Testimony

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

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*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.

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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.

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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:

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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.

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 "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

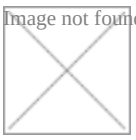
According to EPA, there are six criteria pollutants for which the Clean Air Act requires the agency to set National Ambient Air Quality Standards (NAAQS): ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead. However, a review of government-wide RIAs, and EPA's specifically, 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 $PM_{2.5}$.



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, 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 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 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.

[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.