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Avoiding the Glorious Mess:

A Sensible Approach to Climate Change and the Clean Air Act

WORKING PAPER

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Executive Summary

It is fair to say that a broad consensus has emerged among thought leaders in environmental policy that the best means to reduce the nation's GHG emissions would be new federal legislation tailored specifically to address the problem. Thus far, however, Congress has failed to pass such a bill, despite repeated attempts. Political winds now appear to be blowing firmly in the face of comprehensive climate legislation in the near term.

In the meantime, the Supreme Court determined in 2007 that greenhouse gas (GHG) emissions from passenger vehicles qualify as pollutants under the existing Clean Air Act ("the Act"), thereby obligating the U.S. Environmental Protection Agency (EPA) to determine whether GHGs endanger public health and welfare.² Citing resounding scientific evidence of the harmful effects of anthropogenic GHG emissions, the EPA issued such a finding (the "endangerment finding") in 2009.³ This chain of events now triggers a legal requirement for the EPA to regulate not only GHG emissions from passenger vehicles, but also certain large stationary sources under the current Act.

Conventional wisdom suggests that regulating GHGs under the Act would be costly, burdensome, and ineffective. In an often cited quote, Representative John Dingell (D-Michigan), then-chairman of the House of Representatives Committee on Energy and Commerce, warned in 2008 that regulating GHGs under the Act rather than new federal climate legislation would lead to a "glorious mess."⁴

The absence of new federal climate legislation leaves EPA officials with the challenge of balancing the Agency's legal obligations and the current political realities. Most recently, at an EPA conference celebrating the 40th anniversary of the Act, EPA Administrator Lisa Jackson sought to quell political concerns by spelling out five principles that guide the EPA's actions, including efforts to regulate GHG emissions:

1. the EPA will pursue common-sense strategies that spark innovation;
2. the EPA will seek to use similar strategies to address multiple pollutants;
3. the EPA will develop clear, achievable standards while providing covered entities the maximum flexibility to achieve those standards;
4. the EPA will seek input from a broad array of stakeholders, including citizens, industry, and state, local, and tribal governments; and
5. the EPA will implement the most cost-effective measures that do not burden small businesses and nonprofit organizations.⁵

¹ The authors would like to extend special thanks to Nadia Luhr, John Doyle, Rhead Enion, and Jonathan Skinner for assisting with legal research, and to Jonathan Wiener and Victor Flatt for reviewing the paper and offering constructive feedback.

² *Mass. V. EPA*, 549 U.S. 497 (2007).

³ EPA Climate Change – Regulatory Initiatives, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under section 202(a) of the Clean Air Act, <http://www.epa.gov/climatechange/endangerment.html>.

⁴ *Strengths and Weaknesses of Regulating Greenhouse Gas Emissions Using Existing Clean Air Act Authorities: Hearing on Climate Change Before the Subcomm. On Energy and Air Quality of the H. Comm. On Energy and Commerce*, 110th Cong. (2008).

⁵ Administrator Lisa P. Jackson, *Remarks on the 40th Anniversary of the Clean Air Act* (Sept. 14, 2010),

This paper proposes possible means to implement the Administrator’s announced intent. In March 2010, the Nicholas Institute for Environmental Policy Solutions at Duke University, the Duke University School of Law, and the Center for Law, the Environment, Adaptation, and Resources (CLEAR) at the University of North Carolina School of Law convened many of the nation’s legal experts on the Clean Air Act for an event in Durham, North Carolina, to examine the options for regulating GHGs under the Act. This report builds upon some of the ideas discussed at that meeting and described in recent publications, with the goal of identifying a viable approach to GHG regulation through the current Clean Air Act in the event that Congress does not act on comprehensive climate legislation.

In particular, analysts and scholars have identified four main options for regulating GHGs from large stationary sources under the Act:

- section 108-110 – regulating GHGs as criteria pollutants (i.e., the NAAQS program);
- section 111 – regulating sources of GHGs under the New Source Performance Standards (NSPS) program;
- section 115 – entering into bilateral agreements to control international air pollution; and
- Title VI – regulating GHGs to protect the stratosphere.

Of these regulatory options, section 111 appears to provide the EPA with the best means to create a system that not only avoids the “glorious mess” that many lawmakers fear, but also implements a cost-effective program that delivers meaningful emissions reductions, is consistent with both the statutory language of the Act and legal precedent, and is politically viable.⁶ This approach has the potential to lay the foundation for an effective national strategy to mitigate climate change and provide a more certain future for regulated entities.

In particular:

- section 111 allows the Agency to build upon many of the key compromises and agreements reached during congressional negotiations regarding climate policy.
- The EPA may consider costs when designing a regulatory program under section 111, an option that is not available when setting National Ambient Air Quality Standards (NAAQS) under sections 108-109 of the Act (although cost can be considered when states or the federal EPA then implement emissions reductions under section 110).
- section 111 requires the EPA to regulate sources of pollution rather than the pollutants themselves (e.g., the overall level of GHGs in the atmosphere), thereby allowing the agency to design appropriate regulatory programs for different sectors of the economy.
- The EPA may regulate GHGs under section 111 relatively quickly, achieving environmental benefits associated with early action while also providing GHG emitters with regulatory certainty.
- section 111 provides the EPA with the discretion to tailor the regulatory approaches to specific sectors of the economy, and to employ market-based mechanisms. This flexibility could allow the Agency to build upon recent congressional efforts to limit GHG emissions.

Some legal scholars conclude that the endangerment finding for passenger vehicles will require the EPA to regulate GHGs as criteria pollutants under the NAAQS program (sections 108-110 of the Act).⁷ To

<http://yosemite.epa.gov/opa/admpress.nsf/12a744ff56dbff8585257590004750b6/7769a6b1f0a5bc9a8525779e005ade13!OpenDocument>.

⁶ Other authorities that were discussed at the workshop, such as sections 115 and 615, may be discussed in future briefs. The authorities discussed at the workshop were detailed in a preparatory paper by Tim Mullins and Rhead Enion, now published in the Environmental Law Reporter. See Tim Mullins & Rhead Enion, *(If) Things Fall Apart: Searching for Optimal Regulatory Solutions to Combating Climate Change Under Title I of the Existing CAA if Congressional Action Fails*, 40 ELR 10864 (Sept. 2010).

⁷ See, e.g., Nathan Richardson, *Greenhouse Gas Regulation under the Clean Air Act: Does Chevron v. NRDC Set the EPA Free?*, RFF Discussion Paper 09-50, (Dec. 2009), available at <http://www.rff.org/RFF/Documents/RFF-DP-09-50.pdf>.

prepare for that scenario, the EPA could attempt to develop a sensible regulatory program under section 111 that could also be “ported” to operate under sections 108-110 if the courts so require.

This paper describes the logic of the section 111 approach, and provides readers with the tools to evaluate the tradeoffs of pursuing a program as described. In doing so, the paper first provides an overview of the EPA’s current efforts to regulate GHGs; turns to the potential for the EPA to balance political, scientific, and economic concerns by regulating GHGs under section 111; and, finally, highlights and evaluates the likely legal challenges that the Agency may face if it pursues such an approach.

I. Climate Change and the Clean Air Act—The Current Legal and Political Landscape

Despite great anticipation by the advocates for climate legislation, it now appears that the 111th Congress will close without enacting any major law requiring GHG reductions. This circumstance has already led, inevitably, to increased pressure on the U.S. Environmental Protection Agency to regulate those gases under the Clean Air Act. At the same time, representatives of affected industries have increased their political opposition to EPA’s authority to undertake such regulation, and lawmakers have introduced several proposals to remove EPA’s authority under the current Clean Air Act to regulate GHGs.

As a consequence, the EPA is left with the delicate task of regulating GHGs, as required by current law, but doing so without provoking such political kickback that Congress strips its authority away. Layered upon that challenge is a widespread perception that the CAA is an inappropriate mechanism for addressing a globally mixing pollutant such as carbon dioxide, the chief GHG.

The EPA is currently taking a gradual approach to regulating GHG emissions from stationary sources. In order to comply with its legal obligation to regulate GHGs while also avoiding subjecting millions of smaller sources to new CAA regulations, the EPA promulgated the Tailoring Rule to target GHG emissions from large sources, claiming the discretion to avoid “absurd results.”⁸

There are four primary options for regulating GHGs from large stationary sources under the Act: section 108-110 (i.e., the NAAQS program);⁹ section 111 (the New Source Performance Standards [NSPS] program);¹⁰ section 115 (international air pollution);¹¹ and title VI (protecting the stratosphere).¹² The statutory authority and tradeoffs associated with GHG regulation under the NAAQS program, section 115, and title VI are described in detail in the papers cited above. This paper focuses on section 111, as the authors believe it may present the most viable option to regulate GHGs in an effective, flexible, efficient, and timely manner, thereby avoiding “the glorious mess” that many lawmakers fear.

A. EPA authority to regulate GHGs

The story of the EPA’s recent efforts to regulate GHGs under the Clean Air Act begins with the U.S. Supreme Court’s 2007 decision in *Massachusetts v. EPA*.¹³ Following the EPA’s denial of their petition

⁸ For a comprehensive discussion of recent “absurd results” cases, see 75 Fed. Reg. at 31542-43. See also *Ala. Power v. Castle*, 636 F.2d 323, 400 (1979), for a discussion of the related “administrative necessity” doctrine.

⁹ Nathan Richardson, *Greenhouse Gas Regulation under the Clean Air Act: Does Chevron v. NRDC Set the EPA Free?*, RFF Discussion Paper 09-50 (2009), available at <http://www.rff.org/RFF/Documents/RFF-DP-09-50.pdf>.

¹⁰ Nathan Richardson et al., *Greenhouse Gas Regulation under the Clean Air Act: Structure, Effects, and Implications of a Knowable Pathway*, RFF Discussion Paper 10-23, pgs. 28-37 (2010), available at <http://www.rff.org/RFF/Documents/RFF-DP-10-23.pdf>.

¹¹ Roger Martella & Matthew Paulson, *Regulation of Greenhouse Gases under section 115 of the Clean Air Act*, Daily Environment Report, 43 DEN B-1 (Mar. 9, 2009).

¹² Inimai M. Chettiar & Jason A. Schwartz, *The Road Ahead: EPA’s Options and Obligations for Regulating Greenhouse Gases*, NYU School of Law Institute for Policy Integrity Report No. 3, p. 71 (2009), available at <http://policyintegrity.org/files/publications/TheRoadAhead.pdf>.

¹³ *Mass.*, 549 U.S. 497.

to regulate GHG emissions from mobile sources,¹⁴ a group of states, local governments, and private organizations responded by petitioning the Court to clarify the EPA’s responsibilities.¹⁵ After finding that GHGs qualify as air pollutants under the Clean Air Act,¹⁶ the Court held that the Act required the EPA to determine whether GHG emissions from mobile sources endanger public health or welfare.¹⁷

Under section 202(a) of the Act, the Administrator must regulate emissions of “any air pollutant” from new motor vehicles which “in [her] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.”¹⁸ Following the Supreme Court’s ruling in *Mass v. EPA* and its classification of GHGs as air pollutants under the Act, the EPA undertook an examination of the health, environmental, and welfare-based effects of GHG emissions from new motor vehicles.

In December 2009, following a public comment period, the EPA issued two distinct findings (hereinafter collectively called the “endangerment finding”).¹⁹

1. [T]he current and projected concentrations in the atmosphere of the six key well-mixed greenhouse gases — carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) — “endanger” the public health and welfare of current and future generations.
2. [T]he combined emissions of these greenhouse gases from new motor vehicles and new motor vehicle engines “contribute to” the greenhouse gas pollution which endangers public health and welfare.

The endangerment finding notes a scientific consensus that GHG emissions from human activities are causing climate change.²⁰

The statutory language of section 202(a) is explicit that the Administrator shall regulate air pollutants from new mobile sources upon a finding of endangerment.²¹ Therefore, the EPA’s conclusion that GHGs from new motor vehicles endangered public health and welfare required the Agency to regulate GHG emissions from new motor vehicles. In April 2010, the EPA and the U.S. Department of Transportation announced a joint rule to regulate GHG emissions from light-duty vehicles and increase the fuel economy

¹⁴ The 1999 petition asked the EPA to exercise its authority under section 202(a) of the Clean Air Act and regulate GHG emissions from new motor vehicles. *See, e.g.*, Petition for Rulemaking and Collateral Relief Seeking the Regulation of Greenhouse Gas Emissions from New Motor Vehicles under §202 of the Clean Air Act, Oct. 20, 1999, available at <http://www.icta.org/doc/ghgpet2.pdf>. In denying the petition, the EPA stated that it did not have the authority to address global climate change, and that given such authority, it would decline to do so at that time. EPA Notice: Control of Emissions from New Highway Vehicles and Engines, Sept. 2003, 68 Fed. Reg. 52922, 52925.

¹⁵ *See* Petition for Writ of Certiorari, *Mass. v. EPA* (Mar. 2, 2006), available at <http://www.icta.org/doc/CertPetitionFinalMar12006.pdf>.

¹⁶ *Mass.*, 549 U.S. at 528-29.

¹⁷ *Id.* at 529-35; Act section 202(a)(1). The Court adds that the EPA can avoid having to make such a determination if it can show that “the scientific uncertainty is so profound that it precludes the EPA from making a reasoned judgment as to whether GHGs contribute to global warming.” *Id.* at 534.

¹⁸ *Id.*

¹⁹ EPA Climate Change – Regulatory Initiatives, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under section 202(a) of the Clean Air Act, <http://www.epa.gov/climatechange/endangerment.html>.

²⁰ Endangerment and Cause or Contribute Findings for Greenhouse Gases Under section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496-99 (Dec. 2009).

²¹ 42 U.S.C. § 7521(a)(1) (“The Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from . . . new motor vehicles . . . which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare) (emphasis added). The court reiterated this in *Mass v. EPA*: “Under the clear terms of the Clean Air Act, the EPA can avoid taking further action only if it determines that GHGs do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.” *Mass.*, 549 U.S. at 533.

standards—the result of negotiations with the automobile industry, a labor union, environmental groups, the State of California, and other state governments.²²

Once a pollutant is regulated under any section of the Clean Air Act, the EPA is required by the “Prevention of Significant Deterioration” (PSD) provisions of the CAA to also regulate the pollutant from large new or modified stationary sources.²³ This step has triggered significant concern about EPA regulation of GHGs from numerous small sources. While the EPA’s actions on stationary sources thus far have been conservative, a leading perception has been that EPA regulations of stationary sources under the CAA would be costly and inefficient.²⁴

In response to the concerns described above, the EPA issued its “Tailoring Rule” to limit the range of stationary sources covered under the PSD provisions, and thus avoid “absurd results.”²⁵ The Tailoring Rule would limit the reach of the PSD provisions to sources of GHGs larger than 75,000 or 100,000 tons per year (tpy), depending on the source category.²⁶ The EPA will issue additional rules by July 2012 that may cover sources of emissions above 50,000 tons per year.²⁷

B. Political challenges

Even with its “go slow” approach, the EPA must still contend with a very real threat that Congress could remove its authority to regulate GHGs at all. In the summer of 2009, Senator Lisa Murkowski of Alaska, the ranking Republican on the Senate Energy and Natural Resources Committee, proposed legislation that would limit or eliminate EPA’s ability to regulate GHGs. Her initial effort, a rider intended for the EPA appropriations bill in September 2009, was blocked by the majority from consideration.²⁸

In January 2010, Senator Murkowski changed her tactics, introducing a Resolution of Disapproval that, if enacted, would have stripped the EPA of its power to regulate GHGs by nullifying the EPA’s science-based endangerment finding.²⁹ By undoing the finding that GHGs endanger public health and welfare, the resolution (the “Murkowski Resolution”) would not only prevent EPA regulation of GHG emissions from stationary sources, but also the negotiated rule addressing GHGs from mobile sources.

Prior to the Senate vote, the Senator and EPA Administrator Jackson engaged in correspondence discussing concerns over the EPA regulation. In a March 2010 letter, Jackson responded to Murkowski’s

²² Press Release, The White House, President Obama Directs Administration to Create First-Ever National Efficiency and Emissions Standards for Medium- and Heavy-Duty Trucks (May 21, 2010), <http://www.whitehouse.gov/the-press-office/president-obama-directs-administration-create-first-ever-national-efficiency-and-em>.

²³ See Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17004, 17004 (2010). Some scholars have concluded that the similarities between the endangerment finding provisions in section 202 and 108 now requires the EPA to regulate stationary source GHG emissions under the NAAQS program. See, e.g., Richardson, *supra* note 9.

²⁴ See *supra* discussion at section I.B.

²⁵ The Act itself defines a “major” source of emissions as any source emitting over 100 tons per year (tpy) or 250 tpy, depending on the source category. While this definition makes sense for pollutants such as sulfur dioxide or nitrogen oxide (NO_x), the EPA has determined that it would be impractical to apply this to GHG emissions. According to EPA Air chief Gina McCarthy, applying the 100/250tpy limit for GHGs would require 6 million sources to obtain Title V permits and lead to 82,000 permitting actions under PSD, resulting in an estimated combined cost of 22.5 billion dollars to permitting authorities. Robin Bravender, *The EPA Issues Final ‘Tailoring’ Rule*, Greenwire, May 13, 2010, <http://www.eenews.net/public/Greenwire/print/2010/05/13/1>; Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31514, 31577.

²⁶ Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31514 (June 2010) (to be codified at 40 CFR pts. 51, 52, 70, and 71).

²⁷ *Id.* at 31526.

²⁸ Press Release, Press Office of Lisa Murkowski, Majority Blocks Consideration of Amendment to Fix Problematic EPA Regulations (Sept. 24, 2009), http://murkowski.senate.gov/public/index.cfm?p=PressReleases&ContentRecord_id=043aa06b-cadf-4cff-824d-10a84923a395&ContentType_id=b94acc28-404a-4fc6-b143-a9e15bf92da4&Group_id=c01df158-d935-4d7a-895d-f694ddf41624&MonthDisplay=9&YearDisplay=2009.

²⁹ S.J. Res. 26, 111th Cong. (2010).

economic concerns and argued that overturning the reversal of the Vehicle Rule would have negative consequences not only for the environment, but also for the automotive industry, which had advocated for the uniform regulations.³⁰ Administrator Jackson also addressed Senator Murkowski's concerns over PSD regulations, stating that smaller sources (i.e., those emitting less than 50,000 tpy) would be regulated at the earliest—if ever—in 2016.³¹ The Senate defeated the Murkowski Resolution in June 2010 by a vote of 53-47, leaving the EPA's authority to regulate GHGs intact.³²

A new challenge to the EPA's authority may come from a member of President Obama's own party: Senator Jay Rockefeller of West Virginia. Senator Rockefeller proposed a bill (the "Rockefeller Bill") that would suspend the EPA's regulation of GHG emissions from stationary sources for a two-year period, giving Congress more time to craft climate-specific legislation.³³ Unlike Senator Murkowski's proposal, the Rockefeller Bill would leave the endangerment finding untouched, thereby preserving the EPA's ability to regulate based on the best available science and allowing the Vehicle Rule to take effect.³⁴ Prior to the vote on the Murkowski Resolution, Senate leaders committed to hold a vote on the Rockefeller Bill.³⁵ As of early October 2010, that vote had not taken place.

Even if the Senate passes a bill that suspends or removes the EPA's authority to regulate GHG emissions, there is no guarantee that the measure would become law in the 111th Congress because it would still have to pass the Democrat-controlled U.S. House of Representatives and survive a threatened presidential veto. Nonetheless, the close vote on the Murkowski Resolution and the pledged support of the Rockefeller Bill by key Democrats³⁶ demonstrate the depth of support for overturning EPA's authority. With significant losses appearing likely in the midterm elections for the Democrats, the EPA's long-term authority to regulate GHG emissions is far from certain.³⁷

C. Legal challenges

In addition to the political challenges to the EPA's authority to regulate GHGs described above, the Agency is already facing numerous legal challenges from across the political spectrum regarding its authority to regulate GHG emissions and the specific regulatory approaches that the Agency is currently pursuing. These challenges include recent lawsuits regarding the initial endangerment finding³⁸ and the Agency's timeline for regulation.³⁹

Challenges to the EPA's Tailoring Rule for GHG emissions may prove the most daunting legal hurdle, regardless of the specific regulatory approach the Agency chooses.⁴⁰ The EPA anticipated this argument in its final rulemaking, stating that the Tailoring Rule was necessary in order to prevent regulation that Congress did not initially intend, and to avoid excessive administrative burdens, as discussed above.⁴¹ In

³⁰ Letter from Lisa P. Jackson, EPA Administrator, to Senator Murkowski (Mar. 26, 2010), http://ourenergypolicy.org/docs/23/3.26.10_Administrator_Jackson_Letter.pdf.

³¹ Lisa P. Jackson, *The Murkowski Resolution: A Step Backward for American Clean Energy*, the Huffington Post, June 7, 2010, http://www.huffingtonpost.com/lisa-p-jackson/the-murkowski-resolution_b_602793.html.

³² U.S. Senate, Roll Call Votes 111th Congress – 2nd Session: Motion to Proceed to S.J. Res. 26, June 10, 2010, available at http://senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=111&session=2&vote=00184.

³³ Press Release, Press Room of Senator Jay Rockefeller, Rockefeller Introduces Legislation to Suspend EPA Action and Protect Clean Coal State Economies (Mar. 4, 2010), available at <http://rockefeller.senate.gov/press/record.cfm?id=322764&>.

³⁴ *Id.*

³⁵ Bravender, *Senate Leaders Strike Deal to Lure Dems from Murkowski*, Greenwire, June 10, 2010, <http://www.eenews.net/public/Greenwire/2010/06/10/1>.

³⁶ U.S. Senate, *supra* note 32; Bravender, *supra* note 35.

³⁷ See, e.g., Maggie Haberman, *Democrats fear Midwestern Meltdown*, Politico, Sept. 26, 2010, <http://www.politico.com/news/stories/0910/42713.html>.

³⁸ *Chamber of Commerce v. EPA*, D.C. Cir., No. 10-1235, 8/13/10

³⁹ *Center for Biological Diversity v. EPA*, D.C. Cir., No. 10-1115, 5/28/10

⁴⁰ See, e.g., Robin Bravender, *The EPA Publishes 'Tailoring' Rule, and Lawsuits Begin*, Greenwire (June 3, 2010) <http://eenews.net/Greenwire/2010/06/03/archive/11>.

⁴¹ 75 Fed. Reg. at 31541-42.

response to litigation, the Agency restated the necessity of avoiding an “administrative nightmare” that would result from the regulation of smaller sources.⁴² Some environmental groups are also challenging the EPA’s actions, claiming that it is not going far enough with its regulation of GHGs.⁴³

II. Challenging Conventional Wisdom

Conventional wisdom suggests that regulation of GHGs under the Act would be costly, burdensome, and ineffective. While this criticism could be on target should EPA pursue some of its less efficient regulatory options, such an outcome is not inevitable. In particular, a regulatory program designed under section 111 might provide EPA with not only the ability to avoid the dire regulatory future painted by some, but also with the tools to create the foundation for an efficient, comprehensive strategy to reduce the nation’s GHG emissions.

Many rhetorical artists, however, have been painting an unfavorable picture of Clean Air Act regulations. Opponents of such regulations often refer to them as the “worst possible option”⁴⁴ for addressing GHG emissions, suggesting a nightmarish scenario of bureaucratic red tape affecting every sector of the U.S. economy. Senator Murkowski captured this sentiment in 2009 in a press release explaining her opposition to the EPA’s GHG regulations: “Very clearly, stationary sources must reduce emissions in order to bring our nation to its climate goal.... But forcing them to do so through the Clean Air Act would be one of the least efficient and most damaging ways to pursue that goal. It would be rife with unintended consequences, and could be devastating for our economy.”⁴⁵

More recently, Senator Murkowski stated that regulating GHGs under the Act “will entail millions of permit decisions ... by mid-level EPA employees, without effective recourse, and it will leave regulated entities with very little flexibility to comply.”⁴⁶ She states that this vast increase in permit decisions would impose new regulations on “millions of residential buildings, small businesses, schools, hospitals, and restaurants found in every town in America.”⁴⁷ On the other side of the aisle, a group of eight Democrats from coal and manufacturing states wrote a letter to Administrator Jackson expressing concern over the impacts of CAA regulations on domestic business and industry,⁴⁸ and six Democrats joined all 41 Republicans in voting for Senator Murkowski’s disapproval resolution.⁴⁹ Echoing these sentiments, the U.S. Chamber of Commerce urged Congress to remove the EPA’s authority to issue GHG regulations under the Act, stating that the Act “simply was never intended to regulate something as complex as global climate change.”⁵⁰

⁴² See Bravender, Greenwire (June 3, 2010), <http://eenews.net/Greenwire/2010/06/03/archive/11?terms=tailoring+rule>.

⁴³ For example, the Center for Biological Diversity and 350.org have petitioned the EPA to regulate GHGs under the NAAQS program, claiming that 350 ppm is the appropriate standard, and the Center for Biological Diversity and the Sierra Club are challenging the agency’s determination of when a pollutant is “subject to regulation.” Center for Biological Diversity v. U.S. EPA, (D.C. Cir., Docket No. 10-1115); Sierra Club v. U.S. EPA, Petition for Judicial Review (D.C. Cir., Case No. ____), Aug. 2, 2010.

⁴⁴ 156:187 Cong. Rec. S4789 (daily ed. June 10, 2010) (statement of Sen. Murkowski “Resolution of Disapproval of EPA rule”).

⁴⁵ Press Release, Press Office of Lisa Murkowski, Murkowski Introduces Amendment on EPA Regulation of CO₂ from Stationary Sources, http://energy.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_id=1856319b-7eca-4c10-8162-80bbc3b04ac2&Month=9&Year=2009.

⁴⁶ Sen. Murkowski, *supra* note 7.

⁴⁷ 156:187 Cong. Rec. S4789 (daily ed. June 10, 2010) (statement of Sen. Murkowski “Resolution of Disapproval of EPA rule”).

⁴⁸ The letter was signed by Sens. Jay Rockefeller (WV), Sherrod Brown (OH), Bob Casey (PA), Claire McCaskill (MO), Mark Begich (AK), Carl Levin (MI), Robert Byrd (WV), and Max Baucus (MT). Letter from Jay Rockefeller Et al. to Lisa P. Jackson (Feb. 19, 2010), available at [http://rockefeller.senate.gov/press/Letter to Lisa Jackson 2-19-10.pdf](http://rockefeller.senate.gov/press/Letter%20to%20Lisa%20Jackson%202-19-10.pdf) (accessed September 16, 2010).

⁴⁹ 156: 187 Cong. Rec. p. S4836 (daily ed. June 10, 2010).

⁵⁰ Press Release, U.S. Chamber of Commerce, U.S. Chamber Challenges Wisdom of Regulating Climate Change Under Clean Air Act (Aug. 13, 2010), <http://www.uschamber.com/press/releases/2010/august/us-chamber-challenges-wisdom-regulating-climate-change-under-clean-air-act> (accessed Sept. 1, 2010).

While many supporters of regulating GHGs under the Clean Air Act agree that the preferred method for addressing climate change is through comprehensive new climate legislation, they argue that EPA's authority to regulate GHGs should be used under the current Act if Congress does not enact new legislation. (Whether to preserve EPA's Clean Air Act authority over GHGs even under comprehensive new climate legislation is a distinct question that this paper does not address; its merits would depend on the contents of such new legislation.) Letters to Congress from the American Lung Association⁵¹ and the Union of Concerned Scientists⁵² underscore the fact that once the EPA makes a scientific determination that GHGs are harmful to human health and welfare, it has a responsibility to regulate them. Underlying the concerns of many advocacy groups is the recognition that the Clean Air Act may provide the most effective tool to address climate change for the foreseeable future.

Despite the concerns described above, the EPA's legal obligation to now regulate GHG emissions from stationary sources remains. A close examination of the Clean Air Act, and the EPA's 40-year history of regulating air pollutants, suggests that EPA may have some sensible options for regulating GHGs under the current CAA. In particular, section 111 of the Act provides the EPA with the means and flexibility to not only create a system that avoids the "glorious mess" that many lawmakers fear, but also to design a cost-effective program that addresses many of the key concerns raised during congressional negotiations regarding climate policy. Notable advantages of regulating GHG emissions under section 111 include:

- The EPA may consider costs when designing a regulatory program under section 111. The consideration of cost is not available to EPA when setting NAAQS under CAA sections 108–109 (although cost can be considered by states or EPA in implementing emissions reductions to meet a NAAQS under CAA 110).
- section 111 requires the EPA to regulate sources of pollution rather than the pollutants themselves, thereby allowing the agency to treat various sectors of the economy differently. In the process, the EPA could negotiate with stakeholders, following a similar model as the one used when designing GHG regulations for passenger vehicles.
- section 111 allows the EPA to regulate GHG emissions from any new or existing sources that already emit other pollutants covered by the section, allowing the agency to enact new regulations relatively quickly. Rapid regulation could not only result in environmental benefits, it also provides regulatory certainty to electric utilities and other large industrial facilities as they plan for the future.
- The program must set forth a "standard" rather than mandate a specific technology.⁵³
- The EPA must periodically update the standards, allowing it to adjust the programs if the costs prove exorbitant or if the science requires more aggressive action.⁵⁴

The EPA has determined that section 111 allows the use of market-based regulatory program credits; this flexibility can substantially reduce costs while still delivering emissions reductions and environmental protection.

In addition to these features of GHG regulation under section 111, such a regulatory structure could provide a framework for future climate legislation. By starting the regulatory process now, the EPA could work through some of the unresolved issues in the congressional debate, as well as harvest policy approaches with broad support that emerged in the recent negotiations. The lessons learned in the early years of the program could inform Congress' efforts to create a longer-term strategy, including comprehensive legislation that could build on or replace EPA's CAA regulations.

⁵¹ Letter from the American Lung Association to Congress (Jan. 26, 2010) *available at* <http://www.usclimatenetwork.org/resource-database/american-lung-association-letter-opposing-senator-murkowski-resolution>.

⁵² Scientists' Statement on the Clean Air Act: A letter signed by 1,906 U.S. Scientists (May 2010), *available at* http://www.ucsusa.org/assets/documents/global_warming/murkowski-amendment-petition.pdf. (accessed Oct. 7, 2010).

⁵³ 42 U.S.C. § 7411(a)(1).

⁵⁴ 42 U.S.C. § 7411(b)(1)(B).

In addition, a market-based approach under section 111 could provide a foundation for a similar program under the NAAQS program—indeed, if designed thoughtfully, such a market-based program could be “ported” into the NAAQS program if and when the courts determine that the EPA is required to follow that route instead.⁵⁵ section 111, by its own terms, is inapplicable to pollutants regulated under the NAAQS program (sections 108-110). Designing a market-based GHG regulatory program that would be valid under both section 111 and sections 108-110 would give markets the credible signal to invest in efficient abatement efforts now, rather than wait for the courts to decide which path EPA must follow. A market-based program can also be adopted by EPA under a Federal Implementation Program (FIP) under section 110, to which the states could be invited to subscribe (or perhaps required to join, if EPA determines that the states’ own implementation plans are inadequate).

III. Regulating GHGs under Section 111

A. Overview of section 111

The EPA provides the following summary of section 111:

section 111 of the Clean Air Act requires the EPA to develop regulations for categories of sources which cause or significantly contribute to air pollution which may endanger public health or welfare. Such regulations apply to each new source within a category without regard to source location or existing air quality. section 111(d) of the Act requires states to develop plans for existing sources of noncriteria pollutants (i.e., a pollutant for which there is no national ambient air quality standard) whenever the EPA promulgates a standard for a new source. These are called section 111(d) plans and are subject to EPA review and approval. Examples of source categories subject to 111(d) are existing municipal solid waste landfills, municipal waste combustors, sulfuric acid plants, primary aluminum reduction plants, and the phosphate fertilizer manufacturing facilities.⁵⁶

A standard of performance includes three key elements, as defined in section 111(a)(1):

- (1) “standard for emissions of air pollutants;”
- (2) “reflects the degree of emission limitation available;” and
- (3) “the best system of emission reduction.”⁵⁷

Elsewhere, the Act defines “standard of performance” as “a requirement of continuous emission reduction, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction.”⁵⁸

Once the EPA lists a category of stationary sources, it “shall publish proposed regulations, establishing Federal standards of performance for new sources within such category.”⁵⁹ Generally the EPA has

⁵⁵ This is not to suggest that a trading system implemented under section 111 could directly transfer to a NAAQS program. The EPA would have to determine the NAAQS for each GHG, then states would have to develop programs designed to either maintain attainment if the NAAQS were set above the atmospheric concentration at the time, or achieve attainment if the NAAQS were set below the existing concentration. Nonetheless, regulators should be able to incorporate the framework for a trading program into state implementation plans or a federal implementation plan.

⁵⁶ EPA Region 7, section 111(d) Plans, <http://www.epa.gov/region07/air/rules/111d.htm> (last visited May 13, 2010).

⁵⁷ 42 U.S.C. § 7411(a)(1).

⁵⁸ 42 U.S.C. § 7602(l).

⁵⁹ 42 U.S.C. § 7411(b)(1)(B) (emphasis added). The EPA makes a distinction between regulating GHG emissions from sources that are already subject to section 111 and subjecting new categories of sources subject to regulations. “An endangerment finding would be a prerequisite for listing additional source categories under section 111(b), but is not required to regulate GHGs from source categories that have already been listed.” ANPR, at 44,486.

discretion as to how it regulates pollutants, and it is not required to regulate every covered pollutant from every listed source.

As implemented over many years by the EPA, the [section 111] program has established standards that do not necessarily set emission limits for all pollutants or even all regulated pollutants emitted by sources within the relevant source category. Rather, [section 111 regulations] generally focus on specific pollutants of concern for a particular source category.⁶⁰

section 111(d) treats new sources⁶¹ and existing sources⁶² somewhat differently. Generally, each state establishes the standard of performance for existing sources, subject to EPA approval.⁶³ The EPA establishes the standards of performance for new sources within an existing category and the states implement and enforce those standards.⁶⁴ When the EPA regulates a new pollutant or determines that a new category of sources is subject to performance standards, states must then develop a plan to regulate existing sources accordingly.

Another significant difference between new and existing source regulations is the interaction with the NAAQS program. A standard of performance may be established for existing sources under section 111(d) only if a NAAQS has not been issued for the pollutant in question.⁶⁵ The rest of section 111 deals with new (and modified) stationary sources, and may apply even if there is a NAAQS for GHGs.⁶⁶

B. Designing a sector-based approach under section 111

Section 111 provides the EPA with a fair amount of flexibility to determine appropriate regulatory programs for different sectors of the economy, potentially building upon recent congressional negotiations. For example, Senate negotiations during the summer of 2010 abandoned the economy-wide cap-and-trade system included in the American Clean Energy and Security (ACES) Act that passed the House of Representatives in 2009. Instead, Senators John Kerry and Joe Lieberman were considering approaches tailored to different sectors of the economy. Both the Kerry-Lieberman negotiations and the ACES Act included protections for energy-intensive sectors that are vulnerable to international competition from companies not facing a price on carbon. By late summer 2010, Senators Kerry and Lieberman were negotiating with some electric utilities regarding a cap-and-trade system targeted at that sector, and the early forms of a consensus were emerging regarding the relative duty of utilities with different portfolios of generation to secure emissions reductions.

While there was no consensus regarding these approaches, the debate is relatively mature by this point, providing the EPA with some guidance regarding viable approaches to limiting GHG emissions that may be consistent with future legislation. Furthermore, federal law allows the EPA to negotiate with representatives from covered sectors and other interested stakeholders during the rulemaking process—an approach the Agency used successfully when crafting the new rule governing GHG emissions from passenger vehicles.

⁶⁰ ANPR, at 44,486.

⁶¹ A “new source” is “any stationary source, the construction or modification of which is commenced after the publication of regulations . . . prescribing a standard of performance . . .” 42 U.S.C. § 7411(a)(2). Modification is any physical or operative change that “increases the amount of any air pollutant emitted . . . or which results in the emission of any air pollutant not previously emitted.” *Id.* § 7411(a)(4).

⁶² An existing source is simply any source that is not a new source. 42 U.S.C. § 7411(a)(6).

⁶³ *Id.* § 7411(d)(1)&(2).

⁶⁴ *Id.* § 7411(b)(1)(B)&(c).

⁶⁵ *Id.* § 7411(d)(1)(A)(i).

⁶⁶ *See, e.g.*, South Carolina Department of Health and Environmental Control, Air Quality: Statutes and Regulations, http://www.scdhec.gov/environment/baq/Permitting/Guide/statutes_and_regulations.asp (last viewed October 7, 2010) (“NSPS may regulate criteria pollutants and hazardous air pollutants (HAP).”).

1. Market-based approach for electric utilities

At the March gathering in Durham, the convened experts discussed the possibility that the EPA could develop a market-based approach to GHG regulation under section 111, thereby attempting to mimic some of the efficiencies desired from a market-based legislative approach. In order to create a carbon-trading program under section 111, the EPA must equate such a market-based program to a “standard of performance.”

The EPA could pursue such an approach relatively quickly for electric utilities. As mentioned above, negotiations for a utility-only GHG-trading system are already relatively mature after the efforts by Senators Kerry and Lieberman. The compromise necessary to balance the interests of more carbon-intensive utilities with those with less fossil fuel-dependent generation was largely negotiated in those negotiations, and could provide the beginning structure of a similar approach under section 111. In addition, the utility sector is already familiar with emissions trading under the acid rain program. Once the market is in operation for utilities, the EPA could expand the market to include other sectors.

There is precedent for emissions trading under section 111. A narrow emissions-trading program currently exists as part of the New Source Performance Standards program to control nitrogen oxide emissions from large municipal waste combustors.⁶⁷ In 2005, the EPA established the Clean Air Mercury Rule (CAMR), a cap-and-trade system to reduce mercury emissions from coal-fired power plants.⁶⁸ The DC Court did not address the legality of emissions trading under section 111, instead striking down the rule because the EPA should have regulated mercury as a toxic air pollutant.⁶⁹

Should the EPA pursue a market-based approach for GHGs under section 111, it is almost certain that the Agency would face similar legal challenges to its authority as it saw during the litigation regarding CAMR. While the court did not decide upon the legality of the CAMR cap-and-trade system, the legal briefs foreshadow the arguments for and against EPA’s authority to create market-based pollution reduction programs under section 111.

a. Challenges to the EPA’s argument that cap-and-trade qualifies as a “standard of performance”

Some state governments and environmental advocacy organizations challenged CAMR, focusing primarily on two arguments: (1) emission reductions must be continuous for each source and (2) the EPA must apply the standard of performance on a source-specific basis. The environmental petitioners in particular relied on the language in section 111(d)(1) that requires “each State” to set forth a standard of performance for “any existing source.”⁷⁰ The environmental petitioners argued that CAMR violates that requirement because the emissions-trading system would have allowed mercury emissions in some states to increase.⁷¹ The environmental petitioners also interpreted the phrase “any existing sources” to mean that “each State plan must reduce emissions from any and all existing sources.”⁷² The petitioners

⁶⁷ 40 CFR 60.33b(2). The acid rain program, perhaps the best known emissions trading program under the Clean Air Act, is authorized under Title IV of the Act rather than section 111. 42 U.S.C. § 7651.

⁶⁸ EPA Clean Air Rule, Basic Information, <http://www.epa.gov/mercuryrule/basic.htm>.

⁶⁹ *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008). The EPA developed the Clean Air Interstate Rule (CAIR)—an emissions trading system established under section 110 to address interstate transport of fine particulate matter and ozone—during the same timeframe as CAMR. *N.C. v. EPA*, 531 F.3d 896 (D.C. Cir. 2008). The D.C. Circuit Court of Appeals overturned CAIR because the trading system would have impacted some downwind states’ ability to meet their ambient air quality standards—a concern for pollutants with local and regional impacts such as ozone and acid rain, but one that is not present with globally-mixing pollutants such as GHGs. *Id.*

⁷⁰ Final Opening Brief of Environmental Petitioners, at *27, *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097), available at 2007 WL 3193050 at 27 (quoting 42 U.S.C. § 7411(d)(1)).

⁷¹ *Id.* at *27; see also Final Reply Brief of Environmental Petitioners at *15, *New Jersey*, 517 F.3d 574, available at 2007 WL 3231256 (“the EPA avoids any textual explanation of why its approach comports with the ‘each State’ plan language in § 111(d)(1).”).

⁷² Final Opening Brief of Environmental Petitioners, at *27 (emphasis added); Final Reply Brief of Environmental Petitioners, at *16 (“the EPA’s brief similarly twists the obligation for ‘emission reduction[s]’ from ‘any existing source’ by substituting a very

reinforced that interpretation with the claim that the EPA must also give effect to section 302(l), which requires “continuous emission reduction[s] at] . . . a source.”⁷³

The Government Petitioners argued that the proposed cap was not stringent enough⁷⁴ and would allow mercury emission hotspots,⁷⁵ thereby violating section 111’s requirement of a “best system” that “reflects the degree of emission limitation available.”⁷⁶ The government petitioners also argued that it was unlikely that Congress would “hide elephants in mouse holes” by allowing for cap-and-trade based on a single definition under section 111 while it devoted all of Title IV of the Act to the SO₂-trading program.⁷⁷

b. The EPA’s arguments in support of the CAMR cap-and-trade system

The EPA responded to these arguments that its proposed cap-and-trade program for mercury emissions “satisfies the three substantive components of the section 111(a)(1) definition of ‘standard of performance.’”⁷⁸ First, the EPA argued that the term “standard” could reasonably be construed to include a cap-and-trade system.⁷⁹ Second, the EPA argues that the emissions cap “reflects the degree of emission limitation available” because it reflected the Agency’s expert judgment regarding the level of achievable emissions reductions if power plants nationwide had implemented available controls or other means of emissions reduction.⁸⁰ The EPA relied on deference to its expertise to meet the third criterion—that the approach represents the “best system of emissions reduction”—claiming that determining the “best system” is a matter of technical judgment.⁸¹

The EPA also noted that in the 1977 CAA Amendments, new source standards meant “the best technological system of continuous emissions reduction” while existing source standards omitted the term “technological.”⁸² The 1990 Amendments amended the section 111 definition for both new and existing sources, omitting the terms “technological” and “continuous.”⁸³ Thus, the “best system of emission reduction” can be a system of tradable allowances, not a technological device.

In addition, the chapter-wide definition of “standard of performance” set forth in section 302(l) requires “continuous emission reduction,” which is not precluded and could be achieved by a cap-and-trade system.⁸⁴ While any given source may increase its emissions—provided it purchases extra allowances—

different obligation ‘requir[ing] each source to cover its emissions with allowances,’ but not actually reduce emissions.” (citation omitted)).

⁷³ Final Opening Brief of Environmental Petitioners, *supra* note 70, at *25–26.

⁷⁴ See Final Opening Brief of Government Petitioners, *supra* note at *30–32, *New Jersey*, 517 F.3d 574, available at 2007 WL 3193051 (“CAMR requires only a fraction of the efficiency achieved by existing and available control technologies.”); Final Reply Brief of Government Petitioners, at *15–16, *New Jersey*, 517 F.3d 574, available at 2007 WL 3231254 (“The record reveals that such reductions [under CAMR] do not reflect the best demonstrated system of emission reduction.”).

⁷⁵ See Final Opening Brief of Government Petitioners, *supra* note 74, at *32–35 (“EPA ignores the threats to public health posed by mercury hot-spots created by EGU emissions acting with other sources of the pollutant.”); Final Reply Brief of Government Petitioners, *supra* note 74, at *16 (“Hotspots of mercury pollution exist and impact public health, and a cap-and-trade plan by its nature raises the very real risk of continuing or even exacerbating these hotspots as power plants avoid emission reductions by purchasing credits.”).

⁷⁶ 42 U.S.C. § 7411(a)(1).

⁷⁷ Final Reply Brief of Government Petitioners, *supra* note 74, at *13–14 (quoting *Whitman v. Am. Trucking Ass’n*, 531 U.S. 457, 468 (2001)).

⁷⁸ Final Brief of Respondent US EPA, at 122, *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097), available at 2007 WL 3231264.

⁷⁹ To support its interpretation, the EPA cited the Supreme Court’s finding in *Engine Manufacturers Association v. South Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 252–53 (2004), that the term “standard” in section 211 “is established by authority, custom, or general consent, as a model or example; criterion; test.” *Id.*, at 123 (*Engine Mfrs. Ass’n v. S. Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 252–53 (2004)).

⁸⁰ *Id.*, at 124.

⁸¹ *Id.*, at 125.

⁸² *Id.*, at 127. Compare 42 U.S.C. §§ 7411(a)(1) & (7) (1988) with *id.* § 7411(a)(1)(C).

⁸³ Final Brief of Respondent US EPA, *supra* note 78, at 127.

⁸⁴ *Id.*, at 129–30 (discussing 42 U.S.C. § 7602(l)).

the nationwide cap would remain intact and emissions would continuously decrease over time.⁸⁵ Moreover, the cap could be set as a declining schedule or budget over time, assuring continuous emissions reductions.

Subsequent to the CAMR ruling, the EPA reiterated its interpretation that market-based programs qualify as standards of performance under section 111 in the Advanced Notice of Proposed Rulemaking for GHGs:

A cap- and-trade program can constitute a “standard for emissions of air pollutants” because it is a system created by the EPA for control of emissions. The use of emissions budgets does not make the system less of a “standard” since the budgets must be met regardless of the methodology used to allocate allowances to specific sources.⁸⁶

2. Traditional performance standards

The Agency has indicated that it is considering future performance standards to control GHG emissions in its recently revised new source performance standards for Portland cement manufacturers. While declining to regulate GHGs under the final rule issued in September 2010, the EPA stated:

Based on our current knowledge we believe that it may be appropriate for the Agency to set a standard of performance for GHGs. ...

Portland cement is one of the largest stationary source categories of GHG emissions, ranking as the third highest U.S. source of CO₂ emissions. Second, based on our initial evaluation it appears that there are cost-effective control strategies for this source category that would provide an appropriate basis for establishing a standard of performance for GHG emissions. These control strategies include, for example, energy efficiency measures, reductions in cement clinker content, and raw materials substitution. There may be other cost-effective controls as well.⁸⁷

Consistent with the principles of flexibility and cost-effectiveness, the EPA and the states could rely on traditional performance standards for sectors where a trading system would not be economical or would otherwise be impractical. For example, the ACES Act allocated additional emission allowances to industrial sectors that are particularly energy-intensive or vulnerable to international competition. Because section 111 applies to categories of sources rather than the pollutant itself, regulators could allow certain categories to rely on efficiency measures, fuel switching, or new technologies to reduce GHG emissions, as long as they are the “best system of emission reduction.” Traditional performance standards would also serve as a backstop if a state opts not to pursue trading at all.

IV. Conclusion

Despite concerns that the Clean Air Act is not an appropriate tool to regulate GHG emissions from stationary sources, the EPA has the ability under section 111 of the Act to design a cost-effective, flexible program. The Agency has already demonstrated that it is moving forward methodically, balancing the need to limit GHG emissions with economics and politics. Looking ahead to the next steps in GHG regulation, the EPA could consider tailoring its approach for different sectors of the economy, creating market-based systems for some sectors—building upon the congressional climate bill negotiations—while pursuing more traditional performance standards for other sectors. Looking ahead, this approach could provide the foundation for an eventual national strategy to regulate GHGs.

⁸⁵ The Agency points out that this interpretation of “continuous” is consistent with its application in other parts of the Act. *Id.*, at 132.

⁸⁶ ANPR, at 44,490.

⁸⁷ National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 75 FR 54970, at 54997-97.