Amendments of 1990 and the Clear Skies Act of 2003, where Congress gave EPA certain authorities to issue regulations. However, the Obama EPA has stepped outside of its legal boundaries and—as demonstrated in today's hearing—EPA has stepped outside the regulatory process by issuing RIAs

with significant gaps. Quite simply, EPA has gone too far, issuing legally vulnerable rules under short time frames based on unsubstantiated science and incomplete economic analyses.

Indeed, defective RIAs are likely to result in inefficient and overly burdensome regulations, many of which are challenged in the courts. But, by the time these challenges are resolved, often against EPA; regulated entities have already incurred the costs of compliance with an illegal regulation. If EPA Administrator Gina McCarthy's unconcern for the Supreme Court's determination that the mercury rule was invalid because "investment had been made" is any indication, testimony today will suggest the Agency is similarly disinterested in completing open and robust RIAs to inform regulatory action because by the time challenges surface, EPA will have issued the regulatory action it so desired and forced compliance.

Accordingly, Congress must continue to conduct oversight of EPA RIAs and hold the Agency accountable in order to curb regulatory uncertainty over the true impact of rules and restore integrity to the regulatory process and subsequent actions coming from the EPA. I ask that my full statement be entered into the record. Thank you.