



# EPI BRIEFING PAPER

ECONOMIC POLICY INSTITUTE • MAY 31, 2011 • BRIEFING PAPER #311

## TALLYING UP THE IMPACT OF NEW EPA RULES

### Combined costs of Obama EPA rules represent a sliver of the economy and are far outweighed by cumulative benefits

BY ISAAC SHAPIRO

President Obama’s Environmental Protection Agency has been under wide-scale attack this year. A series of congressional hearings and industry statements have argued that particular EPA regulations, especially in combination with one another, will damage the economy and lower employment. A recent Economic Policy Institute analysis discussed the relationship between regulations and employment in detail (Shapiro and Irons 2011). This paper examines the combined effects of the major EPA regulations that the Obama administration has already finalized as well as the regulations that it has proposed but not finalized. The paper focuses on major rules for which cost and benefit data are available.

Two broad conclusions emerge from this analysis. First, the dollar value of the benefits of the major rules finalized or proposed by the EPA so far during the Obama administration exceeds the rules’ costs by an exceptionally wide margin. Health benefits in terms of lives saved and illnesses avoided will be enormous. Expressed in 2010 dollars:

- The combined annual benefits from all final rules exceed their costs by \$32 billion to \$142 billion a year. The benefit/cost ratio ranges from 4-to-1 to 22-to-1.
- The combined annual benefits from four proposed rules examined here exceed their costs by \$160 billion to \$440 billion a year. The benefit/cost ratio ranges from 12-to-1 to 32-to-1.

Second, the costs of all the finalized and proposed rules total to a tiny sliver of the overall economy, suggesting that fears that these rules together will deter economic progress are unjustified. The calculations below describe

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the costs of the rules when “fully in effect.” A complete explanation of the calculations can be found in the text, but for now it is worth noting that it takes several years for most rules to take full effect.

- When fully in effect in 2014, the combined costs of the rules finalized by the Obama administration’s EPA would amount to less than 0.1% of the economy. (Note that the combined benefits from these rules, which include some benefits that directly boost productivity, would amount to 0.3% to 0.9% of the economy.)
- Assuming the proposed rules are also finalized, and ignoring the Ozone Standard for a moment, when fully in effect in 2016 the combined costs of the major EPA rules finalized and proposed so far under the Obama administration would amount to less than 0.2% of the economy.
- Adding in the middle option for the proposed Ozone Standard (which leads to some double counting), when fully in effect in 2020 the combined costs of the finalized and proposed rules would amount to about 0.3% of the economy.

## Benefits versus costs

This section of the paper examines the combined benefits and costs of the “major” EPA rules finalized to date under the Obama Administration,<sup>1</sup> and similarly reviews significant EPA rules that have been proposed but not finalized. Among the final rules are regulations that cap the concentration of sulfur dioxide in the air we breathe, reduce pollutants from diesel-fueled internal combustion engines, and limit hazardous emissions from industrial and commercial boilers (known as the “Boiler MACT” rule, where MACT stands for “Maximum Achievable Control Technology”). The proposed rules include regulations that seek to limit hazardous emissions from the electric power industry or greenhouse gas emissions from heavy-duty vehicles such as trucks and tractors, as well as a rule controlling harmful spillover effects from coal ash storage. Short descriptions of each of the rules discussed in this paper can be found in the Appendix.

Under an Executive Order, the EPA must provide an economic cost-benefit analysis for each major regulation. One note of caution: Cost-benefit analyses should not be considered precise. Such analyses rely on a series of difficult and controversial assumptions and valuations. Furthermore, it is impossible to quantify all of the benefits and costs of regulations. For example, the monetized benefits described later in this paper for the “Boiler MACT” rule are far from complete; as the EPA Regulatory Impact Analysis of the rule stated, “Data, resource, and methodological limitations prevented EPA from quantifying or monetizing the benefits from several important benefit categories, including benefits from reducing toxic emissions, ecosystem effects, and visibility impairment” (U.S. EPA 2011a, p. 7-37).

Nonetheless, the data, methodologies, analytic tools, and assumptions that EPA uses are all subject to rigorous scrutiny, including by the Office of Management and Budget, and the resulting cost-benefit analyses typically provide a reasonable sense of the implications of EPA rules. Moreover, the information analyzed here shows that benefits overwhelmingly exceed costs, strongly indicating that a more precise calculation would yield similar findings, especially since benefits are not fully accounted for and costs (as discussed later) may be overstated.

**Final rules.** **Table 1** lists the estimated annual benefits of each of the major EPA rules that have been finalized under the Obama Administration for which cost-benefit data are available. In each case, the value of the benefits (calculated by “monetizing” various benefits from the rules, notably a range of health benefits) exceeds the estimated costs, usually by a sizable margin. Unless otherwise indicated, all dollar figures in this report are in 2010 dollars.<sup>2</sup> The estimates rely on the

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1. Major regulations are those that meet criteria such as a predicted annual effect on the economy of \$100 million or more.

2. OMB (2011) presents its data in 2001 dollars. Different EPA sources present their data in different dollars. The author converted all of the data to 2010 dollars using the government’s GDP deflator.

**TABLE 1**

**Annual costs and benefits of EPA rules finalized under the Obama administration**

Rule	(In millions of 2010 dollars)			
	Costs (range)		Benefits (range)	
	Low	High	Low	High
<i>Revisions to the Spill Prevention, Control, and Countermeasure Rule*</i>	\$-104	\$-95	\$0	\$0
<i>NESHAP: Portland Cement Notice of Reconsideration</i>	1,024	1,051	7,446	19,897
<i>Review of the National Ambient Air Quality Standards for Sulfur Dioxide</i>	408	2,464	3,540	47,117
<i>NESHAP: Reciprocating Internal Combustion Engines (Diesel)</i>	361	380	865	2,344
<i>NESHAP: Reciprocating Internal Combustion Engines—Existing Stationary Spark Ignition (Gas-fired)</i>	247	255	464	1,211
<i>Lead: Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program</i>	326	354	883	3,293
<i>Light-Duty Vehicles Greenhouse Gas Emission Standards and CAFE Standards (Joint rule with the Department of Transportation)</i>	2,075	5,737	10,376	17,944
<i>NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters (the "Boiler MACT" rule)</i>	2,028	2,028	20,573	55,554
<i>Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units</i>	285	285	316	846
<b>Total</b>	<b>\$6,650</b>	<b>\$12,459</b>	<b>\$44,462</b>	<b>\$148,205</b>

\* This revision reduces annual compliance costs under the SPCC rule by \$95 million to \$104 million.

**NOTE:** NESHAP stands for National Emission Standards for Hazardous Air Pollutants.

**SOURCE:** Data for the first seven rules listed comes from the annual Office of Management and Budget report to Congress on the costs and benefits of federal regulations. Data for the last two rules listed come from the individual Regulatory Impact Analyses prepared by EPA.

official cost-benefit data from the Office of Management and Budget (2011) and the Environmental Protection Agency (2011a, 2011b).<sup>3</sup>

In combination, the monetized benefits of these rules also greatly exceed the estimated costs:<sup>4, 5</sup>

- Ultimately, the total estimated benefit of these final rules is roughly \$44 billion to \$148 billion a year, well in excess of their combined annual cost of \$6.7 billion to \$12.5 billion. It will take several years to reach this level

3. The latest OMB regulatory report to Congress (2011) covers rules finalized before October 1, 2010, so this report relies on OMB for such rules. For rules finalized after that date, or for proposed rules (the OMB report only covers final rules), this report relies on EPA information.

4. Consistent with the Office of Management and Budget's regulatory report to Congress for 2011 (OMB 2011, pp.16-17), Table 1 includes the National Ambient Air Quality Standards (NAAQS) for Sulfur Dioxide (SO<sub>2</sub>) even though this rule's standards will be achieved by other rules. OMB indicates that it may adjust the cost-benefit data for the SO<sub>2</sub> NAAQS "in future reports to avoid double-counting, to the extent that EPA publishes implementing regulations that would be designed to achieve the emissions reductions required" by this NAAQS.

The Boiler MACT rule, which was finalized after OMB's 2011 report was drafted, might lead to such an adjustment. If the SO<sub>2</sub> NAAQS standard is removed from Table 1, the benefits from the other rules would total \$41 billion to \$101 billion a year, still far in excess of the total costs of \$6.3 billion to \$10 billion.

5. The estimating procedures used for different EPA rules vary somewhat. That is, the cost-benefit estimates that are added together here are not absolutely comparable. EPA updates its estimating process to incorporate changing economic assumptions (such as assumptions about electricity demands as new forecasts become available) as well as changes in the estimated cost and effectiveness of control technologies.

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of costs and benefits, because firms typically are given several years to come into compliance with regulations and because pollution levels do not immediately adjust.

- The ratio of combined benefits to costs ranges from 4-to-1 to 22-to-1.
- The combined net benefits range from \$32 billion to \$142 billion a year.<sup>6</sup>

The rules affect many important aspects of our lives. They are dominated by rules aimed at cleaning the air we breathe. The importance of clean air to human health can be illustrated by listing some expected benefits of the Boiler MACT rule. (The finality of this rule is currently uncertain. The final Boiler MACT rule was issued in February 2011, but on May 16, 2011, EPA (Jackson 2011) announced that the rule's implementation will be delayed "until such time as judicial review is no longer pending or until the EPA completes its reconsideration... whichever is earlier.")

The Boiler MACT rule aims to reduce air pollutants from industrial, commercial, and institutional boilers and process heaters. By reducing exposure to fine particles and ozone, the rule is expected to produce the following estimated benefits in 2014 (U.S. EPA 2011a, 7-22):<sup>7</sup>

- 2,500–6,500 lives saved (which EPA describes as avoiding "premature mortality")
- 4,000 fewer heart attacks
- 4,300 fewer hospital and emergency room visits
- 78,000 fewer cases of respiratory symptoms
- 310,000 more work days (because workers are not too sick to go to work)

**Four proposed rules.** EPA has proposed four other major rules: the air toxics, federal transport, and cooling water rules, as well as the rule to limit greenhouse gas emissions and improve fuel efficiency of medium- and heavy-duty engines and vehicles. These rules may be finalized during President Obama's first term. The estimates rely on the official cost-benefit data from the Environmental Protection Agency (2011c, 2011d, 2011e) and, in the case of the rule on medium- and heavy-duty vehicles, a joint report from EPA and the Department of Transportation (2010). As monetized, the benefits of three of these rules far exceed their costs. As measured to date, this is not true of the cooling water rule, but the benefit data for this rule are especially incomplete and thus its benefits are significantly understated.<sup>8</sup>

The combined potential benefits of these rules, and the degree to which the monetized value of these benefits exceed their costs, are dramatic:

- The total estimated benefit of these proposed rules is \$173 billion to \$457 billion a year, far greater than their combined cost of \$14 billion to \$15 billion a year. (See **Table 2.**)

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6. Following OMB convention, this range is calculated by subtracting the high end of the cost range from the low end of the benefit range and also subtracting the low end of the cost range from the high end of the benefit range. The same approach was followed in calculating the ratios.

7. These figures relate to the "major source" part of this rule. They exclude the much smaller benefits from the "area source" part of this rule.

8. The initial Regulatory Impact Analysis for this proposal monetized benefits related to recreational and commercial fishing but did not monetize most other benefits, such as benefits of diminishing the risk to endangered species. EPA is conducting a survey to help it more accurately quantify the benefits from the proposal.

**TABLE 2**

**Annual costs and benefits of certain EPA rules proposed during the Obama administration but not yet finalized**

Rule	(in millions of 2010 dollars)			
	Costs (range)		Benefits (range)	
	Low	High	Low	High
<i>Power plant, mercury, and air toxics (the "Toxics" rule)</i>	\$11,347	\$11,347	\$55,172	\$145,737
<i>Federal transport</i>	2,175	2,390	115,733	308,622
<i>Cooling water intake structure (the "Cooling Water" rule)</i>	388	463	16	18
<i>Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles</i>	346	591	2,140	2,649
<b>Total</b>	<b>\$14,256</b>	<b>\$14,791</b>	<b>\$173,061</b>	<b>\$457,027</b>

**NOTE:** The proposed ozone standard and coal ash rule are discussed separately in this paper.

**SOURCE:** Regulatory Impact Analyses prepared by EPA. The benefit data for the cooling water rule are especially incomplete; see footnote 8.

- The ratio of combined benefits to costs ranges from about 12-to-1 to 32-to-1.
- The combined net benefits range from \$160 billion to \$440 billion a year.

The improvements in public health from these proposals are expected to be substantial. For example, the air toxics rule, which regulates the amount of hazardous pollutants emitted, would have the following estimated health benefits in 2016:

- 6,800–17,000 lives saved
- 11,000 fewer heart attacks
- 12,200 fewer hospital and emergency room visits
- 225,000 fewer cases of respiratory symptoms
- 850,000 more work days

**Ozone, coal ash, and other potential rules.** Two major rules that have been proposed by the Obama administration are not included in the above tabulation. One would make the ambient air quality standard for ozone more stringent. The Ozone Standard set by this proposed rule is a potentially significant reconsideration of a rule established by EPA under President George W. Bush. The proposal offers a wide range of possible standards. The annual estimated benefits from the middle option (the third most stringent of five options) are \$14 billion to \$46 billion greater than the benefits from the Bush EPA rule, and the annual estimated costs are \$27 billion to \$38 billion greater (U.S. EPA 2010a). (The EPA estimates are for the year 2020, since it would take many years for the proposal to fully take effect; indeed, attainment deadlines can be up to 20 years for areas with the worst pollution problems. These estimates are translated here into 2010 dollars.)

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The proposed Ozone Standard would be achieved in part by other proposed regulations considered in the previous section, including the air toxics, federal transport, and medium- and heavy-duty engines and vehicles rules, all of which were proposed after EPA proposed the range of options for its new Ozone Standard. To avoid double counting, the benefits and costs of the Ozone Standard are not considered in the above combined tabulation.

The above combined tabulation also does not consider the proposed coal ash rule. This rule is excluded because the proposal contains a particularly diverse range of options examined under three distinctly different industry scenarios, making it impossible to neatly assess the rule's potential effects. While there is relatively little dispute over the compliance costs of the options, which are expected to amount to \$238 million to \$1.5 billion annually, there is substantial dispute over the benefits. Under what EPA considers the most likely scenario, benefits would significantly exceed costs (EPA 2010b). (Under other scenarios, such as the "stigma" scenario considered less likely by the EPA, costs would significantly exceed benefits. The Environmental Integrity Project (2010) as well as the Institute for Policy Integrity (2010) have separately advanced strong arguments against the application of the worst-case "stigma" scenario, in which the regulation of coal ash is assumed to undercut the use of coal ash for other purposes.)

It is worth noting that later this year EPA is expected to propose major rules that set standards for greenhouse gas emissions from power plants and petroleum refineries.<sup>9</sup> The type of analysis conducted in this paper needs to be revised as additional proposals are made, or as proposed rules are finalized.

## **Cumulative costs of the regulations relative to the size of the economy**

One frequent criticism made by opponents of EPA rules advanced under the Obama administration is that their cumulative impact will be immensely damaging to the economy and employment.

A straightforward way to place these claims in some context is to compare the costs of the EPA rules with the size of the economy. Are these rules so costly that they plausibly will have a dominant or significant effect on economic progress?

The answer to this question is "no," as will be shown. This does not mean that the effects of particular regulations on particular industries and groups of workers should be ignored; potential effects and ways to respond to them deserve careful consideration. But the size of the potential compliance costs created by EPA rulemaking under the Obama administration to date is not a significant factor in U.S. economic performance overall.

The calculations below examine the annual costs of the rules once they are "fully in effect," relative to the size of the economy. It typically takes three to five years for final rules to be fully implemented. The often considerable time provided to firms to come into compliance eases any necessary transitions and mitigates the immediate and eventual economic impacts.

The calculations that follow assume all rules that have been finalized will be fully in effect in 2014, because most of EPA's cost estimates for these rules were estimated for 2014 or earlier. Following a similar approach, these calculations assume that all rules that have been finalized or proposed will be fully in effect in 2016. In both cases, because not all the rules will really be fully in effect in those years, costs as a share of the economy are overstated. The calculations may also be overstated due to the historic tendency of government cost estimates to themselves overstate the effects of environmental regulations.<sup>10</sup> It also bears keeping in mind that the figures below do not consider the offsetting benefits;

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9. An initial step connected to these forthcoming rules was the so-called "tailoring rule" which took effect on January 2, 2011. The rule essentially exempts small-scale polluters from any greenhouse gas permitting requirements established between now and 2016. The rule considerably diminishes any potential compliance costs and is really a regulatory relief bill. Because of the difficulty in estimating the appropriate baseline against which to assess the amount of regulatory relief, OMB chose not to include an estimate of such savings in its annual cost-benefit report to Congress.

10. The tendency for government cost estimates of individual rules to be overstated is discussed in Shapiro and Irons (2011, pp. 21-23).

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for example, in 2014, the combined benefits from the rules finalized so far by the Obama administration (which include increased productivity from effects such as increased work days) would amount to 0.3% and 0.9% of the estimated size of the economy.

This report finds:

- Once the EPA rules finalized so far by the Obama administration are fully in effect, their combined costs would amount to less than 0.1% of the economy.<sup>11</sup> (Their annual costs would be just 0.04% to 0.08% of the estimated size of the economy in 2014.)
- Assuming the EPA rules that have been proposed are finalized, their effect (ignoring the Ozone Standard for a moment) combined together with the EPA rules that have already been finalized would be as follows: the combined costs would amount to less than 0.2% of the economy.<sup>12</sup> (Their annual costs would be just 0.12% to 0.16% of the estimated size of the economy in 2016.)

The annual costs of the proposed Ozone Standard are also modest when compared with the size of the economy. This can be seen by examining the middle option under consideration by EPA. As noted, EPA estimated the annual effects of the ozone rule for 2020. Assuming the middle option under consideration were fully in effect that year, its incremental<sup>13</sup> costs would amount to between 0.13% and 0.19% of the economy.

For the reasons stated earlier, adding the costs of the Ozone Standard to the costs of the other rules finalized and proposed under the Obama administration involves some double counting, and thus produces an estimate of EPA rules relative to the size of the economy that is on the high side. Still, if the EPA rules finalized and proposed so far by the Obama Administration, including the middle option Ozone Standard, are fully in effect in 2020, their combined costs would only amount to between 0.24% and 0.34% of the economy.

## Conclusion

The regulations finalized and proposed by the Obama administration are likely to be of tremendous value to the nation, producing a wide range of significant health benefits. Further, the modest estimated costs of these regulations relative to the size of the economy, as well as the extended period over which they will take effect, indicate that they would not be a major impediment to economic or job growth in the near-term or in the future.

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11. To the degree there is some overlap between the costs of the SO<sub>2</sub> NAAQS and the Boiler MACT rule (see footnote 4), the costs here are overstated. Similarly, to the degree there is further overlap between the costs of the SO<sub>2</sub> NAAQS and the proposed rules discussed here, the combined costs of the final and proposed rules are further overstated.

12. The relatively modest costs of the proposed coal ash rule are included in this calculation.

13. The “incremental” cost of this option is the cost over and above the cost of the standard advanced under the Bush administration.

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## **APPENDIX: A summary of EPA rules discussed in this paper**

By Nicholas Finio

This appendix provides a brief summary of each of the nine finalized and six proposed EPA rules discussed in this paper. For a majority of these rules, monetized health benefits come from reduced exposure to particulate matter; these monetized benefits are mostly accounted for as lives saved (which EPA describes as avoiding “premature mortality”). More information on the rules can be found through the EPA’s Technology Transfer Network (<http://www.epa.gov/ttn/>) web portal, the U.S. Government Printing Office’s Federal Digital System (<http://www.gpo.gov/fdsys/>) or [www.regulations.gov](http://www.regulations.gov).

### ***Final Rules***

#### **Revisions to the Spill Prevention, Control, and Countermeasure Rule**

This EPA regulation aims to prevent spills of oil and other products from spreading into U.S. waterways and affecting human life and the environment. These revisions streamlined existing regulations to make them more effective. Specifically, the regulations now exempt hot-mix asphalt, pesticide application equipment, home heating oil tanks, underground back-up generator tanks at nuclear facilities, and several other items. The revisions are estimated to have negative costs, since they decreased the costs of complying with the underlying rule.

#### **NESHAP: Portland Cement Notice of Reconsideration**

This regulation amends the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Portland cement plants (this type of cement is not associated with a city; rather, it is a certain type of hydrochloric cement). These amendments add or revise emission limits for mercury, total hydrocarbons, particulate matter, and hydrochloric acid (separate limits apply during startup, shutdown, and operating modes). The benefits and costs of this regulation are estimated for year 2013.

#### **Review of the National Ambient Air Quality Standards for Sulfur Dioxide**

The EPA sets ambient air quality standards with the goal of protecting public health. The final ambient standard for sulfur dioxide concentrations was set at 75 parts per billion. Benefits and costs of attaining this standard are measured for the year 2020. The majority of sulfur dioxide emissions (66%) come from power plant fuel combustion.

#### **NESHAP: Reciprocating Internal Combustion Engines (Diesel)**

This regulation reduces Hazardous Air Pollutant (HAP) emissions from reciprocating internal combustion engines that use diesel fuel, not natural gas. The regulation affects industries such as power generation, pipeline transportation, and oil and gas extraction. The estimates of benefits and costs of this regulation are a snapshot of the year 2013. The regulation reduces 1,014 tons of HAPs each year.

#### **NESHAP:**

#### **Reciprocating Internal Combustion Engines—Existing Stationary Spark Ignition (Gas-Fired)**

This regulation reduces Hazardous Air Pollutant emissions from reciprocating internal combustion engines that use natural gas. This regulation reduces 109,000 tons of carbon monoxide emissions and 6,000 tons of hazardous air pollutants each year. The benefits and costs of this act are estimated for the year of full implementation, 2013.

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## **Lead: Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program**

With this regulation, the EPA has begun to regulate the renovation, repair, and painting of public and commercial buildings under the Toxic Substances Control Act. This regulation aims to mitigate the effects of lead paint-based hazards on the health of workers and people living in these buildings. This regulation includes measures such as restricting building access during renovation, closing windows, proper disposal of waste, etc.

## **Light-Duty Vehicles Greenhouse Gas Emission Standards and CAFE Standards (Joint Rule with the Department of Transportation)**

The new standards for emissions and fuel economy jointly established by EPA and the Department of Transportation apply to vehicles in model years 2012–2016. The goals of the new standards are to reduce greenhouse gas emissions and increase fuel economy. For the first time, a greenhouse-gas emission target level is established based on vehicle “footprint,” or size. Over the lives of all vehicles produced from 2012-2016, the regulations are estimated to save 1.8 billion barrels of oil, reduce greenhouse gas emissions by 960 million metric tons, and to provide a net benefit to consumers of \$130-\$180 annually (the lower amounts of fuel they will use over the lifetimes of their vehicles will save them \$4,000, which is greater than the increased costs of the vehicles themselves).

## **NESHAP: Industrial, Commercial, and Institutional Boilers and Process Heaters (also known as the “Boiler MACT” rule)**

The EPA’s regulatory impact analysis (RIA) covered two provisions that limit emissions of hazardous air pollutants from industrial, commercial, and institutional boilers and process heaters: a “major source rule” for larger emitters, and an “area source rule” for facilities that emit smaller amounts of HAP. The rules will also limit emissions of mercury, carbon monoxide, hydrochloric acid, and other pollutants. Benefits and costs for these rules are calculated for the year 2014.

## **Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units**

The EPA completed a five-year review requirement for this extant regulation as per Clean Air Act requirements. The EPA added amendments to address emissions from the solid waste incineration units and also clarified certain rules. This regulation reduces carbon monoxide, hydrochloric acid, lead, cadmium, and mercury emissions. Benefits and costs are estimated for the year 2016.

### ***Proposed Rules***

## **National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units**

The proposed “Air Toxics rule” aims to reduce emissions of Hazardous Air Pollutants from the electric power industry, including mercury, other metals such as cadmium and arsenic, acid gases, and organics. The rule’s benefits and costs are estimated by EPA for the year 2016.

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## **Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone**

The proposed “Transport rule” aims to reduce interstate transport of sulfur dioxide and nitrogen oxide(s) emissions from the electric power industry in 32 eastern states. The health benefits of this proposed regulation, estimated for the year 2014, come from diminished particulate matter and ozone concentrations in downwind areas. Sulfur dioxide contributes to particle formation and nitrogen oxide contributes to the formation of particulate matter and ground level ozone.

## **National Pollutant Discharge Elimination System—Cooling Water Intake Structures at Existing Facilities and Phase I Facilities**

This proposed “Cooling Water” regulation would establish requirements under the Clean Water Act for manufacturing and industrial facilities that withdraw from U.S. waterways more than 2 million gallons of water per day, at least 25% of which is used for cooling purposes. High levels of water usage can result in significant mortality rates for wildlife in the adjoining waters, through two distinct processes: impingement and entrainment. Impingement occurs when fish and other organisms are trapped against screens where water is drawn into facilities. Entrainment occurs when smaller organisms pass through these screens and are killed by high pressure or temperature in the facility itself. EPA estimates that 2.1 billion fish, crab and shrimp are killed annually by these processes. The new regulations would establish national requirements for the construction of these facilities, including the use of technology to limit impingement and entrainment.

## **Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles**

As with the light-duty vehicle greenhouse gas standards, the EPA and Department of Transportation are proposing to apply a similar framework to heavy duty vehicles such as heavy trucks, vans, tractors, and pickups. The goals of these regulations are to provide a more fuel efficient and environmentally cleaner national heavy-duty vehicle fleet. Additional health benefits would result from reduced pollution. The benefits of these regulations are calculated based on lifetime use of the new vehicle fleet.

## **National Ambient Air Quality Standards for Ozone**

In 2008, the Bush administration’s EPA established a standard that the national ambient level of ozone in the air be .075 parts per million maximum. The EPA is currently considering a further improvement of this air quality standard to between .060 and .070 ppm, based on reconsideration of evidence. The improvement in the standard would provide health benefits from lessened exposure to ozone and particulate matter, estimated for the year 2020.

## **Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities**

This rule, also titled the Coal Combustion Residuals (CCR) rule and referred to in this paper as the coal ash rule, is intended to reduce risks presented by disposal of the byproducts of coal combustion (from power generation). Vast amounts of CCR are disposed of in landfills or surface impoundments. CCR contain antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and thallium. To limit groundwater contamination, and to ensure structural stability, the proposed EPA regulations establish standards for coal ash disposal.

—*Nicholas Finio is a research assistant at the Economic Policy Institute.*

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