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EPA Regulations: Too Much, Too Little, or On Track?

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Summary

Since Barack Obama was sworn in as President in 2009, the U.S. Environmental Protection Agency (EPA) has proposed and promulgated numerous regulations to implement the pollution control statutes enacted by Congress. Critics have reacted strongly. Some, both within Congress and outside of it, have accused the agency of reaching beyond the authority given it by Congress and ignoring or underestimating the costs and economic impacts and overestimating the benefits of proposed and promulgated rules. The House conducted vigorous oversight of the agency in the 112th and 113th Congresses, and approved several bills that would overturn specific regulations or limit the agency's authority. Particular attention was paid to the Clean Air Act, but there also was congressional scrutiny of other environmental statutes and regulations implemented by EPA. With Republican majorities in both the House and Senate, the 114th Congress accelerated oversight of the Administration's initiatives and renewed efforts to limit EPA's regulatory activities.

Environmental groups and other supporters of the agency disagree that EPA has overreached. Many of them believe that the agency has, in fact, moved in the right direction, including taking action on significant issues that had been long delayed or ignored in the past. In several cases, environment and public health advocates would have liked the regulatory actions to be stronger.

EPA has stated that critics' focus on the cost of controls obscured the benefits of new regulations, which, it estimates, far exceed the costs. It maintains that pollution control is an important source of economic activity, exports, and American jobs. Further, the agency and its supporters have said that EPA is carrying out the mandates detailed by Congress in the federal environmental statutes.

This report provides background information on EPA regulatory activity during the Obama Administration to help address these issues. It examines major or controversial regulatory actions taken by or under development at EPA from January 2009 to late 2016, providing details on the regulatory action itself, presenting an estimated timeline for completion of rules not yet promulgated (including identification of related court or statutory deadlines), and, in general, providing EPA's estimates of costs and benefits, where available.

The report also discusses factors that affect the time frame in which regulations take effect, including statutory and judicial deadlines, public comment periods, judicial review, and permitting procedures, the net results of which are that existing facilities are likely to have several years before being required to comply with most of the regulatory actions under discussion. Unable to account for such factors, which will vary from case to case, timelines that show dates for proposal and promulgation of EPA regulations effectively underestimate the complexities of the regulatory process and overstate the near-term impact of many of the regulatory actions.

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Introduction

Has the Obama Administration's EPA Overreached? Conflicting Views

Since Barack Obama was sworn in as President of the United States in 2009, the Environmental Protection Agency (EPA) has proposed and promulgated numerous regulations under many of the 11 pollution control statutes Congress has directed it to implement.[1] Most of these statutes were enacted decades ago and have not been amended for more than a decade, yet the agency is still addressing for the first time numerous directives given to it by Congress, while also addressing newly emerging pollution problems and issues. The statutes also mandate that EPA conduct periodic reviews of many of the standards and rules that it issues. The agency has conducted these reviews, as well, and revised some regulations in response to the reviews.

Although supporters have maintained that EPA is just doing its job, the agency's regulatory actions over the eight years have drawn attention for several reasons. In some cases, such as regulation of greenhouse gas emissions, they represented a new departure. Based on a 2007 Supreme Court ruling that greenhouse gas emissions are air pollutants under the Clean Air Act's definition of that term,[2] the agency undertook numerous regulatory actions setting emission standards or laying the framework for a future regulatory structure. In other cases, the agency revised emissions, effluent, and waste management regulatory decisions made during earlier Administrations and promulgated more stringent standards to address pollution that persists as long as 40 years after Congress directed the agency to take action. These actions were driven by statutory requirements to reexamine regulations, by legal challenges and court decisions, or because of changing technologies or new and evolving scientific information.

EPA's actions, both individually and in sum, generated controversy. For example, the U.S. Chamber of Commerce described EPA's actions as "a series of one-sided, politically-charged regulations that are intended to take the place of legislation that cannot achieve a consensus in the Congress."[3] Affected parties, such as the National Petrochemical & Refiners Association (now known as the American Fuel and Petrochemical Manufacturers), labeled the agency's actions "overreaching government regulation" and "a clear distortion of current environmental law,"[4] while the National Mining Association said that "even at a time of great economic stress, EPA is poised to enact a series of back-door mandates that threaten to cost millions of American jobs, and increase the cost of their electricity while they're at it."[5]

Both Democrats and Republicans in Congress expressed concerns and criticism, through bipartisan letters commenting on proposed regulations, in statements at congressional hearings,

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[1] For a summary of each of the 11 statutes and their principal requirements, see CRS Report RL30798, *Environmental Laws: Summaries of Major Statutes Administered by the Environmental Protection Agency*, coordinated by David M. Bearden.

[2] See CRS Report R40984, *Legal Consequences of EPA's Endangerment Finding for New Motor Vehicle Greenhouse Gas Emissions*, by Robert Meltz.

[3] U.S. Chamber of Commerce, "Regulatory Areas, Energy, and the Environment," http://www.uschamber.com/regulations/areas, accessed June 15, 2015.

[4] NPRA, "NPRA Says Court Decision on GHGs Bad for Consumers," December 10, 2010, at http://www.npra.org/newsRoom/?fa=viewCmsItem&title=Latest%20News&articleID=5980.

[5] National Mining Association, "EPA's Regulatory Train Wreck," 2011, http://www.nma.org/pdf/fact_sheets/epa_tw.pdf.

and through introduced legislation that would delay, limit, or prevent certain EPA actions.[6] Committees have conducted vigorous oversight of the agency's actions; oversight and efforts to limit EPA's activities accelerated in the 114th Congress. Arguing in favor of riders to the FY2016 Interior, Environment, and Related Agencies appropriations bill intended to restrain the Administration's regulatory efforts, the Senate majority leader reportedly referred to Administration regulatory efforts as "an all-out assault on the American economy.... But in all the overreach, none has been more dramatic than at the EPA." In response to announcement of a final rule defining "waters of the United States" under the Clean Water Act, the chairman of the Senate Environment and Public Works Committee characterized the rule as "a measure that hugely expands the ability of this aggressive agency to disregard the conservation efforts of American states and interfere with the daily lives and property of the American people."[7]

EPA was not silent as the agency's actions came under attack. In a 2010 letter to the ranking members of the Energy and Commerce Committee and its Subcommittee on Oversight and Investigations, then-EPA Administrator Lisa Jackson stated the following:

> The pace of EPA's Clean Air Act regulatory work under this administration is actually not faster than the pace under either of the two previous administrations. In fact, EPA has finalized or proposed fewer Clean Air Act rules (87) over the past 21 months than in the first two years of either President George W. Bush's administration (146) or President Clinton's administration (115).[8]

In congressional testimony and other fora, Administrator Gina McCarthy, head of the agency from July 2013 to January 2017, sought to rebut critics' challenges to EPA's actions and initiatives.

> When it comes to the American economy, cutting pollution doesn't dull our competitive edge, it sharpens it. Thanks to our fuel efficiency standards, the auto industry is once again a source of economic strength. The number of cars coming off American assembly lines, made by American workers, is the highest it's been in 12 years. From catalytic converters to smoke-stack scrubbers, America has a legacy of innovating the world's leading environmental technologies—accounting for more than 1.5 million jobs and $44 billion in exports in 2008 alone. That's more than other big sectors like plastics and rubber products. If you want to talk return on investment, in over four decades, we've cut air pollution by 70 percent, while our GDP has tripled.[9]

Environmental groups generally believe that the agency moved in the right direction, but in several cases they would have liked the regulatory actions to be stronger or to have occurred sooner. Many also feared that decisions to delay the issuance or implementation of several

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[6] For discussion of some of these congressional actions, see CRS Report R43851, *Clean Air Issues in the 114th Congress*, by James E. McCarthy; CRS Report R43943, *The "Waters of the United States" Rule: Legislative Options and 114th Congress Responses*, by Claudia Copeland; CRS Report R41698, *H.R. 1 Full-Year FY2011 Continuing Resolution: Overview of Environmental Protection Agency (EPA) Provisions*, by Robert Esworthy; and CRS Report R41979, *Environmental Protection Agency (EPA) FY2012 Appropriations: Overview of Provisions in H.R. 2584 as Reported*, by Robert Esworthy.

[7] Senator James Inhofe, "Why every property owner should fear EPA's 'waters of the United States' rule," *FoxNews.com*, June 2, 2015, http://www.foxnews.com/opinion/2015/06/02/why-every-property-owner-should-fear-epas-waters-united-states-rule.html.

[8] Letter of Lisa P. Jackson, EPA Administrator, to Hon. Joe Barton and Hon. Michael C. Burgess, November 8, 2010, p. 1. According to the letter, "All three counts include all Clean Air Act rules that amend the Code of Federal Regulations and that require the EPA Administrator's signature." Administrator Jackson's letter was written in response to an October 14, 2010, letter from Reps. Barton and Burgess in which they expressed concern regarding the cumulative impacts of new regulations being proposed under the Clean Air Act.

[9] Gina McCarthy, EPA Administrator, Remarks at Resources for the Future, Washington, DC, September 25, 2014.

standards were bad omens. Commenting on EPA's 2010 request to delay the issuance of air emission standards for boilers, for example, Clean Air Watch stated that "there is an unfortunate appearance here that political pressure from Congress is affecting the situation. That EPA is running scared."[10]

While industry groups have been the most frequent critics of EPA regulation, industry sometimes complains of a lack of EPA action. In 2014, the CEO of the American Petroleum Institute complained that regulations dealing with renewable fuels were overdue, calling it "unacceptable," and "an example of government at its worst." The American Fuel and Petrochemical Manufacturers, seeking issuance of the same rule, called the agency's track record in failing to issue regulations "an egregious pattern of non-compliance."[11]

It is not this report's purpose to render a verdict on whether EPA overreached, ran scared, or followed the directions and used the authorities given to it by Congress during the eight years of the Obama presidency. Statements characterizing EPA's actions, such as those cited above, depend on judgments as to whether the agency correctly determined the level of stringency needed to address an environmental problem, and whether the agency's actions are justified by the legislative mandates that Congress imposed and statutory authorities that Congress provided. Congress and the courts may render these judgments.

What This Report Does

This report provides a factual basis for discussion of these issues, which must ultimately be evaluated on a case-by-case basis. The report identifies and briefly characterizes major regulatory actions[12] promulgated, proposed, or under development by EPA from January 2009 to late 2016. The report uses data from EPA's Semiannual Regulatory Agendas[13] and the list of economically significant reviews completed by the Office of Management and Budget (OMB)[14] to compile a list of regulatory actions proposed, promulgated, or under development by the agency. The list includes most EPA rules considered "economically significant" by OMB since January 2009,[15] as well as some others that were not so designated but have been widely discussed.

Each entry in this report (1) gives the name or, where appropriate, the common name of the regulatory action (e.g., the Clean Power Plan or Mountaintop Mining in Appalachia); (2) explains what the action does; (3) states the current status of the rule or action (e.g., proposed September 20, 2013); (4) explains the significance of the action, providing information on estimated costs

[10] Clean Air Watch, "EPA Seeks Big Delay in Final Toxic Rule for Boilers," December 7, 2010, at http://blogforcleanair.blogspot.com/2010/12/epa-seeks-big-delay-in-final-toxic-rule.html.

[11] See "EPA Won't Finalize Renewable Fuel Standard in 2014, Cites Lengthy Delays," *Daily Environment Report*, November 24, 2014.

[12] This report uses the terms "regulatory action," "regulation," "rule," "standard," and "guidelines" for the actions it describes. There are slight differences among these terms, which are explained, if necessary to understand how the regulatory action will be implemented. In general, "regulatory action" is the broadest of the terms and includes each of the others.

[13] Executive Office of the President, Office of Management and Budget, Office of Information and Regulatory Affairs, *Semiannual Regulatory Agenda: Fall 2016*, November 17, 2016, at http://www.reginfo.gov/public/do/eAgendaMain.

[14] OMB, Office of Information and Regulatory Affairs (OIRA), *Historical Reports*, at http://www.reginfo.gov/public/do/eoHistReviewSearch.

[15] OIRA (the regulatory affairs staff within OMB) considers a rule to be "economically significant" if it is "likely to have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities." OMB, *FAQs/Resources*, at http://www.reginfo.gov/public/jsp/Utilities/faq.jsp.

and benefits,[16] where available; (5) discusses the timeline for implementation, and whether there is a nondiscretionary congressional deadline or a court order or remand driving its development; and (6) identifies a CRS analyst who would be the contact for further information. To simplify presentation, in some cases, we have summarized several separate, but related, regulations under one heading.

This is not a complete list of the regulations that EPA has proposed or promulgated during the Obama Administration. Rather, it is an attempt to identify the most significant and most controversial. A complete list would be substantially longer.

A Few Caveats Regarding Timing

Not all of the rules discussed here are Obama Administration initiatives. Many began development under the Bush Administration (or earlier, in some cases), including several that were promulgated under that Administration and subsequently were vacated or remanded to EPA by the courts. Within the Clean Air Act group, for example, most of the major rules, including the agency's boiler rules and two of the major rules affecting electric power plants (the Cross-State Air Pollution Rule and the Utility MACT/MATS rule) fit that description. Similarly, EPA's regulation of power plant cooling water intake structures under the Clean Water Act is governed by a 1995 consent decree and rules issued and proposed in several phases beginning in 2001. Other EPA actions, such as reconsideration of the ozone air quality standard, actually delayed for several years implementation of Bush Administration rules that strengthened existing standards. All of these are described in detail below.

Several other generalizations are worth underlining:

- Many proposed and "pre-proposal" rules linger for years without being promulgated. They may also be substantially altered before they become final and take effect, as a result of the proposal and public comment process, and/or judicial review.
- For proposed rules, we attempted to provide known deadlines, whether statutory or court-ordered. If there were no known deadlines, we attempted to provide EPA's estimate of the schedule for promulgation. Proposal or promulgation often took longer than estimated in cases that did not have a court-ordered deadline.
- Although they were the most likely deadlines to be met, even court-ordered dates for proposal or promulgation occasionally changed. It was not uncommon for EPA to request extensions of time, often due to the need to analyze extensive comments or reevaluate technical information.
- Promulgation of standards is not the end of the road. Virtually all major EPA regulatory actions are subjected to court challenge, frequently delaying implementation for years. As noted earlier, many of the regulatory actions described here are the result of courts remanding and/or vacating rules

[16] Costs and benefits of EPA regulations are another issue frequently raised by critics of the agency, many of whom have questioned whether EPA's cost estimates are too low or estimates of benefits too high. There are recurring questions regarding the methodologies used to estimate both costs and benefits, including what to choose as the baseline against which to measure changes resulting from a regulation; how to monetize improvements in public health, such as the avoidance of premature death; whether to count both direct benefits and cobenefits (i.e., benefits achieved that were not the purpose of the regulation); how to account for benefits for which there is no accepted measurement or valuation methodology; whether to include reductions in the "social cost of carbon" as a benefit and, if so, how to measure those benefits; and whether certain benefits or costs are double-counted when simultaneous proposals address the same pollutant. These issues are not the subject of this report.

promulgated by previous Administrations. EPA has also, in several cases, reconsidered rules after promulgation, changing what were announced as "final" standards, and, in some cases, granting additional time for compliance.

- In many cases, EPA rules must be adopted by states to which the program has been delegated before actual implementation occurs (e.g., establishing air quality plans or issuing permits). Moreover, many states require that the legislature review new regulations before the new rules would take effect.
- Federal standards for stationary sources under the air, water, and solid waste laws are generally implemented through permits, which would be individually issued by state and local permitting authorities after the federal standards take effect. When finalized, a permit would generally include a compliance schedule, typically giving the permittee several years for installation of required control equipment. Existing sources generally have several years following promulgation and effective dates of standards, therefore, to comply with any standards.

In short, the road to EPA regulation is rarely a straight path. There are numerous possible causes of delay. It would be unusual if the regulatory actions described here were all implemented on the anticipated schedule, and even if they were, existing facilities often have several years before being required to comply.

Congressional Activity

Since the 111th Congress, a number of EPA's regulatory actions have been the subject of legislative proposals, including stand-alone bills that would have delayed or prohibited EPA actions, resolutions of disapproval under the Congressional Review Act, and potential riders on EPA's appropriation. In the 112th and 113th Congresses, criticism of EPA actions increased, and several bills to prevent or delay EPA action passed the House but were not considered in the Senate. Some proposals were broad in nature, targeting all regulatory agencies or a lengthy list of specific regulations, while others focused more narrowly on individual rules or actions. In the 114th Congress, opponents of EPA's initiatives, who maintained that the agency was exceeding its authority, again considered various approaches to altering the agency's course, including riders on appropriations bills, stand-alone legislation, resolutions of disapproval under the Congressional Review Act, and amendments to the underlying environmental statutes.

Throughout this period, congressional oversight of EPA actions has been vigorous. With Republican majorities in both the House and the Senate, the 114th Congress accelerated oversight activities of the Administration's initiatives and legislative efforts to limit EPA's regulatory activities. The House passed several bills intended to halt or redirect EPA rules or policies. In addition, both the Senate and House passed three joint resolutions disapproving EPA rules under the Congressional Review Act. Each of the joint resolutions was vetoed by the President.

Beyond the criticism of specific regulations, there have also been calls for broad regulatory reforms of government—for example, to reinforce the role of economic considerations in agency decisionmaking, or to increase Congress's role in approving or disapproving regulatory decisions. Congress's interest in these types of regulatory reform proposals accelerated in the 114th Congress; many bills were introduced. Topics covered include reforms such as requiring agencies to adopt the least costly rule that meets relevant statutory objectives unless the benefits justify additional costs; establishing commissions or other mechanisms to review the effectiveness of federal programs and identify outdated or overly burdensome rules for repeal; requiring independent regulatory agencies to comply with regulatory analysis requirements; providing for judicial review of certain requirements and determinations for which judicial review is not

currently available; altering judicial deference to agency interpretations of rules; and/or placing moratoria on the issuance of new regulations.

While many of these proposals were broad in nature and would have applied regulatory reforms to multiple federal agencies, some bills in the 114th Congress targeted EPA expressly and particularly. Examples include H.R. 1029/S. 543, which would alter qualifications for membership of the Science Advisory Board (SAB), which provides recommendations and scientific advice to the EPA Administrator, and revise public participation and other procedures of the SAB; and H.R. 1030/S. 544, which would bar EPA from proposing or promulgating rules based upon science that is not transparent or reproducible. Supporters of bills such as these say that they are intended to restore transparency and confidence in EPA's regulatory processes, while opponents contend that the legislation is intended to limit the quality of scientific advice provided to EPA and to impede EPA's ability to use science to protect public health and the environment. The Obama Administration opposed these bills.

Conclusions

This report has been updated frequently since the first version was released early in 2011. That original report and numerous updates to it tracked nearly four dozen rules. Many of the issues that were raised in 2011 regarding specific regulations have now been resolved—at least to the extent that proposed rules have been finalized. Still, the broader question of whether the Obama Administration's EPA "overreached" in its regulatory efforts has not gone away. Critics both in Congress and outside of it regularly accuse the agency of overreach. In 2013, in a case involving four of EPA's greenhouse gas regulatory actions, for example, a dozen states led by Texas asked the Supreme Court to "rein in a usurpatious agency and remind the President and his subordinates that they cannot rule by executive decree."[17] Legal challenges to the "waters of the United States" rule filed by multiple industries and more than half of the states similarly claimed overreach, beyond what Congress and the courts have allowed.

What is different since our first report is that there is now a more detailed record of EPA actions to be evaluated. Reviewing that record, we find the following:

- Most of the proposals that were controversial when our first report was released are now final.
- The final versions of many of the most controversial rules were made less stringent than what was proposed.
- The Clean Power Plan, which set state-by-state average greenhouse gas emission requirements for existing fossil-fueled power plants, is one exception to the stringency generalization: it underwent a number of changes following proposal, some of which made the rule more stringent and others less stringent.
- In revising proposed rules, EPA often relied on data submitted by industry and other stakeholders, acknowledging that it had inadequate or incomplete data when it proposed the rules.

[17] Petition for certiorari filed by State of Texas et al. at 2, granted, 2013 WL 1743433 (Oct. 15, 2013), from Coalition for Responsible Regulation v. EPA, 682 F.3d 102 (D.C. Cir. 2012). Five other petitions for certiorari from the same decision were also granted; in June 2014, the Supreme Court issued a ruling that largely upheld EPA's authority to regulate greenhouse gases through the agency's New Source Review program (Utility Air Regulatory Group v. EPA, 134 S. Ct. 2427 (2014)).

- In several instances, the regulated community was given more time to comply than originally expected.
- Regardless of modifications in the final rules, many of the promulgated regulations have been challenged in court by a variety of groups—some seeking more stringent rules, others less stringent.
- Although some of these challenges remain to be heard by the courts, thus far the courts have upheld EPA decisions on the final regulations in most cases.[18]
- The pace of new proposed and final regulations has waxed and waned. The pace slowed considerably for several years after 2011. In part, this may have been because a backlog of rules that were remanded to the agency during the Bush Administration had been largely addressed by 2012; other rules were delayed until after the 2012 election, perhaps due to political considerations at the time. Most of these have now been promulgated.
- 2015 was a particularly contentious year. Major rules were promulgated on greenhouse gas emissions and discharges to water from electric power plants, hard on the heels of a December 2014 rule on coal combustion residuals and a May 2015 rule to define waters subject to the regulatory jurisdiction of the Clean Water Act. Ambient air quality standards for ozone, promulgated in October 2015, were also contentious.

With a change in presidential Administration taking place in January 2017, this will be the final version of this report. It thus provides an overview of major environmental regulations and regulatory issues that were prominent and controversial during the eight years of the Obama Administration. The 115th Congress and the new Administration seem likely to revisit at least some of these issues, but that is a topic for future reports.

One additional point to note here is that EPA has continuing and ongoing statutory responsibilities that will extend beyond the term of the Obama Administration. Some of these are nondiscretionary statutory duties, such as the requirement to review and, if appropriate, revise National Ambient Air Quality Standards every five years, or to review New Source Performance Standards under the Clean Air Act (CAA) every eight years. EPA must evaluate the statutory annual requirements of the Renewable Fuels Standards every year, revising the CAA's requirements if attainment of the statutory standards is not feasible. Numerous other CAA requirements are also nondiscretionary and recurring. Other statutes require review and, if appropriate, revision of existing standards at regular intervals, too: the Solid Waste Disposal Act, in Section 2002(b), requires that each regulation promulgated under the act "shall be reviewed and, where necessary, revised not less frequently than every three years"; and the Safe Drinking Water Act requires EPA to review each drinking water regulation every six years. Further, the Clean Water Act requires EPA to review sludge management rules "not less often than every 2 years" in order to identify additional toxic pollutants for regulation.

In its Fall 2016 Regulatory Agenda, the agency identified 130 rules that are in the pre-rule, proposed rule, or final rule stage, with timelines stretching into 2017 and later.[19] A few of the listed rules are expected to be "economically significant," such as a rule to establish financial responsibility requirements under the Comprehensive Environmental Response, Compensation,

[18] See, for example, CRS Legal Sidebar WSLG921, *EPA on a Roll?: D.C. Circuit Upholds Three EPA Rulemakings in April*, by Robert Meltz; and CRS Legal Sidebar WSLG1292, *Three More EPA Wins in the D.C. Circuit for Greenhouse Gas Rules*.

[19] See http://www.reginfo.gov/public/do/eAgendaMain?operation=OPERATION_GET_AGENCY_RULE_LIST&currentPub=true&agencyCode=&showStage=active&agencyCd=2000&Image58.x=39&Image58.y=17.

and Liability Act (CERCLA) for facilities in the hardrock mining industry, which EPA plans to promulgate in December 2017.

Organization of the Remainder of This Report

Major or controversial EPA rules developed under the Obama Administration are organized below under these headings: "Clean Air Act," "Clean Water Act," "Solid Waste (RCRA)," and "Toxic Substances Control Act (TSCA)."

Clean Air Act

Because so many of the rules discussed in this report were developed under the Clean Air Act, we have divided this section into five subsections: (1) "Climate Change"; (2) "Ambient Air Quality Standards"; (3) "Electric Generating Units"; (4) "Boilers and Incinerators"; and (5) "Other Clean Air Act Rules."

Climate Change

1. Greenhouse Gas Reporting Rule. In October 2009, in response to a congressional mandate in EPA's FY2008 appropriation (P.L. 110-161), EPA promulgated the Greenhouse Gas Reporting Rule.[20] The rule required 31 categories of sources to report their emissions of greenhouse gases to EPA annually, beginning in 2011, if the sources emit 25,000 tons or more of carbon dioxide or the equivalent amount of five other greenhouse gases (GHGs).[21] (Eleven other categories of sources have since been added to the rule.) By itself, the rule imposes little cost ($867 per facility, according to EPA's estimate) because it only requires reporting; but the sources who are required to report are expected to be the focus of EPA efforts as the agency develops regulations to control emissions of GHGs. The original reporting deadline was March 31, 2011. As that date approached, EPA extended the deadline to September 30, 2011. The first data submitted under the rule were released January 11, 2012. For additional information, contact Jim McCarthy.

2. Greenhouse Gas Endangerment Finding. On December 15, 2009, EPA issued findings that six greenhouse gases cause or contribute to air pollution that endangers public health and welfare.[22] The action was taken in response to an April 2007 Supreme Court decision (*Massachusetts v. EPA*) that required the agency to decide the issue or to conclude that climate change science is so uncertain as to preclude making such findings. These findings do not themselves impose any requirements on industry or other entities. However, the action was a prerequisite to finalizing EPA's greenhouse gas emission standards for cars and light-duty trucks, which were jointly promulgated by EPA with fuel economy standards from the Department of Transportation, in May 2010. These, in turn, triggered permit requirements for stationary sources of GHGs, beginning January 2, 2011. On December 10, 2010, the U.S. Court of Appeals for the D.C. Circuit denied industry and state motions to stay the endangerment finding and related

[20] U.S. Environmental Protection Agency, "Mandatory Reporting of Greenhouse Gases; Final Rule," 74 *Federal Register* 56260, October 30, 2009.

[21] GHG emissions consist of carbon dioxide (CO_2), methane, nitrous oxide (N_2O), sulfur hexafluoride (SF_6), and two categories of gases—hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). Since each of these substances has a different global warming potential, the emissions of each are converted to the equivalent amount of CO_2 emissions, based on how potent the substance is as compared to CO_2, giving rise to the term "CO_2-equivalent."

[22] U.S. Environmental Protection Agency, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act," 74 *Federal Register* 66496, December 15, 2009.

regulations, and on June 26, 2012, the court upheld the regulations. The court's decision applied to 84 cases filed by a variety of industry groups and states (*Coalition for Responsible Regulation v. EPA*). For additional information, contact Jim McCarthy or Alexandra Wyatt.

3. Light Duty Motor Vehicle Greenhouse Gas Emission Standards, Model Years 2012-2016. On May 7, 2010, EPA and the National Highway Traffic Safety Administration (NHTSA) promulgated integrated GHG emission standards and corporate average fuel economy (CAFE) standards for new cars and light trucks, a category that includes SUVs and minivans, as well as most pickup trucks.[23] NHTSA was required by the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140) to promulgate CAFE standards so that by 2020, new cars and light trucks reach a combined average fuel economy of 35 miles per gallon (mpg). EPA simultaneously issued vehicle greenhouse gas standards in response to directives from the Supreme Court in *Massachusetts v. EPA*. The EPA regulations required a reduction in emissions to an estimated combined emission level of 250 grams of CO_2 per mile by model year 2016, about a 21% reduction in emissions when fully implemented. The Administration estimated that complying with the regulations would add $1,100 to the cost of an average vehicle, although this additional purchase cost was expected to be paid back through lifetime fuel savings. The new standards were phased in beginning with the 2012 model year. EPA estimates that the additional lifetime cost of 2012-2016 model year vehicles under the regulations will be about $52 billion; benefits are expected to be approximately $240 billion. This rule was also upheld by the D.C. Circuit in the June 26, 2012, *Coalition for Responsible Regulation* decision. For additional information, contact Rick Lattanzio.

4. Light Duty Motor Vehicle Greenhouse Gas Emission Standards, Model Years 2017-2025. Using the same authority described in the item above, EPA and NHTSA promulgated joint GHG/fuel economy rules for 2017-2025 model year vehicles, on October 15, 2012.[24] Under these standards, GHG emissions from new cars and light trucks will be reduced about 50% by 2025 compared to 2010 levels, to an expected fleet average of 163 grams per mile; average fuel economy will rise to nearly 50 miles per gallon. The agencies estimated that the new technology to comply with the standards will cost roughly $1,800 per vehicle in 2025, although lifetime fuel savings would total roughly $5,700 to $7,400.

In the final rule, EPA committed to a Midterm Evaluation of the standards for model years 2022-2025. The evaluation is scheduled to be completed by April 2018, along with a decision about whether to retain the standards as promulgated, make them less stringent, or make them more stringent. According to its website, EPA is examining a wide range of factors in the evaluation, such as developments in powertrain technology, vehicle electrification, light-weighting and vehicle safety impacts, the penetration of fuel efficient technologies in the marketplace, consumer acceptance of fuel efficient technologies, trends in fuel prices and the vehicle fleet, employment impacts, and many others. As a first step, a draft Technical Assessment Report was made available for public comment in July 2016. Auto manufacturers have expressed concerns about a lack of harmonization between EPA, NHTSA, and California standards, and consumer acceptance

[23] U.S. Environmental Protection Agency, U.S. Department of Transportation, "Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule," 75 *Federal Register* 25324-25728, May 7, 2010. Information on benefits and costs are summarized in an April 2010 EPA Fact Sheet, at http://www.epa.gov/oms/climate/regulations/420f10014.pdf.

[24] U.S. Environmental Protection Agency, U.S. Department of Transportation, "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards; Final Rule," 77 *Federal Register* 62624, October 15, 2012. A link to the rule and other information, including a Fact Sheet, is available at http://www.epa.gov/otaq/climate/regs-light-duty.htm#new1.

of zero emission technology, particularly given the current relatively low price of gasoline. For additional information, contact Rick Lattanzio.

5. Greenhouse Gas Tailoring Rule. On June 3, 2010, EPA promulgated a rule that defined which stationary sources would be required to obtain Clean Air Act permits for GHG emissions and how the requirements would be phased in, a rule the agency referred to as the "Tailoring Rule."[25] Under the Clean Air Act, stationary sources of pollution (power plants, refineries, steel mills, etc.) are required to obtain preconstruction and operating permits if they emit more than a threshold amount of any air pollutant. The statutory threshold (generally 100 tons per year of any air pollutant, but in some cases 250 tons) is not well-suited to carbon dioxide (CO_2), the principal greenhouse gas: requiring permits of facilities that emit more than 100 tons of CO_2 would lead to the "absurd result"[26] that as many as 6 million sources of GHGs would need to apply for permits.

Out of administrative necessity, therefore, the agency set higher annual thresholds. The threshold set by the Tailoring Rule (annual emissions of 75,000-100,000 tons of carbon dioxide equivalents) limited which facilities were required to obtain permits for their GHG emissions: from 2011 through 2016, the nation's largest GHG emitters, including power plants, refineries, cement production facilities, and about two dozen other categories of sources (an estimated 17,000 facilities annually) were to be the only sources required to obtain permits. Of these, most would have faced only an administrative requirement to provide an estimate of their GHG emissions. A few (EPA estimated 1,600) new or modified facilities would need to address whether they have the best available control technology for limiting emissions.[27]

The Tailoring Rule was effectively overturned by the Supreme Court on June 23, 2014. The Court agreed that EPA could require permits for GHG emissions from sources that were treated as major sources because of their emissions of conventional pollutants, and thus had to obtain CAA permits anyway. But the Court ruled that EPA could not require sources to obtain permits based solely on their GHG emissions. There is little practical effect from the Court's decision, since most of the sources that the Tailoring Rule would have required to obtain GHG permits are also in the "anyway" category.

For additional information, contact Jim McCarthy or Linda Tsang.

6. Medium- and Heavy-Duty Vehicle Greenhouse Gas Rule. On September 15, 2011, EPA and NHTSA promulgated integrated GHG emission standards and fuel economy standards for medium- and heavy-duty vehicles.[28] Medium- and heavy-duty trucks are trucks with a gross vehicle weight of 8,500 pounds or more. EPA's endangerment finding (see above) specifically referenced medium- and heavy-duty trucks as among the sources that contribute to the GHG emissions for which it found endangerment. In addition, NHTSA was required by Section 102 of

[25] U.S. Environmental Protection Agency, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Final Rule," 75 *Federal Register* 31514, June 3, 2010.

[26] In the preamble to the Tailoring Rule, EPA refers to three legal doctrines that guided its interpretation of the statutory requirements of the permit sections of the Clean Air Act, the first of which was "what we will call (1) The 'absurd results' doctrine, which authorizes agencies to apply statutory requirements differently than a literal reading would indicate, as necessary to effectuate congressional intent and avoid absurd results.... " 75 *Federal Register* 31516, June 3, 2010.

[27] EPA reported, however, that in the first 11 months of the program, only 68 permit applications were received. See U.S. Environmental Protection Agency, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Step 3, GHG Plantwide Applicability Limitations and GHG Synthetic Minor Limitations, Proposed Rule," 77 *Federal Register* 14233, March 8, 2012.

[28] U.S. Environmental Protection Agency, U.S. Department of Transportation, "Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles; Final Rules," 76 *Federal Register* 57106, September 15, 2011.

the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140) to promulgate fuel economy standards for medium- and heavy-duty trucks, reflecting the "maximum feasible improvement" in fuel efficiency. The standards are being phased in between 2014 and 2018. When fully implemented, they will require an average per vehicle reduction in GHG emissions of 17% for diesel trucks and 12% for gasoline-powered trucks. The expected cost increase for the 2014-2018 vehicles affected by the rule is $8.1 billion. EPA projects benefits of $57 billion over the trucks' lifetimes, including $50 billion in fuel savings. In the President's June 25, 2013, Climate Action Plan, he committed to a second round of fuel efficiency and GHG emission standards for post-2018 heavy-duty vehicles. For additional information, contact Rick Lattanzio.

7. Phase 2 Medium- and Heavy-Duty Truck Greenhouse Gas Emission Standards. On October 25, 2016, EPA and NHTSA promulgated a second round of greenhouse gas emission and fuel economy standards for medium- and heavy-duty trucks. The first round of standards (Phase 1), promulgated in 2011, covered model year 2014-2018 trucks. The Phase 2 standards will affect trucks beginning with the 2021 model year, and will set standards for trailers beginning in 2018. According to EPA, "The Phase 2 standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons, save vehicle owners fuel costs of about $170 billion, and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program."[29]

EPA projects the total cost of the rule at $29-$31 billion over the lifetime of model year 2018-2029 trucks. The standards will increase the cost of a long-haul tractor-trailer by as much as $13,500 in model year 2027, according to the agency, but the buyer would recoup the investment in fuel-efficient technology in less than two years through fuel savings. In EPA's analysis, fuel consumption of 2027 model tractor-trailers will decline by 34% as a result of the rule.[30] As with the earlier rule, EPA and NHTSA worked on the Phase 2 standards with stakeholders and with the California Air Resources Board (CARB) with the goal of ensuring that manufacturers can continue to build a single national fleet. For additional information, contact Rick Lattanzio.

8. Carbon Pollution Standards for New, Modified, and Reconstructed Power Plants. Electric generating units are the largest U.S. source of greenhouse gas emissions, accounting for about 30% of all anthropogenic GHG emissions. In a settlement agreement with 11 states and other parties, EPA agreed to propose New Source Performance Standards (NSPS) for power plant GHG emissions by July 26, 2011, and take final action on the proposal by May 26, 2012. This schedule encountered delays: NSPS were not proposed until April 13, 2012,[31] and although EPA faced a statutory deadline of one year after the date of proposal (i.e., April 13, 2013) for promulgation of final standards, it did not meet that deadline. The agency received nearly 2.7 million comments on the proposed rule—until that time, the most it had received on any rule in its 40-year history.

On June 25, 2013, the President directed EPA to re-propose the rule by September 20, 2013. EPA met that deadline, releasing a modified proposal on that date. The re-proposal appeared in the

[29] U.S. Environmental Protection Agency, Office of Transportation and Air Quality, "EPA and NHTSA Adopt Standards to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond," Regulatory Announcement, August 2016, at https://nepis.epa.gov/Exe/ZyPDF.cgi/P100P7NL.PDF?Dockey=P100P7NL.PDF.

[30] U.S. Environmental Protection Agency, U.S. Department of Transportation, "Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2; Final Rule," 81 *Federal Register* 73478, 73482, October 25, 2016. Payback period information is found in the EPA regulatory announcement cited above.

[31] The standards appeared in the *Federal Register* on April 13, 2012. The standards and supporting materials are available at http://www.epa.gov/carbonpollutionstandard/actions.html.

Federal Register on January 8, 2014.[32] A four-month public comment period ensued. Modified and reconstructed units are also subject to NSPS: EPA proposed separate standards for these units on June 2, 2014. EPA combined these rulemakings, finalizing a rule that covers new, reconstructed, and modified units on August 3, 2015; it was published in the *Federal Register* on October 23, 2015.[33]

The GHG emission standards for new units were set at levels achievable by most natural-gas-fired units without added pollution controls; new coal-fired units, on the other hand, would need to use carbon capture and storage (CCS) technology to capture about 20% of their uncontrolled emissions. Although the components of CCS technology have been demonstrated, no operating power plant in the United States combined them all in an operating unit as of the date of the rule's promulgation. The electric power industry has generally concluded that a CCS requirement would effectively prohibit the construction of new coal-fired plants, other than those already permitted. EPA maintains otherwise, but it also says that, because of low natural gas prices and abundant existing generation capacity, it believes no new coal-fired units subject to the proposed standards will be constructed between 2015 and 2020.

The final standards for modified and reconstructed units[34] are less stringent. These units would have to meet emission standards equal to their best yearly performance from 2002 to the year of modification, or, if reconstructed, the emissions of the best demonstrated generating technology for the type of unit. Neither would be subject to CCS requirements. EPA says "we anticipate few covered units will trigger the reconstruction or modification provisions in the period of analysis [through 2025]. As a result, we anticipate negligible costs or benefits associated with those standards."[35]

Even if the rule's costs are negligible, the New Source standards play an important role. Under Section 111 of the Clean Air Act, EPA can only promulgate standards for emissions from *existing* sources if it has set standards for emissions from new sources in the same category. Existing source standards were promulgated at the same time as the NSPS (see next item). For additional information, contact Jim McCarthy.

9. Clean Power Plan (Carbon Pollution Standards for Existing Power Plants). In the settlement agreement that EPA reached in 2010 (see previous item), the agency also agreed to develop guidelines for GHG emissions from existing fossil-fueled power plants. The President directed EPA to propose these guidelines by June 1, 2014; finalize them by June 1, 2015; and require the states to submit implementation plans by June 30, 2016. EPA promulgated this rule—which it calls the Clean Power Plan—at the same time as the NSPS standards for power plants.[36] The Clean Power Plan sets state-specific goals for CO_2 emissions from fossil-fueled power plants.

[32] U.S. Environmental Protection Agency, "Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, Proposed Rule," 79 *Federal Register* 1430, January 8, 2014.

[33] U.S. Environmental Protection Agency, "Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, Final Rule," 80 *Federal Register* 64510, October 23, 2015.

[34] A modification is any physical or operational change to an existing source that increases the source's maximum achievable hourly rate of air pollutant emissions. A reconstructed source is a unit that replaces components to such an extent that the capital cost of the new components exceeds 50% of the capital cost of an entirely new comparable facility. U.S. Environmental Protection Agency, "Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units, Proposed Rule," 79 *Federal Register* 34960, June 18, 2014.

[35] U.S. Environmental Protection Agency, *Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plants*, June 2014, p. ES-26, at http://www2.epa.gov/sites/production/files/2014-06/documents/20140602ria-clean-power-plan.pdf.

[36] U.S. Environmental Protection Agency, "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Final Rule," 80 *Federal Register* 64661, October 23, 2015.

EPA set these goals based on three "building blocks": improved efficiency at coal-fired power plants; substitution of natural gas combined cycle generation for coal-fired power; and zero-emission power generation (from increased renewable or nuclear power). Two sets of goals were proposed: an interim set, which would apply to the average emissions rate in a state in the 2022-2029 time period; and a final set for the years 2030 and beyond. EPA estimates the cost of the rule at $5.1 billion to $8.4 billion annually in 2030, with annual benefits of $32 billion to $54 billion in that year.

In addition to targeting emission rates for the states, the Clean Power Plan set emission and emission-rate targets for three areas of Indian country. Emission rates for Alaska and Hawaii and two U.S. territories (Guam and Puerto Rico) were not finalized due to incomplete information. EPA stated it will determine how to address the requirements of Section 111(d) with respect to these jurisdictions at a later time. Legal challenges to the Clean Power Plan were filed by more than 100 parties following its promulgation in October 2015. On February 9, 2016, the Supreme Court stayed the rule pending adjudication of the legal challenges. For additional information, contact Jim McCarthy or Jonathan Ramseur.

10. Federal Implementation Plan for Existing Power Plants Under the Clean Power Plan. As described above, the Clean Power Plan, which sets greenhouse gas emission standards for existing power plants, would set *average* emission rates for fossil-fueled power plants separately for each state. The rule would be implemented through state regulations, with each state submitting an implementation plan to EPA outlining how it would achieve its state goal. This presents a potential problem for EPA: what to do if a state does not submit a plan—if it "just says no." Under the Tenth Amendment to the Constitution, EPA cannot require states to undertake sovereign acts, such as implementing federal regulatory requirements or writing the federal regulations into state law. If a state does not submit an implementation plan, EPA's only recourse under the Constitution and the Clean Air Act would be to promulgate requirements for the state through a Federal Implementation Plan. EPA proposed a template for such plans and model emissions trading rules that could be used by the states, at the same time that it finalized the Clean Power Plan, on August 3, 2015. The agency sent a final version of the model trading rules to the Office of Management and Budget for interagency review on November 3, 2016. For additional information, contact Jim McCarthy or Linda Tsang.

11. Methane Emission Standards for New and Modified Sources in the Oil and Gas Industry. On June 3, 2016, EPA promulgated a suite of New Source Performance Standards (NSPS) under Section 111 of the Clean Air Act to set controls for the first time on methane emissions from sources in the crude oil and natural gas production sector and the natural gas transmission and storage sector.[37] The rule builds on the agency's 2012 NSPS for volatile organic compound (VOC) emissions[38] and would extend controls for methane and VOC emissions beyond the existing requirements to include new or modified hydraulically fractured oil wells; pneumatic pumps; compressor stations; and leak detection and repair at well sites, gathering and boosting stations, and processing plants. The Administration stated that the rule is a key component under the President's Climate Action Plan, and that plan's *Strategy to Reduce Methane Emissions*,[39] needed to set the Administration on track to achieve its goal to cut methane

[37] U.S. Environmental Protection Agency, "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule," 81 *Federal Register* 35824, June 3, 2016.

[38] U.S. Environmental Protection Agency, "Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, Final Rule," 77 *Federal Register* 49489, August 16, 2012.

[39] There are other regulatory and nonregulatory components to the Administration's *Strategy to Reduce Methane*

emissions from the oil and gas sector by 40%-45% from 2012 levels by 2025, and to reduce all domestic greenhouse gas emissions by 26%-28% from 2005 levels by 2025.

Methane—the key constituent of natural gas—is a potent greenhouse gas with a global warming potential (GWP) more than 25 times greater than that of carbon dioxide. According to EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, methane is the second-most-prevalent greenhouse gas emitted in the United States from human activities, and nearly 30% of those emissions come from oil production and the production, transmission, and distribution of natural gas.[40]

EPA projects that the standards for new, reconstructed, and modified sources will reduce methane emissions by 510,000 short tons in 2025, the equivalent of reducing 11 million metric tons of carbon dioxide. In conjunction with the proposal, EPA conducted a regulatory impact analysis (RIA) that looked at the illustrative benefits and costs of the proposed NSPS: in 2025, EPA estimated the rule will have costs of $530 million and climate benefits of $690 million (in constant 2012 dollars). The rule will also reduce emissions of VOCs and hazardous air pollutants. EPA was not able to quantify the benefits of these reductions. For additional information, contact Rick Lattanzio.

12. GHG Emission Standards for Commercial Aircraft. On August 15, 2016, EPA issued a finding that greenhouse gas emissions (including CO_2 emissions) from commercial aircraft contribute to the pollution that causes climate change and endangers the health and welfare of Americans.[41] The finding, under Section 231 of the Clean Air Act, is the precondition for GHG emission standards for commercial aircraft. U.S. aircraft emit roughly 11% of GHG emissions from the U.S. transportation sector and 29% of GHG emissions from all aircraft globally.

In February 2016, the International Civil Aviation Organization (ICAO) agreed on international CO_2 standards for aircraft, beginning in 2020. ICAO is a specialized body of the United Nations with 191 member states. For the past five years, ICAO had been working with the aviation industry and other stakeholders to develop international CO_2 emission standards for aircraft. EPA and the Federal Aviation Administration, representing the United States, have participated in ICAO's process. In October 2016, ICAO's governing council also agreed on a system for offsetting future carbon emissions from aviation.

EPA's endangerment finding lays the necessary foundation for the adoption and implementation of domestic aircraft CO_2 standards, in accordance with the Clean Air Act and the ICAO agreement. The emissions offset system agreed to in the ICAO process is voluntary for the next

Emissions, including a proposal for Control Techniques Guidelines for VOC reduction requirements at existing oil and gas sources in ozone nonattainment areas and states in the Ozone Transport Region, a proposal to clarify the definitions for "major source" categories in the oil and natural gas sector for the purpose of permitting, and a proposal to expand voluntary efforts under the Natural Gas STAR program and to provide several new mechanisms through which oil and gas companies could make and track commitments to reduce methane emissions. For more information, see Executive Office of the President (EOP), *The President's Climate Action Plan*, June 2013; EOP, *Climate Action Plan: Strategy to Reduce Methane Emissions*, March 2014; EOP, "Fact Sheet: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions," January 14, 2015; and CRS Report R43860, *Methane: An Introduction to Emission Sources and Reduction Strategies*.

[40] GWP as calculated over 100 years. U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013*, Washington, DC, EPA 430-R-15-004, April 15, 2015.

[41] U.S. Environmental Protection Agency, "Finding That Greenhouse Gas Emissions from Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated to Endanger Public Health and Welfare," 81 *Federal Register* 54422, August 15, 2016.

decade and has been agreed to by the U.S. industry. For additional information, contact Jane Leggett.

Ambient Air Quality Standards

13. Ozone Ambient Air Quality Standards. On October 1, 2015, EPA finalized a revision of the National Ambient Air Quality Standards (NAAQS) for ozone.[42] The Clean Air Act requires EPA to review the NAAQS every five years. The previous review was completed in March 2008, so the agency was behind the statutory schedule for completion of its review, and was under a court order to sign a final rule by October 1, 2015.

NAAQS are the cornerstone of the Clean Air Act, in effect defining what EPA considers to be clean air for six widespread categories of air pollution. Ozone is the most widespread of the six pollutants. Exposure to it in concentrations above the standard has been linked to respiratory illnesses, heart attacks, and premature death. Ozone also has negative effects on forests and crop yields, which the NAAQS are also supposed to protect.

In setting standards for ambient air quality, NAAQS do not directly limit emissions, but they set in motion a process under which "nonattainment areas" are identified and states and EPA develop plans and regulations to reduce pollution in those areas. Nonattainment designations may also trigger statutory requirements, including that new major sources offset certain emissions by reducing emissions from existing sources.

The ozone NAAQS promulgated in 2015 were based on a review of 2,300 scientific studies. The NAAQS set both primary (health-based) and secondary (welfare-based) standards of 70 parts per billion (ppb)—as opposed to the previous standards of 75 ppb—for ozone concentrations in ambient air. EPA has identified 241 counties that would violate the NAAQS's proposed range, if the most recent three years of data available in 2015 were used to determine attainment. For comparison, 155 counties had monitors showing violation of the currently implemented (2008) standard. Actual designation of nonattainment areas will be made using later data than those available in 2015, however—most likely data for 2014-2016. Given emission trends, a revised standard may affect fewer counties than the current projection might suggest. (Note: From late 2009 to September 2011, EPA conducted a reconsideration of the 2008 ozone NAAQS, and proposed changes. At the President's request, however, the proposal was withdrawn without final action. The reconsideration is discussed below.)

EPA estimates that the costs of implementing the proposal would be $1.4 billion annually in 2025 in states other than California. The monetized value of the health benefits associated with changing the standard would range from $2.9 billion to $5.9 billion annually in 2025, according to the agency. Separate cost and benefit estimates were prepared for California; under the statute, most areas in California will have until the 2030s to attain the standard. Relying on their own estimates, which make different assumptions regarding the cost of emission controls, industry sources (notably the National Association of Manufacturers) have stated that the ozone proposal could be the most expensive rule in EPA history, and have supported efforts in Congress to delay promulgation of a final standard. For additional information, contact Jim McCarthy.

14. 2010-2011 Ozone Ambient Air Quality Standards Review. On January 19, 2010, EPA proposed a revision of the National Ambient Air Quality Standard (NAAQS) for ozone.[43] At the

[42] The rule appeared in the *Federal Register* on October 26, 2015: U.S. Environmental Protection Agency, "National Ambient Air Quality Standards for Ozone, Final Rule," 80 *Federal Register* 65292.

[43] U.S. Environmental Protection Agency, "National Ambient Air Quality Standards for Ozone; Proposed Rule," 75 *Federal Register* 2938, January 19, 2010.

President's request, on September 2, 2011, this proposal was withdrawn, leaving EPA to implement previously promulgated (2008) ozone standards. As noted above, the Clean Air Act requires EPA to review NAAQS every five years. EPA had completed a review of the ozone NAAQS in 2008, and made the standard more stringent, but the Obama Administration's EPA suspended implementation of the 2008 standard in 2009 in order to consider further strengthening it.

The reconsidered ozone NAAQS that was proposed in January 2010 was among the most controversial standards under consideration at EPA, because of its wide reach and potential cost. In the 2010 proposal, EPA identified at least 515 counties that would violate the proposed NAAQS if the most recent three years of data available at the time of proposal were used to determine attainment (compared to 85 counties that violated the 1997 standard in effect at that time). The agency estimated that the costs of implementing the reconsidered ozone NAAQS, as proposed, would range from $19 billion to $25 billion annually in 2020, with benefits of roughly the same amount.

On September 2, 2011, the White House announced that the President had requested that EPA Administrator Jackson withdraw the draft ozone standards, since work was already under way to update a review of the science that would result in the reconsideration of the ozone standard in 2013.[44] That review led to the 2015 revision of the standards described above. For additional information, contact Jim McCarthy.

15. Particulate Matter (Including "Farm Dust") NAAQS. EPA considers particulate matter (PM) to be among the most serious air pollutants, responsible for tens of thousands of premature deaths annually. The current NAAQS sets standards for both "fine" particulates ($PM_{2.5}$) and larger, "coarse" particles (PM_{10}). The $PM_{2.5}$ standards affect far more people and far more counties than the standard for PM_{10}, and both sets of standards have affected mostly industrial, urban areas.

EPA completed a review of the PM NAAQS in 2006. The agency is required by the Clean Air Act to review NAAQS at five-year intervals, so another review was due in 2011. As the review process was getting under way, in February 2009, the D.C. Circuit Court of Appeals remanded the 2006 standard for $PM_{2.5}$ to EPA, saying that the standard was "contrary to law and unsupported by adequately reasoned decisionmaking."[45] As a result, EPA combined the statutory five-year review of the standard and its response to the D.C. Circuit decision, completing a review of the PM standard that served both purposes in January 2013.[46] The review left the standard for coarse particles unchanged, as well as the standard for 24-hour exposures to $PM_{2.5}$. But it lowered the standard for annual exposures to $PM_{2.5}$, as suggested by the agency's outside scientific advisers, from 15 micrograms per cubic meter to 12.

Although this appears to be a significant strengthening of a standard that potentially affects a wide array of mobile and stationary sources, EPA projects the incremental cost of the revision at a relatively modest $53 million to $350 million annually. The cost of compliance with the PM NAAQS is moderated by the fact that other EPA standards (for various emission sources) are

[44] The White House, Office of the Press Secretary, "Statement by the President on the Ozone National Ambient Air Quality Standards," September 2, 2011.

[45] American Farm Bureau Fed'n v. EPA, 559 F.3d 512 (D.C. Cir. 2009).

[46] U.S. Environmental Protection Agency, "National Ambient Air Quality Standards for Particulate Matter; Final Rule," 78 *Federal Register* 3086, January 15, 2013. A link to the standards and other supporting materials can be found at http://www.epa.gov/pm/actions.html.

reducing exposures to $PM_{2.5}$ even without a strengthening of the ambient standard. Annual benefits of the more stringent NAAQS were estimated to range from $4.0 billion to $9.1 billion.

In the 112th Congress, attention to PM issues focused on the larger, coarse particles, PM_{10}, even though EPA did not propose to change them. Members of the House and Senators discussed the need to prevent a supposed EPA plan to use the revision of the PM_{10} standard to impose controls on "farm dust." The House passed legislation to prevent EPA from tightening standards for PM_{10} for one year and to permanently limit EPA's authority to regulate dust in rural areas. EPA stated early in the PM review process that it did not intend to change the PM_{10} standard, and the final revision made no change. For additional information, contact Rob Esworthy.

16. Sulfur Dioxide NAAQS. Three other NAAQS reviews (for sulfur dioxide,[47] nitrogen dioxide,[48] and carbon monoxide) were completed in 2010 and 2011. Of these, only the sulfur dioxide (SO_2) NAAQS was considered an economically significant rule.[49] EPA estimated the cost of the more stringent SO_2 NAAQS at $1.5 billion annually, with benefits 9-24 times that amount. For additional information, contact Jim McCarthy.

Electric Generating Units[50]

17. Cross-State Air Pollution (Clean Air Transport) Rule. Under the Clean Air Act's "good neighbor" provisions (in Section 110(a) of the act), states are required to prohibit emissions that contribute significantly to nonattainment (or interfere with maintenance) of ambient air quality standards by downwind states. If a state fails to meet these requirements, EPA must issue federal regulations addressing the problem. Under the Bush Administration, EPA found that 28 eastern states had failed to adequately address this requirement, and issued the Clean Air Interstate Rule (CAIR) to address the good neighbor provisions. The rule was remanded to the agency by the D.C. Circuit Court of Appeals in 2008. EPA promulgated a replacement, the Cross-State Air Pollution Rule (CSAPR, pronounced "Casper"), on August 8, 2011.[51] The original CAIR rule established cap-and-trade programs for sulfur dioxide and nitrogen oxide emissions from coal-fired electric power plants in 28 eastern states, at an estimated annual cost of $3.6 billion in 2015. The replacement rule also applies to 28 states; it allows unlimited intrastate allowance trading, but limits interstate trading in response to the D.C. Circuit decision. Its annual compliance cost was estimated at $800 million annually in 2014, on top of $1.6 billion already being spent to comply with CAIR. EPA estimates the benefits of CSAPR at $120 billion to $280 billion annually, chiefly the avoidance of 13,000 to 34,000 annual premature deaths.

Numerous parties petitioned the D.C. Circuit for review of CSAPR, and the court stayed its implementation pending the completion of the court's proceedings. On August 21, 2012, the court vacated the standards and remanded them to EPA. In June 2014, however, the Supreme Court

[47] U.S. Environmental Protection Agency, "Primary National Ambient Air Quality Standard for Sulfur Dioxide; Final Rule," 75 *Federal Register* 35520, June 22, 2010.

[48] U.S. Environmental Protection Agency, "Primary National Ambient Air Quality Standards for Nitrogen Dioxide; Final Rule," 75 *Federal Register* 6473, February 9, 2010.

[49] The agency concluded that the nitrogen dioxide NAAQS, even though it was strengthened, would have no costs or benefits, since the agency projected no areas to be nonattainment for the revised standard. The agency decided not to change the carbon monoxide NAAQS, so there were no costs or benefits associated with that review, either.

[50] See also Items 8, 9, and 10 under the subhead "Climate Change."

[51] U.S. Environmental Protection Agency, "Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals," 76 *Federal Register* 48208, August 8, 2011. Explanatory material can be found at http://www.epa.gov/crossstaterule/actions.html. The rule was generally referred to as the Clean Air Transport Rule prior to being finalized.

overturned the D.C. Circuit decision and remanded the case to the D.C. Circuit for further action. In light of the Supreme Court decision, the stay on implementation of CSAPR was lifted: the first phase of the rule was implemented in 2015, with a second phase scheduled for 2017. Because of the earlier CAIR requirements, which remained in effect pending their replacement and, more recently, because power companies have replaced substantial amounts of coal-fired generation with cheaper (and cleaner) natural-gas-fired units, electric generators had already (in 2012) achieved more than two-thirds of the pollution reductions necessary to comply with the 2017 standards. For additional information, contact Jim McCarthy.

18. Cross-State Air Pollution Rule Update. On October 26, 2016, EPA promulgated updates to the Cross-State Air Pollution Rule (CSAPR).[52] The CSAPR rule was first promulgated in August 2011, and took effect in January 2015. As explained above, CSAPR is designed to address what are called the "good neighbor" provisions of the Clean Air Act by requiring states to limit emissions of pollution that cause air quality problems in other, downwind states. The rule established cap-and-trade programs for sulfur dioxide (SO_2) and nitrogen oxide (NOx) emissions from coal-fired electric power plants in 28 eastern states.

On July 28, 2015, the D.C. Circuit Court of Appeals remanded CSAPR's ozone-season NOx emission budgets for 11 states and the annual SO_2 budgets of four states to EPA for modification. The updated rule, in part, addresses the court's remand of the ozone-season NOx emission budgets. The updated rule also sets new requirements for 22 states to limit NOx pollution that is contributing to nonattainment of the 2008 ambient ozone standard in downwind states; the 2011 CSAPR rule was designed to achieve an earlier, less stringent version of the ozone standard.[53]

The updated rule will take effect in May 2017. EPA estimates the annual cost of the rule at $68 million, with benefits of $880 million annually. The agency expects that the rule's requirements can be met quickly and at low cost by optimizing operation of existing pollution control technology, turning on existing pollution controls that are currently idled, upgrading to state-of-the-art low-NOx combustion controls, and shifting generation to lower-emitting power plants. NOx emissions from power plants in the eastern United States will be lowered by 20% in 2017 under the update and "other changes already underway in the power sector," with three-fourths of the reductions occurring in Pennsylvania, Indiana, West Virginia, Ohio, Alabama, and Kentucky. For additional information, contact Jim McCarthy.

19. Mercury and Air Toxics Standards/MACT for Electric Generating Units ("Utility MACT" or MATS Rule). In 2005, EPA promulgated regulations establishing a cap-and-trade system to limit emissions of mercury from coal-fired power plants. The rules were challenged, and the D.C. Circuit Court of Appeals vacated them in 2008. Rather than appeal the ruling to the Supreme Court, EPA agreed to propose and promulgate Maximum Achievable Control Technology (MACT) standards by the end of 2011. EPA stated that the standards for existing units, promulgated February 16, 2012,[54] could be met by 56% of coal- and oil-fired electric generating units using pollution control equipment already installed; the other 44% would be required to install technology that would reduce uncontrolled mercury and acid gas emissions by

[52] U.S. EPA, "Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, Final Rule," 81 *Federal Register* 74504, October 26, 2016.

[53] The court's remand of the SO_2 budgets was addressed separately in a memorandum that proposed two options for future state compliance with SO_2 requirements. The memorandum is at https://www3.epa.gov/airtransport/CSAPR/pdfs/CSAPR_SO2_Remand_Memo.pdf.

[54] U.S. Environmental Protection Agency, "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," 77 *Federal Register* 9304, February 16, 2012.

about 90%, at an annual cost of $9.6 billion. Standards for new facilities are more stringent, and many (including the industry that manufactures pollution control and monitoring equipment), doubted whether compliance with the mercury portion of these standards could be measured. In response to industry petitions, EPA reconsidered the mercury limit for new facilities, and announced changes to the standards for new facilities on March 29, 2013.

EPA estimated that the annual benefits of the Utility MACT, including the avoidance of up to 11,000 premature deaths annually, will be between $37 billion and $90 billion. Virtually all of the avoided deaths and monetized benefits come from the rule's effect on emissions of particulates, rather than from identified effects of reducing mercury and air toxics exposure. Numerous parties petitioned the courts for review of the rule, contending in part that EPA had failed to conduct a cost-benefit analysis in its initial determination that control of air toxics from electric power plants was "appropriate and necessary," and that the agency's later cost-benefit analysis indicated that the rule failed this test. In June 2015, the Supreme Court agreed with the petitioners, remanding the rule to the D.C. Circuit for further consideration.

As of this writing, the effect of the Supreme Court decision remains unclear. Existing power plants had until April 2015, with a possible one-year extension, to meet the standards. The majority of the affected plants had already complied with the rule before the Court's decision. In response to the Court's decision, EPA prepared a supplemental "appropriate and necessary" finding that, after taking public comment, it finalized in the April 25, 2016, *Federal Register*. As of late 2016, the MATS rule remains in effect while the circuit court considers whether EPA's action in response to the Supreme Court decision has properly addressed the Court's concerns. For additional information, contact Jim McCarthy or Alexandra Wyatt.

Boilers and Incinerators

20. MACT and Area Source Standards for Boilers. EPA proposed Maximum Achievable Control Technology standards to control emissions of toxic air pollutants from commercial and industrial boilers in June 2010. A final rule was issued February 21, 2011, under a court order by the Federal District Court for the District of Columbia.[55] Because of voluminous comments and new information received from industry during a public comment period, EPA had asked the court to extend the deadline for promulgating final standards to April 2012. Having been denied that extension, the agency initiated a reconsideration after it released the final rule, and it promulgated changes to the rule on January 31, 2013.[56] In addition to adjusting the rule's emission standards, the January 2013 rule reset the clock for compliance, effectively giving industry almost two additional years to install control equipment.

Boilers are used to provide heat and/or power throughout industry and in many commercial and institutional facilities. The D.C. Circuit vacated EPA's previous MACT rule for this category in 2007, saying EPA had wrongly excluded many industrial boilers from the definition of solid waste incinerators, which have more stringent emissions requirements under the Clean Air Act. The vacated rule had estimated annual costs of $837 million, with a benefit-cost ratio of about 20-to-1. The January 2013 rule set more stringent standards. It affects about 14,000 boilers,

[55] The final rule appeared in the *Federal Register* on March 21, 2011. U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule," 76 *Federal Register* 15608, March 21, 2011.

[56] U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers; Final Rule; Notice of Final Action on Reconsideration," 78 *Federal Register* 7138, January 31, 2013.

according to the agency, with annual costs estimated at $1.2 billion and benefits of $25 billion to $67 billion annually, including the avoidance of 3,100 to 7,900 premature deaths.

EPA also promulgated what are called "area source" standards for smaller boilers at the same time as the MACT.[57] The area source standards affect 183,000 boilers, most of which do not need to install pollution controls. Their sole requirement is to perform a tune-up every two to five years to comply with the regulations. EPA estimated the net cost of the area source rule to be $490 million annually, with partial benefits ranging from $210 million to $520 million annually. For additional information, contact Jim McCarthy.

21. Commercial and Industrial Solid Waste Incinerator (CISWI) Standards. A third regulation promulgated and reconsidered at the same time as the boiler MACT and area source boiler rules sets standards for emissions from commercial and industrial solid waste incinerators.[58] These standards are related to the D.C. Circuit's remand of the boiler rules in 2007; they also faced a judicial deadline of February 21, 2011, and after being promulgated, were also reconsidered in early 2013. As reconsidered, the rules expanded the number of existing facilities subject to the more stringent CISWI standards from 20 to 106, with annual costs of $271 million, according to EPA, and benefits of $380 million-$1 billion annually. For additional information, contact Jim McCarthy.

Other Clean Air Act Rules

22. Tier 3 Emissions Standards for Passenger Cars and Light Trucks and Gasoline Standards. In February 2011, EPA began to scope out new emissions standards for conventional pollutants (i.e., nongreenhouse gases) from passenger cars and light trucks. In a May 2010 memorandum from the White House to the EPA Administrator, President Obama had directed EPA to review the adequacy of the current "Tier 2" emissions standards for these vehicles, which EPA finalized in February 2000, and were phased in between model years (MYs) 2004 and 2009.[59] EPA proposed "Tier 3" standards April 13, 2013, and released the final standards March 3, 2014. As with the Tier 2 standards, the proposed Tier 3 standards include changes to both vehicle emission limits and fuel formulation rules, lowering allowable sulfur content to reduce the fouling of catalytic converters on existing vehicles and facilitate the use of new technology. The proposal would lower allowable sulfur from 30 parts per million to a maximum of 10, and would require reductions in vehicle emissions of 60%-80%. In letters to the EPA Administrator, several Senators asked EPA to delay its rulemaking over concerns that the new fuel standards would raise the price of gasoline,[60] but EPA maintained that the rule as proposed would add less than a penny a gallon to the price of gasoline. The rules will be phased in, beginning in 2017. EPA estimates

[57] U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers; Final Rule," 76 *Federal Register* 15554, March 21, 2011. Final action on reconsideration is at 78 *Federal Register* 7488, February 1, 2013.

[58] The 2011 standards were U.S. Environmental Protection Agency, "Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule," 76 *Federal Register* 15704, March 21, 2011. The notice of final action on reconsideration is at 78 *Federal Register* 9112, February 7, 2013.

[59] For more information on the Tier 3 standards, see U.S. EPA, "Tier 3 Vehicle Emission and Fuel Standards Program," at http://www.epa.gov/otaq/tier3.htm.

[60] Jeremy P. Jacobs, "Bipartisan Senate Group Seeks Delay in EPA Tailpipe Rules," *E&E News PM*, January 12, 2012. Also, "Four Democratic Senators Urge EPA to Issue Advance Notice on Proposed Rule for Tier 3," *Daily Environment Report*, March 22, 2013.

the cost of the rules at $1.1 billion to $1.5 billion annually, with annual benefits ranging from $7 billion to $19 billion. For additional information, contact Rick Lattanzio.

23. Wood Stove Emission Standards. On February 3, 2015, EPA released final emission standards for new residential wood heaters, the most common of which are wood stoves, pellet stoves, hydronic heaters, and forced air furnaces. The regulations, which revise New Source Performance Standards (NSPS) set in 1988 for wood stoves and pellet stoves and establish standards for other types of wood heaters for the first time, appeared in the *Federal Register* on March 16, 2015.[61]

According to EPA, smoke from wood heaters contributes "hundreds of thousands of tons" of fine particles to the air throughout the country each year, accounting for nearly 25% of all area source air toxics cancer risks and 15% of noncancer respiratory effects. In many areas, in wintertime, wood heaters are the largest source of particulate air pollution; yet, many heater types have not been subject to any federal emission standard prior to promulgation of this rule. The rule would only gradually reduce this pollution, because it would apply only to new heaters (not those already in use) and it would give the industry a five-year grace period before its most stringent standards would take effect. Wood heaters can last for 40 years or more, so it will be decades before the full health benefits of the rule will be attained. Nevertheless, the rule would eliminate an estimated 360 to 810 premature deaths annually in the 2015-2020 period, according to EPA, as well as reduce hospital admissions and lost work days due to respiratory illness. EPA quantifies these benefits at $3.4 billion to $7.6 billion per year during the 2015-2020 period, more than 70 times the agency's estimate of the annualized cost to manufacturers, $46 million. Trade associations representing the affected industries and companies in the industry supported revision of the standards and the inclusion of additional heater types, but they expressed concern that the standards will impose too great a cost. Facing higher costs for new units, homeowners will continue to use current, highly polluting equipment, rather than replace it, the industry maintains. Many have also expressed concerns regarding the process to be used in certifying compliance and the short period of time in which currently available units could be tested and certified. For additional information, contact Jim McCarthy.

24. Ethanol Waiver ("Blend Wall"). Section 211(f) of the Clean Air Act effectively limits the amount of oxygen in gasoline unless EPA issues a waiver. Since ethanol contains oxygen, an increase in the ethanol content of gasoline offered for sale can occur only if EPA issues such a waiver. EPA may issue a waiver if the agency determines that the fuel or fuel additive will not cause or contribute to the failure of any emission control device or system used by vehicle manufacturers to achieve compliance with emission standards under the act.

On March 6, 2009, Growth Energy (on behalf of 52 U.S. ethanol producers) applied to EPA for a waiver from the then-current regulation limiting the ethanol content in gasoline to a maximum of 10% (E10). The application requested an increase in the maximum concentration to 15% (E15). A complete waiver would allow the use of significantly more ethanol in gasoline than has been permitted under the Clean Air Act. Limiting ethanol content to 10% leads to an upper bound of roughly 15 billion gallons of ethanol in all U.S. gasoline. This "blend wall" could limit the fuel industry's ability to meet the Energy Independence and Security Act's requirement to use increasing amounts of renewable fuels (including ethanol) in transportation.

[61] U.S. EPA, "Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces; Final Rule," 80 *Federal Register* 13672, March 16, 2015.

On November 4, 2010, EPA granted a partial waiver allowing the use of E15 in MY2007 vehicles and newer.[62] The agency delayed a decision on MY2001-MY2006 vehicles until the Department of Energy completed testing of those vehicles. On January 21, 2011, EPA announced that the waiver would be expanded to include MY2001-MY2006 vehicles.[63] EPA determined that data were insufficient to address concerns that had been raised over emissions from MY2000 and older vehicles, as well as heavy-duty vehicles, motorcycles, and nonroad applications, and thus a waiver for these vehicles/engines was denied.

EPA has noted that granting the waiver eliminates only one impediment to the use of E15—other factors, including retail and blending infrastructure, state and local laws and regulations, and manufacturers' warranties, would still need to be addressed. Because of concerns over potential damage by E15 to equipment not designed for its use, this partial waiver has been challenged in court by a group of vehicle and engine manufacturers, although that case was dismissed because none of the petitioners had been injured *in fact*.[64] On June 23, 2011, EPA issued final rules, including new labeling requirements, to prevent the accidental use of E15 in vehicles and engines not approved for its use.

Because of various factors, expansion of E15 supply has been slow. The Department of Energy reports E15 is sold at approximately 100 stations, mostly in the Midwest.[65] Further, one renewable fuel organization reports that eight auto companies approve of the use of E15 in all of their vehicle models for MY2017.[66]

For additional information, contact Kelsi Bracmort.

25. Expanded Renewable Fuel Standard (RFS2). The RFS is a mandate that requires the nation's transportation fuel supply contain increasing amounts of renewable fuel on an annual basis (Section 211[o] of the Clean Air Act, as amended by the Energy Independence and Security Act of 2007 [EISA, P.L. 110-140]).[67] The total renewable fuel volume under the RFS consists of both conventional biofuel (e.g., corn starch ethanol) and advanced biofuel (e.g., cellulosic biofuel, biomass-based diesel). EPA is responsible for administering the RFS. One of EPA's annual responsibilities is to release a final rule announcing the standard for each year. Another responsibility is to reduce the statutory volumes given certain conditions.

On November 23, 2016, EPA announced the final 2017 renewable fuel standards, setting the total renewable fuel volume at 19.28 billion gallons, which was below the 24.0 billion gallon statutory requirement.[68] EPA set the conventional biofuel mandate at 15.0 billion gallons, in line with the statutory requirement of 15.0 billion gallons for 2017. EPA set the 2017 advanced biofuel mandate at 4.28 billion gallons, which was below the statutory requirement of 9.0 billion gallons.

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[62] U.S. Environmental Protection Agency, "Partial Grant and Partial Denial of Clean Air Act Waiver Application Submitted by Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Percent; Decision of the Administrator; Notice," 75 *Federal Register* 68094-68150, November 4, 2010.

[63] U.S. Environmental Protection Agency, "Partial Grant of Clean Air Act Waiver Application Submitted by Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Percent; Decision of the Administrator," 76 *Federal Register* 4662, January 26, 2011.

[64] Grocery Mfrs. Ass'n v. EPA, 693 F.3d 169 (D.C. Cir. 2012).

[65] U.S. Department of Energy, *Alternative Fuels Data Center, E15*, March 30, 2016.

[66] Renewable Fuels Association, *E15 Approval Status for Conventional (Non-FFV) Automobiles*, 2016.

[67] For more information, see CRS Report R43325, *The Renewable Fuel Standard (RFS): In Brief*, by Kelsi Bracmort.

[68] The rule appeared in the *Federal Register* in December. U.S. Environmental Protection Agency, "Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018; Final Rule," 81 *Federal Register* 89746, December 12, 2016; EISA, P.L. 110-140.

EPA used the cellulosic biofuel waiver authority to reduce the cellulosic biofuel and the total renewable fuel standards. EPA asserts that "real-world constraints, such as the slower than expected development of the cellulosic biofuel industry and constraints in the marketplace related to supply of certain biofuels to consumers, have made the timeline laid out by Congress for the growth in renewable fuel use (other than for biomass-based diesel) impossible to achieve."[69] For the 2017 final rule, EPA followed the trend from its previous final rule for the RFS—which covered 2014, 2015, and 2016—by lowering the total renewable fuel volume required.[70]

There have been numerous difficulties with implementing the RFS. It is a complicated, technical policy, subject to multiple factors that determine its outcome. Also, the RFS was established and expanded at a time when gasoline consumption was expected to be higher than what is currently observed, allowing for more blending of biofuels into gasoline. Moreover, it was thought that advanced biofuel production would occur at a faster pace, and there was no forewarning about an economic downturn and the slower-than-anticipated investment in advanced biofuel projects. Lastly, EPA has had to implement the RFS using their resources, stakeholder input, and guidance from the courts, all of which have contributed to the uncertainty and delay of certain aspects of the program (e.g., issuance of the annual standards, approval of eligible fuel pathways).

One distinct issue of concern with the RFS is the "reset" provision. The reset provision requires that the EPA Administrator modify the applicable volumes of the RFS in future years starting in 2016 if certain conditions are met.[71] The latest final rule has triggered the use of this provision for both the advanced biofuel and cellulosic biofuel categories. This is primarily a result of the lack of cellulosic biofuel production. Cellulosic biofuel production has not reached the statutory requirements for various reasons, including technological challenges, financial challenges, and more.[72] EPA has repeatedly reduced the annual cellulosic biofuel requirement each year from 2010 to 2017. This lack of production has a domino effect on the advanced biofuel category, particularly when there is not enough other advanced biofuel production to backfill the cellulosic biofuel shortfall.

Legislation introduced in the 114th Congress would amend the Clean Air Act to modify and/or repeal the RFS. For instance, proposed legislation would have modified the way EPA projects yearly cellulosic biofuel mandates. Various other bills would also amend the RFS, including legislation to eliminate portions of the RFS, lower the annual mandated levels, or eliminate the program entirely.[73]

For additional information, contact Kelsi Bracmort.

26. Oil and Natural Gas Air Pollution Standards. In February 2010, EPA signed a consent agreement under which it was to promulgate revisions of the New Source Performance Standards and Hazardous Air Pollutant standards for oil and gas production by November 30, 2011. The agency promulgated these rules on August 16, 2012.[74] Under the CAA, EPA is required to review

[69] Ibid.

[70] U.S. Environmental Protection Agency, "Renewable Fuel Standard Program: Standards for 2014, 2015, and 2016 and Biomass-Based Diesel Volume for 2017; Final Rule," 80 *Federal Register* 77420, December 14, 2015.; EISA, P.L. 110-140.

[71] For more information, see CRS Report R44045, *The Renewable Fuel Standard (RFS): Waiver Authority and Modification of Volumes*.

[72] For more information, see CRS Report R41106, *The Renewable Fuel Standard (RFS): Cellulosic Biofuels*.

[73] See, for example, S. 1584, S. 577, S. 934, H.R. 434, H.R. 703, H.R. 704, and H.R. 3228.

[74] U.S. Environmental Protection Agency, "Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final Rule," 77 *Federal Register* 49490, August 16, 2012. For information, see http://www.epa.gov/airquality/oilandgas/actions.html.

New Source Performance Standards every eight years; the revisions update NSPS rules for VOCs and SO_2 that were promulgated in 1985. Similarly, EPA had a statutory obligation to review hazardous air pollutant standards for oil and natural gas production, which were issued in 1999, by 2007. Additionally, the 2012 rules are the first regulations to address emissions from natural gas wells that use hydraulic fracturing ("fracking"). The new standards, which were to be fully implemented by 2015, require companies to capture natural gas and volatile organic compounds (VOCs) that escape when hydraulically fractured gas wells are prepared for production. The rules affect production, processing, transmission, and storage, but not distribution to customers. EPA estimated that the rules would result in the capture of 95% of the VOCs otherwise emitted. Although there are costs associated with the use of equipment to capture the emissions, EPA estimated that the rules will produce a net annual savings of $11 million to $19 million for the industry, because the captured gas and condensate can be sold. Some states already required similar measures, and EPA estimates that about half of fracked natural gas wells already met the standards at the time of promulgation. In 2013, EPA promulgated updates to the storage tank portions of the rules in response to petitions for reconsideration. The updates provided additional time for compliance and an alternative emissions limit.[75] Industry groups have filed lawsuits challenging both the 2012 standards and the 2013 updates. For additional information, contact Rick Lattanzio.

27. Portland Cement Manufacturing. On September 9, 2010, EPA promulgated New Source Performance Standards (NSPS) for conventional pollutants from new cement kilns and Maximum Achievable Control Technology (MACT) standards for hazardous air pollutants from both existing and new cement kilns.[76] When fully implemented in late 2013, the standards would have required a 92% reduction in emissions of both particulate matter and mercury and a 97% reduction in emissions of acid gases, according to EPA, as well as controlling other pollutants. EPA had previously issued emission standards for this industry in 1999, but the standards were challenged in court and remanded to the agency by the D.C. Circuit Court of Appeals. The new rules reflect EPA's reconsideration of the 1999 standards.

The agency estimated that it would cost the industry $350 million annually to comply with the 2010 standards, but that benefits (including the avoidance of 960 to 2,500 premature deaths in people with heart disease) would be worth $6.7 billion to $18 billion annually. The trade association representing the industry said the standards would cause some facilities to close. In 2011, the D.C. Circuit Court of Appeals remanded the 2010 standards to EPA for the agency to reconsider emission standards for kilns that use solid waste as fuel. The court did not stay implementation of the 2010 standards, but EPA, in proposing changes to the particulate portion of the standards in 2012, announced its intention to give the industry an additional two years to comply, with a third year available if needed. The changes were estimated to reduce industry costs by $52 million annually, compared to the 2010 rule. EPA finalized these changes February 12, 2013.[77]

Further regulation of this industry, which is the third-highest stationary U.S. source of carbon dioxide emissions, was at one point under consideration: when EPA promulgated the rule in September 2010, it stated in the preamble to the rule that it is "working towards a proposal for

[75] U.S. Environmental Protection Agency, "Oil and Natural Gas Sector: Reconsideration of Certain Provisions of New Source Performance Standards," 78 *Federal Register* 58416-58448, September 23, 2013.

[76] U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule," 75 *Federal Register* 54970, September 9, 2010.

[77] 78 *Federal Register* 10006, February 12, 2013.

GHG standards" for these plants.[78] But action on these standards was not mentioned in the President's June 2013 Climate Action Plan, and has not taken place. For additional information, contact Jim McCarthy.

28. Stationary Internal Combustion Engines. EPA set standards for both compression-ignition[79] (generally diesel) and spark ignition (generally gasoline) stationary engines[80] in 2010. The agency subsequently amended the rules on January 30, 2013.[81] The regulations would affect stationary engines, such as emergency power generators used by hospitals and other sources and electric power generators used for compressors and pumps by a wide array of industrial, agricultural, and oil and gas industry sources. The rules are referred to as the RICE (Reciprocating Internal Combustion Engine) rules. They apply to engines that meet specific siting, age, and size criteria (generally engines of 500 horsepower or less). EPA estimates that more than 1.2 million engines will be affected by the regulations. Depending on the type of engine, owners were required to install pollution control equipment or follow certain work practice standards, such as burning low sulfur fuel or performing oil changes and inspections. EPA estimated that the health benefits of the two rules would be between $1.45 billion and $3.5 billion annually in 2013. Annualized costs for the rules were estimated to be $626 million in 2013. EPA stated that the 2013 amendments will reduce the annualized costs by $139 million (to $487 million). The amendments were issued in response to a suit by the Engine Manufacturers Association. The most controversial of the amendments allows backup generators to operate for up to 100 hours per year during emergency or peak power use periods without being subject to emission limits, although beginning in 2015 they needed to use low-sulfur fuel. In May 2015, the D.C. Circuit Court of Appeals found that EPA acted arbitrarily and capriciously in allowing backup generators to operate without emission controls for up to 100 hours per year as part of an emergency demand-response program. The court remanded that portion of the rules to EPA. For additional information, contact Jim McCarthy.

29. Ocean-Going Ships. EPA took two steps to control emissions from ocean-going ships in 2009 and 2010. It promulgated emission standards for new marine engines[82] and it proposed the establishment of Emission Control Areas (ECAs) extending 200 nautical miles off most U.S. shores.[83] In the ECAs, which received final approval in March 2010, both U.S. and foreign ships were required to use low sulfur fuel, beginning in 2012. In both cases, the actions reflect international standards that the United States and other maritime nations had agreed to under the International Convention for the Prevention of Pollution from Ships (MARPOL). EPA estimated the cost of these two initiatives at over $3 billion annually by 2030, mostly attributable to the cleaner fuel requirement. The agency also estimated that monetized benefits of the requirements will exceed costs by more than 30 to 1. The ECAs and the new standards were supported by both industry and environmental groups, and were extended to cover the U.S. Caribbean, beginning in

[78] Ibid., p. 54997.

[79] U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants: Reciprocating Internal Combustion Engines; Final Rule," 75 *Federal Register* 9648, March 3, 2010.

[80] U.S. Environmental Protection Agency, "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; Final Rule," 75 *Federal Register* 51570, August 20, 2010.

[81] 78 *Federal Register* 6674, January 30, 2013.

[82] U.S. Environmental Protection Agency, "Control of Emissions from New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder; Final Rule," 75 *Federal Register* 22896, April 30, 2010.

[83] International Maritime Organization, Marine Environmental Protection Committee, "Proposal to Designate an Emission Control Area for Nitrogen Oxides, Sulphur Oxides and Particulate Matter, Submitted by the United States and Canada," April 2, 2009, at http://www.epa.gov/oms/regs/nonroad/marine/ci/mepc-59-eca-proposal.pdf.

2014. In July 2012, controversy arose over the requirement that ships in Alaskan waters use low-sulfur fuel, with the state of Alaska filing suit to block implementation of the fuel requirement. In September 2013, a Federal District Court dismissed the state's lawsuit. For additional information, contact Jim McCarthy.

30. Flares and Process Heaters at Petroleum Refineries. On September 12, 2012, EPA promulgated amendments to New Source Performance Standards for flares and process heaters at petroleum refineries.[84] The amendments are the result of the agency's reconsideration of standards it promulgated on June 24, 2008. The agency estimated that the reconsidered rules will have capital costs of $460 million, but will result in savings to the industry of $79 million per year, while resulting in monetized benefits of $240 million to $580 million annually, principally from the avoided health impacts caused by reduced emissions of sulfur dioxide and nitrogen oxides. For additional information, contact Jim McCarthy.

31. Brick and Clay Product NESHAP. EPA promulgated National Emission Standards for Hazardous Air Pollutants (NESHAPs) for manufacturers of bricks, structural clay products, and clay ceramics in 2003, but the standards were vacated by the D.C. Circuit Court of Appeals in 2007. The agency was sued by the Sierra Club for its failure to take further action. Under a November 2012 consent decree, the agency agreed to sign proposed standards to replace the vacated rule by November 20, 2014, and to sign a final rule by September 24, 2015. In compliance with this schedule, EPA finalized national emission standards for mercury, particulate matter, acid gases, dioxins, and furans on September 24, 2015.[85] EPA estimated the cost of the rule at $25 million annually, with monetized cobenefits three to eight times the cost. The Brick Industry Association called the proposal "a much more reasonable rule than the one EPA first envisioned several years ago," but they and others have continued to express concerns regarding the cost and achievability of the standards. Environmental groups and the association of state air pollution officials are concerned for different reasons: in their view, EPA improperly set standards under a section of the act that allows an alternative to the Maximum Achievable Control Technology requirement that generally applies to hazardous air pollutant standards. Both industry and environmental groups have filed petitions for review of the standards with the D.C. Circuit Court of Appeals. For additional information, contact Jim McCarthy.

Clean Water Act

32. Mountaintop Mining in Appalachia. Since 2009, EPA and other federal agencies (the Office of Surface Mining and Reclamation [OSM], in the Department of the Interior, and the U.S. Army Corps of Engineers) have been working on a series of actions and regulatory proposals to reduce the harmful environmental and health impacts of surface coal mining, including mountaintop removal mining, in Appalachia. The actions are intended to improve regulation and strengthen environmental reviews of permit requirements under the CWA and the Surface Mining Control and Reclamation Act (SMCRA). Viewed broadly, the Administration's combined actions on mountaintop mining displease both industry and environmental advocates. The additional scrutiny of permits and more stringent requirements have angered the coal industry and many of its supporters. At the same time, while environmental groups support EPA's steps to restrict the

[84] U.S. Environmental Protection Agency, "Standards of Performance for Petroleum Refineries; Performance Standards for Petroleum Refineries for Which Construction, Reconstruction, or Modification Began After May 14, 2007," 77 *Federal Register*, 56422, September 12, 2012.

[85] U.S. EPA, "NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing; Final Rule," 80 *Federal Register* 65470, October 26, 2015.

practice, many favor tougher requirements or even total rejection of mountaintop mining in Appalachia. Many of the actions have been highly controversial in Congress. One action—not directly involving EPA—that is related to the Obama Administration's focus on mountaintop mining remains under way. It is issuance of a set of nationwide permits by the Army Corps of Engineers that apply to coal mining operations and a number of other activities that discharge to U.S. waters. The existing nationwide permits, which were issued in 2012, will expire in March 2017, and the Army Corps is expected to reissue the permits before then.[86]

Another regulatory action involves a rule issued by OSM on December 19, 2016, to revise SMCRA regulations on surface coal mining operations.[87] The Obama Administration identified a 2008 rule, called the stream buffer zone rule, which exempts so-called valley fills and other mining waste disposal activities from requirements to protect a 100-foot buffer zone around streams, for revision as part of the series of actions concerning surface coal mining in Appalachia. The 2016 final revised SMCRA rule is intended to avoid or minimize adverse impacts of coal mining on surface water, groundwater, fish, wildlife, and other natural resources by limiting the mining of coal in or through streams, restricting placement of waste in streams, and limiting the generation of mining waste. Most of the regulations being replaced by the 2016 rule were promulgated in 1983. OSM asserts that updated rules, which have been under development since 2009, are needed to reflect current science, technology, and modern mining practices. The revised rule will apply nationwide, not just in Appalachia. Potential changes to the 1983 rules drew wide controversy and criticism. Mining industry groups are very critical of the costs of the rule, while environmental groups that have generally supported strengthening SMCRA regulations contend that the rule should be stronger to provide more protection to streams. A number of states say that the rule would undermine state authority to administer SMCRA and that OSM failed to consult adequately with states during development of the rule. Legislation in the 114th Congress proposed to prevent OSM from releasing the rule pending a study by the National Research Council on economic and scientific data in the rule (H.R. 1644/S. 1458). Legislation to overturn the 2016 final rule under procedures of the Congressional Review Act also was introduced (H.J.Res. 107).

Controversy also was generated by EPA's 2011 veto of a CWA permit that had been issued by the Corps for a surface coal mining project in West Virginia. EPA's veto was overturned by a federal court, but that ruling was reversed on appeal, and the Supreme Court declined to review the case. Legislation to restrict EPA's veto authority has been introduced on several occasions, including in the 114th Congress (H.R. 896, H.R. 1203, and S. 54/S. 234). For additional information, contact Claudia Copeland.

33. Pesticide Application General Permit. EPA has developed a Clean Water Act (CWA) general permit to control pesticides that are applied to waters of the United States, such as aerial application of insecticide to control mosquitoes. The general permit was issued on October 31, 2011, in response to a 2009 federal court decision that invalidated a 2006 EPA rule, which had codified the agency's long-standing view that pesticide applications that comply with federal pesticides law do not require CWA permits.[88] The estimated universe of affected activities is

[86] For information see CRS Report 97-223, *The Army Corps of Engineers' Nationwide Permits Program: Issues and Regulatory Developments*, by Claudia Copeland and Jonathan L. Ramseur.

[87] For information, see CRS Insight IN10627, *OSM Finalizes the Stream Protection Rule*, by Claudia Copeland; and CRS Report R44150, *The Office of Surface Mining's Proposed Stream Protection Rule: An Overview*, by Claudia Copeland.

[88] U.S. Environmental Protection Agency, "Final National Pollutant Discharge Elimination System (NPDES) General Permit for Point Source Discharges from the Application of Pesticides; Notice of Final Permit," 76 *Federal Register* 68750-68756, November 7, 2011.

approximately 5.6 million applications annually, which are performed by 365,000 applicators, in four use patterns: mosquito and other flying insect pest control, aquatic weed and algae control, aquatic nuisance animal control, and forest canopy pest control. The permit requires all operators covered by the permit to minimize pesticide discharges to waters by practices such as using the lowest amount of pesticide product that is optimal for controlling the target pest. It also requires operators to prepare plans to document their pest management practices. Under OMB's criteria, the permit is not a significant rule, but is "economically significant."[89] EPA reissued the 2011 permit without significant change in October 2016. Meanwhile, in the 114th Congress, legislation intended to overturn the court's 2009 ruling by exempting aerial pesticide application activities from clean water permit requirements has been introduced (H.R. 897, S. 1500, and a provision of S. 659). The House passed a modified version of H.R. 897, retitled the Zika Vector Control Act, on May 24, 2016.[90] For additional information, contact Claudia Copeland.

34. Florida Nutrient Water Quality Standards. The CWA directs states to adopt water quality standards for their waters and authorizes EPA to promulgate new or revised standards if a state's actions fail to meet CWA requirements. Water quality standards consist of designated uses, criteria to protect the designated uses, and an antidegradation statement. They serve as the framework for pollution control measures specified for individual sources. Because of severe water quality impairment of Florida waters by nutrients (nitrogen and phosphorus) from diverse sources including agriculture and livestock, municipal and industrial wastewater discharges, and urban stormwater runoff, EPA determined in 2009 that Florida's existing *narrative* water quality standards for nutrients must be revised in the form of *numeric* criteria that will enable Florida to better control nutrient pollution. In 2009 EPA entered into a consent decree with environmental litigants requiring the agency to promulgate numeric nutrient water quality standards for Florida. To meet the legal deadline, EPA promulgated the first phase of these standards, called the "inland waters rule," in December 2010. Water quality standards do not have the force of law until the state translates them into permit limits or otherwise imposes pollution control requirements on dischargers. The rule would not establish any requirements directly applicable to regulated entities or other sources of nutrient pollution.

The 2010 rule did not go into effect, because, in response to criticism of the standards, EPA delayed the effective date of the rule to allow local governments, businesses, and the state of Florida time to review the standards and develop implementation strategies. While few dispute the need to reduce nutrients in Florida's waters, EPA's 2010 rule has been controversial, involving disputes about the data underlying the proposal, potential costs of complying with numeric standards when they are incorporated by the state into discharge permit limitations, and disputes over administrative flexibility. EPA has said all along that it prefers that Florida implement its own numeric nutrient water quality criteria, and in 2012 the state submitted revised standards with numeric nutrient criteria. In response, EPA indicated to the state that the agency likely would approve the standards, at which time the agency would initiate administrative action to repeal the 2010 federal rule. EPA's deadline for issuing the second phase of standards, for

[89] "Significant" rules are a broader OMB category that includes not only the economically significant (i.e., primarily those with an annual effect on the economy of $100 million or more), but also rules that "create a serious inconsistency or otherwise interfere with an action taken or planned by another agency"; "materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof"; or "raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth" in Executive Order 12866.

[90] For additional information, see CRS Report RL32884, *Pesticide Use and Water Quality: Are the Laws Complementary or in Conflict?*, by Claudia Copeland.

estuaries, coastal waters, and flowing waters in the South Florida Region, also was extended several times to allow the state to develop its own standards.

In 2013, EPA and the state reached agreement in principle on steps that will put the state in charge of determining numeric limits on nutrient pollution in Florida waterways. Under that agreement, Florida pledged to move forward with rulemaking and legislation to complete the job of setting numeric nutrient criteria for Florida waterways. In response to the state's actions, EPA approved the state's implementation plan for controlling nutrient pollution in Florida waters and petitioned the federal court in Florida to allow it to approve the state's water quality standards, although they lack numeric criteria for all waters. In January 2014, the U.S. District Court for the Northern District of Florida agreed to amend the 2009 consent decree in light of the adoption of new nutrient criteria, thus lifting the requirement for EPA to issue numeric nutrient standards under the second phase of rulemaking, and in September 2014, EPA finalized a rule withdrawing the overlapping federally promulgated water quality standards to allow Florida to implement its standards to address nutrient pollution.[91] Environmental groups have criticized EPA's approval of the standards that Florida adopted, saying that EPA's actions are inconsistent with its 2009 determination that numeric criteria are necessary to protect Florida's waters, but their legal challenge to the plan was rejected by the Florida federal district court's January 2014 ruling. For additional information, contact Claudia Copeland.

35. Chesapeake Bay TMDL. Pursuant to a court-ordered schedule, EPA has developed a plan, called a Total Maximum Daily Limit (TMDL), to restore nutrient-impaired waters of the Chesapeake Bay. The TMDL is required because jurisdictions in the Chesapeake Bay watershed have failed to meet deadlines to attain water quality goals for the bay, thus triggering Clean Water Act requirements that the federal government must develop a plan to do so. The TMDL is not a regulation. A TMDL represents the maximum amount of a pollutant that a body of water may receive and still meet its water quality standards.[92] Individual actions needed to meet the overall pollutant limits specified in the TMDL, such as discharge permit limits or other controls, are to be developed by the Chesapeake Bay jurisdictions in Watershed Implementation Plans (WIPs). The Chesapeake Bay TMDL is the largest ever developed by EPA or any state, since it will apply to all impaired waters of the 64,000 square miles of the six states in the bay watershed. On December 29, 2010, EPA issued the TMDL.[93] Pursuant to the schedule of steps in the TMDL, jurisdictions are now developing specific WIPs, which outline the types of controls and best management practices that will be used to reduce pollution in the bay. The TMDL has been controversial with agricultural and other groups that are concerned about the likely mandatory nature of many of EPA's and states' upcoming actions. In 2013, a federal district court upheld the TMDL, in a lawsuit filed by the American Farm Bureau Federation that had challenged EPA's authority to set pollution limits in the multistate plan. The district court's ruling was upheld on appeal in 2015. For additional information, contact Claudia Copeland.

36. Airport Deicing Effluent Limitations Guidelines and New Source Performance Standards. In 2012, EPA promulgated regulations under the CWA to limit water pollution from aircraft and airport runway deicing operations.[94] The rule is intended to limit runoff of deicing

[91] For additional information, see http://water.epa.gov/lawsregs/rulesregs/florida_index.cfm.

[92] For additional information, see CRS Report R42752, *Clean Water Act and Pollutant Total Maximum Daily Loads (TMDLs)*, by Claudia Copeland.

[93] Notice of the TMDL appeared in the *Federal Register* January 5, 2011. U.S. Environmental Protection Agency, "Clean Water Act Section 303(d): Notice for the Establishment of the Total Maximum Daily Load (TMDL) for the Chesapeake Bay," 76 *Federal Register* 549-550, January 5, 2011.

[94] U.S. Environmental Protection Agency, "Effluent Limitations Guidelines and New Source Performance Standards for the Airport Deicing Category; Final Rule," 77 *Federal Register* 29168-29205, May 16, 2012.

fluid, because it contains urea and other contaminants that contribute to low oxygen levels in streams, which can cause fish kills, algal blooms, and contamination of surface water or groundwater. The rule, which had been under development for several years and was proposed in 2009, is part of ongoing EPA activities under the CWA to regulate wastewater discharges from categories of industries through new and revised effluent limitations guidelines. EPA estimated that the final rule will reduce the volume of deicing-related pollutants by 16.4 million pounds at a cost of $3.5 million annually. Those estimates are substantially less than the 44.6 million pounds of pollutants estimated in the proposed rule, which was projected to cost the industry $91.3 million annually. EPA estimated that the final rule will apply to 198 existing airports. For additional information, contact Claudia Copeland.

37. Construction Site Effluent Limitations Guidelines. In 2009, EPA promulgated regulations under the Clean Water Act (CWA), called effluent limitations guidelines (ELGs), to limit pollution from stormwater runoff at construction sites.[95] The rule is called the Construction and Development, or C&D, ELG. OMB determined that it is an economically significant rule. It requires construction sites that disturb one or more acres of land to use erosion and sediment control best management practices to ensure that soil disturbed during construction activity does not pollute nearby waterbodies. For construction sites disturbing 10 acres or more, the rule established, for the first time, enforceable numeric limits on stormwater runoff pollution. EPA issued the rule in response to a 2004 lawsuit filed by an environmental group; in 2006, a federal court ordered EPA to issue a final rule by December 1, 2009. The rule affects about 82,000 firms nationwide involved in residential, commercial, highway, street, and bridge construction. EPA has issued effluent guidelines for 56 industries that include many types of discharges, such as manufacturing and service industries. These guidelines are implemented in discharge permits issued by states and EPA. Several industry groups challenged the C&D ELG. In response, EPA examined the data set underlying a portion of the rule and concluded that it improperly interpreted the data. In August 2010, a federal appeals court granted EPA's request for remand of a portion of the rule to conduct a rulemaking to correct the numeric effluent limitation. In November 2010, EPA promulgated a direct final rule to stay the effectiveness of the numeric turbidity limit in the 2009 rule; other portions of the rule remain in effect.[96] To resolve industry challenges to the 2009 rule, in 2014, EPA finalized modifications of the 2009 rule, including withdrawal of the numeric turbidity effluent limitations in the 2009 rule, which had been controversial, and changes specific to the nonnumeric portions of the rule. The effluent limits in the 2014 rule emphasize best practices to manage erosion and stabilize soils during construction. If more data on numeric discharge standards for construction sites become available, EPA could initiate a new rulemaking in the future.[97] For additional information, contact Claudia Copeland.

38. "Post-Construction" Stormwater Rule. For some time, EPA has explored options to strengthen the existing regulatory program for managing stormwater, which is a significant source of water quality impairments nationwide. Under the current program, large cities and most industry sources are subject to CWA rules issued in 1990; smaller cities, other industrial sources, and construction sites are covered by rules issued in 1999. Among the options that EPA considered to strengthen stormwater regulations was establishing rules containing post-construction requirements for stormwater discharges from new development and redevelopment,

[95] U.S. Environmental Protection Agency, "Effluent Limitation Guidelines for the Construction and Development Point Source Category," 74 *Federal Register* 62996-63058, December 1, 2009.

[96] U.S. Environmental Protection Agency, "Direct Final Rule Staying Numeric Limitation for the Construction and Development Point Source Category," 75 *Federal Register* 68215-68217, November 5, 2010.

[97] U.S. Environmental Protection Agency, "Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category, Final Rule," 79 *Federal Register* 12661-12667, March 6, 2014.

which currently are not regulated, focusing on stormwater discharges from developed or post-construction sites such as subdivisions, roadways, industrial facilities and commercial buildings, or shopping centers. Under a consent agreement with environmental groups, EPA was expected to propose a rule in 2013, and to issue a final rule by December 2014. EPA's efforts to develop the stormwater rule were controversial and, apparently, technically challenging, and the agency missed the 2013 deadline to propose a rule. In March 2014, EPA announced that it is deferring action on the stormwater rule and instead will provide incentives, technical assistance, and other approaches for cities and towns to address stormwater runoff themselves.[98] For additional information, contact Claudia Copeland.

39. Revised Cooling Water Intake Rule. Thermoelectric generating plants and manufacturing facilities withdraw large volumes of water for production and, especially, to absorb heat from their industrial processes. Water withdrawals by power producers and manufacturers represent more than one-half of water withdrawn daily for various uses in the United States. Although water withdrawal is a necessity for these facilities, it also presents special problems for aquatic resources. In particular, the process of drawing surface water into the plant through cooling water intake structures (CWIS) can simultaneously pull in fish, shellfish, and tiny organisms, injuring or killing them. In 2014, EPA promulgated a CWA rule to protect fish from entrainment by cooling water intake structures at existing power plants and certain other industrial facilities. The final rule applies to approximately 1,065 existing electric generating and manufacturing plants.[99]

The proposed CWIS rule was highly controversial. Many in industry had feared, while environmental groups had hoped, that EPA would require installation of technology that most effectively minimizes impacts of cooling water intake structures, but also is the most costly option. The EPA proposal declined to mandate such technology universally and instead favored a less costly, more flexible regulatory option. In the 2014 final rule, EPA again declined to mandate closed-cycle cooling as a uniform requirement and provided several compliance options that are more flexible and less costly than the proposal.[100] Legal challenges to the final rule have been filed by industry and environmental groups. For additional information, contact Claudia Copeland.

40. Revised Steam Electric Effluent Limitations Guidelines. Under authority of CWA Section 304, EPA establishes national technology-based regulations, called effluent limitations guidelines (ELGs), to reduce pollutant discharges from industries directly to waters of the United States and indirectly to municipal wastewater treatment plants based on Best Available Technology. These requirements are incorporated into discharge permits issued by EPA and states. In a 2009 study, EPA found that then-existing regulations do not adequately address the pollutants being discharged and have not kept pace with changes that have occurred in the electric power industry over the last three decades. Pollutants of concern include metals (e.g., mercury, arsenic, and selenium), nutrients, and total dissolved solids.

In 2015, EPA promulgated revised effluent limitations for the steam electric industry to replace rules that were issued in 1982. The new rule, which was effective on January 4, 2016, applies to 1,079 steam electric power plants nationwide, but EPA believes that only 133 plants are likely to incur compliance costs, because a large portion of the industry has already implemented

[98] For additional information, see CRS Report 97-290, *Stormwater Permits: Status of EPA's Regulatory Program*, by Claudia Copeland.

[99] U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities; Final Rule," 79 *Federal Register* 48300-48439, August 15, 2014.

[100] For more information, see CRS Report R41786, *Cooling Water Intake Structures: Summary of the EPA Rule*, by Claudia Copeland.

processes or technologies that are required by the rule. The 2015 rule regulates six pollutant wastestreams from steam electric power plants. The estimated annual compliance cost of the rule would be $340 million (after-tax compliance cost). The rule also would reduce pollutant discharges by 385 million pounds annually and reduce water use by 57 billion gallons per year. Many in industry are concerned that the 2015 rule will impose new requirements at the same time that power plants are implementing other EPA rules. Environmental advocates are generally satisfied with the final rule, but many do have concerns with issues such as compliance deadlines in the rule. Both industry groups and environmental groups have challenged the rule in federal court.[101] For additional information, contact Claudia Copeland.

41. Oil Spill Prevention, Control, and Countermeasure Requirements, Including Deadline Extension for Farms and Exemption for Milk Storage. To prevent the discharge of oil from onshore and offshore facilities, EPA issued CWA regulations for spill prevention control and countermeasure (SPCC) plans in 1973.[102] SPCC plans apply to owners or operators of certain nontransportation-related facilities. In general, SPCC plans focus on oil spill prevention, requiring, for example, secondary containment (e.g., dikes or berms) for oil-storage equipment.

Following the passage of the Oil Pollution Act of 1990, the agency proposed substantial changes and clarifications that were not made final until July 2002.[103] However, EPA has both extended the 2002 rule's compliance date (on multiple occasions) and made further amendments to the 2002 rule. On one occasion, amendments offered by the Bush Administration's EPA in 2008 were eliminated by the Obama Administration's EPA the following year.[104]

For most types of facilities subject to SPCC requirements, the deadline for complying with the changes made in 2002 was November 10, 2011.[105] However, in a November 2011 rulemaking, EPA extended the compliance date for farms to May 10, 2013.[106]

Pursuant to the CWA definition of oil, the SPCC requirements apply to petroleum-based and nonpetroleum-based oil.[107] In a 1975 *Federal Register* notice, EPA clarified that its 1973 SPCC regulations apply to oils from animal and vegetable sources.[108] EPA subsequently stated that "milk typically contains a percentage of animal fat, which is a non-petroleum oil" and is thus potentially subject to SPCC provisions.[109] However, in January 2009, EPA proposed a conditional exemption from SPCC requirements for milk storage units.[110] EPA issued a final rule April 18, 2011, exempting all milk and milk product containers and associated piping from the SPCC requirements. EPA's rationale for the exemption is that these units are subject to industry

[101] For information, see CRS Report R43169, *Regulation of Power Plant Wastewater Discharges: Summary of the EPA Final Rule*, by Claudia Copeland.

[102] 38 *Federal Register* 34164, December 11, 1973.

[103] 67 *Federal Register* 47041, July 17, 2002.

[104] A November 13, 2009, rule (74 *Federal Register* 58784) eliminated specific exclusions/exemptions made by a December 5, 2008, rulemaking (73 *Federal Register* 74236).

[105] U.S. Environmental Protection Agency, "Oil Pollution Prevention; Spill Prevention, Control, and Countermeasure Rule Compliance Date Amendment," 75 *Federal Register* 63093, October 14, 2010.

[106] U.S. Environmental Protection Agency, "Oil Pollution Prevention: Spill Prevention, Control, and Countermeasure Rule—Compliance Date Amendment for Farms," 76 *Federal Register* 72120, November 22, 2011.

[107] See CWA Section 311(a) (33 U.S.C. 1321(a)).

[108] 40 *Federal Register* 28849, July 9, 1975.

[109] 74 *Federal Register* 2461, January 15, 2009.

[110] U.S. Environmental Protection Agency, "Oil Pollution Prevention: Spill Prevention, Control, and Countermeasure Rule Requirements—Amendments," 74 *Federal Register* 2461, January 15, 2009.

standards for sanitation and may be regulated by other agencies, including the U.S. Department of Agriculture.[111] In addition, the final rule states that exempted milk storage units are not included in a facility's overall oil storage volume, a primary factor for SPCC applicability. For additional information, contact Jonathan Ramseur.

42. "Waters of the United States" Rule. From the earliest days, Congress has grappled with where to set the line between federal and state authority over the nation's waterways. Typically, this debate occurred in the context of federal legislation restricting uses of waterways that could impair navigation and commerce. The phrase Congress often used to specify waterways over which the federal government had authority was "navigable waters of the United States." However, in the legislation that became the CWA of 1972, Congress felt that the term was too constricted to define the reach of a law whose purpose was not maintaining navigability, as in the past, but rather preventing pollution. Accordingly, in the CWA Congress retained the traditional term "navigable waters," but defined it broadly to mean "waters of the United States." That phrase is important in the context of Section 404 of the law, a permit program jointly administered by EPA and the Army Corps of Engineers that regulates discharges of dredged and fill material to U.S. waters, including wetlands. The same phrase also defines the geographic extent of the other parts of the CWA, including state-established water quality standards, the discharge permit program in Section 402, oil spill liability, and enforcement. Consequently, how broadly or narrowly "waters of the United States" is defined has been a central question of CWA law and policy for nearly 40 years.

Controversies increased following two Supreme Court rulings, one in 2001 and one in 2006, on how "waters of the United States" are defined for purposes of the 404/wetlands permit program. Those two rulings interpreted the regulatory scope of the CWA more narrowly than previously, and created uncertainty about the appropriate scope of waters that are protected by the CWA. To resolve uncertainties about which waters are protected by the CWA, on May 27, 2015, EPA and the Army Corps of Engineers finalized regulations that define "waters of the United States." The agencies' intention in proposing it was to clarify questions of CWA jurisdiction, in view of the Supreme Court's rulings while reflecting the agencies' scientific and technical expertise. However, the rule as proposed in 2014 and finalized in 2015 has been and remains very controversial. Industries that are the primary applicants for CWA permits and agriculture groups (although farms are exempt from most permitting) raised numerous objections over how broadly they fear that the rule will be interpreted. Many states and state environmental agencies expressed support for a rule to clarify the scope of CWA jurisdiction, but there was no state consensus on the Corps-EPA proposed or final rule. Environmental groups defend the agencies' efforts to protect U.S. waters and reduce frustration resulting from unclear jurisdiction of the CWA. Still, some of them argue that the final rule should be stronger, such as by providing categorical protection for more waters.[112]

Legal challenges to the final rule were filed by more than 30 states and a variety of industries seeking to have the rule invalidated. Environmental groups also challenged parts of the rule that they believe are not stringent enough. Although the rule became effective August 28, 2015, a federal court imposed a nationwide stay in October 2015, pending further developments, which are ongoing. Congressional interest in the rule has been strong, with hearings held by House and Senate committees and multiple bills introduced to halt or redirect the rule. The Senate and House

[111] 76 *Federal Register* 21652, April 18, 2011.

[112] For additional information on the rule, see CRS Report R43455, *EPA and the Army Corps' Rule to Define "Waters of the United States"*, by Claudia Copeland.

passed a resolution of disapproval of the rule (S.J.Res. 22), under procedures in the Congressional Review Act, but President Obama vetoed the joint resolution on January 19, 2016, and on January 21, the Senate failed to invoke cloture on a motion to proceed to override the veto.[113] For additional information, contact Claudia Copeland or Linda Tsang.

Solid Waste (RCRA)

43. Coal Combustion Residuals. In 2015, coal-fired power plants accounted for 33% of U.S. electric power, resulting in approximately 117 million tons of coal combustion residuals (CCR, commonly referred to as "coal ash"). On December 22, 2008, national attention was turned to risks associated with managing CCR when a breach in a surface impoundment pond at the Tennessee Valley Authority's Kingston, TN, plant released 1.1 billion gallons of coal ash slurry, covering hundreds of acres and damaging or destroying homes and property. In addition to the risk of a sudden, catastrophic release such as that at Kingston, EPA determined that CCR disposal in unlined landfills and surface impoundments presents substantial risks to human health and the environment from releases of toxic constituents (particularly arsenic and selenium) into surface and groundwater. To address those risks, on April 17, 2015, EPA issued a final rule to regulate solid waste disposal units that receive CCR.[114] EPA did so in accordance with its existing authorities to regulate solid waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The regulations, which went into effect on October 19, 2015, establish national standards for landfills and surface impoundments that receive CCR.[115]

Under Subtitle D, the EPA standards were enforceable primarily by citizen suits. However, provisions in the Water Infrastructure Improvements for the Nation Act (WIIN Act, P.L. 114-322, signed into law on December 16, 2016) amended Subtitle D to expand EPA's potential authority to implement those standards. Specifically, Section 2301 amends Subtitle D to establish a framework for EPA to approve state permit programs to regulate CCR disposal units, and, in effect, authorize EPA to enforce the federal standards in states that choose not to adopt a permit program.[116]

In its Regulatory Impact Analysis, EPA estimated the average annualized regulatory costs to be $587 million a year under Subtitle D. The average annual benefits were estimated at $289 million per year, but the monetized benefits do not include a number of important benefits that EPA was not able to quantify. There could be additional costs or benefits depending on how the rule affects the recycling of coal ash.

For additional information, contact Linda Luther.

44. Identification of Nonhazardous Materials That Are Solid Wastes When Burned. In conjunction with emission standards for boilers and solid waste incinerators (see discussion of "Boilers and Incinerators" section above), in February 2011, EPA finalized regulations intended to clarify when certain materials burned as fuel in a combustion unit would be considered a "solid

[113] For information, see CRS Report R43943, *The "Waters of the United States" Rule: Legislative Options and 114th Congress Responses*, by Claudia Copeland.

[114] U.S. Environmental Protection Agency's, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, Final Rule," 80 *Federal Register* 21302-21501, April 17, 2015. The final regulations are codified at 40 C.F.R. Part 257, Subpart D.

[115] For more information, see CRS Insight IN10583, *Overview of EPA Standards for "Coal Ash" Disposal*, by Linda Luther.

[116] For more information, see CRS Insight IN10585, *State Programs for "Coal Ash" Disposal in the WIIN Act*, by Linda Luther.

waste."[117] The definition of solid waste plays an important role in implementing the emission standards for both boilers and solid waste incinerators. The 2007 D.C. Circuit Court of Appeals decision that vacated EPA's previous emission standards for boilers also vacated EPA's definition of terms under its "CISWI Definitions Rule."[118] The D.C. Circuit concluded that EPA erred in defining "commercial and industrial solid waste" to exclude solid waste that is burned at a facility in a combustion unit whose design provides for energy recovery or which operates with energy recovery. Instead, the D.C. Circuit stated that the Clean Air Act "requires any unit that combusts 'any solid waste material at all'—regardless of whether the material is being burned for energy recovery—to be regulated as a 'solid waste incineration unit.'"[119]

The 2011 final rule addresses issues brought up by the D.C. Circuit and, in doing so, significantly narrows the current universe of nonhazardous secondary materials that could be burned in boilers.[120] EPA anticipates that boiler operators that burn materials newly identified as a solid waste would switch to a nonwaste fuel, rather than being subject to the more stringent emission standards applicable to solid waste incinerators. The final rule also addresses a host of concerns raised by various stakeholders during the public comment period for the proposed rule, including those of several Members of Congress. In particular, the final rule clarifies that the definition of solid waste would not affect current used oil recycling regulations (which allows burning used oil in space heaters, under certain conditions) and explicitly excludes from the definition of solid waste "scrap tires used in a combustion unit that are … managed under the oversight of established tire collection programs." EPA states that this regulatory action would not directly invoke any costs or benefits. Instead, any costs or benefits would be related to the Boiler MACT and CISWI Standards (discussed above). On February 7, 2013, EPA amended the 2011 rule to clarify specific elements of the regulations. The amendments were jointly promulgated with EPA's reconsideration of the CISWI proposed rule (discussed above). For additional information, contact Linda Luther.

45. Underground Storage Tanks. On June 19, 2015, the EPA Administrator signed final regulations revising the agency's 1988 Underground Storage Tank (UST) technical regulations and state program approval regulations promulgated under Subtitle I of the Solid Waste Disposal Act (SWDA).[121] The agency proposed the revisions in 2011.[122] The final regulations address amendments to Subtitle I made in the Energy Policy Act of 2005 (P.L. 109-58)[123] and also update UST leak prevention and detection technologies and requirements.[124] The revisions are intended

[117] U.S. Environmental Protection Agency, "Identification of Non-Hazardous Secondary Materials That Are Solid Waste, Final Rule," 76 *Federal Register* 15455, March 21, 2011.

[118] U.S. Environmental Protection Agency, "Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units, Final Rule," 70 *Federal Register* 55568, September 22, 2005.

[119] This and related court finding are discussed in the final rule at 76 *Federal Register* 15461.

[120] See EPA's web page "Identification of Non-Hazardous Materials That Are Solid Waste: Final Rulemaking" at http://www.epa.gov/epawaste/nonhaz/define/index.htm.

[121] U.S. Environmental Protection Agency, "Revising Underground Storage Tank Regulations—Revisions to Existing Requirements and New Requirements for Secondary Containment and Operator Training," 80 *Federal Register* 41566, July 15, 2015. The Solid Waste Disposal Act (SWDA) is commonly referred to as the Resource Conversation and Recovery Act.

[122] U.S. Environmental Protection Agency, "Revising Underground Storage Tank Regulations-Revisions to Existing Requirements for Secondary Containment and Operator Training," 76 *Federal Register* 71708, November 18, 2011.

[123] P.L. 109-58, Title XV, Subtitle B, comprises the Underground Storage Tank Compliance Act (USTCA), which broadly amended the UST leak prevention and provisions of SWDA Subtitle I (42 U.S.C. §6991-6991m).

[124] Technical regulations are codified at 40 C.F.R. §280. EPA also revised state program approval requirements in 40 C.F.R. §281 to incorporate changes to the technical regulations.

to improve leak prevention and detection of releases from USTs, which EPA and states report as a leading source of groundwater contamination. The final revisions to UST technical regulations include (1) secondary containment requirements for new and replaced tanks and piping, (2) training requirements for UST owners and operators, (3) new operation and maintenance requirements, (4) new release prevention and detection technologies, (5) requirements to ensure UST systems are compatible with certain biofuel blends before storing them, and (6) updated codes of practice. The regulations also revise state program approval requirements to incorporate the new requirements, and phase out past deferrals for several types of tanks (emergency generator tanks, airport hydrant systems, and field-constructed tanks).

The Energy Policy Act of 2005 (EPAct) amended the SWDA to require states that receive federal funding under Subtitle I to meet certain requirements (such as operator training and secondary containment requirements). The final rule expands on EPAct and further applies these requirements in Indian country and in states that do not receive Subtitle I funds. EPA's stated goal is to make UST requirements similar in all states and in Indian country. Additionally, the final rule expands the scope of certain requirements beyond those established in law. For example, EPAct requires states receiving Subtitle I money to require either that (1) new or replaced tanks installed within 1,000 feet of community water systems or drinking water wells be equipped with secondary containment, or (2) UST manufacturers and installers maintain evidence of financial responsibility to cover the costs of corrective actions. In the final rule, EPA requires secondary containment for new or replaced tanks in all locations. The agency noted that states are implementing or plan to implement this approach, and most tanks are within that distance of a water system (including water distribution lines) or potable well.

Among the updates to the 1988 UST rules, the rule modifies the requirement that UST systems must be compatible with stored substances, by adding options for owners and operators to demonstrate that UST systems are compatible with fuel containing more than 10% ethanol (E10) or 20% biodiesel (B20).[125] For additional information, contact Mary Tiemann.

Toxic Substances Control Act (TSCA)

46. Lead: Renovation, Repair, and Painting (RRP) Rule Amendments. Stakeholders have differed on what federal requirements are appropriate to protect children from lead-based paint hazards that may occur from renovation and remodeling of older residential, public, or commercial buildings. Certain public interest and environmental organizations have sought to expand the scope of buildings and circumstances in which federal training, certification, and work practice requirements would apply, while renovators have argued that such requirements may not be warranted in terms of costs to the renovator and property owner depending on the level of risk and other circumstances. In 2008, pursuant to Section 402(c)(3) of the Toxic Substances Control Act (TSCA), EPA promulgated the Lead Renovation, Repair, and Painting (RRP) rule that included certain provisions for which there has been disagreement.[126] Shortly after promulgation of the rule, trade associations who represent renovators and certain public interest and

[125] The new regulations and support documents (including a comparison of the key differences between the 1988 regulations and the 2015 revised UST regulations) are available at http://www.epa.gov/oust/fedlaws/revregs.html.

[126] 15 U.S.C. §2582(c)(3). This provision of TSCA was enacted by the Lead-Based Paint Exposure Reduction Act (Subtitle B) as part of the Residential Lead-Based Paint Hazard Reduction Act of 1992 (P.L. 102-550, Title X). The RRP rule is codified at 40 C.F.R. Part 745, Subpart E. Additional information is available on EPA's website "Lead Renovation, Repair, and Painting Program Rules," April 19, 2016, https://www.epa.gov/lead/lead-renovation-repair-and-painting-program-rules.

environmental organizations challenged it.[127] In 2009, EPA signed a settlement agreement with the public interest and environmental organization petitioners (but not the trade association), committing to propose certain amendments to the RRP rule.[128] In response to the settlement agreement, EPA promulgated two amendments to the rule and continues to consider a third rulemaking. Among other provisions, the RRP rule amendments

- eliminated the "opt-out" provision that had exempted renovators from training and work practice requirements if they obtained certification from the property owner that no child under age six or pregnant woman resided in the building and no children spent significant amounts of time there; and
- allowed certified renovators the option to collect paint samples from components to be affected by a renovation for analysis by a nationally accredited laboratory instead of using EPA-recognized test kits.[129]

EPA did not amend the RRP rule as the agency originally proposed to require dust wipe testing and clearance requirements after the completion of a renovation activity. EPA continues to consider potential RRP requirements for public and commercial buildings that children do not frequent.[130] On June 9, 2016, EPA announced that the agency would review the entire RRP rule as required by Section 610 of the Regulatory Flexibility Act.[131] The agency anticipates completing the review by January 2017. In the 114th Congress, H.R. 2328 and S. 1987 would have amended TSCA, among other things, to limit the circumstances in which the RRP rule would apply. For additional information, contact Jerry Yen.

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[127] See *National Association of Home Builders v. EPA*, D.C. Cir., No. 08-1193, consolidated with *New York City Coalition to End Lead Poisoning et al. v. EPA*, D.C. Cir., No. 08-1235 and *Sierra Club et al. v. EPA*, D.C. Cir., No. 08-1258.

[128] The 2009 settlement agreement and certain amendments to the settlement agreement are available at http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OPPT-2010-0173-0089.

[129] U.S. Environmental Protection Agency, "Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program: Lead; Final Rule," 75 *Federal Register* 24802-24819, May 6, 2010, and "Lead; Clearance and Clearance Testing Requirements for the Renovation, Repair, and Painting Program, Final Rule," 76 *Federal Register* 47918-47946, August 5, 2011.

[130] Regulatory Information Service Center, "View Rule: Lead; Renovation, Repair, and Painting Program for Public and Commercial Buildings," Fall 2016, http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201610&RIN=2070-AJ56.

[131] 5 U.S.C. §610. Section 610 of the Regulatory Flexibility Act requires federal agencies to review, within 10 years of promulgation, each rule that has or will have a "significant economic impact on a substantial number of small entities."

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