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Focus on EPA's Proposed Clean Power Plan and CAA §111(d)

Articles

Dialogue

ENVIRONMENTAL LAW • INSTITUTE®

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Dedicated *ELR* Issue on the Proposed Clean Power Plan: Introduction

Jonas Monast & Scott Schang

On June 18, 2014, the U.S. Environmental Protection Agency (EPA) officially proposed the Clean Power Plan—a rule that aims to reduce carbon dioxide (CO_2) emissions from the nation's existing fleet of fossil fuel-fired power plants. The proposal was developed pursuant to §111(d) of the Clean Air Act, a section of the law for which there is limited regulatory precedent and no direct judicial decisions interpreting the statutory language. This lack of regulatory and judicial precedent, combined with broad language included in §111, raises a number of important legal, economic, technical, and political questions as the EPA seeks cost-effective and legally sound options for addressing electricity sector CO_2 emissions. The Environmental Law Institute and Duke University's Nicholas Institute for Environmental Policy Solutions co-hosted an expert workshop in Washington, D.C., on July 14, 2014, to explore in detail the EPA's proposed rule and the legal issues it presents.

The Clean Power Plan is central to the Barack Obama Administration's plans to reduce greenhouse gas (GHG) emissions both at home and abroad. According to EPA estimates, electricity generation accounts for 32% of U.S. GHG emissions and transportation accounts for 28% of U.S. GHG emissions.[1] EPA has already started to address transportation emissions with the so-called tailpipe rule,[2] and now, in conjunction with proposed regulations that address CO_2 emissions from new fossil fuel-fired power plants,[3] the proposed Clean Power Plan tackles the electricity sector, the single largest contributor to U.S. GHG emissions. The emission reduction goals in the Clean Power Plan also contribute to the ability of the United States to meet its international commitments, such as the recent agreement between President Obama and Chinese President Xi.[4] Thus, the ramifications of the success or failure of the Clean Power Plan are far-reaching.

The text of §111(a) & (d) identify important parameters to guide the EPA's rulemaking process. For example, the EPA must establish the procedure whereby states submit plans to EPA establishing a standard of performance for sources subject to the rulemaking process and "provid[ing] for the implementation and enforcement of such standards. . . ."[5] EPA approves or denies state plans, and has the authority to develop federal plans in the event a state fails to submit an adequate plan on its own.[6] Standards of performance must "reflect[ ]" the "degree of emission limitation achievable by the application of the best system of emission reductions."[7] The best system of emission reductions determination requires consideration of a range of factors, including "the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements," and EPA must determine that the system has been "adequately demonstrated."[8] While the U.S. Congress specified roles for the federal and state governments and defined the term "standard of performance," the statutory language nonetheless invites competing interpretations of the discretion provided to EPA.

EPA's Clean Power Plan takes a broad view of the options for reducing CO_2 emissions from existing power plants by considering the electricity system as a whole. The proposal concludes that the best system of emission reduction includes four major categories of action, or "building blocks," including heat rate improvements at coal-fired electric generating units, increasing dispatch of existing natural gas-fired units, maintaining or increasing zero-emitting generation from nuclear power plants and renewable resources, and increasing demand-side energy efficiency.[9] The proposal relies on the building block for-

1. U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012 (EPA 430-R-14-003, Apr. 15, 2014).
2. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 Fed. Reg. 62624 (Oct. 15, 2012).
3. Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units, 77 Fed. Reg. 1430 (Jan. 8, 2014).
4. White House Office of the Press Secretary, U.S.-China Joint Announcement on Climate Change, Nov. 11, 2014.
5. 42 U.S.C. §7411(d)(1).
6. *Id.* at §7411(d)(1) & (2).
7. *Id.* at §7411(a)(1).
8. *Id.*
9. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829, 34855-77 (June 18, 2014).

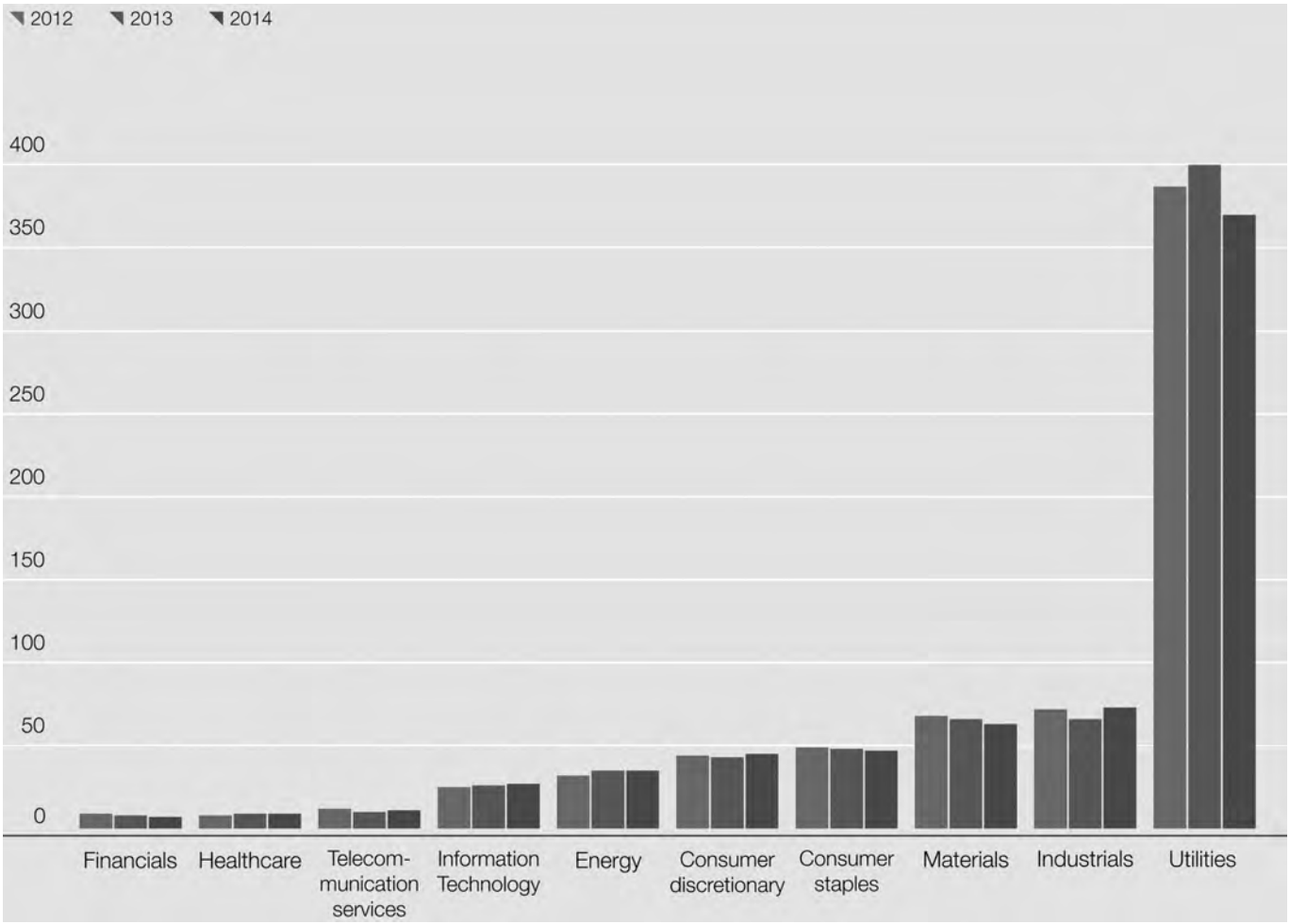
mula (i.e., the "best system of emission reduction") to calculate binding emission performance goals (i.e., the "degree of emission limitation achievable by the application of the best system of emission reductions") for each state.[10] States then have numerous options for achieving these goals and are not limited to actions included in the building blocks. In addition, the proposal indicates that states may consider market-based strategies and multistate collaboration as compliance pathways.[11]

Any major new EPA rulemaking is bound to be controversial, and the proposed Clean Power Plan is no exception. Stakeholder reactions include a range of opinions regarding the Agency's general statutory authority and the specific details of the proposed rule. This issue of *Environmental Law Reporter (ELR)* contributes to the debate by expanding on the major issues explored during the July 14 workshop. One article provides an historical perspective on Clean Air Act §111(d). Three articles offer perspectives on interpreting Clean Air Act §111(d) and the legal issues raised by EPA's proposed Clean Power Plan. Additional articles discuss potential compliance strategies, including regional strategies and strategies that take into account additional risks facing the electricity sector. This issue of *ELR* supplements articles arising out of the July 14 workshop with the transcript of a panel discussion organized by the Federalist Society titled "The Oklahoma Attorney General's Plan: The Clean Air Act §111(d) Framework That Preserves States' Rights." Together, these articles offer diverse perspectives on some of the most pressing issues presented by the effort to regulate CO_2 emissions under the Clean Air Act.

10. *Id.* at 34895-97.
11. *Id.* at 34900-04.

BEYOND WORDS

Total Scope 1 (Direct) and Scope 2 (Indirect) Greenhouse Gas (GHG) Emissions by Sector (Mt CO_2 e)



Note: Scope 1 emissions are emitted directly from GHG sources owned or controlled by the reporting organization. Scope 2 GHG emissions do not physically occur from within the organization's reporting boundary and are therefore "indirect" emissions. Scope 2 emissions are caused by the organization's consumption of electricity, heat, cooling, or steam brought into its reporting boundary. This category is often called "purchased electricity" because it represents the most common source of Scope 2 emissions.

One megaton (Mt) carbon dioxide emissions (CO_2 e) = 1,000,000 metric tons CO_2 e.

Source: Adapted from CDP Worldwide, The A List: The CDP Climate Performance Leadership Index 2014, at 10, *available at* https://www.cdp.net/en-US/Pages/events/2014/cdp-leaders.aspx.

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4TH Edition

By Nicholas C. Yost

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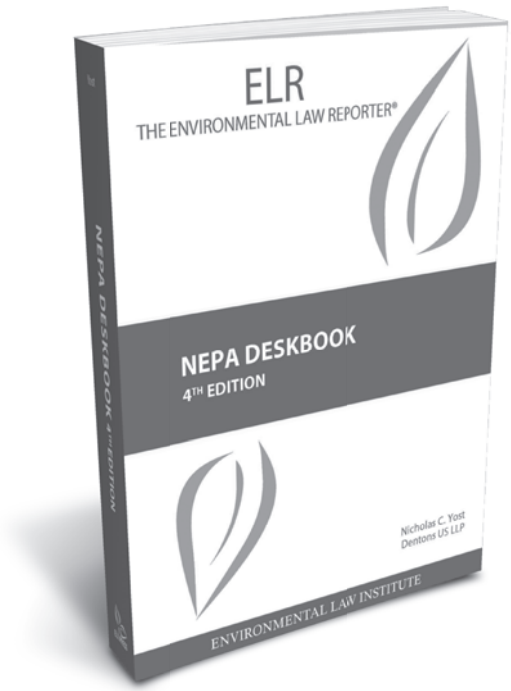
NEPA Deskbook, 4th Edition, is an essential resource for environmental attorneys, compliance managers, environmental consultants, or anyone who deals with environmental regulation and compliance.



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DIALOGUE

The Oklahoma Attorney General's Plan: The Clean Air Act §111(d) Framework That Preserves States' Rights

Summary

On May 20, 2014, the Federalist Society Environmental Law and Property Rights Practice Group convened at the National Press Club to discuss the form of the appropriate federalism model for regulating CO_2 emissions under §111(d) of the Clean Air Act. The event featured Oklahoma Attorney General Scott Pruitt, who discussed his recent paper, "The Oklahoma Attorney General's Plan: The Clean Air Act Section 111(d) Framework That Preserves States' Rights." Under that plan, EPA would design procedures and emission guidelines, and then states would determine the legally enforceable emission standard that is as stringent as the applicable guideline, unless the state determines a less-stringent emission standard is warranted. Attorney General Pruitt's presentation was then followed by a panel discussion of the plan's merits, its understanding of CAA §111(d), and its implications for state compliance. Below, we present a transcript of the event, which has been edited for style, clarity, and space considerations.

Jeffrey Bossert Clark (moderator) is chair of the Federalist Society's environmental law and property rights practice group executive committee, and a partner at Kirkland & Ellis LLP.
Scott Pruitt is Oklahoma's Attorney General.
F. William Brownell is chair of the executive committee and former head of the administrative law and environmental practice groups at Hunton & Williams LLP.
Patrick McCormick III is Republican Chief Counsel for the U.S. Senate Energy and Natural Resources Committee.
David Doniger is director and senior attorney for the Natural Resources Defense Council's climate and clean air program.

Jeffrey Bossert Clark: Good afternoon, everyone. We'd like to begin the program with our distinguished guest, Attorney General Scott Pruitt of the state of Oklahoma. Attorney General Pruitt has one of those multifaceted resumes to envy: Georgetown University followed by law school at the University of Tulsa, then a stint in private practice, later a senator in the Oklahoma Legislature for eight years, with four years as the Republican floor leader—and for seven years, he was owner and managing general partner of the Oklahoma City Redhawks, a AAA baseball team.

Attorney General Pruitt established the first federalism unit in Oklahoma's Office of the Solicitor General to combat unwarranted regulation and overreach by the federal government. He is a national leader in the cause to restore the proper balance of power between the states and the federal government, and has led or is still leading charges on that front against not only the U.S. Environmental Protection Agency (EPA), which is our subject today, but also on the Affordable Care Act[1] and Dodd-Frank.[2] Additionally, Attorney General Pruitt has not hesitated to break with his fellow state attorneys general when necessary; for instance, when he secured, consistent with law, millions of dollars in relief for Oklahomans harmed by unfair foreclosure practices in the mortgage industry. He's also acted to protect the most vulnerable child citizens of Oklahoma by negotiating a landmark settlement designed to dramatically improve foster care in the state.

It is the Federalist Society's honor and pleasure to have the attorney general here, to speak about his plan[3] concerning §111(d) of the Clean Air Act (CAA).[4] So, give a good welcome to Attorney General Pruitt.

1. Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119-1025.
2. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010).
3. Oklahoma Attorney General's Plan: The Clean Air Act Section 111(d) Framework That Preserves States' Rights (Apr. 2014), *available at* http://documents.nam.org/ERP/OK_AG_Pruitt_Plan_05.20.14.pdf.
4. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.

Scott Pruitt: "Multifaceted" experience; that's right—baseball to law. It's a wonderful life that I've been able to be a part of. I played baseball at the University of Kentucky, and sometimes the mistake is made that folks introduce me by saying that I played *basketball* at the University of Kentucky. Then, I step out from behind the podium and people see my very imposing stature and they say, "You didn't play basketball at the University of Kentucky," and that is a true statement.

It's been a wonderful year for me. On a personal note, my daughter has gone on to college and done very well. She's back home, so we're excited about that. I hear all these stories about kiddos who go away to school and don't stay in touch. They don't e-mail, they don't write, they don't call. McKenna has stayed in touch because she needs money, so it's gone very well. But I read with interest a story last year about a young lady who had gone off who didn't stay in touch, and then she wrote a little missive to her dad toward the end of the year, saying: "It's been a great year, Dad. Things have gone really well. The dorm did burn down and I did lose all my personal effects and textbooks, but I found a new place off campus to live, with a new roommate, Jim, and Jim is doing extraordinarily well. He's been in recovery for almost six months now, and I know that we've not stayed in touch and I've not written, and I fully understand why you didn't make it to the wedding, but I know that you're not going to miss the impeding birth of your new grandchild." And she signs it and says, "Sincerely," but adds a P.S.: "Everything above is untrue. I did flunk chemistry. I just wanted you to keep things in perspective."

In the life that I live as attorney general, particularly on these issues we're going to talk about today, we've got to keep things in perspective because they are very difficult issues from a state vantage point, and these are very adversarial, uncertain times for the states. I'm going to talk about that today. I want to say, first and foremost, thank you to the Federalist Society for hosting this event. It's very kind of them to do that. This is going to be a very engaging and, I believe, thoughtful and productive discussion.

One of my favorite books recently—well, when I say recently, I mean in the past six or seven years—one of my favorite historians is Joseph Ellis. He's written several books, and one is called *Founding Brothers*. There's a chapter that I want to call to your attention just briefly, as kind of a narrative for my comments today. It's a chapter dedicated to something called "The Dinner." That was a dinner that took place among Alexander Hamilton, James Madison, and Thomas Jefferson. If you study history, which many of you in this room do very closely, you know that Alexander Hamilton and Thomas Jefferson were not the best of friends. They did not trust each other a great deal, but they particularly distrusted each other on policy issues.

An important issue being debated in the early 1790s, after the American Revolution, concerned all the debt the colonies faced. The federal government was contemplating consolidating all that debt at the national level, at the federal level. Alexander Hamilton, as Secretary of the Treasury, was pushing for that, advancing that idea, and as you might imagine, Jefferson and Madison were very concerned about consolidation of power in the federal government, so they opposed it.

The three men had a dinner. They got together, which doesn't happen very much these days in Washington, D.C. They got together as adversaries, as competitors, as individuals who were dealing with some very consequential issues. And they worked it out. The bargain they struck was that Madison and Jefferson would not oppose the Assumption Bill, as it was called, in exchange for . . . what? That the capital of the United States would be not New York City, but instead built on the banks of the Potomac River. That's why our capital is here today.

There are big, consequential issues that we're dealing with as a country in the energy/environmental space. Many of you know that Oklahoma is very active in oil and natural gas. We do have wind sweeping down the plains, as you know, so we're very involved with renewables, but we also have coal, and we have the production and development of coal in southeast Oklahoma. We're very vertical with respect to our energy development and production.

One of the important things about our state is that, historically, it has provided very low energy costs on electricity to our manufacturers, residents, and consumers. In fact, low energy costs has been one of the primary things that has allowed us to grow our economy, compared to Texas and others around us, because their tax rates are higher, and that's been a marked advantage for us.

These are issues that we're dealing with, with respect to energy, environment, and EPA's role, and the state's role—or as micro as what it cost to turn on the lights here today. I have a responsibility as attorney general to represent ratepayers before the Oklahoma Corporation Commission. The demands upon utility companies are substantial. They're facing environmental mandates, along with all the other issues they deal with, and the combination is presenting—I don't want to say a perfect storm—but it's presenting a rather difficult situation for consumers, not only in Oklahoma, but across the country.

But I don't want you to feel that our challenges in Oklahoma are somehow unique to Oklahoma. I think many states across the country are facing exactly what Oklahoma is facing. My purpose in being here today—these gentlemen are going to discuss the merits (very few demerits, David) of the Oklahoma plan—but in my remarks, I want to provide more of a big picture on the plan as a whole.

To start with, it's important to recognize that there are some global issues up-front that I don't endeavor to yield to. Our discussion about the procedure or §111(d) and the role of the states and the role of EPA, doesn't necessarily mean that I or others yield to the fact that you take *Massachusetts v. EPA*[5] and somehow extrapolate that CO_2 [carbon dioxide] is considered an air pollutant under that case. Does that necessarily link with it being nonstationary sources to stationary sources and existing sources? What

5. 549 U.S. 497, 37 ELR 20075 (2007).

authority and power does EPA have? That's a fundamental question that I'm not going to get into today, but it's a question that perhaps will be litigated, will be discussed, will be a source of contention on a going-forward basis.

Even more than that, globally, I think there is a significant interplay between §111(d) and §112. As you know, §111(d) says that EPA cannot regulate categories of facilities regulated under §112, and these existing stationary sources are regulated under §112. So, the weather, I think, has been resolved on CO_2 and whether it's a hazardous air pollutant or not. But *how* [to regulate], I think is what we're here to talk about today. What is the procedure? What are the steps that EPA should and shall go through as it relates to cooperative federalism and the role of the states?

In that regard, Oklahoma is a bit sensitive in light of our experience under the CAA with the regional haze situation. The regional haze statute just unpacked that briefly. In fact, we're seeking certiorari at this moment before the U.S. Supreme Court. We're hoping to hear [the Court's decision to grant or deny certiorari] very soon.[6] But that section of the CAA is very specific as it relates to the authority of the states in setting up a state implementation plan.

Oklahoma did that in 2010. As you know, under the regional haze statute, we have obligations that have to be met by the year 2064. Oklahoma met those obligations, but despite its meeting the obligations, EPA swept into Oklahoma, [former EPA Administrator] Lisa Jackson swept into Oklahoma, within three months after [I was] sworn in as attorney general, and rejected the state plan, and simultaneously issued a federal plan for one reason and one reason only—EPA disagreed with the methodology, the decisions made by the state of Oklahoma. Not with the results, not with the outcomes, not whether there was compliance with the statute, but simply based upon an attitude that says we [EPA] know best.

EPA, in my estimation, is using its regulatory power to pick winners and losers, to elevate certain energy sources at the expense of others, particularly fossil fuels and, in this instance, coal. That is not the proper use of regulatory authority. EPA has an attitude. It's almost like elevating form over substance. [They take the position that] so long as we [EPA] agree with the state's decisionmaking, so long as we agree with the state's methodology as it reforms its responsibilities in the statute, so long as we agree with that, the state can put it in the state implementation plan. But if we [EPA] disagree with that, we're going to FIP [federal implementation plan] the respective states. EPA is going to force itself upon the respective states across the country, and I believe, in certain instances, exceed its authority under the statute. That's what we're here to talk about.

That theme is very evident as it relates to §111(d), and it's very timely for us to be gathering here in the beautiful month of May [2014] in Washington, D.C., because you know, on June 2d, there is going to be an unveiling by the president himself, of what EPA is going to pursue under §111(d), the "how to do it" portion of CO_2 regulation.

There are two or three things I want to draw your attention to with respect to Oklahoma's plan. It's intended to be a counterpoint to the plan offered by the commonwealth of Kentucky.[7] (You notice that I said the *commonwealth* of Kentucky. Having been born in Kentucky and growing up there, a commonwealth just as Virginia is, I recognize these things.) The Kentucky plan is something that has been put in the marketplace within the last three or four months, and it is intended to address the proposals that are going to come out of the Climate Action Plan[8] by the president. It's a view from a state's perspective of the relationship between the state and the federal government under the §111(d) umbrella.

The primary thing that I find objectionable and that our plan deals with, with respect to the Kentucky plan versus our plan, is that it takes a mass emissions approach, as opposed to a unit-by-unit analysis from a state perspective. It effectively establishes a capitated or a cap and trade without the trade. It says to the states across the country: Here's what the emissions standards should be for your state. Now, you figure it out from there.

As that occurs, as a capitated objective is defined on a state-by-state basis, it seems to run counter specifically to the language in the statute. The U.S. Congress has been very specific, since the 1970s as these environmental laws were passed and signed into law, that it is very important to have the involvement, the partnership of the states in the regulatory process. In November of last year, I testified before Congress. Ms. Janet McCabe,[9] who heads the air division of EPA, testified ahead of me and said all of the right things about the respect that EPA has for the states, and the role of the states in each of these key areas that we're talking about.

I followed Ms. McCabe in testifying. Shortly thereafter, Energy and Power Subcommittee Chairman Ed Whitfield (R-Ky.) asked me "How is that working for you?" My answer was, "Not very well." This elevation of form over substance, this attitude that says we [EPA] know best, this dictatorial attitude that says so long as you agree with us then everything is kosher and everything is okay, is exactly the opposite of what Congress has said repeatedly in the role of the states. The states have a meaningful role. It's not an administrative role. The states are not a vessel to carry out the desires of EPA. The states are actually there to make important decisions, balancing factors between industry and consumers and meeting the obligations of air and water quality in their respective states. That's important to

6. The Supreme Court denied certiorari. *See* Oklahoma v. EPA, No. 13-921, *cert. denied* (U.S. May 27, 2014).

7. Commonwealth of Kentucky Energy & Environment Cabinet, Greenhouse Gas Policy Implications for Kentucky Under Section 111(d) of the Clean Air Act (Oct. 2013), *available at* http://eec.ky.gov/Documents/GHG%20Policy%20Report%20with%20Gina%20McCarthy%20letter.pdf.

8. Executive Office of the President, President's Climate Action Plan (June 2013), *available at* http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf.

9. Janet McCabe is Acting Assistant Administrator for EPA's Office of Air and Radiation.

recognize. I think the attitude here in this city, and the attitude amongst the regulators, and the attitude at times amongst those who come into our states, is that [they are] going to change that and review that, and make sure that the states are acting merely in an administrative fashion.

Let's go to a quote by Justice Felix Frankfurter, because the statutes are clear here, in many instances. Justice Frankfurter said this: "Standards must be enforced to be respected. If they are merely left as something on paper, they might as well be written on water."[10] That's what we're facing, as a collection of states. We're trying to give meaning and life to the words as drafted by Congress, and making sure that our responsibilities are protected and we can actually do our job as provided for by statute.

This mass emissions, unit-by-unit review is something that is, I think, the primary point, the primary distinction between the Kentucky plan and the Oklahoma plan. It's an arbitrary emissions baseline that's made upline at the state level and then it affects all decisions downline, on a unit-by-unit basis. It takes away the discretion from the states. You find that [discretion] in our plan.

The second point that I wanted to highlight for you in the distinction between the Kentucky plan and Oklahoma's plan is the way that it relates to §111(d). That distinction, which emanates from the mass emissions approach versus an inside-the-fence approach, is where the approach takes discretion away from the states as far as making decisions about more or less stringent standards on a unit-by-unit basis. The applicable regulations say very clearly that "states may prescribe, on a case-by-case basis, for particular designated facilities, or classes of facilities, less stringent emissions standards, upon unreasonable cost of control, physical impossibility, and other factors specific to the facility."[11] Now, how do you do that as a state if you have a mass emissions approach and a capitated approach, as presented by the Kentucky plan? We're hopeful that EPA is more persuaded by our position in the plan.

The third point I would mention to you as central to our proposal is that it maintains the primacy of the states. I reject—in fact, I find it offensive—that regulators in Washington believe that regulators in the states somehow aren't interested in the air we breathe and the water we drink in our respective places that we call home. I reject that utterly. In fact, I would say to you that Washington, D.C., EPA, and other agencies that are involved in these areas could learn a lot with respect to the expertise of the states.

Let me add this as an aside: Hydraulic fracturing—its regulation, our involvement as a state—in certain sections of the country, they think that's a new technology or a new phenomenon. We've been regulating hydraulic fracturing since the late 1940s in the state of Oklahoma. We have a very robust regulatory regime, tremendous expertise, and I think that this attitude that regulators at the state level are somehow dismissive or disregard the importance of air quality is something that I find unfortunate. The federal government and EPA, through its §111(d) proposal, can recognize the importance of the states as it relates to primacy. Primacy is not something that is editorial. It's not something that we're asserting. It is something that is maintained and protected by the statutory constructs that Congress has put out.

So, these areas are important on primacy, and we need to make sure that we protect them, and that's what brings litigation to the bearer, Jeff. I've kidded [Texas Attorney General] Greg Abbott. When I came into office, I think he had roughly 13 lawsuits against EPA. I'm trying to catch up; we only have, I think, six or seven. I met him the other day in Oklahoma—we were having an event for him in Oklahoma—and [I learned that] he's up to 31 lawsuits. Now, let me say to you, as I share that with you, I don't want you to hear that we at the state level are simply trying to find ways to challenge or sue EPA. There are multiple examples. We have to prioritize, unfortunately, and it is in response to this attitude of command and control, as I talked about earlier, a D.C.-centric viewpoint that states cannot be trusted to exercise the authority given to them by Congress to meet the objectives and goals established under the environmental laws.

Oklahomans care about their air quality. They care about their water. We want clean air and we want clean water, and we've done it very, very well for decades. That balance between consumers and industry, and meeting the demands of environmental regulations by Congress, is something that we will continue to do in a responsible way. Our proposal, which will be discussed today, is an effort to establish guidelines for EPA. As the proposed rule comes out June 2, I'm hopeful that our proposal will find persuasion with EPA, and that as the rule is finalized in June of 2015, EPA will recognize that a mass emissions approach is not the way to go, that a cap and trade without the trade is not the way to go, that a unit-by-unit, inside-the-fence strategy that gives discretion, maintains discretion to the states to balance these factors, to evaluate cost, to make sure that all factors at the site are considered, will be maintained.

It is a pleasure to present that to you today, and I'm hopeful that the discussion we have together will be instructive. Thank you, Jeffrey, for the time to make the opening comments, and I wish the panelists well as they discuss the Oklahoma plan. Thank you.

Jeffrey Bossert Clark: Thanks, Attorney General Pruitt. I wanted the attorney general to be the star of the show. Let me at this point introduce myself and the other panelists. I'm Jeff Clark from Kirkland & Ellis, and I'm the chair of the Federalist Society environmental law and property rights practice group. We have two panelists with us to discuss the attorney general's paper, and we're hoping to be joined by a third. He is a staffer in the U.S. Senate and he's held up by a hearing there, but we hope he'll be joining us later.

10. Ferguson v. Moore-McCormack Lines, Inc., 352 U.S. 521, 537 (U.S. 1957) (Frankfurter, J., dissenting).
11. 40 C.F.R. §60.24(f).

One panelist we have is David Doniger. He is director of the Natural Resource Defense Council (NRDC) climate change and clean air program. He previously served as an attorney at the NRDC, and was an advisor in the Clinton Administration, primarily as director of the climate change policy issues at EPA, where he helped to negotiate the storied Kyoto Protocol. He's been involved in numerous high-profile lawsuits and policy initiatives related to carbon emissions, dating back to that time and going forward into the present.

We also have Bill Brownell, the chair of Hunton & Williams LLP, where he previously led the administrative law group and the environmental law team. His practice covers a broad range of environmental issues involving proceedings before federal and state agencies, courts, and Congress. He has represented the utility industry in proceedings under the CAA for over 30 years.

I will also introduce our third panelist, although he is not here yet. That third panelist is Patrick J. McCormick III. Pat McCormick is Republican chief counsel to the Senate Committee on Energy and Natural Resources. Prior to assuming his current role in 2011, he was a partner at Hunton & Williams, specializing in energy regulation and infrastructure development. Earlier in his career, he served as an attorney with the Federal Energy Regulatory Commission (FERC), and in the private sector at the Potomac Electric Power Company.

We're going to hear from each of our panelists in turn for about eight to 10 minutes, and then we will take questions.

F. William Brownell: Thank you, Jeff, and thank you to the Federalist Society for making this forum available. This is an interesting and timely topic. As you all know, there has been a lot of policy debate on the issue of §111(d) regulation over the past year. I thought that I would look at the statutory language, because that ultimately is what defines the scope of EPA's authority.

One of the things I remember from law school was from a comparative law course on the difference between a common-law country and a civil-law country. The professor said, "In common-law countries, everyone is worried about precedent. In civil law, you look at the statute. You look at the regulations." What's important, even in the common-law country, is to read the statute, read the statute, read the statute. I think that's really important here, as we go into the §111(d) rulemaking.

First, §111(d) talks about standards of performance for existing sources. It talks about the performance of sources, not about what other sources do, not about demand-side management, but about what is the performance of the regulated source. Second, in terms of EPA's regulatory responsibility, the statute says that EPA must provide by regulation a procedure similar to that under CAA §110, the state implementation plan (SIP) provision, for developing state plans. The regulations that EPA is to develop are procedural, they address the procedure for states to develop state plans. The states, however, develop the plans.

Third, the statute goes on to say that state plans must address two things. First, they address the performance standards for the existing sources. Second, they address implementation and enforcement of those performance standards.

Now, what guidance does the statute provide for plan content, both the performance standards and the implementation and enforcement provisions of the state plan? A standard of performance is defined in §111 as a standard for emissions of air pollutants that reflects the degree of emissions limitation achievable, using the best system of emission reduction that the EPA Administrator determines has been adequately demonstrated. So, the EPA Administrator has a role. The Administrator determines what systems of emission reduction have been adequately demonstrated. But then the state formulates the plan, defines the standard, and takes into account the systems of emission reduction that have been adequately demonstrated to define a performance standard that's achievable—an important role for the state.

As important, and perhaps more importantly, §111(d) then goes on to provide that, in formulating these plans, the states are to take into account the remaining useful life of sources in defining the performance standards for individual sources, among other factors. This is very interesting: remaining useful life, *among other factors*. Well, what are those other factors? They are the factors that states commonly consider when they develop SIPs; for example, factors that reflect the local and state considerations and conditions that inform commonsense regulation. So, that's all for the state in developing the state plan.

Now, if a state does not adopt a plan, EPA has what's called FIP [federal implementation plan] authority under §111(d). EPA can impose a FIP if it finds that the state plan is not satisfactory. This is not an equivalency test. Instead, the statute asks: Is the state plan satisfactory? Similar to the law that's developed under §110, which is the starting point of the procedural regulations that EPA issues, the determination of what is "satisfactory" is established by consideration of the range of factors under §111(d) considered in formulating the plan, the factors that we've talked about. If the state considers the factors, then its plan is satisfactory.

There are other limitations on EPA's authority with respect to §111(d) standards. Some of them were referred to by Attorney General Pruitt. For example, as he mentioned, if a pollutant is regulated under §108 and §109, the national ambient air quality standards (NAAQS) program, or under §112, you don't regulate it under §111(d) as well. If the source category is regulated under §112, you don't regulate it under §111(d).

Further, there has to be a new source performance standard in place for the source category. Section 111(d) talks about applying performance standards to existing sources that would be subject to a standard if the source were a new source. That, of course, raises a range of additional issues. There is a proposal out there right now—the comment period just closed last week—on new source performance

standards for greenhouse gases for the electric utility industry.[12] There are lots of issues with respect to whether, at the end of the day, that proposed rule will go into place, including the very important issue of the Energy Policy Act (EPAct),[13] which limits the authority of EPA and others to rely on U.S. Department of Energy (DOE)-funded projects as the basis for an adequately demonstrated technology determination. All of that is being debated in the context of this rulemaking and related litigation.

There are other considerations that we can talk about during the discussion, but I wanted to lay out the statutory structure for you because I think it provides important context for the discussion. The statutory structure very clearly delineates, I think, the roles of EPA and the roles of the state in developing plans and regulating under §111(d).

Finally, I want to quote a sentence from a brief that NRDC filed in the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit on emissions trading—and I'm sure David will have something to say about this—under §111(d). This was in the context of the Clear Air Mercury Rule, an issue never ultimately addressed by the D.C. Circuit because they vacated the program on other grounds.[14] "Trading is unlawful. The statute mandates that each state plan, under 111(d), apply the best system of emission reduction to any existing source, on a source-specific basis."[15] That's §111(d). Jeff, those are my remarks, and I'm happy to take questions later.

Jeffrey Bossert Clark: Thanks, Bill, for those remarks. Now, it is David's turn.

David Doniger: Thank you very much for inviting me into the lion's den. I have to confess that the first time I spoke in front of the Federalist Society, I was under the misimpression that I was going to be addressing the World Federalist Society, and I came rather unprepared, but I hope I'm a little better prepared this time. I thought, what is Boyden Gray doing in a meeting of the World Federalist Society, and suddenly I realized what was going on.

I want to stipulate, at least for the purposes of today—nobody else has put this point in play—I want to stipulate, at least for my purposes, that climate change is a very real problem. The science is strong. The threat is real. Many of you are familiar with the reports that have come out in the last few months. They are just icing on the cake, further scientific studies showing that the problem is real and the impacts are already on us. So, our goal [at NRDC] is to do something to abate this pollution, to abate it in the United States, in concert with a program of negotiation with other countries to get them to take on their roles. But now let me just talk about the U.S. role.

The CAA is an important tool, a law already on the books, for addressing the climate change problem, and that's not just my opinion. That actually has been determined three times by the Supreme Court already, once in *Massachusetts v. EPA*, with respect to vehicles. In 2011, also, the Supreme Court held that the CAA empowers EPA to regulate CO_2 from power plants,[16] and that was part of its disposition of a tort suit on the climate issue, so you can't bring a federal common-law case because this is EPA's job under the CAA.

More recently, after EPA issued the endangerment determination and the motor vehicle standards, there was litigation to challenge those, as well as some permitting regulations that follow from the motor vehicle standards. The Supreme Court pointedly denied the certiorari petitions on all matters except the permitting issues, saying "We're not going back there." And in oral argument in *Utility Air Regulatory Group*, Chief Justice John Roberts in essence said, "We're not going back over that again."[17] Justice Anthony Kennedy, to paraphrase, said, "This is settled law," citing *American Electric Power*[18] and *Massachusetts*. And the *American Electric Power* case is a riff on §111 and §111(d). So, this is not virgin territory to the Supreme Court.

The Obama Administration issued landmark vehicle regulations in 2010 and 2012. The car industry is currently making cars that comply with these standards, which go out to 2025, so at that point, the vehicles will be getting twice the mileage and emitting one-half the CO_2 and other greenhouse gases that they did just a few years ago. This is a major achievement, and the auto industry is prospering under the standards. The power plants are the only source larger than the transportation sector. Forty percent of the CO_2 in the country comes from power plants. You can't address the problem of climate change unless we address power plants.

So, let's put aside for a moment the new source rule. I'm happy to answer questions about that, but we're here to talk about the coming approach to existing sources. EPA has been engaged in an outreach, a stakeholder process, direct engagement with states, with air regulators, with public utility commissions, with utilities, with environmental stakeholders, and others all across the country, since August of last year, on the proposed rule coming out in June [2014]. This is the most massive pre-proposal stakeholder outreach and engagement process that EPA has ever held, to my knowledge, and they have solicited and received lots of input from states.

My favorite piece of input is a letter from the Texas Environmental Agency and the Public Utility Commis-

12. Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1429 (Jan. 8, 2014).
13. Energy Policy Act of 2005 (EPAct), Pub. L. No. 109-58, 119 Stat. 594 (codified as amended in scattered sections of 7, 10, 15, 16, 22, 26, 30, 40, and 42 U.S.C.).
14. New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008).
15. Opening Brief of Environmental Petitioners in *New Jersey v. EPA*, at 25-29 (filed Jan. 12, 2007).
16. American Elec. Power Co. v. Connecticut, 131 S. Ct. 2527, 41 ELR 20210 (2011).
17. Utility Air Reg. Grp. v. EPA, Nos. 12-1146 et al., 44 ELR 20132 (U.S. 2014) (for a transcript of oral arguments, visit http://www.supremecourt.gov/oral_arguments/argument_transcripts/12-1146_768c.pdf).
18. *American Elec. Power Co.*, 131 S. Ct. 2527.

sion. The first two or three pages say, "Go away. Forget it. We hate you. Don't do this." The last seven or eight pages say, "When you do this, please structure your regulations to give us credit for all the good things we've been doing on energy efficiency, wind energy, and the transition from coal to gas." I thought that letter was really interesting because the proposals in the latter half of the letter closely mirror the thinking that NRDC has put forward about how the power plants standards should be set, could be set, to achieve the most carbon reductions at the lowest cost, and with the most flexibility for the industry and for the states.

The first thing in our plan, which we published in 2012—we updated it in March of this year—the first element of our plan is the recognition that the power sector is different in every state. The mix of generation, coal versus gas, for example, is different in every state. And since this part of the CAA calls for federal standards implemented through state plans, it makes sense to account for the diversity of the starting point that the states have in the structure of the standards. So, we recommended that every state be given a baseline, which could be in 2005 or 2008. What were its emissions at that point, and what was the mix of coal versus gas in that state? There's been a lot of transition toward gas, toward renewables, buildup of energy efficiency, and every reduction that came from those transitions, no matter whether they were induced by regulation or by markets or by happenstance—everything counts, including, for example, under our plan, increases in output from nuclear plants.

Any kind of zero-emitting generation counts for credit toward reducing the emissions of the system of power plants in a state. We don't think it makes sense to limit the view to the relatively minor modifications that a plant could make on its own site. Why should it not have more compliance options than just that? It should have the option of getting credit, in effect, for switching the dispatch between the units in a company's fleet more toward the cleaner ones, away from the dirtier ones. This is happening already. Why shouldn't they get credit for it, and then why shouldn't that be built into the further improvements that a standard might require, looking out to 2020 or 2025?

The cheapest way to reduce emissions—and it results in lower consumer bills, not higher consumer bills—is to emphasize energy efficiency in buildings and in the machinery, the appliances, all the goodies we use that consume electricity. If they're more efficient, you don't need as much electricity. Therefore, you need less generation. That less generation results in less pollution. There should be a way to get credit for that, so we propose formulas in which increases in efficiency become a compliance option for the operator of a coal plant or a gas plant. I'll be happy to take further questions about how all that stuff works. It's not overly difficult. It's complicated, but it's not hard. There's a difference.

So, we propose a standard that takes into account those opportunities, differentiated state by state, graduated over time. We ran the proposals that we came up with through the same model that the utility industry uses and EPA uses (the integrated planning model of the ICF Corporation), to see what it would cost and how much emission reduction you would get if you posited this set of standards or that set of standards, and we proposed combinations of standards that can achieve as much as 35-40% reduction in the total fleet carbon emissions by 2020. Really dramatic reductions, and yet they would cost less than the Mercury and Air Toxics Standard.[19]

When you do cost-benefit analysis, in which you take into account the benefits of achieving carbon reductions—again, if you accept the science, which as I stipulated at the beginning I do—and when you take into account the public health benefits that come from further reducing sulfur dioxide and nitrogen oxide emissions, you end up with $30-60 billion in quantifiable dollar-value benefits, against roughly $10 billion in costs to comply with these standards.

So, we think this is a massively good deal on a cost-benefit basis. It's legal under the CAA. The question, by the way, whether §111(d) can't be used because power plants are regulated for other pollutants under §112, I predict that will take the courts less than five minutes to dispose of, and I'll explain why if you have questions about that. It's a classic *Chevron*[20] ambiguity question, and it will go away very quickly.

EPA has been upheld, most recently in the *Homer City*[21] case. It's not exactly on point, but it does involve analogous provisions, analogous problems. It's a very ringing affirmation of EPA's authority and responsibility to solve problems that come up, even if they were not entirely, precisely anticipated, because that's the way the CAA is written. It gives EPA that authority and responsibility, so long as the Agency does it reasonably and rationally. That opinion was joined by Chief Justice Roberts and Justice Kennedy.

So, we think EPA is operating from a very strong position. They have a serious responsibility and a big opportunity, but at the same time, we want to see every state have proper differentiation and proper access to flexible compliance. We want to do this as cheaply and as reasonably as possible, and NRDC is very eager to talk to anybody about how to do this in a sound way. Thank you very much.

Jeffrey Bossert Clark: Thank you, David. We have been joined by our fourth panelist, Patrick McCormick, who is chief counsel to the Senate Energy and Natural Resources Committee.

Patrick McCormick III: Thank you very much for having me, and I apologize for my being late. When I was in practice and used to come to events such as this one, it always annoyed me that the guy from the Hill showed

19. Mercury and Air Toxics Standard (MATS), 77 Fed. Reg. 9304 (Feb, 16, 2012) (codified at 40 C.F.R. pts. 60, 63).
20. Chevron U.S.A., Inc. v. Natural Res. Def. Council, 467 U.S. 837, 14 ELR 20507 (1984).
21. EPA v. EME Homer City Generation, L.P., 134 S. Ct. 1584, 44 ELR 20094 (2014).

up late, didn't listen to the material, and had things to say that were so ephemeral I could read them in the trade press tomorrow.

So, I apologize for fitting the bill. I also want to commend the Federalist Society for engaging this debate, and thanks obviously to the attorney general for writing that very thoughtful paper, and especially to David for coming and being part of this discourse. On our committee, the senators on both sides of the dais have a real commitment to discourse about the subjects that divide us. It's good to be with you.

I should also say by way of disclaimer that obviously my views here are my own. They're not the views of any senator, certainly not of Sen. Lisa Murkowski (R-Alaska), who is our ranking member, and as much as I would welcome the opportunity to be the chief counsel of the committee, I am in fact the minority chief counsel, a situation that may change imminently, but we don't know.

With that having been said, I should note that my colleague Margaret Caravelli is here, and the committee for which she is a staff person has jurisdiction over the CAA. While it is true that I was once a partner of Bill Brownell's, I really don't pretend to know even the things he has forgotten about the CAA.

F. William Brownell: A little bit more each year.

Patrick McCormick III: In any case, I will leave to the discourse you have already had the proper reading of §111 and all of that.

Something that might be worth considering, as part of this conversation, is that from the time of—I think it's called the Ash Council Memo,[22] which is the memorandum that went to President Richard Nixon, outlining the case for EPA (and if you haven't read that memo, I really commend it to you)—from that time, there has been a real concern about balance and the rule of law and not having environmental regulation completely swallow regulations of other kinds. That concern is one that's been wrestled with by Congress and the courts over time.

As we think about §111(d) and how it might be implemented in the next year, or two years, or five years, we really do go back to those fundamental questions. The fundamental question for the senators on our side of the dais on the Energy Committee—and I think also for Sen. Joe Manchin (D-W. Va.) and some others on the other side of the dais—is how do we ensure what Senator Murkowski says repeatedly and has written on extensively: abundant, affordable, clean, diverse, and secure energy; specifically with respect to electricity. The key to that is electric reliability and the affordability of electricity. Those issues are very squarely within the jurisdiction of our committee.

The reason I was late is that I came from the confirmation hearing for two nominees to FERC, one of whom is already serving there. Although we disagree with her on policy grounds on many things, including the administration of FERC's authorities as they relate to the administration of EPA's authority, she is a very studious, very fine, and balanced commissioner whom Senator Murkowski strongly supports.[23]

I tell you that because in the hearing I just came from, §111(d) was indeed a subject of discussion. That's not surprising because the Kentucky plan—and David, I apologize, I have not read your paper, which is cited in the attorney general's paper—the Kentucky plan essentially calls for, I think the attorney general called it a mass emissions approach, and that approach is very similar to cap and trade, for which the Waxman-Markey bill[24] was jurisdictional to our committee, and Congress never moved on that. In fact, in the Senate, it's interesting to recall that the Waxman-Markey bill—well, the Senate variant—was on the calendar for months, almost one year, at a time when the current majority commanded a greater than 60-vote margin, and yet it never came to a vote.

The points that the attorney general makes, I think, are very consistent with the overall themes that Senator Murkowski and the senators on our side of the dais have taken, which is that although we don't have jurisdiction over the environmental laws, we want to see that the environmental laws are administered according to their terms and are not supplanting the energy policy of the United States. I thought some of the points in the Oklahoma plan were really right on target in terms of trying to get back to that balance, and although I like the idea of flexibility, and I seem to recall—David or Bill, you can correct me—I seem to recall that the idea of mass emissions or a sort of overall cap was a Republican idea originally.

I like the flexibility that it affords, and I credit David for wanting to work within that flexibility. But as the attorney general's paper points out—and I'm sorry I don't have the quotation right at hand—the flexibility offered under the Kentucky plan is a [mere] guise of flexibility because of the vast authority that it would cede to EPA. So, that's my reaction from my perspective, and I hope that it's helpful.

Jeffrey Bossert Clark: Let's proceed this way: With Attorney General Pruitt's indulgence, if I could ask for your reactions to the panelists, first, and then I'd like to exercise my prerogative as the moderator to toss out the first question to the panel. Attorney General Pruitt?

Scott Pruitt: Thanks, Jeffrey. I appreciate the comments by all the panelists. Here's one of the things, David, that I did want to ask you about: You made the reference to emissions baselines based upon historical—you pick a year, 2008, 2010—that recognizes the steps that states have taken

22. Letter from Roy L. Ash, Chairman, President's Advisory Council on Executive Organization, to Executive Office of the President (Apr. 29, 1970), *available at* http://www2.epa.gov/aboutepa/ash-council-memo.

23. The Senate confirmed Chairman Cheryl A. LaFleur for a second term on July 15, 2014. *See* http://www.ferc.gov/media/news-releases/2014/2014-3/07-15-14.asp#.VD1mFVeaUW4.

24. American Clean Energy and Security Act, H.R. 2454, 111th Cong. (2009). The bill was approved by the House on June 26, 2009, by a vote of 219-212, but was defeated in the Senate.

historically. How do you reconcile that emissions baseline approach, which would be defined on a state basis, with the language that Bill cited in his comments? Just to reiterate, the language was: "Congress explicitly required the EPA to allow the states to permit the state, in applying the standard of performance to any particular source, under a plan to take into consideration, among other factors, the remaining useful life of the existing source to which the standard applies." Clearly, Congress contemplated that the states were going to look at unit-by-unit basis, with that type of language, at least from my perspective. Do you not see any kind of conflict between that language and an emissions standard that's based at the state level?

David Doniger: That's a good question. Thank you. The language "remaining useful life" doesn't have a definition. I can think of a number of different ways to define it. The focus might be on how old a facility is, or its economic value, how much economic value it still has left. Whichever way you think about that, I do believe in the approach that we're suggesting the states have—and in fact the power companies have—the ability to take into account the remaining useful life of a facility. For example, under the proposal that we've launched, it turns out that Oklahoma is a 50/50 state. It's the state that had an equal dependence on coal and gas-fired power in the baseline period that we looked at, just hypothetically, which was an average of 2008-2010.

So, if Oklahoma had that distribution, and then a standard was established, and it's essentially a formula—this much for gas, this much for coal, and in your case, it would be equally balanced—but there's a lot of flexibility in how to achieve that. So, if you wanted to keep a particular coal asset or a particular gas asset running longer, you would be able to use the mechanisms I described of crediting, basically of doing something else, in order to cover the emissions of that plant to the extent it was over the limit. There would be total flexibility at the state level, or at the corporate level, to decide how long to run each facility, so long as its emissions were properly covered.

If I may, let me just say that our proposal is not a cap-and-trade proposal. There is no cap in the NRDC proposal. We proposed an emission rate. It would be a rate, as I said, differentiated from state to state. But it would mean that if power demand went up in a particular fast-growing region of the country, the rate could still be met. Mass emissions might go up, but it wouldn't be required to meet a given cap.

What our proposal does include is an option, at the state level, for states that want to use cap-and-trade approaches, that want to use mass-based approaches, to choose to do that and to convert from the rate-based—you multiply the rate by the expected electric demand in the year 2020, and you end up with a number of tons, and if the state wants to manage its situation under a cap-and-trade-based formula, so be it. Now, the eastern states and California already have those kinds of programs. Kentucky has expressed some interest in it, but it would be a Kentucky choice. Montana has expressed some interest in it, but it would be a Montana choice. And other states, under our proposal, could continue to operate with no caps, although there would be these emission rates, and averaging and trading between sources, in order to achieve the most reduction feasible at a reasonable cost.

Jeffrey Bossert Clark: Thank you, David. You're going to be a popular panel member, because the first question that I want to put is to you. So, that's giving you a lot of the speaking time. First, in terms of your remarks, I do think that the science is contestable, and I also think that your interpretation of cases like *American Electric Power* are contestable, but we're not here for that purpose. Let me stipulate that they're just not on the agenda for today.

The issue for today, it seems to me, and you've been addressing it, is compliance with §111(d)'s terms. You said that it would take the Supreme Court or any court all of five minutes to reject an argument that what the EPA is doing here, or we suspect that they will be doing, is improper.

I think there are three textual limitations. First, the last time I checked, there's still a Step One in *Chevron*—it's not all *Chevron* Step Two—embedded in §111(d). One of those that you've been talking about is the useful life reference, which I think is inconsistent with the whole notion of picking winners and losers that Attorney General Pruitt was talking about. I think you're going to have problems there, but let's put that one to the side because you spent so much time talking about it already.

The other two key textual limitations are the fact that the statute is structured to give EPA the power to create procedure, not substance; and the second one is the source category limitation, which was your jumping-off point for your claim of the five minutes it would take a court to reject that. It seems to me that those two limitations in the statute are very strong. They're framed in mandatory and very clear terms. Why, in your view, would they be rejected as *Chevron* Step One grounds for a challenge?

David Doniger: Well, my glib remark about five minutes was about the second one, the source category limitation, so let me address that. The basic idea of the *Chevron* case is that if Congress settles on one form of word formulation and it is crystal clear, then that crystal-clear meaning has to be observed; but if there are gaps or ambiguities in it, the Agency gets considerable discretion to resolve those ambiguities. (And by the way, I argued and lost the *Chevron* case. I sometimes feel it's better to be really unhappy 30 years ago and pretty satisfied now, rather than the other way around.)

That's the principle of the *Chevron* case. Now, when you look at this particular statute, it turns out that Congress really kind of screwed up in 1990. They adopted two provisions, in two different sections of the 1990 CAA Amendments, that both modified the same sentence in §111. The codifiers didn't know what to do, so

they tried to pick one version of it and put it into the *U.S. Code*. But what really is the law of the land is found in the *Statutes at Large*. So, you have to reconcile these two inconsistent amendments adopted at the same time to a single sentence of the CAA.

If there ever was a place where the *Chevron* doctrine applies, it's got to be that: where the statute is a mutation in the process of dividing and combining between the U.S. House of Representatives and the Senate, and the Agency is going to end up with the leeway to resolve that. EPA did produce a resolution of that in—I believe it was the mercury regulations, or maybe it was the more recent ones—and I think the federal Circuit Court and the Supreme Court will literally spend, together, maybe 10 minutes resolving that one.

As for your other textual limitation, the question is what does the term "procedure" mean? What §111(d) does is it says: Think about how it came to be. In 1970, they were writing this law, and there was a section on ambient air quality standards, so there are these concentration values in the atmosphere and state plans to implement them. EPA sets the former. States do the plans. EPA judges whether the state plans are going to meet those concentration values, approves or disapproves them, and issues FIPs if the state plans don't.

Bump over to §111. They wrote a section that said we should have new source performance standards, standards for new plans. Bump over to §112, which actually was carved out of §111 during the legislative process. It said that for special pollutants called hazardous air pollutants, we're going to have not only new source standards, but also existing source standards set by EPA. Very near the end of the legislative process in 1970, the drafters realized that they had a gap. They hadn't provided for regulation of existing sources of pollutants that are neither the ones for which the air quality standards are set nor the hazardous air pollutant standards, but they are dangerous. Those pollutants have been determined to endanger. So, §111(d) was written to fill the gap by providing that EPA would set a performance standard and the states would write implementation plans through a procedure like the one used to meet the air quality standards. That's it. That's how it came to be.

It's quite clear that it also says EPA has the same authority to approve and disapprove FIPs and to write federal plans as it does under the program to meet the air quality standards. It says that, very explicitly. The state plans have to be satisfactory to be approved. If they're not satisfactory, they have to be disapproved, and then there is a requirement issue of federal plans. So, again, I don't think there's much ambiguity there. If there is, then it's going to get resolved, so long as EPA is reasonable about the way it's interpreted, in the Agency's favor.

Jeffrey Bossert Clark: Before we open it to questions from the audience, are there any panelists who want to make remarks, especially about the issue of the Senate and House amendments that were both adopted in conference, whether they conflict or not, and how any conflict would be resolved?

Patrick McCormick III: Yes. I can't speak to the legislative history that you've outlined, but you are outlining my worst nightmare as someone who works in Congress. Of course, it wouldn't be a nightmare to be actually legislating on subjects such as these. I think that would be very important.

There is one part of the paper and one aspect of the debate as outlined in the paper that is jurisdictional to our committee. I'm reminded of it by your comment, because I think that in the EPAct, Congress went the extra mile to be very specific about certain demonstrations for purposes of §111(d). On page 8 of the paper there is a good discussion, a long paragraph that raises the issue we're engaged with here, the question of whether carbon capture and sequestration is adequately demonstrated. Congress, in sort of the opposite situation to the one you're describing, was trying to harmonize laws and said very clearly in EPAct that for purposes of §111(d), you couldn't say that a technology was adequately demonstrated if it was a technology that was receiving assistance from the DOE's Clean Coal Power Initiative.

I mention that as a mere footnote to the much broader and important question you're raising, but the point is that Congress doesn't always get it wrong. And I'm not suggesting you were wrong.

David Doniger: I love the CAA. You talked about the founding brothers. I think of the people who wrote the CAA as a kind of second set of founding brothers. That may scare you; I don't know.

Patrick McCormick III: I will disclose that one of my children is named after the first general counsel at EPA.

David Doniger: On the point you raised, what those provisions say is that, first of all, I don't anticipate any reliance by EPA in the §111(d) rule on carbon capture and storage, but that has to do with the new source rule, the subsection (b) rule. What those provisions say is that you cannot rely solely—*solely*—on a federally supported project to support the demonstration of a technology. EPA's position is that they have not relied solely. They have a solid basis in facts that flow from projects and experience that has no EPAct support, that is sufficient to demonstrate that carbon capture and storage is demonstrated achievable technology for the new plants, and the EPAct plants would provide a kind of verification. But if you didn't have that, if it didn't exist, there is still a basis for the standard.

F. William Brownell: Jeff, if I could just jump in, because there's a different side of the story on each of the points that David and others have discussed. Just very briefly: On the §111(d) limitations on EPA's authority under the clauses on regulation of pollutants under other sections, including reg-

ulation of source categories under §112, the other side of the story is that there are two limitations on EPA's authority. At the end of the day, they're both there in the statute, and they both should be applied. No pollutant that's regulated under §108, §109, or under §112, and no source category regulated under §112, gets regulated under §111(d).

On procedure, you know, the response is: Procedure is procedure, substance is substance. Congress knew what it was talking about when it talked about procedures. Look at CAA §307(d), which provides different standards for judicial review of substantive and procedural decisions. And in EPAct, "solely" does appear, but it appears in only one of the clauses that limits EPA's authority with respect to consideration of technologies as adequately demonstrated: "No technology, no level of emission reduction achieved solely by that technology, or no level of emission reduction achieved shall be considered as a basis for an adequately demonstrated determination." "Solely" is confined to one clause, and that clause does not modify technology. So, that's the other side of the debate on this, and that's what may take—

Scott Pruitt: That's why it may take a bit more time than five minutes.

Jeffrey Bossert Clark: On the point that Bill was talking about, in terms of the Senate version and the House amendments, and the fact that both should be given effect, there's a paper that I'll commend to you that's up on the Federalist Society website, written by William Hahn, I believe. It covers the legislative history and basically takes the position that both the Senate and House amendments are directionally deregulatory. I think his prediction would be that it's going to be tough going for EPA and the courts if they try to say that because the House and the Senate amendments are not identical (even though in conference they adopted both), then that somehow creates ambiguity and EPA can do whatever it wants and ignore the deregulatory purposes of both of those amendments. That would be pretty dicey for the Agency to try. So, take a look at that paper, if you would.

With that, let's kick it open to the first question from the audience. Sir?

Attendee: Greetings and thank you very much to the panel. It was wonderful. Quick question: I'm having a tough time wrapping my head around what an FIP would look like under a beyond-the-fence, mass emissions §111(d) regime for greenhouse gases. Utilities normally plan on four-year horizons with these integrated resource plans. Would an FIP, under the Kentucky plan or the NRDC plan, would it empower EPA to impose a de facto IRP [integrated resource plan], and is that within the Agency's technical and functional expertise?

David Doniger: I'm glad I came. My view is that what a state plan will provide, if it's developed by the state as it should be, it will impose an emission rate—I mean, this is the plain vanilla version—impose an emission rate on the sources. Those that are over the limit would have a compliance obligation. Those that are under it, the state could choose to turn them into credit generators. The plan would also provide what the compliance tools are that a source above the standard is entitled to use, and at least in our proposal, that would be things they do to ratchet down the emission rate of the source itself by improvements to the physical plant. But it would also count credits through the kinds of approaches that we describe in our report, to move toward cleaner dispatch order, and credit for wind plants, the zero-emission generation of wind plants built after the baseline. That would count. Uprates of nuclear plants would count, and, as I explained, credit for the reduction in power demand by making our buildings, homes, and appliances more efficient.

Now, if the state chose not to do that, the question is, what would the federal government's plan provide? It might provide only that same emission limit and at that point, as it is under the CAA, there is always the prerogative of the state to resume the lead. I'm not speaking for EPA. I don't know how they're going to do this, but this is just our idea. The federal plan would specify the emission limit. If the tools to bring all of those compliance measures into play are really state tools, well, that's the state's option. Bring them into play if you want.

F. William Brownell: Let me answer that a little differently. Under the Federal Power Act, FERC doesn't have authority to override, to dictate integrated resource planning at the state level, much less EPA, so that's the first point. The second point is that this whole discussion illustrates the difficulty you get into if you go beyond the source-focused performance standards authorized by §111(d). If you're focusing on what the performance of a source is, based on best adequately demonstrated technology for that source, then theoretically, if the state doesn't adopt a plan and EPA has to, EPA can then determine what's adequately demonstrated technology for the source in the source category, by looking at what's the appropriate performance standard for the source, taking into account, as the statute says, things like remaining useful life of the individual facility.

Now, as David says, that might not be as flexible as something the state could do in implementation. The state could always come back with its own §111(d) plan after that. But if you confine it to the proper statutory authority, what is the performance standard for the source, I think you avoid some of those problems you raise.

Patrick McCormick III: I would like to add that not only does FERC not have the power to impose integrated resource planning under the Federal Power Act, but the Federal Power Act specifically ousts FERC of any jurisdiction over electricity generation. It's very clear in the Federal Power Act that electricity generation is a state matter, and

that, I think, goes along nicely with an inside-the-fence §111(d) analysis consistent with the Oklahoma plan.

Scott Pruitt: David, your comments have been constructive as far as our discussion here today, but it seems to me that the NRDC's approach (hopefully not EPA's approach) is that this section provides substantive authority to EPA, not procedural, which has a direct corollary effect on what the state can do. It converts the state's role from a substantive position to an administrative or procedural position. It takes away the authority of the states to contemplate the useful life that Bill made reference to, in addition to these other factors on less-stringent standards for a unit-by-unit designation. The statute clearly contemplates that.

David Doniger: Actually, the explanations are in the regulations and were created by EPA, but could be changed by EPA.

Scott Pruitt: But you're dismissing those factors. If you could reconcile that, it would be helpful, because I'm trying to understand the reconciliation.

David Doniger: The statute says—and there's no denying this—that there needs to be consideration of remaining useful life. What I've argued is that in a flexible structure, which has a limit for each source, but doesn't command that the limit has to be met all by itself at that source, it has other tools available—then the state and the source operators have flexibility to decide how long they believe it's valuable to operate that plant and continue doing that by use of the flexible compliance methods. That should be welcome rather than—

Scott Pruitt: If states have the ability and authority to determine a less-stringent rate on a facility-by-facility basis, based upon a physical impossibility, based on factors at the site, how do you achieve that if you are starting from the top down, with a mass emissions approach? How do you achieve that?

David Doniger: I don't expect EPA to set the standard in terms of mass emissions. I expect them to set the standard in terms of rate of emissions, and I've explained that. Here's another way to look at it: In the 1975 regulations that you're referring to, EPA was thinking of standards that were set in a way that most of you are recommending: in other words, a uniform standard that's the same for every plant of a given type. Then, the Agency contemplated, in accordance with the remaining useful life language, that maybe there would be something different about the economic position of one of those plants, so you need a variance. If you're going to have a uniform standard, you need a variance. That's the way EPA interpreted the statute to read. The regulations flesh out the procedures and the considerations that go into the variance provisions that EPA was thinking about at that time.

But if you think about the standards differently, that they're not set on the basis that every single plant is the same and every single plant has to meet this by itself, then you have other mechanisms of compliance and other ways to take into account the underlying concern, which is that when plants have a different cost structure or a different situation, there needs to be a way to recognize that. So, built into this flexible emission rate standard approach that we are recommending is consideration of remaining useful life.

F. William Brownell: If I could just follow up on that—and this is a discussion that could go on the entire afternoon, quite easily—when I look at the Oklahoma plan and others who have come out and emphasized that it's the state's responsibility to develop the plan, it's not about imposing a uniform standard of performance across a source category under §111(d). It's about looking at the technologies that EPA has determined are adequately demonstrated for the source category in determining, first, what is achievable at specific sources, using adequately demonstrated technology? Then, what is best in light of the statutory considerations? What is appropriate for the source in light of the remaining useful life? And other factors that are particularly relevant at the state and local level. So, the plan, far from providing uniform regulation of sources in the source category, would provide for tailored regulation of individual sources, depending on the factors that I've discussed.

Jeffrey Bossert Clark: Before we go to another question, let me just hop in here because I think some of these questions—and I'm a specialist in the CAA, as well—can get very abstruse, so let me try to tie it to something that a more lay audience would understand. President Obama very famously said that, "Oh, you can build coal-fired power plants but if you do so, you will be bankrupt," and that approach seems to be running through all of the greenhouse gas regulations. Certainly, I think that will be part of industry's argument in challenging the rules, if EPA goes in the direction of making existing coal-fired power plants impracticable.

Isn't the self-evident purpose of that language in the statute, about considering the remaining useful life of plants, something that was designed specifically, David, by Congress to ensure that preexisting investments in any technology, but in this case primarily coal-fired power plants, would not be effectively rendered useless or have their life cut short by a stringent regulatory regime? Wasn't that the purpose of Congress in 1990?

David Doniger: That dates from 1970, I think, but no, I don't think there is a guarantee in the CAA that all the sources continue to remain in the same economic position that they would be if they were allowed to continue discharging dangerous pollution without any restrictions. The whole point of pollution control legislation is to internalize the cost of pollution that is being imposed on the

rest of us. Again, it's important, and I'm sure there's disagreement in the room about whether this is a serious kind of pollution, but I stipulate that it is at least from NRDC's vantage point.

So, when any kind of source is required to limit its pollution, its cost of operating changes. Sometimes, actually, it goes down. The car regulations have the fortunate impact of making cars cheaper to own and operate than they would have been if there were no standards, because of the payback in savings on the gas you don't have to buy. But sometimes, and probably most of the time, pollution regulations raise the cost of operating a source that is emitting pollution, and that's going to shorten its economic life, reduce its economic value. The question always is how much or what is the right balance. But you can't start with a proposition that Congress didn't want anything to change.

Patrick McCormick III: I'm going to show my ignorance here. I'm not a CAA lawyer, so please correct me, but I thought that the purpose of the CAA was to protect the public health and to reduce pollution. I don't think that it's an economic statute whose purpose is to internalize the cost of pollution. That may be a consequence of pollution control, but from my point of view as a Power Act lawyer who works for the Energy Committee, that's precisely the kind of assertion about the reach of the environmental laws that is problematic from our point of view as people who are responsible for safeguarding the energy system and making sure that it's balanced. I'm all for public health, and I wasn't kidding when I said one of my children is named after the first general counsel of the EPA. I admire the work that was done in the early '70s, and I'm all for pollution control, but internalizing the cost of pollution, while it may be a consequence, is not a purpose.

David Doniger: Please don't mistake me. I didn't say it was a purpose; I said it was a consequence. It is a necessary consequence of controlling pollution to meet a health or environmental objective, because that's done to protect public health and welfare, which includes the climate. That's explicit in the statute, and the Supreme Court has so held. But when you do that, you cannot do that without—let me put it this way—you cannot do that and have a purpose or a principle limitation where you hold harmless the economic position of a polluting source. So, I'm not saying that it's our purpose to change the economic position. It's not. Our purpose is to control the pollution.

F. William Brownell: That's why you have that language in the statute.

Jeffrey Bossert Clark: Yes. We realize we've gone over a little, but Attorney General Pruitt has prevailed on me to take one last question from the back.

Scott Pruitt: You've been very persistent.

Attendee: Gentlemen, thank you all for a wonderful discussion, including you, my dear cousin. David is always very sharp and very—

David Doniger: He claims to be my cousin.

Attendee: I'm trading on that. It's really helped my career a lot, such as it is. Look, the original carbon pollution rule, which came out in April 2012, was deeply weird because in that rule, EPA decided that the performance standard for new coal power plants would be based on the emissions profile of a natural gas plant, and, in effect, EPA defined a gas turbine as an adequately demonstrated system of emission reduction for a coal boiler. So, it was a blatant fuel-switching mandate, and I think that may be the main reason why they pulled it, why they needed a do-over, because it is so obviously contrary to congressional intent.

But it seems to me that these other options that are being discussed, for existing power plants, are very much in the same spirit. In other words, you're not going to require an existing coal plant to meet the emissions profile of the natural gas plant, but you're going to propose a performance standard, or a performance standard guideline, which basically says that each coal plant must split the difference between itself and a natural gas-combined cycle plant. It's still very much a fuel-switching mandate, it seems to me, that's being talked about here. In fact, David, that was one of the options that you said states could use in order to come into compliance.

The question I would raise is: Do you really think, does the panel really think, that Congress intended that the §111(d) provision would be used to set standards for existing sources that no existing source in that category can meet, and that the only way that it can meet it is by reducing its operation, maybe even going out of business, and having the covered entity shift to a different type of facility? Does anyone think that that's a plausible reading of congressional intent?

F. William Brownell: My answer is probably shorter than David's. It's no.

David Doniger: Well, yes is about the same length.

Jeffrey Bossert Clark: Any last remarks before we close out? Thanks to all of our panelists, to Attorney General Pruitt, to Bill and David and Patrick, and to all of you and your patience.

The Legal Scrutiny Surrounding §111(d): Will It Survive or Stumble?

by Roger R. Martella Jr.

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Summary

EPA's Clean Power Plan is the Obama Administration's most important effort to address the challenge of climate change. But it also raises significant legal issues of first impression ranging from unsettled statutory language to EPA's splintered approach under different subsections of CAA §111 to judicial skepticism about EPA's expansive CAA approach using a very narrow statutory provision. Although the courts likely will be inclined to grant EPA significant deference in pursuit of the important goal of curbing greenhouse gas emissions, concerns regarding the precedent-setting nature of EPA's "beyond the fenceline" approach in this rule and future rulemakings for other sectors likely could tip the scales against upholding the rule.

I. Introduction

With barely two years remaining in the Barack Obama Administration, its biggest challenge to cement the flagship element of its environmental legacy lies ahead: finalizing the U.S. Environmental Protection Agency's (EPA's) most ambitious regulation in its history in a manner that avoids making it also the Agency's shortest-lived regulation in the courts.

The president's Climate Action Plan undoubtedly is his tenure's legacy item for the environment. And no element is more critical to the plan than EPA's proposed regulation of existing coal- and natural gas-fired electric generating units (EGUs) under §111(d) of the Clean Air Act (CAA).[1] By the Administration's estimates, the Existing Source Performance Standard (ESPS)[2] would result in a 30% reduction of greenhouse gas (GHG) emissions by 2030, at a critical time when there is not even a glimmer of climate change legislation on the horizon.

In what is likely to be a record-breaking sprint from the start line to the finish line for an EPA regulation of this magnitude, the president has directed the Agency to finalize the rule by June 2015. Other experts have compellingly presented in the *Environmental Law Reporter* the technical, policy, and pragmatic elements of this landmark proposal from a wide range of perspectives. At this stage, however, no question is perhaps more important than this one: Will the courts affirm the precedent-setting regulation, or remand it to the president's successor to develop his or her own legacy?

II. Setting the Stage for Judicial Review

Although there are scores of unanswered questions about the final §111(d) rule, there is one universal and certain truth: Whatever the rule's final form, EPA is going to be sued.

Unlike most EPA rulemakings, the ESPS will offer several opportunities for bites at the proverbial apple for those who seek to challenge it. The first opportunity will be a challenge to the final rule in the U.S. Court of Appeals for

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1. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
2. The ESPS is published as part of the proposed rulemaking, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014).

the District of Columbia (D.C.) Circuit within 60 days of EPA publishing it in the *Federal Register*. A second round of challenges are likely to occur years later, when EPA takes action to approve or disapprove state implementation plans needed to implement the rule. A party can challenge those actions in the respective U.S. Circuit Court with jurisdiction over the state whose plan is at issue. (In addition, there likely will be an earlier opportunity to challenge EPA's EGU rule for new sources under §111(b), which could further influence the §111(d) litigation).

Focusing on the imminent D.C. Circuit litigation, which will likely commence less than one year from now, there are a few unique considerations that set the stage for what is certain to be the most contentious environmental litigation of the next several years.

A. Settled Issues

EPA will defend the ESPS on a playing field where several key issues have been resolved in its favor in recent years. We are now past the point of debate on whether EPA can use the CAA to address GHG emissions. That point has been resolved by the U.S. Supreme Court's 2007 decision in *Massachusetts v. EPA*,[3] as well as more recent decisions in *American Electric Power Co. (AEP) v. Connecticut*[4] and *Utility Air Regulatory Group (UARG) v. EPA*,[5] both of which clarified that EPA has discretion to regulate GHG emissions under certain provisions of the CAA. What remains to be seen, however, is the extent to which the D.C. Circuit and other lower courts will give weight to the Supreme Court's significant rebuke to EPA in the *UARG* decision. In that ruling, the Court denied deference to EPA on a key interpretation and chided the Agency for reading the CAA expansively in its efforts to combat climate change.

B. Unsettled Issues

The ESPS presents numerous significant precedent-setting and legal issues of first impression in the CAA's 40+ year history. Indeed, this may be the first rule in EPA's history where the Agency's lawyers felt compelled to include a separate legal justification document in the record to provide the opening argument in favor of its various pushing-the-envelope positions. There are far more novel issues of first impression presented in the rulemaking than there are settled ones. Importantly, these issues, described below, will have expansive precedent beyond the specific rulemaking; even more importantly, if affirmed, they will fundamentally redefine and reshape EPA's regulatory reach for the next generation of rulemakings in a way typically reserved for legislative amendments. This is effectively the health care law of the environmental and energy universe, but without the U.S. Congress passing a new law authorizing it.

It's true that the Administration, to date, has boasted a relatively successful track record in developing legal arguments to support expanded powers in statutory tools that have not been upgraded since the 1990 CAA Amendments. Yet, the ESPS is unique given the precedent-setting nature of not only the specifics of the rule, but also the new interpretations of EPA's regulatory authority that could be carried over to other CAA provisions in the future. Even a court sympathetic to EPA's efforts to combat climate change is likely to consider how employing the tools in an instant case could create broad new precedent and powers in other contexts.

C. Timing

The Administration's schedule for finalizing the rule appears reverse-engineered to get the big news out well ahead of the 2016 elections, and also to ensure that the current Administration will control the defense of the rule in the D.C. Circuit. Given the likelihood that all parties may share an interest in a prompt resolution—industry and states because compliance with the proposed 2020 deadlines will require immediate action, and the federal government to avoid leaving the defense to the next administration—the rule seems like a strong candidate for expedited review in the D.C. Circuit. Thus, there is a real likelihood that the case could be decided as soon as the spring of 2016. However, even with a fast decision, the likelihood of the U.S. Department of Justice under the current Administration seeing the litigation through the end of any Supreme Court proceedings seems remote, meaning that the defense of the rule likely will transition to the next administration.

D. Climate Change in the Courts

Of benefit to EPA is the reality that courts increasingly are playing a supportive role in endorsing efforts of federal regulators and states to fill the void left by Congress by taking action to address climate change. Prior to the Supreme Court's *UARG* decision, the D.C. Circuit issued a number of opinions[6] fully endorsing EPA's GHG regulations, which themselves at the time deployed some novel and precedent-setting legal positions. Recently, the U.S. Court of Appeals for the Ninth Circuit, in affirming California's Low Carbon Fuel Standard against a Com-

3. 549 U.S. 497, 37 ELR 20075 (2007).
4. 131 S. Ct. 2527, 41 ELR 20210 (2011).
5. 134 S. Ct. 2427, 44 ELR 20048 (2014).
6. *See, e.g.*, Coalition for Responsible Reg. v. EPA, 684 F.3d 102, 122, 42 ELR 20141 (D.C. Cir. 2012).

merce Clause challenge, opined that "California should be encouraged to continue to expand its efforts to find a workable solution to lower carbon emissions, or to slow their rise" and that the court "will not . . . block" California from such initiatives.[7] Thus, it would be a bit naïve to assume that reviewing courts will look at the ESPS in isolation from its important stated mission. In addition to providing deference to the Agency's regulations generally, courts may also weigh the significance of what EPA is trying to accomplish in its efforts to address climate change between now and 2030 and the missed opportunities and lack of significant alternatives if the Agency's approach is not endorsed. Here, again, the potential for a change in presidential administration and approach could weigh on the court.

III. Five Key Legal Issues to Watch

Given the 12-month sprint for finalizing the ESPS and the commitment to achieve 30% reductions by 2030, there is little expectation of EPA making significant changes from the proposed rule to the final rule. Instead, all eyes appear to be focused on the legal watch: Comments that are filed by December 1, 2014, largely will be aimed at either preserving arguments to challenge the rule or bolstering EPA's defenses. Among the scores of issues to be presented, there are five key thematic issues that are likely to be the focus of the comments and, accordingly, the litigation.

A. *The Interplay Between §111(d) and §112*

Walk to your law library and open the CAA in the *United States Code* (or, more likely, look up the CAA online), and you will quickly encounter what appears to be an insurmountable hurdle for EPA at the outset: The plain language of §111(d) does not apply to air pollutants that are emitted from source categories subject to §112. Fossil fuel-fired EGUs, in turn, are subject to the §112 hazardous air pollutant (HAP) standards under EPA's Mercury and Air Toxics Standards rule.[8] Thus, even EPA has agreed that this language forecloses it from regulating existing EGUs under §111(d), stating that "a literal reading of the House language would mean that EPA cannot regulate HAP or non-HAP emitted from a source category regulated under Section 112."[9] The Supreme Court has similarly concluded. After describing generally EPA's authority to regulate existing sources under §111(d), the Court in *AEP* noted that "[t]here is an exception: EPA may not employ §[111(d)] if existing stationary sources of the pollutant in question are regulated under the national ambient air quality standard program, §§[108-110], or the 'hazardous air pollutants' program, §[112]. See §[111(d)(1)]."[10]

Of course, few things in the law are ever that straightforward, and the analysis is complicated here by the peculiar fact that Congress enacted competing revisions to the same provision, one originating in the U.S. House of Representatives and one in the U.S. Senate. The Senate version reads slightly differently, but different enough, and would preempt from regulation under §111(d) only those pollutants that are actually regulated under §112.

EPA's response to this is to invoke *Chevron*[11] deference in choosing to give full weight to the Senate version while virtually disregarding the House version. In this instance, however, citing *Chevron* may be too simplistic a solution to save the Agency's interpretation. Foremost, EPA itself has recognized that the Senate version was a "drafting error,"[12] and it is hard to see why that version should be given any weight at all, let alone greater weight than the House version. Further, when faced with conflicting provisions, EPA is required "to give effect to both if possible."[13] But reconciling the two versions is not something EPA has done, nor can it do, to realize its policy goals. In the legal battle over the defensibility of the ESPS, this is likely to be Round One. In fact, even prior to finalizing the rule, three separate challenges already have been mounted to the proposal, putting this argument front and center.

B. *Reconciling EPA's §111(b) and (d) Rules*

Although it is well-established doctrine that courts are inclined to defer to regulatory agencies on technical and scientific issues, there also are well-established exceptions to the rule. Courts offer no deference when an agency takes inconsistent positions across related regulations; instead, courts require that "identical words used in different parts of the same act are intended to have the same meaning."[14]

The CAA contains two provisions governing performance standards. Section 111(b) governs new sources, and §111(d) governs existing sources. There is no debate that §111(b) and (d) are related, if not symbiotic, provisions.

However, EPA's approaches to setting performance standards based on the best system of emission reduction (BSER) adequately demonstrated in the two proposals are entirely independent, distinct, and ignorant of each other, if not flatly inconsistent. For example, in the §111(b) proposal, EPA's BSER analysis focuses specifically on emission reduction opportunities for individual facilities within the fenceline of those facilities, and sets separate standards for coal- and natural gas-fired EGUs. By contrast, in the §111(d) proposal, EPA adopts an entirely distinct approach to BSER that looks far beyond

7. Rocky Mountain Farmers Union v. Corey, 730 F.3d 1070, 1107, 43 ELR 20216 (9th Cir. 2013).
8. Mercury and Air Toxics Standards (MATS), 77 Fed. Reg. 9304 (Feb, 16, 2012) (codified at 40 C.F.R. pts. 60, 63).
9. *See* Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, 70 Fed. Reg. 15994, 16032 (Mar. 29, 2005).
10. AEP v. Connecticut, 131 S. Ct. 2527, 2537 n.7, 41 ELR 20210 (2011).
11. Chevron U.S.A., Inc. v. Natural Res. Def. Council, 467 U.S. 837, 14 ELR 20507 (1984).
12. *See* 70 Fed. Reg. at 16031.
13. United States v. Borden Co., 308 U.S. 188, 189 (1939).
14. Gustafson v. Alloyd Co., 513 U.S. 561, 570 (1995).

the fenceline of any given facility, and merges not only coal and gas together, but also GHG reductions associated with renewable energy, nuclear energy, and demand-side energy efficiency—energy sectors that are not subject to the §111(b) proposal in the first place, and arguably not even subject to the CAA.

As a result of these disparate approaches, the §111(d) proposal turns §111 on its head by setting standards for existing facilities that are *more stringent* than those for new facilities in 30 states. If the ESPS survives the first argument above, and a court concludes that there is no generic preemption of §111(d) for §112 sources, this inconsistency between the §111(b) and (d) approaches may be grounds for the court to remand EPA's specific approach back to the drawing board for a rule that draws a stronger nexus between new and existing source regulation.

C. Regulating "Beyond the Fenceline"

In what has become the prominent environmental catchphrase of the last six months, the most contentious legal battleground—and most precedent-setting under the CAA—is the proposal's approach to setting performance standards for EGUs based on emission reduction goals that can only be realized beyond the fenceline of those facilities. In so doing, EPA has assumed regulatory authority over energy generation, dispatch, and retail demand that has always been predominantly (if not exclusively) subject to state regulation.

EPA's policy rationale for adopting this approach is apparent. The Agency concludes that, under the best of circumstances, existing coal-fired EGUs can realize at most 6% reductions in their GHG emissions by 2030 (a number that most coal-fired EGUs would contest as unrealistic and too aggressive). Thus, to realize the goal of 30% reductions by 2030, EPA had to look elsewhere to make up the difference. The core premise of the ESPS, therefore, is that fossil fuel-fired EGUs can be held accountable for the actions of third parties in other sectors that can reduce overall GHG emissions by displacing coal. And the other side of the coin is EPA's authorization to states to also hold non-EGUs liable under the CAA as a means of enforcing those reductions.

Putting aside the policy, the legality of this approach is untested and beyond the bounds of EPA's past experience under the CAA. EPA hinges almost the entirety of its position on the fact that the §111 standard here—the best s*ystem* of emission reduction—enables EPA to regulate a "system" of reductions. But that is a very heavy lift for a single word read out of context. The arguments surrounding the legislative history, case law, and past practice will be thoroughly fleshed out in the public comments and the legal briefs, with challengers pointing to the approach's inconsistencies with everything that has come before it during the generations of CAA implementation to date.

But beyond the pure legality of the issue, the fundamental question for judges weighing it likely will focus on the precedent-setting nature of the decision. Ultimately, putting the specific arguments aside, supporting EPA's interpretation would require a court to endorse an approach that can hold individual facilities responsible and liable for the actions of third parties in entirely distinct sectors that are not regulated by the same rule or perhaps by the CAA at all. EPA's "portfolio" approach of compliance also, in turn, would hold unrelated third parties liable for a rule under a provision of the CAA that was never intended to apply to them. Even a court sympathetic to EPA's policy goals will pause on the precedential nature of such a decision, not only for this and future GHG rulemakings, but also for the potentially dramatic expansion of the CAA in other contexts into the future.

The legal questions here also extend beyond the CAA. When viewing the ESPS's beyond-the-fenceline approach through the lens of being fundamentally a regulation of energy in the states, states are likely to advance arguments about how the ESPS upsets the delicate balance between state and federal regulation of the energy sector expressed in the Federal Power Act, state regulations, and regional energy agreements. To implement EPA's ESPS, many states would have to enact new laws and regulations to enforce the new policies set by EPA, even though EPA itself would lack the authority to implement them directly under the CAA. All of this raises questions about the ESPS unraveling cooperative federalism, in potential violation of the Tenth Amendment and other laws.

D. EPA's Technical Assumptions

In the ordinary course, EPA should feel most confident and challengers most insecure when the legal debate before a court turns to challenging EPA's technical assumptions. As the D.C. Circuit recently reminded litigators who challenge EPA rules, "we do not determine the convincing force of evidence, nor the conclusion it should support, but only whether the conclusion reached by EPA is supported by substantial evidence when considered on the record as a whole."[15] Thus, precious real estate in briefs typically is used sparingly in challenging technical issues and factual conclusions.

The ESPS, however, may present an exception to this general practice rule for challengers. Throughout the rule, EPA relies on several overarching uniform assumptions regarding heat rate improvements at coal-fired EGUs, the ability to seamlessly switch dispatch from coal to natural gas combined cycle facilities, states' abilities to enact renewable portfolio standards and preserve at-risk nuclear energy, and efforts to improve demand-side energy efficiency on an annual basis. It would not be surprising to see the public comments take issue with both the lack of a record basis for EPA's assumptions and a litany of examples where the real world in individual states is at sharp and distinct odds with EPA's across-the-board assumptions.

15. Coalition for Responsible Reg. v. EPA, 684 F.3d 102, 122, 42 ELR 20141 (D.C. Cir. 2012).

Although EPA surely will cite a mountain of case law in support of its position that neither other parties nor the courts should second-guess its judgment on its factual conclusions, the assumptions that will be challenged are not highly technical environmental and scientific issues where deference is most warranted for EPA, but rather involve assumptions about energy issues outside EPA's expertise. Further, given the black-and-white nature of likely rebuttal facts that certainly will be presented, courts are likely to be more willing to truly assess whether EPA's conclusions are arbitrary and capricious.

E. In the Shadow of the Supreme Court

In what may have been the most unfortunate timing coincidence for EPA during the Obama Administration, just five days after the proposed rule was published in the *Federal Register*, the Supreme Court issued a stern decision that may prove to be the strongest influence on judicial review of the rule. In a passage quickly inserted into the front page of the playbook for challenging EPA regulations, the Supreme Court in *UARG* chided the Agency, stating that:

> When an agency claims to discover in a long-extant statute an unheralded power to regulate "a significant portion of the American economy," *Brown & Williamson*, 529 U. S., at 159, 120 S. Ct. 1291, we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast "economic and political significance."[16]

Beyond that broader direction, however, also came the Court's comment that EPA cannot "regulate millions of small sources" including commercial, residential, and public buildings,[17] a holding that appears to speak directly to EPA's proposal to regulate demand-side energy efficiency.

Although it is too early to know how lower courts, not to mention EPA, will implement this direction across a wide range of rulemaking challenges, the precedent of the Supreme Court's opinion seems as relevant to the ESPS as it was to the Tailoring Rule that the Court partially struck down in *UARG*. In the ordinary course, there is probably little doubt that an agency in the wake of such a relevant Supreme Court decision would take the time to revisit its regulatory approach to reconcile it with the Court's direction. But very little about the ESPS is ordinary, and the Administration has committed to an approach and time line that does not offer the flexibility required to fix the fundamental issues identified by the Court.

Thus, of the various rounds of legal battles on the horizon, the most interesting one will be how EPA and the D.C. Circuit grapple with the shadow of the Supreme Court's *UARG* decision. While EPA certainly will work to distinguish it in the record, the D.C. Circuit is unlikely to give the Supreme Court's holding short shrift. As for the Supreme Court itself, it is admittedly difficult to fathom how five Justices who were sufficiently concerned about the Tailoring Rule to reverse it in part based on the language above would not share as significant a concern with a rule that is exponentially broader in reach.

IV. Conclusion

Since the release of the proposed ESPS, I have participated in more than 50 discussions with professional organizations, states, industry groups, think tanks, and environmental nongovernmental organizations regarding the legal defensibility of the ESPS. Reflecting on the unique opportunities to hear a wide and diverse range of informed views and positions, what strikes me the most is the extent to which any discussion of environmental issues has been thematically absent in all of the presentations. Virtually every presenter and every question has focused not on how this rule will impact the environment—EPA's core mission—but on how and whether this rule can be reconciled with, implemented alongside, or be disruptive to state energy generation, markets, and transmission. The presenters who have joined me at the podium have not been state environmental permitting officials or environmental regulators. Instead, they have been the voices of the energy sector.

To me, this observation underscores what simultaneously may be the ESPS's strongest defense and its greatest vulnerability. The Obama Administration clearly has decided that in the absence of congressional action and international consensus, it cannot wait longer to take firm action to address the challenge of climate change before its window closes in 2016. The Administration is thus sending a strong signal that it has no choice but to use the existing tools at its disposal in new ways to tackle the most significant environmental challenge for the planet. A reviewing court will not consider a rule of this magnitude in a legal vacuum and may be inclined to give strong deference to such an important policy goal.

At the same time, a court cannot neglect the weighty issue of the precedent to be endorsed along the way. EPA's interpretation here would reach far beyond fossil fuel-fired EGUs and GHG emissions and open a new era for the Agency to regulate for the first time in its history not just EGUs, but entire sectors of the economy that have never been within the reach of a specific rule or even the CAA as a whole. In essence, endorsing the ESPS would endorse a new self-appointed role for EPA fundamentally to become the leading and most powerful regulator of energy itself in the nation—a role that Congress has not assigned to the Agency or any other federal agency and about which the Supreme Court has expressed significant skepticism. Regardless of how noble the goal, ultimately, courts are likely to be more concerned about a specific approach that sanctions an entirely new regulatory role

16. UARG v. EPA, 134 S. Ct. 2427, 2444, 44 ELR 20048 (2014).
17. *Id.* at 2446.

for the Agency moving forward. President Obama's environmental, energy, and climate change legacy may very well be that he was the first president to enact national regulations to reduce GHG emissions, but for these reasons, the longevity of the §111(d) component is in significant legal doubt.

EPA's Novel Interpretation of "Best System of Emission Reduction" for Existing Electric Generating Units Violates the Clean Air Act

by Allison D. Wood and Andrew D. Knudsen

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Summary

When designating the "best system of emission reduction" in its Clean Power Plan, EPA considered several factors far beyond the fencelines and control of the regulated power plants. The clear statutory language, context, and regulatory background demonstrate that such a "beyond-the-source" approach is not allowed under §111. To find otherwise would suggest that EPA can require drivers to stay home or to use public transportation in order to reduce motor vehicles' tailpipe emissions under the Clean Air Act. Although this conclusion may result in lower overall emission reductions, it is the outcome that the CAA requires.

I. Introduction

Imagine that the U.S. Environmental Protection Agency (EPA) proposes regulations under a section of the Clean Air Act (CAA)[1] authorizing the Agency to develop standards of performance for tailpipe emissions from motor vehicles that burn fossil fuels. One might expect that these regulations would require vehicles to be equipped with emission control equipment (such as catalytic converters) or operational features (such as on-board diagnostic computers) to limit each vehicle's tailpipe emissions per mile. But what if EPA went farther? Imagine that these regulations also attempted to reduce vehicle tailpipe emissions by requiring car owners to shift more of their travel to buses, or by providing subsidies to promote the sale of electric vehicles, or by encouraging individuals to reduce vehicle use altogether by working from home once per week. Can a "standard of performance" reasonably include measures like these?

To many, such broad requirements would seem entirely out of place. That is because although these types of measures might indirectly reduce tailpipe emissions from vehicles, they have no effect on the emissions performance of the individual vehicles on which this hypothetical provision focuses, and they are beyond the control of the vehicle manufacturer altogether. In order to require such measures, EPA would need authority to reach "beyond the source" to impose obligations on other entities.

That's not what a "standard of performance" program is about. Yet, this is exactly what EPA is proposing to do in its proposed emission guidelines[2] for existing electric generating units (EGUs). EPA's broad "beyond-the-source" approach is incompatible with the statute. Like the hypothetical motor vehicle provision above, CAA §111 authorizes EPA and states to promulgate standards of performance for new and existing sources within certain source categories. At its heart, this regulatory program is quite simple. It provides for the regulation of sources through standards that are based on what an individual source can do to reduce the source's rate of potential emissions. Efforts to require aggregate emission reductions by targeting entities outside the designated source category exceed the scope of this program; a "standard of performance" cannot ask another source to operate more (or other entities to reduce demand for a product) so that the source in the designated source category must curtail its operations or not "perform" at all.

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1. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
2. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014).

Section 111(a)(1) requires that any standard of performance be based on "the best system of emission reduction" (BSER) that has been adequately demonstrated for the source category. EPA relies on a dramatic redefinition of the statutory term "system" to broaden the scope of this program "beyond the source" by claiming that it may base a standard of performance on *any* "set of things" that leads to reduced emissions from the source category overall, ranging from utilization limits at certain units to enforceable obligations for other entities that reduce utilization of some sources.[3] This interpretation is misguided. The plain language, the statutory context, and the regulatory history of §111 are all clear and unambiguous. A "system of emission reduction" must begin and end at the source itself.

II. The Statute

A. *Statutory Text*

On its face, §111 clearly does not authorize EPA or states to impose requirements that reach beyond individual sources in a regulated category. Instead, the statute provides only for standards that regulate the emissions performance of *individual* stationary sources. This narrow focus is evident simply from reading the titles used in these provisions: §111 is designated "[s]tandards of performance for new stationary sources," and §111(d) is titled "[s]tandards of performance for existing sources; remaining useful life of source." Likewise, the plain text of these provisions is clear that standards of performance apply only to sources in specific categories: new source performance standards (NSPS) under §111(b) apply only to "new sources within [a listed] category,"[4] while state standards under §111(d) apply to "any existing source . . . to which a standard of performance . . . would apply if such existing source were a new source."[5] In addition, §111(d) explicitly directs states and EPA to consider the "remaining useful life" of existing sources when applying any standard of performance, further demonstrating that this section focuses solely on what individual sources can do to improve their performance at reasonable cost rather than on what the entire source category (or other entities) can do collectively.[6]

The CAA also narrowly confines the stationary sources that may be regulated under §111 to any individual "building, structure, facility, or installation which emits or may emit any air pollutant."[7] The definition notably does not extend to combinations of these facilities or to other non-emitting entities. EPA has attempted in the past to treat multiple individual sources as a single system subject to regulation for the purposes of §111, only to be rebuked by the courts for violating the clear language of the statute.[8] The U.S. Court of Appeals for the District of Columbia (D.C.) Circuit has held that if EPA is concerned about the cost or need for flexibility in regulating a category of sources, the solution is to change the *standard*, not the entity to which the standard applies.[9]

Importantly, §111 also requires that any standard of performance be "achievable" by the individual sources to which it applies based on application of an "adequately demonstrated" system of emission reduction.[10] The achievability requirement is clearly inconsistent with a "beyond-the-source" approach. A standard cannot be "achievable" for a source if the source must rely on the conduct of some other entity that it does not control, or must not operate at all, in order to achieve the standard. The hypothetical motor vehicle standard described in the introduction provides a telling example. If a standard of performance for tailpipe emissions from new motor vehicles were to be based on the emission reductions that would result from encouraging people to work from home one day per week, how would the manufacturer of any motor vehicle achieve that standard? No change in the design or operation of the vehicle could achieve those reductions. How would the owners of existing vehicles adjust their emissions performance? A source does not "achieve" a level of required performance by "performing" less or ceasing to "perform" at all.

Other parts of §111 similarly contradict the broad "beyond-the-source" approach to defining a system of emission reduction. Section 111(h) authorizes EPA to promulgate a design, equipment, work practice, or operational standard in cases where "it is not feasible to prescribe or enforce a standard of performance," and defines exactly when the U.S. Congress considered it "not feasible" to establish a standard of performance.[11] One such situation is where the regulated pollutant "cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant."[12] By tying a "standard of performance" to the level of emissions from a regulated source that may be emitted through a "conveyance" at that source, Congress could not have made more clear that this program is exclusively focused on individual sources.

3. *Id.* at 34885-86.
4. 42 U.S.C. §7411(b)(1)(B).
5. *Id.* §7411(d)(1).
6. *Id.* §7411(d)(1)(B), (d)(2).
7. *Id.* §7411(a)(3).
8. *See* ASARCO, Inc. v. EPA, 578 F.2d 319, 8 ELR 20277 (D.C. Cir. 1978).
9. *Id.* at 329.
10. 42 U.S.C. §7411(a)(1).
11. *Id.* §7411(h)(1).
12. *Id.* §7411(h)(2)(A).

B. Statutory Context

Further, nothing in the remainder of the CAA even hints that EPA has *any* authority under §111 to impose beyond-the-source emission reduction measures. Other provisions of the Act draw a sharp contrast between source-focused regulatory programs and programs that reduce aggregate emissions.

The CAA's other provisions establishing emission standards for new and existing sources all focus solely on achieving reductions in the rate of emissions at individual sources. Emission standards for hazardous air pollutants must be based on the maximum achievable control technology and reflect the application of "measures, processes, methods, systems or techniques" directly to individual sources.[13] Standards for visibility-impairing pollutants must reflect "the best available retrofit technology . . . for controlling emissions from [each eligible] source," considering the costs, existing control technology, and remaining useful life for that source.[14] And under the CAA's program for prevention of significant deterioration, new and modified sources must implement the "best available control technology" (BACT), which the permitting authority must identify on a case-by-case basis for each source and which must reflect "application of production processes and available methods, systems, and techniques" at the source.[15] None of these programs allows EPA to set an emission standard based on capping or restricting a source's operations.

The BACT program is particularly relevant because Congress explicitly tied these emission standards to §111. Standards of performance under §111 provide a regulatory floor for BACT standards.[16] But if a standard of performance relies on a "system of emission reduction" that goes beyond the source itself, it cannot meaningfully inform a BACT standard for individual sources in that category.

In contrast, in the few regulatory programs where Congress did authorize broad emission control measures for the purpose of meeting aggregate emission reduction goals, it spoke clearly and precisely. When Congress took action in the 1990 Clean Air Act Amendments to cap acid rain-forming emissions and to establish a program for emissions allowances and trading, it added an entirely new title to the Act spelling out the requirements and implementation procedures for that program in great detail.[17] Unlike the portion of the Act in which §111 is found, Congress' statement of purpose in Title IV establishes clear goals for nationwide "reductions in annual emissions" and explicitly states its desire to "encourage energy conservation, use of renewable and clean alternative technologies, and pollution prevention as a long-range strategy, consistent with the provisions of this subchapter, for reducing air pollution."[18] Congress also gave EPA specific instructions on how to credit sources for compliance with emission requirements based on avoided emissions from renewable energy and energy conservation.[19] The exhaustive provisions in Title IV prove that when Congress intends to establish a program requiring aggregate emission reductions that reaches beyond measures implemented at individual sources, it does not hide such authority in general terms like "system of emission reduction."

III. Regulatory History

Even if the statutory language left any doubt, the Agency's long and consistent history of implementing §111 at the source would give lie to today's novel attempts to extend that section beyond the source. In fact, in the 44-year history of the CAA, EPA has limited the scope of §111 to the emission rate improvements at the regulated source in *every rulemaking it has undertaken*.

First, EPA's 1975 Subpart B regulations—which establish a procedural framework for states to adopt standards of performance for existing sources under §111(d)—share §111's exclusive focus on standards that are achievable by individual sources. Subpart B directs EPA to publish a "guideline document containing information pertinent to control of the designated pollutant [from] *designated facilities* [i.e., existing sources subject to regulation under §111(d)]."[20] Echoing the statutory text, emission guidelines under Subpart B must "reflect[ ] the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated *for designated facilities*."[21] Acknowledging §111's statutory command to consider the "remaining useful life" of regulated existing sources, Subpart B also notes that states may tailor standards of performance for individual designated facilities to account for "unreasonable cost of control resulting from plant age, location, or basic process design," "physical impossibility of installing necessary control equipment," or "other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable."[22] This discretion reflects Subpart B's focus on what emission rate improvements individual existing sources can achieve themselves.

Subpart B also specifies that compliance with any standards of performance for existing sources will be shown through a series of "increments of progress," which are "steps to achieve compliance which must be taken by an owner or operator of a designated facility."[23] These increments of progress include awarding contracts, initiating on-site construction or installation, and completing on-site construction or installation of emission control equip-

13. *Id.* §7412(d)(2) (listing acceptable measures).
14. *Id.* §7491(b)(2)(A).
15. *Id.* §§7475(a)(4), 7479(3).
16. *Id.* §7479(3).
17. *See id.* §7651-7651o.
18. *Id.* §7651(b).
19. *Id.* §7651c(f).
20. 40 C.F.R. §60.22(a) (emphasis added).
21. *Id.* §60.22(b)(5) (emphasis added).
22. *Id.* §60.24(f).
23. *Id.* §60.21(h).

ment or process changes.[24] Thus, Subpart B makes clear that compliance with standards of performance is achieved through on-site measures taken by regulated sources.

Second, out of the nearly 100 NSPS and emission guidelines EPA has promulgated and subsequently revised since 1970, *not one* has included beyond-the-source measures as part of a "system of emission reduction." For example, when the Agency promulgated and later revised NSPS for kraft pulp mills, it never considered basing the standard of performance on measures that indirectly reduce those sources' operations by reducing demand for paper, such as promoting double-sided printing or encouraging businesses to provide paperless billing for customers.[25] EPA's source-focused approach has not changed from 1970 to the present. In a June 30, 2014, NSPS rulemaking, EPA reaffirmed that standards of performance "apply to sources" and must be "based on the BSER *achievable at that source*."[26]

Nor has EPA ever taken a beyond-the-source approach in emission guidelines for existing sources. Since 1970, EPA has only published valid emission guidelines under §111(d) for five source categories, and in all five of these rulemakings, the emission guidelines were based on the application of pollution control technology or other process controls at individual sources.[27] Even EPA's short-lived Clean Air Mercury Rule[28] under §111(d), did not adopt a beyond-the-source approach to establishing standards of performance. Although that rule did authorize an emissions trading program as a tool for *compliance* with standards of performance, the "system of emission reduction" that was used to set the emission guidelines themselves was limited to pollution control technology that could be installed at individual sources.[29]

IV. Conclusion

In light of this statutory language, context, and regulatory background, a beyond-the-source approach clearly conflicts with CAA §111. Just as the Act does not authorize EPA to require drivers to stay home or to use public transportation in order to reduce motor vehicles' tailpipe emissions, the Agency cannot require stationary source owners to operate their sources less or to rely on other measures outside of their control as part of a standard of performance. In the context of existing EGUs, this means that any final carbon dioxide emission guidelines that EPA ultimately promulgates may be based only on measures that EGU owners may incorporate into the design or operation of their EGUs themselves, such as improvements in heat-transfer efficiency. Although this may result in lower overall emission reductions than a beyond-the-source approach, it is the outcome that the CAA requires. As the U.S. Supreme Court recently held in *Utility Air Regulatory Group v. EPA*, striking down a major component of EPA's greenhouse gas permitting program, "[a]n agency has no power to 'tailor' legislation to bureaucratic policy goals by rewriting unambiguous statutory terms."[30] Because §111 focuses solely on standards that are achievable by individual sources, EPA's standards of performance must do so as well.

24. *Id.* §60.21(h)(1)-(5).
25. *See* 43 Fed. Reg. 7572 (Feb. 23, 1978); 79 Fed. Reg. 18952 (Apr. 4, 2014).
26. 79 Fed. Reg. 36880, 36885 (June 30, 2014) (emphasis added).
27. *See* 41 Fed. Reg. 19585 (May 12, 1976) (guidelines for phosphate fertilizer plants based on "spray cross-flow packed scrubbers"); 41 Fed. Reg. 48706 (Nov. 4, 1976) (guidelines for sulfuric acid production units based on "fiber mist eliminators"); 43 Fed. Reg. 7597 (Feb. 23, 1978) (guidelines for kraft pulp mills based on various process controls and two-stage black liquor oxidation system); 45 Fed. Reg. 26294 (Apr. 17, 1980) (guidelines for primary aluminum plants based on "effective collection of emissions followed by efficient fluoride removal by dry scrubbers or by wet scrubbers"); 61 Fed. Reg. 9905, 9907 (Mar. 12, 1996) (guidelines for municipal solid waste landfills based on "(1) a well-designed and well-operated gas collection system and (2) a control device capable of reducing NMOC [nonmethane organic compounds] in the collected gas by 98 weight-percent").
28. 70 Fed. Reg. 28606 (May 18, 2005).
29. *Id.* at 28617-20, 28621 (final guideline was "based on the level of [mercury (Hg)] emissions reductions that will be achievable by the combined use of co-benefit (CAIR [Clean Air Interstate Rule]) and Hg-specific controls").
30. Utility Air Reg. Grp. v. EPA, 134 S. Ct. 2427, 44 ELR 20048 (2014).

Designing CO_2 Performance Standards for a Transitioning Electricity Sector: A Multi-Benefits Framework

by Jonas Monast and David Hoppock

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Summary

A significant transition is underway within the electricity sector due to several market forces, retirement of certain plants, and regulatory pressures. There is notable overlap between available strategies for mitigating electricity sector risks and potential compliance strategies for states under the Clean Power Plan. This overlap presents regulators with an opportunity to pursue strategies that help manage the transition occurring in the electricity sector and achieve greenhouse gas reductions required under the Clean Power Plan, particularly in the areas of end-use energy efficiency and additional renewable power generation.

I. Introduction

The proposal by the U.S. Environmental Protection Agency (EPA) to limit carbon dioxide (CO_2) emissions from existing power plants comes at a time when the electricity sector is in the midst of a significant transition due to market, regulatory, and technological forces. Low natural gas prices, driven by the rapid expansion of shale gas production using hydraulic fracturing and horizontal drilling, have led to a shift toward natural gas-fired electricity generation.[1] The shale gas boom occurred at the same time that EPA promulgated new rules, the Mercury and Air Toxics Standards (MATS), to limit hazardous air pollutants as well as rules to limit downwind transport of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulate matter, intensifying economic pressure on coal-fired power plants operating without adequate pollution control technologies.[2] The combination of these factors is causing power plant operators to choose whether to retire older coal-fired units, retrofit them with new pollution control technologies, or convert them from coal to natural gas generation.

These trends have had a major impact on the coal sector, but coal-fired power plants are not the only facilities facing a new economic reality. Low natural gas prices and, in some markets, increasing wind generation are also creating economic pressure on nuclear power plants[3]—a situation that would have seemed highly unlikely only a few years ago. Together, relatively flat electricity demand and inexpensive photovoltaic panels have the potential to challenge the traditional electric utility business model by shrinking revenues from electricity sales.[4] In addition to these economic, technical, and regulatory shifts, in January 2014,

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1. *Evaluating the Role of FERC in a Changing Energy Landscape: Hearing Before the Subcomm. on Energy and Power of the House Comm. on Energy and Commerce*, 113th Cong. (2013) (written testimony of John R. Norris, Commissioner, Fed. Energy Reg. Comm'n), *available at* http://www.ferc.gov/CalendarFiles/20131205094304-Norris-12-05-2013.pdf ("Significant change is occurring in the energy sector. This change is driven by a new, abundant supply of natural gas; technological innovations in grid operations, renewable energy and energy efficiency; and public policy initiatives and environmental regulations.").
2. Mercury and Air Toxics Standards (MATS), 77 Fed. Reg. 9304, 9367-70 (Feb, 16, 2012) (codified at 40 C.F.R. pts. 60, 63); Cross-State Air Pollution Rule, 76 Fed. Reg. 48208, 48208 (codified at 40 C.F.R. pts. 51-52, 72, 78, 97).
3. Jeffrey Jones & Michael Leff, U.S. Energy Info. Admin. (EIA), Issues in Focus: Implications of Accelerated Power Plant Retirements, DOE/EIA-0383 (2014), http://www.eia.gov/forecasts/aeo/section_issues.cfm#power_plant.
4. Peter Kind, Edison Elec. Inst., *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business* (2013).

EPA proposed new source performance standards (NSPSs) to limit CO_2 emissions from new coal-fired and natural gas-fired power plants. Following the NSPS proposal, the Agency released a proposed rule under §111(d) of the Clean Air Act (CAA)[5] to limit CO_2 emissions from existing coal-fired and natural gas-fired facilities.

Viewed in isolation, limiting CO_2 emissions from the existing fleet of coal and natural gas-fired power plants could add to the growing list of challenges facing regulators and power plant operators. With deliberate planning, however, compliance strategies to reduce CO_2 emissions from the power sector may also address numerous other electricity sector risks. Much of this potential is rooted in the statutory language of §111(d), which could provide a range of flexible compliance options to state regulators.

This Article explores the options for addressing electricity sector concerns while simultaneously implementing strategies to reduce CO_2 emissions. It starts with a general discussion of the roles of state-level environmental regulators and utility commissions and the near-term decisions that will determine the structure of the electricity sector in the future. Subsequent sections describe economic, technical, and regulatory factors facing the sector and provide an overview of CAA §111(d) and the options available to the states to limit CO_2 emissions from existing fossil fuel-fired facilities. The Article concludes by outlining §111(d) compliance strategies that could help mitigate the other challenges facing the electric power sector.

II. State-Level Regulation of the Electricity Sector

State regulatory agencies overseeing the electricity sector typically have distinct mandates: Utility commissions generally focus on economic regulation of the electricity sector, whereas state environmental agencies focus on protecting public health and the environment.[6] In some states, energy offices oversee energy efficiency and renewable energy policies.[7] Together, these government officials will grapple with many difficult questions in the next few years, including:

- How important is maintaining diversity in the electricity sector fuel mix, and what are the viable options for achieving the desirable mix?
- How will increased end-use efficiency and distributed generation affect forthcoming capital investments and revenues to pay for these investments?
- How should the potential impacts of nuclear retirements due to market forces and expiring operating licenses be assessed and the potential for stranded investments be considered?
- How should regulators design performance standards that limit CO_2 emissions from the existing fleet of fossil fuel-fired power plants?

The answers to these questions will affect the makeup of the electricity sector for years to come. Inadequately hedging against emerging market risks and the potential for technological and regulatory developments could result in increased electricity prices. Reducing CO_2 emissions while also maintaining an affordable and reliable electricity sector will therefore require not only understanding the range of challenges in isolation, but also how they interact with one another. For example, there are numerous strategies available to maintain diversity in the fuel mix and numerous options to reduce CO_2 emissions from the electric power sector. Some, but certainly not all, choices could achieve both goals. The emergence of these issues in a relatively short time frame presents state regulators with an opportunity to take a more holistic view of the electricity sector and factors that will affect electricity rates and reliability as well as public health. In particular, the §111(d) proposal released in June 2014 allows states to choose among a range of options available as they design performance standards for the sector.[8] With proper planning, this regulatory flexibility may allow state officials to identify options that satisfy the broadest range of policy goals.

III. A Rapidly Changing Electricity Sector

A number of market, regulatory, and technological factors occurring in a relatively short time frame are resulting in dramatic changes throughout the electricity sector and complicating efforts to engage in long-term planning. First, a large percentage of coal-fired power plants are retir-

5. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
6. For more detail about the roles of the state utility commissions, environmental agencies, and energy offices, see Jonas J. Monast & Sarah K. Adair, *A Triple Bottom Line for Electric Utility Regulation: Aligning State-Level Energy, Environmental, and Consumer Protection Goals*, 38 Colum. J. Envtl. L. 1, 10-19 (2013).
7. *See, e.g.*, Maryland Energy Admin., http://energy.maryland.gov/.
8. *See, e.g.*, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34832 (June 18, 2014):
   > The proposal provides flexibility for states to build upon their progress, and the progress of cities and towns, in addressing GHGs. It also allows states to pursue policies to reduce carbon pollution that: (1) Continue to rely on a diverse set of energy resources, (2) ensure electric system reliability, (3) provide affordable electricity, (4) recognize investments that states and power companies are already making, and (5) can be tailored to meet the specific energy, environmental and economic needs and goals of each state.

ing in a relatively short time period.[9] Second, the sector is increasing its reliance on natural gas generation, creating concerns about increased exposure to fuel price volatility.[10] Third, future electricity demand growth is uncertain, with the potential for flat or even declining demand in the coming years.[11] This uncertainty comes at a time when power plant operators are facing significant capital expenditures for emissions control retrofits and new generation, and therefore complicates investment decisions. Fourth, licenses for approximately one-third of the nation's nuclear capacity will expire between 2030 and 2035. Due to the long licensing and construction time lines associated with nuclear power plants, most operators must decide whether or not to renew those licenses, replace the aging units with new facilities, or replace the units with a different generation option within the next five to 10 years. Fifth, rapid growth in demand-side resources such as distributed solar could reduce electric utilities' sales and revenues. Finally, upcoming environmental regulations and policy, the details of which are unknown, will likely affect the economics of electricity generation. The following subsections describe each of these factors in more detail.

A. Retiring Older Coal-Fired Power Plants

Forthcoming regulation of emissions from existing coal units, most notably MATS, and the shifting economic outlook due to low natural gas prices have forced owners of uncontrolled coal plants to decide whether to make major investments in emissions control technology or to retire their plants.[12] Environmental retrofit costs tend to be higher per unit of capacity for smaller units (less than 300 megawatts (MW)) than for larger units.[13] The U.S. Energy Information Administration (EIA) projects that 60 gigawatts (GW) of coal-fired capacity—19% of 2010 coal capacity—will retire by 2020.[14] Approximately 90% of projected plant closures will occur by 2016, when remaining coal units must comply with the emissions limits established under MATS.[15] The rapid retirement of this segment of traditional base-load capacity will cause a significant shift for the electricity sector.

Energy projections suggest that it is highly unlikely that utilities will replace the retiring generation with new coal-fired power plants. For example, in EIA's Annual Energy Outlook 2014 Early Release, which does not reflect EPA regulations restricting electricity sector CO_2 emissions, the projection is for less than 0.5 GW of new coal capacity through 2040.[16]

B. Expanding Natural Gas Generation and the Risk of Increased Exposure to Price Volatility

1. Expanding Natural Gas Generation

In light of low natural gas prices due to increasing production from shale gas resources, retiring coal capacity, and the low costs of constructing new natural gas generation, relative to other generation technologies, the U.S. electric power sector is increasing its dependence on natural gas generation.[17] Natural gas generation is projected to increase approximately 28% by 2020 relative to 2010, and EIA's Annual Energy Outlook 2014 Early Release projects a 37.3 GW increase in new natural gas capacity through 2020 and a decrease in coal capacity.[18]

In this environment of projected low natural gas prices corresponding to increased production, utilities and utility regulators can easily consider gas the best option to meet new capacity needs. Table 1 shows EIA's 2013 estimate for the levelized cost of new generation coming online in 2018. New natural gas generation is the least-cost resource, on the order of one-third less than other dispatchable generation options.

A comparison of EIA's levelized cost for new generation in Table 1 above with the levelized cost estimates for a low-heat-rate natural gas combined cycle (NGCC) unit shown in Table 2 below shows that natural gas prices would need to more than double current New York Mercantile Exchange (NYMEX) futures prices to make other dispatchable resources cost competitive with new combined-cycle generation.[19]

2. Risk of Increased Exposure to Price Volatility

Historically, natural gas prices have shown significant volatility relative to coal prices.[20] Projections of recover-

9. U.S. EIA, *Today in Energy: AEO 2014 Projects More Coal-Fired Power Plant Retirements by 2016 Than Have Been Scheduled* (Feb. 14, 2014), http://www.eia.gov/todayinenergy/detail.cfm?id=15031 [hereinafter U.S. EIA, *Today in Energy*].
10. Sue Tierney et al., The Aspen Institute, Responding to Trends in the U.S. Electricity Sector 14 (2014), *available at* http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/2014EnergyPolicyReport.pdf.
11. U.S. EIA, Annual Energy Outlook 2014, at MT-16 (Apr. 2014), *available at* http://www.eia.gov/forecasts/aeo/pdf/0383%282014%29.pdf.
12. U.S. EIA, *Today in Energy*, *supra* note 9.
13. Jennifer Macedonia & Colleen Kelly, Bipartisan Pol'y Ctr., Projected Impacts of Changing Conditions on the Power Sector (2012).
14. U.S. EIA, *Today in Energy*, *supra* note 9; U.S. EIA, Annual Energy Outlook 2013 (Apr. 2013) (hereinafter U.S. EIA Annual Outlook 2013).
15. U.S. EIA, *Today in Energy*, *supra* note 9.
16. The total unplanned coal capacity additions amount to 0.5 GW. Planned coal capacity additions, representing ongoing capacity additions that EIA uses as an input into its projections, are 2.2 GW in the 2014 Early Release. U.S. EIA, Annual Energy Outlook 2014 Early Release (Feb. 2014) (hereinafter U.S. EIA, 2014 Early Release).
17. U.S. EIA, Annual Outlook 2013, *supra* note 14.
18. Capacity additions include all natural gas combined cycle (NGCC) units and oil and gas combustion turbine units. U.S. EIA, 2014 Early Release, *supra* note 16.
19. EIA cost assumptions are based on a national average. EIA modeling assumes that heat rates improve as technology is further developed and deployed. For this example, the Nth-of-a-kind heat rate is used to represent a low-heat-rate combined cycle unit coming online in 2018. An Nth-of-a-kind heat rate represents EIA's estimate of future heat rates as technology matures and is widely deployed and utilized. *See* U.S. EIA, Assumptions to the Annual Energy Outlook 2013: Electricity Market Module (2013), *available at* http://www.eia.gov/forecasts/aeo/assumptions/pdf/electricity.pdf.
20. Historical coal prices are available from EIA at http://www.eia.gov/totalenergy/data/annual/showtext.cfm?t=ptb0709. Historical natural gas prices are

Table 1
Average Levelized Costs (2011 $/Megawatt Hour (MWh) for Plants Entering Service in 2018[a]

Plant Type	Capacity Factor (%)	Levelized Capital Cost	Fixed Operations & Maintenance (O&M)	Variable O&M (Including Fuel)	Transmission Investment	Total System Levelized Cost
Coal	85	65.7	4.1	29.2	1.2	100.1
Advanced coal with carbon capture and sequestration (CCS)	85	88.4	8.8	37.2	1.2	135.5
Natural gas combined cycle (NGCC)	87	15.8	1.7	48.4	1.2	67.1
Advanced NGCC with CCS	87	34	4.1	54.1	1.2	93.4
Advanced natural gas combustion turbine	30	30.4	2.6	68.2	3.4	104.6
Advanced nuclear	90	83.4	11.6	12.3	1.1	108.4
Biomass	83	53.2	14.3	42.3	1.2	111
Wind[b]	34	70.3	13.1	0	3.2	86.6
Solar photovoltaics[b, c]	25	130.4	9.9	0	4	144.3

a. U.S. EIA, Annual Energy Outlook 2013 Early Release Overview: Levelized Cost of New Generation Resources in the Annual Energy Outlook 2013 (2012), http://www.eia.gov/forecasts/aeo/er/electricity_generation.cfm.
b. Does not include state and federal tax incentives.
c. Costs are expressed in terms of net alternating current power available to the grid for the installed capacity.

Table 2
Levelized Cost of New NGCC Generation Entering Service in 2018

	$5/million metric British thermal units (MMBtu)	$6/MMBtu	$7/MMBtu	$8/MMBtu	$9/MMBtu	$10/MMBtu	$11/MMBtu	$12/MMBtu
NGCC	56.24	63.04	69.84	76.64	83.44	90.24	97.04	103.84

Note: Cost is based on EIA assumptions and a low (Nth-of-a-kind) heat rate.

able domestic natural gas supply in the United States have increased significantly due to the new accessibility of shale gas resources, and EIA projects increasing domestic onshore natural gas production and reduced imports.[21] In theory, these trends should reduce natural gas price volatility, but projecting future natural gas prices is difficult. Since 2008, when shale production began to increase, natural gas spot prices have decreased in volatility relative to 1997-2007 prices.[22]

While natural gas markets may experience less volatility in the future due to expanding supply from shale resources, increased reliance on natural gas generation coupled with a return to past volatility would create significant price risk for consumers.[23] Additionally, during this period of low gas prices, it is generally assumed that there is more upside than downside price risk.[24] Despite low natural gas price projections, the combination of coal retirements, increasing natural gas capacity, and projections for additional natural gas facilities has created concern among some utilities and utility regulators about overreliance on natural gas generation.[25]

New NGCC and combustion turbine units are generally assumed to have an operating life of 30 years, well beyond the scope of NYMEX futures markets.[26] If natural gas units were to operate at high use rates during periods of high natural gas prices, ratepayers would likely see cor-

available at http://www.eia.gov/dnav/ng/hist/n9190us3m.htm.

21. Potential Gas Committee, *Potential Gas Committee Reports Significant Increase in Magnitude of U.S. Natural Gas Resource Base* (Apr. 9, 2013), http://potentialgas.org/press-release. *See also* U.S. EIA, Annual Outlook 2013, *supra* note 14.
22. U.S. EIA, Henry Hub Natural Gas Spot Price, http://www.eia.gov/dnav/ng/hist/rngwhhdw.htm.
23. Mark Bollinger, Lawrence Berkeley Nat'l Lab., Revisiting the Long-Term Hedge Value of Wind Power in an Era of Low Natural Gas Prices, LBNL-6103E (2013).
24. *See, e.g.*, Tierney et al., *supra* note 10, at 13-16.
25. Brian Wingfield, *Duke Energy Chief Urges U.S. Caution in Relying on Natural Gas*, Bloomberg, May 19, 2011, http://www.bloomberg.com/news/2011-05-19/duke-energy-chief-urges-u-s-caution-in-relying-on-natural-gas.html; Phyllis Reha, *The Role of Natural Gas in Minnesota's Energy Future* (presentation at the Environmental Initiative Policy Conference, Concordia Univ., Sept. 21, 2012), http://www.slideshare.net/Environmental-Initiative/policy-forum-series-reha-the-role-of-natural-gas-in-minnesotas-energy-future. Projections of natural gas prices have consistently proven to be incorrect. *See, e.g.*, Kentucky Energy & Env't Cabinet, Economic Challenges Facing Kentucky's Electricity Generation Under Greenhouse Gas Constraints, at 9, 11 (2013).
26. EPA modeling of the electricity sector assumes a 30-year book life (useful life) for new natural gas generation. *See* EPA's Power Sector Modeling Platform Documentation for v.5.13, ch. 8: Financial Assumptions, http://www.epa.gov/airmarkets/progsregs/epa-ipm/docs/v513/Chapter_8.pdf (last visited Apr. 15, 2014).

responding increases in electricity prices. More non-gas dispatch options during these periods would help alleviate the price pressure.

Natural gas prices and supplies can also face local constraints, especially during cold weather periods, when natural gas demand for heating increases and pipelines reach their capacity. Natural gas prices in New England increased significantly in January and February 2014 as cold weather increased demand for natural gas for heating and pipeline constraints limited supply into the region.[27] As a result of high natural gas prices and increased demand, spot electricity prices exceeded $600/MWh at the New England ISO [Independent System Operator] regional hub, with average prices of $169/MWh in January 2014 and $161/MWh from February 1-18, 2014. For comparison, prices at the same hub averaged $45/MWh in November 2013.[28] But natural gas futures prices (NYMEX) remain in the $4-$5/MMBtu range despite these recent price spikes in the northeastern United States and are consistent with near-term projections from EIA.[29] Nonetheless, these spikes demonstrate that some regions may be vulnerable to local price shocks. Natural gas-dependent regions can reduce local constraints by adding transportation capacity and are actively doing so. For example, the northeast region is adding pipeline capacity and planning additional capacity.[30]

C. Demand Growth Uncertainty and the Risk of Stranded Assets

In traditional utility regulation, electric utilities recover costs and earn a return on capital investments through volumetric rates. Slow or even negative load growth during a time of increasing capital expenditures means that electricity rates per kilowatt hour (kWh) will likely rise in traditionally regulated markets, further eroding demand.[31] EIA projects low future electricity demand growth (0.9% per year), relative to historical demand growth, in its Annual Energy Outlook 2013 Reference Case.[32] Total energy demand is low due to a combination of increasing end-use efficiency[33] and increasing distributed generation.[34] Industry observers forecast that rooftop solar is approaching grid parity in many areas of the United States, a trend that could further erode utility revenues.[35] Given the potential for low or even negative load growth, some new utility-generation investments could be underutilized, or stranded, due to a lack of demand.

Despite tepid demand growth, the industry faces major capital expenditures to upgrade and replace aging infrastructure and to comply with environmental regulations. The estimated cost for new generation capacity from 2012 to 2020 exceeds $150 billion, and estimates for new transmission over the same period range from $100 to $120 billion.[36] EPA estimates that compliance with the MATS rule will cost $9.4 billion per year in 2015, with costs decreasing over time.[37] Combined with stagnant electricity sales, these and other costs will put upward pressure on electricity rates. Increases in fuel prices would put further pressure on electricity rates, eroding demand and making distributed generation more attractive to consumers.

D. Pending Nuclear Retirements

Nuclear power provides approximately 20% of the electricity generation in the United States.[38] But the existing fleet of nuclear plants is aging; many units are approaching the end of their 20-year operating license extension (60 years total).[39] Although the Nuclear Regulatory Commission has begun the process of considering a second operating license extension, the number of units that will apply for and the costs of complying with the extension are unknown.[40]

Potential nuclear retirements due to expiring operating licenses are more than a decade away, but given the 10-plus-year planning horizon for new nuclear power plants, many

27. U.S. EIA, *Today in Energy: New England Spot Prices Hit Record Levels This Winter*, Feb. 21, 2014, http://www.eia.gov/todayinenergy/detail.cfm?id=15111#.
28. *See* ISO New England, *Selectable Day-Ahead and Real-Time Hourly LMP Data*, http://www.iso-ne.com/markets/hrly_data/selectHourlyLMP.do. Day-ahead hourly price for the NEISO Internal Hub on Jan. 23, 2014, reached $688/MWh. *See id.*
29. CME Group, *Natural Gas (Henry Hub) Physical Futures Settlements*, Mar. 14, 2014, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_settlements_futures.html; U.S. EIA, 2014 Early Release, *supra* note 16; U.S. EIA, Annual Outlook 2013, *supra* note 14. Cyclical increases in NYMEX futures prices are due to increased winter demand. U.S. EIA, *Today in Energy: Natural Gas Consumption Has Two Peaks Each Year*, July 1, 2011, http://www.eia.gov/todayinenergy/detail.cfm?id=2050.
30. Natural Gas Assoc., *Planned Enhancements, Northeast Natural Gas Pipeline Systems* (2014), http://www.northeastgas.org/pdf/system_enhance0314.pdf.
31. In restructured electricity markets, electricity prices are set by the marginal generation cost, which may or may not cover capital costs and return on capital for investors. Low or negative demand growth in these markets would likely cause prices to drop because lower cost generation would become the margin generation resource and, in turn, could cause bankruptcies and other financial hardship for market participants. *See*, *e.g.*, Gregory Aliff, Deloitte Ctr. for Energy Solutions, *The Math Does Not Lie: Factoring the Future of U.S. Electric Power Industry* (2012).
32. U.S. EIA, Annual Outlook 2013, *supra* note 14. The Reference Case does not include future increases in the stringency of either federal appliance efficiency standards or building energy conservation codes.
33. *See* Aliff. *supra* note 31.
34. Kind, *supra* note 4; Larry Sherwood, Interstate Renewable Energy Council, *U.S. Solar Market Trends 2012* (2013).
35. Citi Equities Research, *Rising Sun: Implications for U.S. Utilities* (2013); Peter Fairley, *Residential Solar Power Heads Towards Grid Parity*, IEEE Spectrum, Mar. 28, 2013, http://spectrum.ieee.org/green-tech/solar/residential-solar-power-heads-toward-grid-parity.
36. *See* Aliff, *supra* note 31 (the $150 billion estimate is based on EIA projections of new capacity, overnight capital costs, and lead time for projected capacity additions); *see also* Johannes P. Pfeifenberger & Delphine Hou, Brattle Grp., *Employment and Economic Benefits of Transmission Infrastructure Investment in the U.S. and Canada* (2011).
37. U.S. EPA, Regulatory Impact Analysis for the Final Mercury and Air Toxics Standard, EPA-452/R-11-011 (2011), *available at* http://www.epa.gov/ttn/ecas/regdata/RIAs/matsriafinal.pdf.
38. U.S. EIA, Annual Outlook 2013, *supra* note 14.
39. Based on data from EPA's National Electric Energy Data System (NEEDS) v.4.10 database, *available at* http://www.epa.gov/airmarkets/progsregs/epa-ipm/BaseCasev410.html.
40. Memorandum from Mark A. Satorius, Executive Director for Operations, to the Commissioners of the Nuclear Regulatory Commission (Jan. 31, 2014), *available at* http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2014/2014-0016scy.pdf.

utilities and utility regulators will need to make decisions about whether to add nuclear capacity within the next three to 10 years.[41] If nuclear generation is replaced with natural gas generation, the electricity industry's exposure to natural gas price fluctuations will increase and total CO_2 emissions will increase.[42]

Some nuclear units may not operate for their full license lifetimes. In 2013, Dominion Resources and Exelon announced, respectively, the early retirement of the Kewaunee Power Station in Wisconsin and the Vermont Yankee Power Station in Vermont. Exelon has indicated that additional merchant units in its nuclear fleet may not survive 2014.[43] Existing nuclear units in many regions are earning reduced revenues due to low wholesale power prices, largely as a result of low natural gas prices.[44] Marginal electricity prices are typically set by natural gas generation. When natural gas prices fall, the cost of the marginal generator tends to fall as well, reducing revenues for all generators within the same market.[45] If additional nuclear units retire due to low market prices for electricity—prices at least partially reflecting low natural gas prices—the electricity sector would likely become more dependent on natural gas generation. Five nuclear units are under construction, but no additional nuclear units have begun construction, and the prospects for additional units in the United States are weak.[46]

E. Policy Uncertainty

Recent experience with the new rules limiting mercury and other hazardous air pollutants, SO_2, NO_x, and particulate matter—rules that took years or even decades to develop[47]—highlight the importance of anticipating environmental regulations. The rulemaking process underway to limit CO_2 emissions from existing power plants is one of many environmental regulations that could affect the electricity sector in the near future. EPA has proposed rules for coal combustion residuals (CCR), also known as coal ash, and cooling water for thermal power plants (under Clean Water Act §316(b)).[48] In August 2014, EPA published its final policy assessment of the national ambient air quality standard (NAAQS) for ozone, finding that the current standard of 75 parts per billion is inadequate to protect public health and recommending tightening the standard to between 60-70 ppb.[49] This followed a 2010 standard-tightening proposed rule that was subsequently withdrawn at the instruction of the White House.[50] EPA is under a court order to propose a revised ozone NAAQS standard by December 2014 and to finalize the standard by October 2015.[51] On April 29, 2014, the U.S. Supreme Court removed a degree of uncertainty facing the electricity sector when it reinstated the Cross-State Air Pollution Rule (CSAPR), a rule aimed at limiting downwind transport of SO_2, NO_x, and particulate matter emissions.[52]

In addition to these regulatory actions, the CAA requires EPA to review ambient air quality standards every five years and NSPSs every eight years and revise the regulations if necessary to protect public health and welfare.[53] The proposed CCR rule, the cooling water rule, increased NAAQS stringency, and increased stringency under the CSAPR could all lead to additional plant retirements or changes in dispatch, depending on the stringency and form of the final rules and the market conditions.[54]

F. Strategies for Addressing Current Market Challenges

Electric utilities and utility regulators can adopt multiple strategies to position themselves to deal with the challenges and risks noted above. Despite the potential for unanticipated changes in market conditions, several planning options can help identify prudent investment deci-

41. Duke Energy, Duke Energy Carolinas Integrated Resource Plan Annual Report (2012). Duke Energy Carolinas assumes a 12-year lead-time for new nuclear units in its 2012 IRP. *Id.*
42. If the increased emissions occur due to new natural gas generation, performance standards issued under CAA §111(b) would govern CO_2 emissions, rather than regulations issued under §111(d). *See* 42 U.S.C. §7411(b), (d) (2012).
43. Thomas Overton, *Exelon May Shutter Some Reactors in 2014*, Power, Feb. 7, 2014, http://www.powermag.com/exelon-may-shutter-some-reactors-in-2014/.
44. Jeffrey Jones & Michael Leff, U.S. EIA, Annual Energy Outlook 2014 Issues in Focus: Implications of Accelerated Power Plant Retirements (Apr. 28, 2014), http://www.eia.gov/forecasts/aeo/power_plant.cfm; Dan Eggers et al., *Credit Suisse: Nuclear . . . The Middle Age Dilemma?*, Feb. 19, 2013, *available at* http://www.wecc.biz/committees/BOD/TEPPC/SPSG/Lists/Events/Attachments/485/Credit%20Suisse%20Nuclear%2019Feb13.pdf.
45. For additional information on the challenges facing existing nuclear units, see Mark Cooper, *Renaissance in Reverse: Competition Pushes Aging U.S. Nuclear Reactors to the Brink of Economic Abandonment*, July 18, 2013, http://216.30.191.148/071713%20VLS%20Cooper%20at%20risk%20reactor%20report%20FINAL1.pdf.
46. World Nuclear Assoc., *Nuclear Power in the USA*, http://www.world-nuclear.org/info/Country-Profiles/Countries-T-Z/USA--Nuclear-Power/ (updated Apr. 8, 2014).
47. Jonas J. Monast & Sarah K. Adair, *A Triple Bottom Line for Electric Utility Regulation: Aligning State-Level Energy, Environmental, and Consumer Protection Goals*, 38 Colum. J. Envtl. L. 1, 21-36 (2013).
48. *See* National Pollutant Discharge Elimination System: Cooling Water Intake Structures at Existing Facilities and Phase I Facilities, 76 Fed. Reg. 43230 (July 20, 2011); and Hazardous and Solid Waste Management System: Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. 35128 (June 21, 2010).
49. U.S. EPA, Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards, EPA-452/R-14-006, ES.5, 3.128-3.136 (Aug. 2014).
50. National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2938 (Jan. 19, 2010). Press Release, The White House Statement by the President on the Ozone National Ambient Air Quality Standards (Sept. 2, 2011), http://www.whitehouse.gov/the-press-office/2011/09/02/statement-president-ozone-national-ambient-air-quality-standards.
51. Sierra Club v. EPA, No. 13-2809, 43 ELR 20233 (N.D. Cal., Oct. 29, 2013).
52. U.S. EPA v. EME Homer City Generation, No. 12-1182, slip op. at 2, 44 ELR 20094 (U.S. Apr. 29, 2014).
53. 42 U.S.C. §7409(d)(1) (five-year review of NAAQS); 42 U.S.C. §7411(b)(1)(B) (eight-year review of NSPSs).
54. For more information on the relationship between air quality regulations and CAA §111(d) compliance strategies, see Jeremy M. Tarr & Jonas Monast, *Beyond Carbon Dioxide: Capturing Air Quality Benefits With State Section 111(d) Plans* (Nicholas Inst. for Envtl Pol'y Solutions, Duke Univ., Working Paper No. NI-WP 14-04, May 2014), http://nicholasinstitute.duke.edu/sites/default/files/publications/wp_14-04.pdf.

sions. Thorough assessments of future demand growth and future deployment of distributed generation, including impacts on energy and capacity requirements, should help to clarify future needs. Additionally, utilities and utility regulators can expand planning beyond typical least-cost scenario assessment methods.[55]

Approaches utilized by the Northwest Power and Conservation Council (NPCC) and the Tennessee Valley Authority (TVA) offer two examples. The NPCC uses risk and cost metrics in its planning process to assess different demand-side and supply-side capacity additions over a wide range of potential futures.[56] TVA utilizes an in-depth, iterative "no regrets" planning framework to ensure investments are robust, regardless of future circumstances.[57]

In some situations, utilities may be able to forestall major capital investments, effectively delaying large-scale expenditures, to react to preserve options for responding to new information regarding market demand, fuel prices, and regulatory requirements. By forestalling major investments, utilities conserve capital for other needs and avoid underutilized or stranded investments if markets experience a significant shift, as many analysts have cautioned may occur.[58]

The Duke Energy Carolinas (DEC) 2013 Integrated Resource Plan (IRP) illustrates the potential for utilities to delay major capital investments. In addition to its Base Case scenario, the DEC 2013 IRP includes an Environmental Focus scenario reflecting increases in demand-side energy efficiency and incremental increases in renewable generation. Both the Base Case and Environmental Focus scenarios include a natural gas capacity addition in 2017, but the Base Case scenario adds additional natural gas capacity in 2019, whereas the Environmental Focus scenario delays this addition until 2022. Assuming a four-year lead time, DEC and the North Carolina and South Carolina utility commissioners must make a determination on the additional natural gas capacity in 2015 under the Base Case scenario, but they can delay that determination until 2018 under the Environmental Focus scenario.[59]

Demand-response and dynamic pricing options, facilitated by smart grid applications, can also forestall capacity additions. Southern Company, for example, achieves more than 3,900 MW of peak demand reduction through programs such as Energy Select, which couples programmable thermostats with an optional four-tier dynamic pricing program.[60] Multiple options also exist to hedge against natural gas price risk. Traditionally, utilities have maintained a diverse generation portfolio, allowing them to adjust utilization rates on the basis of relative fuel prices. But they can use numerous financial, contractual, and even physical options to hedge or lock in future natural gas prices. For example, they can sign long-term contracts for gas supply or storage, buy or sell futures contracts through NYMEX, or purchase forward contracts, swaps, call options, and collars.

These options, other than physical storage, tend to have durations on the order of years. NYMEX futures contracts are available up to 10 years, but their trading volume beyond 36 months is low. Long-term supply contracts are generally up to one year and are indexed to monthly prices.[61] Examples of longer contracts include a 10-year escalating fixed price contract between Anadarko and Public Service Company of Colorado.[62] Reducing demand through demand-side efficiency improvements and distributed generation can also reduce natural gas dependency and price risk if used as substitutes for new or existing natural gas generation.[63] Another option to reduce fuel price risk is to sign long-term power purchase agreement contracts. Wind power is typically offered through 20-year (or longer) fixed contracts with constant rates or rates that increase at approximately the rate of inflation. In addition, recent average wind power purchase agreement costs, in the mid-$40/MWh range, are cost-competitive with fuel costs for natural gas units beginning in 2022, according to EIA's Annual Energy Outlook 2013 Reference Case natural gas price projections.[64]

Options to hedge against potential nuclear retirements are more limited. If utilities and utility commissions are concerned about natural gas dependence and have nuclear units nearing the end of their second operating license, they should consider securing—in the near term—a diverse portfolio, including demand-side resources. These resources can reduce the potential for a default to natural gas in the event the nuclear units are retired.

55. *See, e.g.*, Patrick Bean & David Hoppock, *Least Risk Planning for Electric Utilities* (Nicholas Inst. for Envtl. Pol'y Solutions, Duke Univ., Working Paper No. NI WP 13-05, Aug. 2013), http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_13-05.pdf; David Hoppock et al., *Determining Least-Cost Investment for an Existing Coal Plant to Comply With EPA Regulations Under Uncertainty* (Nicholas Inst. for Envtl. Pol'y Solutions, Duke Univ., Working Paper No. NI WP 12-03, Feb. 2012), http://nicholasinstitute.duke.edu/sites/default/files/publications/determining-the-least-cost-investment-for-an-existing-coal-plant-to-comply-with-epa-regulations-under-uncertainty-paper.pdf.
56. Northwest Power and Conservation Council, Sixth Northwest Electric Power and Conservation Plan, Council Doc. 2010-09 (Feb. 2010).
57. Tennessee Valley Authority (TVA) Integrated Resource Plan TVA's Environmental and Energy Future (Mar. 2011). For more information about planning under significant uncertainty, see also David Hoppock et al., *Assessing the Risk of Utility Investments in a Least-Cost Planning Framework* (Nicholas Inst. for Envtl. Pol'y Solutions, Duke Univ., Working Paper No. NI WP 13-07, Nov. 2013), http://nicholasinstitute.duke.edu/climate/publications/assessing-risk-utility-investments-least-cost-planning-framework#.Ux9u7T9dVJQ.
58. *See* Kind, *supra* note 4; Aliff, *supra* note 31.
59. Duke Energy Carolinas (DEC), Integrated Resource Plan Annual Report (2013). DEC has already requested proposals for the 2017 natural gas capacity addition.
60. Jeff Burleson, Southern Co., Reducing Peak Demand, Presentation at the National Association of Regulatory Utility Commissioners Winter Meeting (Feb. 10, 2014), http://www.narucmeetings.org/Presentations/Tuesday%201030am%20BURLESON.pdf.
61. Frank C. Graves & Steven H. Levine, Brattle Grp., *Managing Natural Gas Price Volatility: Principles and Practices Across the Industry* (Nov. 2010), http://www.cleanskies.org/wp-content/uploads/2011/08/ManagingNG-PriceVolatility.pdf.
62. Bollinger, *supra* note 23.
63. Demand-side efficiency reduces energy generation by the marginally producing unit. As noted above, natural gas is typically the marginal generator, indicating that demand-side efficiency will often displace natural gas generation.
64. *See* Bollinger, *supra* note 23.

The shift away from coal toward other generating resources generally facilitates management of other regulatory requirements, such as the cooling water rule and the CCR rules. CCRs are only produced by coal plants, and newer generation technology tends to utilize recirculating cooling systems that withdraw much less water than older, once-through cooling, thermal plants.[65] The shift from coal to other generation resources also reduces emissions of conventional pollutants (for example, SO_2 and NO_x) and will ease compliance with the CSAPR or CAIR as well as improve ambient air quality.[66]

IV. CO_2 Limits for Existing Power Plants

A. *Section 111(d) Overview*

In January 2014, EPA published a proposed rule to set NSPSs for coal-fired and natural gas-fired power plants that will limit CO_2 emissions from new facilities.[67] The vast majority of rules issued under CAA §111 apply only to new sources or existing sources undergoing major modifications.[68] In this case, because the regulated pollutant (CO_2) is neither regulated as a criteria pollutant under the NAAQS program nor as a hazardous air pollutant under CAA §112, the final NSPSs for CO_2 emissions from new fossil fuel-fired power plants will trigger a requirement that states develop performance standards for *existing* power plants, subject to EPA's guidance and approval.[69]

EPA and the states each play important roles in developing performance standards for existing sources. Under §111(d), EPA specifies a procedure for states to submit these standards for agency approval, a step requiring EPA to provide official guidance that clarifies the states' obligations and the criteria by which EPA will evaluate state plans.[70] In this guidance, EPA will identify the "best system of emission reduction" for reducing CO_2 emissions from existing power plants and the emissions reductions achievable using that system.[71] Each state then submits a plan to EPA that establishes performance standards for existing sources.[72] Like all performance standards under CAA §111, these standards must

> reflect the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.[73]

The CAA does not define the term "best system," and it grants states the authority to identify standards that "reflect the degree of *emission limitation achievable* through application of the best system of emission reduction," as opposed to implementing a single "best system."[74] These two factors lead many scholars and stakeholders to conclude that the statute (1) does not limit regulators to actions that occur at each specific unit and (2) could allow performance standards for existing power plants to include a broad range of options that result in emissions reductions from the electricity system.[75] EPA has previously determined that emissions averaging across facilities or emissions trading can qualify as a "best system."[76] The CAA grants discretion to the states to define the options for covered entities within their borders to secure the required emissions reductions. Those options might include heat-rate improvements at a facility, shifts in dispatch, investments in end-user energy efficiency to reduce demand, or construction of new generation that emits fewer CO_2 emissions. The range of available options will affect electricity generators' compliance strategies and potential to use those strategies to address other current electricity sector needs.

On June 18, 2014, EPA proposed emissions guidelines for developing state plans to limit CO_2 emissions from existing

65. Union of Concerned Scientists, *How It Works: Water for Power Plant Cooling*, http://www.ucsusa.org/clean_energy/our-energy-choices/energy-and-water-use/water-energy-electricity-cooling-power-plant.html (last visited Mar. 18, 2014).
66. U.S. EIA, Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants (Apr. 2013), http://www.eia.gov/forecasts/capitalcost/pdf/updated_capcost.pdf; and Annual Outlook 2014 Early Release, *supra* note 16.
67. Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1430 (Jan. 8, 2014).
68. The proposed NSPS does not apply to major modifications. *See id.* at 1433. President Obama has instructed EPA to propose standards for modified and reconstructed power plants by June 1, 2014. *See* Press Release, Memorandum from President Barak Obama to EPA on Power Sector Carbon Pollution Standards (June 25, 2013), http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards.
69. Some observers have questioned EPA's authority under CAA §111(d) due to different versions adopted by the U.S. House of Representatives and the U.S. Senate that were not resolved in the final law. *See, e.g.*, William J. Haun, Federalist Soc'y, *The Clean Air Act as an Obstacle to the Environmental Protection Agency's Anticipated Attempt to Regulate Greenhouse Gas Emissions From Existing Power Plants* 9-12 (Mar. 2013), http://www.fed-soc.org/publications/detail/the-clean-air-act-as-an-obstacle-to-the-environmental-protection-agencys-anticipated-attempt-to-regulate-greenhouse-gas-emissions-from-existing-power-plants; Ann Brewster Weeks, *Essay Responding to Brian H. Potts*, 31 Yale J. on Reg. Online 38 (posted Oct. 20, 2013), http://jreg.commons.yale.edu/essay-responding-to-brian-h-potts/ (arguing that EPA is authorized to regulate power plants under CAA §111(d)). EPA responded to this issue in the Clean Air Mercury Rule, issued in 2005, *see* Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, 70 Fed. Reg. 15994, 16030-32 (Mar. 29, 2005), *vacated on other grounds*, New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008).
70. 42 U.S.C. §7411(d)(1); 40 C.F.R. §60.22.
71. 40 Fed. Reg. 55340, 53342-44 (Nov. 17, 1975); 42 U.S.C. §7411(a) & (d).
72. 42 U.S.C. §7411(d)(1).
73. 42 U.S.C. §7411(a)(1).
74. *Id.* (emphasis added).
75. *See, e.g.*, Kate Konschnik & Ari Peskoe, Efficiency Rules: The Case for End-Use Energy Efficiency Programs in the Section 111(d) Rule for Existing Power Plants (Mar. 3, 2014) (Harvard Law Sch. Envtl. Law Program); Jonas Monast et al., *Regulating Greenhouse Gas Emissions From Existing Sources: Section 111(d) and State Equivalency*, 42 ELR 10206 (Mar. 2012); Gregory E. Wannier, *Prevailing Academic View on Compliance Flexibility Under §111 of the Clean Air Act* (Resources for the Future Working Paper No. DP 11-29, July 2011).
76. *See* Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units (Clean Air Mercury Rule), 70 Fed. Reg. 28606 (July 18, 2005).

fossil fuel-fired power plants.[77] These proposed guidelines identify four "building blocks" that together form the proposed best system of emission reductions: improving the heat rate of coal-fired electric generating units; increasing dispatch of existing natural gas units; increasing generation from renewable energy resources, maintaining the existing nuclear fleet and, for those states with new nuclear units currently under construction, increasing nuclear generation when the new construction is complete; and increasing demand-side energy-efficiency policies and programs.[78] The proposal identifies individual state goals based on the potential for the building blocks to limit CO_2 emissions from the covered generation facilities within each state.[79]

B. Potential §111(d) Compliance Strategies

The proposed rule emphasizes that states have broad flexibility in implementing §111(d) plans, and are not bound to any of the building blocks identified by EPA as the best system of emission reduction.[80] Unit-level options for reducing CO_2 emissions from the existing fleet of coal-fired power plants include a host of efficiency upgrade options, fuel switching, co-firing with lower-carbon fuels, and reducing dispatch.[81] Since 2012, state officials and other stakeholders have released a range of proposals that would allow emissions averaging, emissions trading (intrastate and regional), and credit for investments in energy efficiency, renewables, and nuclear energy. Another proposal is to measure total CO_2 emissions from covered units within a state and to allow that state to choose how best to achieve the required emissions reductions.[82]

Numerous states have one or more strategies in place to limit CO_2 emissions, including renewable portfolio standards, end-use energy-efficiency programs,[83] and statewide[84] and regional greenhouse gas emissions markets.[85] Many states are also seeing reductions in CO_2 emissions as electric generators retire coal-fired power plants and replace them with natural gas facilities. Each of these strategies offers the potential to achieve cost-effective CO_2 emission reductions from the power sector, and would be allowable compliance options under the June 2014 proposed rule.

V. A Multi-Benefits Framework: Addressing Electricity Sector Challenges and Complying With §111(d) Requirements

There is notable overlap between the strategies for mitigating electricity sector risks and potential compliance strategies for the §111(d) rulemaking process. This overlap presents regulators with an opportunity to pursue strategies that help manage the transition occurring in the electricity sector and achieve CO_2 reductions required under state §111(d) plans.

Electricity sector challenges and the potential for CO_2 emissions reductions from strategies to meet those challenges vary significantly by state. Discussed below are three strategies that are permitted under the proposed §111(d) guidelines and that could play a role in electricity sector

77. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829 (June 2, 2014).

78. *Id.* at 79 Fed. Reg. 34855-58. There is notable disagreement about EPA's authority to set stringent emissions limits or to consider emissions reductions not resulting from sources subject to the §111(d) rule (for example, investments in renewable energy generation) when identifying emissions limits for existing sources. *Compare* Megan Ceronsky & Tomás Carbonell, Environmental Defense Fund, §111(d) of the Clean Air Act: The Legal Foundation for Strong, Flexible & Cost-Effective Carbon Pollution Standards for Existing Power Plants (Oct. 2013, revised Feb. 2014) (an adapted version can also be found in this issue, 44 ELR 11086), *and* Daniel A. Lashof et al., Natural Res. Def. Council, *Closing the Power Plant Carbon Pollution Loophole: Smart Ways the Clean Air Act Can Clean Up America's Biggest Climate Polluters* (2013), http://www.nrdc.org/air/pollution-standards/files/pollution-standards-report.pdf, *with* N.C. Dept. of Env't & Natural Res., North Carolina §111(D) Principles (Jan. 27, 2014), http://www.daq.state.nc.us/rules/EGUs/NC_111d_Principles.pdf, *and* Hunton & Williams, *Establishment of Standards of Performance for Carbon Dioxide Emissions From Existing Electric Utility Generating Units Under Clean Air Act §111(d)* (Apr. 2013), http://www.publicpower.org/files/PDFs/NSPS111%28d%29Analysis.pdf.

79. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829, 34895, tbl. 8.

80. *See, e.g.*, 79 Fed. Reg. 34829, 34905 ("The 2020-2029 interim goal is expressed as a 10-year average emission rate to provide states with flexibility in designing their plans."); *id.* at 34930 ("[T]he EPA expects that states and sources will take advantage of available flexibilities as appropriate, but will comply with all relevant legal requirements."); *id.* at 34931:

> As states implement the proposed guidelines, they have sufficient flexibility to adopt different state-level or regional approaches that may yield different costs, benefits, and environmental impacts. For example, states may use the flexibilities described in these guidelines to find approaches that are more cost effective for their particular state or choose approaches that shift the balance of co-benefits and impacts to match broader state priorities.

81. *See, e.g.*, Richard J. Campbell, Cong. Research Serv., Increasing the Efficiency of Existing Coal-Fired Power Plants, R43343 (2013); Massachusetts Inst. of Tech. Energy Initiative Symposium, *Retrofitting of Coal-Fired Power Plants for CO_2 Emissions Reductions* 19 (Mar. 23, 2009), http://mitei.mit.edu/system/files/meeting-report.pdf; Chris Nichols et al., U.S. Nat'l Energy Tech. Lab., Reducing CO_2 Emissions by Improving the Efficiency of the Existing Coal-Fired Power Plant Fleet, DOE/NETL-2008/1329 (2008), http://www.netl.doe.gov/energy-analyses/ pubs/CFPP%20Efficiency-FINAL.pdf.

82. *See, e.g.*, ISO/RTO Council, *EPA CO_2 Rule: ISO/RTO Council Reliability Safety Valve and Regional Compliance Measurement and Proposals* 4-7 (2014), http://www.isorto.org/ircreportsandfilings/irc-reliability-safety-valve-and-regional-compliance-measurement-proposal-in-response-to-epa-c02-rul; Letter from Mary D. Nichols, Chair, California Air Res. Bd., to Gina McCarthy, EPA Administrator (Dec. 16, 2013), *available at* http://www.georgetownclimate.org/sites/default/files/EPA_Submission_from_States-FinalCompl.pdf (attaching States' §111(d) Implementation Group Input to EPA on Carbon Pollution Standards for Existing Power Plants); Letter from Daniel C. Esty, Commissioner, Connecticut Dep't of Energy & Envtl. Prot., to Gina McCarthy, EPA Administrator (Dec. 2, 2013), *available at* rggi.org/docs/RGGI_States_111d_Letter_Comments.pdf (attaching Report on Emission Reduction Efforts of the States Participating in the Regional Greenhouse Gas Initiative and Recommendations for Guidelines Under Section 111(d) of the Clean Air Act); Letter from Leonard K. Peters, Secretary, Kentucky Energy & Env't Cabinet, to Gina McCarthy, EPA Administrator (Oct. 22, 2013), *available at* http://eec.ky.gov/Documents/GHG%20Policy%20Report%20with%20Gina%20McCarthy%20letter.pdf (attaching Greenhouse Gas Policy Implications for Kentucky Under Section 111(d) of the Clean Air Act); Lashof et al., *supra* note 78.

83. For a compilation of state energy efficiency and renewable energy policies, see the Database of State Incentives for Renewables & Efficiency website, http://www.dsireusa.org.

84. *See* California Air Res. Bd., Cap-and-Trade Program, http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm (last updated Mar. 14, 2014).

85. *See generally* Regional Greenhouse Gas Initiative website, http://www.rggi.org.

risk mitigation. Deciding on a particular strategy or strategies requires a detailed assessment of the state's energy sector and greater certainty regarding EPA's and states' choices regarding §111(d) policy design.

A. *Reducing Electricity Demand Through End-Use Energy Efficiency*

Increasing end-use energy efficiency is generally recognized as a low-cost option for reducing CO_2 emissions and is included in many white papers outlining §111(d) compliance strategies.[86] The level of emissions reduction resulting from efficiency investments depends on the amount of avoided generation from fossil fuel-fired power plants and on whether the reduced demand affected natural gas-fired or coal-fired facilities.[87] The specificity required under §111(d) plans regarding the link between end-use energy-efficiency measures and reduced emissions at covered units subject to performance standard requirements may affect whether states view energy efficiency as a feasible compliance option.

Beyond reductions in CO_2 emissions and emissions of other pollutants produced by fossil fuel combustion, energy-efficiency programs can provide energy savings for consumers.[88] Less appreciated is the potential for energy-efficiency investments to help utilities hedge against price volatility and uncertain demand growth. In areas with projected demand growth, energy efficiency can forestall or eliminate requirements for additional capacity. In today's low natural gas price environment, much of this capacity is likely to come from natural gas-fueled generation. Reducing future demand growth through end-use efficiency, therefore, may reduce dependence on natural gas and associated price volatility risk. Additionally, by forestalling capacity additions, end-use efficiency hedges against underutilized capacity in the event future demand growth does not materialize due to factors such as increases in distributed generation or end-use efficiency improvements. By forestalling major capital investments, energy efficiency conserves capital and facilitates flexibility by allowing otherwise sunk capital to be invested in response to changing markets and technological advances.

B. *Increasing Renewable Energy Generation*

Once constructed, renewable energy resources such as wind and solar produce electricity without fuel costs and without directly emitting CO_2 and other regulated pollutants.[89] Wind and solar have both experienced significant growth over the past decade—more than 1,000% and 1,500% generation growth, respectively—due to a combination of tax credits, state renewable portfolio standards, technology improvements, and improving market conditions.[90] As noted above, wind is already cost-competitive in some markets, and the falling price of photovoltaic panels is leading to increases in both rooftop and utility-scale solar installations.[91]

Renewable energy can help hedge against natural gas price fluctuations by reducing natural gas generation, the potential for more stringent CO_2 limits, and the potential for increasingly stringent limits on criteria pollutants.[92] However, the net environmental benefits and hedging value of renewable energy resources depends on the amount of cycling of fossil generation necessary to address intermittency.[93]

C. *Additional Options for Expanding Generation From Low-Carbon Energy Sources*

Other options for reducing CO_2 emissions, hedging environmental policy uncertainty by reducing emissions of other regulated pollutants, and hedging concerns about natural gas price volatility include biomass generation (through dedicated biomass generation facilities or by co-firing biomass with coal) and new nuclear generation.[94] Demand response—reducing electricity demand during

86. *See, e.g.*, Commonwealth of Kentucky Energy & Env. Cabinet, Greenhouse Gas Policy Implications for Kentucky Under Section 111(d) of the Clean Air Act (Oct. 2013), http://eec.ky.gov/Documents/GHG%20Policy%20Report%20with%20Gina%20McCarthy%20letter.pdf; Daniel A. Lashoff et al., Closing the Power Plant Carbon Pollution Loophole: Smart Ways the Clean Air Act Can Clean Up America's Biggest Climate Polluters, NRDC Report R:12-11-A (March 2013); Letter from Mary D. Nichols, Chair, Cal. Air Resources Board et al., to Gina McCarthy, EPA Administrator (Dec. 16, 2013), *available at* http://www.georgetownclimate.org/sites/default/files/EPA_Submission_from_States-FinalCompl.pdf (attaching States' §111(d) Implementation Group Input to EPA on Carbon Pollution Standards for Existing Power Plants); Letter from Daniel C. Esty, Commissioner, Conn. Dept. of Energy & Envtl. Protection et al., to Gina McCarthy, EPA Administrator (Dec. 2, 2013), *available at* rggi.org/docs/RGGI_States_111d_Letter_Comments.pdf (attaching Report on Emission Reduction Efforts of the States Participating in the Regional Greenhouse Gas Initiative and Recommendations for Guidelines Under Section 111(d) of the Clean Air Act).

87. Jeremy M. Tarr et al., Nicholas Inst. for Envtl. Pol'y Solutions, Duke Univ., *Energy Efficiency and Greenhouse Gas Limits for Existing Power Plants: Learning From EPA Precedent* (Nicholas Inst. for Envtl. Pol'y Solutions, Duke Univ., Report No. NI R 13-04, June 2013), http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_r_13-04_0.pdf.

88. For example, the Electric Cooperatives of South Carolina report that a pilot on-bill efficiency-financing program resulted in the average annual savings of $1,157; consumers' annual net savings equaled $288 after loan repayment. Loans averaged $7,700 and financed measures such as air sealing, duct leakage reduction, attic insulation, and replacement of electric furnaces with heat pumps. Consumers participating in the pilot program are projected to save more than $8,500 over a 15-year period. *See* http://www.cepci.org/assets/HelpMyHouseBrochure_June2013.pdf.

89. Hydropower also produces electricity without fuel costs. Hydropower was not included in this Article because of low projected growth, according to EIA Annual Outlook 2014 Early Release, *supra* note 16.

90. U.S. EIA, *Electric Power Monthly*, Feb. 2014.

91. *See* Bollinger, *supra* note 23; Sherwood, *supra* note 34.

92. For a discussion of the history of more-stringent environmental regulations over time, see Monast & Adair, *supra* note 47.

93. Cycling fossil generation (natural gas and coal) to integrate these intermittent resources can result in increased CO_2 and NO_x emissions rates for fossil units. *See* Warren Katzenstein & Jay Apt, *Air Emissions Due to Wind and Solar Power*, 43 Envtl. Sci. Tech. 253 (2009); D. Lew et al., U.S. Nat'l Energy Tech. Lab., Western Wind and Solar Integration Study Phase 2, NREL/TP-5500-55588 (2013).

94. EPA has yet to issue guidance on calculating greenhouse gas emissions from bioenergy. In June 2011, the Agency issued a three-year deferral for biomass facilities complying with the Tailoring Rule, claiming that more time was needed to assess total emissions. *See* Final Deferral for CO_2 Emissions From Bioenergy and Other Biogenic Sources Under the Prevention of Significant Deterioration (PSD) and Title V, 76 Fed. Reg. 43490 (July 20, 2011). In

periods of peak demand—is currently treated as a capacity resource in competitive wholesale markets and may also achieve these goals, depending on the type of generation avoided.[95] Its CO_2 emissions benefits may be less significant than its price, diversity, and system reliability benefits.

New nuclear generation will likely be difficult to justify solely on a cost basis. Table 1, above, shows that the levelized cost of a new nuclear plant is an estimated 62% higher than an NGCC facility due to the high capital costs associated with nuclear plant construction. Although nuclear facilities are under construction in Georgia and South Carolina, obtaining approval from state public utility commissions for other such facilities in this period of demand-growth uncertainty may be difficult.[96] However, concerns about increasingly stringent CO_2 emissions limits and a desire to maintain fuel diversity could cause utility regulators and investors to view nuclear more favorably.

Similar concerns could also cause utilities and utility regulators to consider pursuit of carbon capture demonstration and early deployment projects under the right circumstances. Carbon capture projects have thus far met with mixed success in public utility commission proceedings. For example, the Mississippi and West Virginia public service commissions (PSCs) have recognized that coal-fired power plants with carbon capture can provide value for the state's respective electricity sectors and economies, in part by hedging the potential for future CO_2 emission limits.[97] The Mississippi PSC ultimately approved the proposal by Mississippi Power to construct a coal-fired integrated gasification combined cycle (IGCC) facility that will capture approximately 65% of the plant's carbon emissions and sell the CO_2 for enhanced oil recovery.[98]

The West Virginia PSC approved partial cost recovery for a CCS demonstration project proposed by Appalachian Power Company, a subsidiary of American Electric Power with a service territory that covers parts of West Virginia and Virginia, but the project did not proceed after the Virginia State Commerce Committee rejected the proposal.[99] The cost of full-scale CCS projects at coal-fired power plants is estimated to be approximately 20% higher than the cost of a new nuclear facility and twice the cost of an NGCC plant, as shown in Table 1, above. Cost overruns at Mississippi Power's Kemper County plant may raise further concerns about the viability of a coal-fired power plant with carbon capture technologies.[100] Nonetheless, the combination of the proposed NSPS rule requiring any new coal-fired power plant to capture approximately 40% of its CO_2 emissions and the §111(d) rule targeting CO_2 emissions from existing coal-fired power plants could cause some states to approve carbon capture projects in an effort to preserve a role for coal in the U.S. energy mix, especially if significant levels of federal funding became available or if the cost of the technology drops to a level that is more competitive with conventional options.

VI. Conclusion

Coal facility retirements, low natural gas prices, low electricity demand, and new air quality regulations, combined with the prospect of large amounts of nuclear generation retiring within the next 20 years, are triggering a significant transition within the electricity sector. Responses to these challenges will have a direct impact on the related public policy goals of maintaining an affordable and reliable electricity sector while also protecting public health and reducing CO_2 emissions. The flexibility embedded in CAA §111(d), and the fact that the §111(d) rulemaking process to limit CO_2 emissions from existing power plants coincides with a transition that is already underway, presents state regulators with an opportunity to pursue strategies that simultaneously limit CO_2 emissions and address other electricity sector needs.

2013, the D.C. Circuit vacated the deferral in *Coalition for Responsible Regulation, Inc. v. EPA*, 722 F.3d 401 (D.C. Cir. 2013).

95. *See* PJM, *Demand Response*, http://www.pjm.com/~/media/about-pjm/newsroom/fact-sheets/demand-response-fact-sheet.ashx.
96. U.S. Dep't of Energy Office of Nuclear Energy, *Quarterly Nuclear Deployment Scorecard* (Jan. 2014), http://www.energy.gov/ne/downloads/quarterly-nuclear-deployment-scorecard-january-2014.
97. *See* Order on Application for Rate Increase, Appalachian Power Co. and Wheeling Power Co., dba American Elec. Power Co., Case No. 10-0699-E-42T, West Virginia Pub. Serv. Comm'n, Mar. 30, 2011, at 47 [hereinafter West Virginia CCS Order]; Final Order on Remand, Mississippi Power Co. Application for Electric Generating Plant in Kemper, Lauderdale, Clarke, and Jasper Counties, Docket No. 2009-UA-014, Mississippi Pub. Serv. Comm'n, Apr. 24, 2012 [hereinafter Mississippi IGCC Order].
98. *See* Mississippi IGCC Order, *supra* note 97.
99. *See* West Virginia CCS Order, *supra* note 97; *see also* Final Order, Application of Appalachian Power Co. for Rate Review, Case No. PUE-2009-0030, Virginia State Corp. Comm'n (July 15, 2009).
100. For a detailed discussion of the Mississippi, Virginia, and West Virginia public utility commission decisions, see Jonas J. Monast & Sarah K. Adair, *Completing the Energy Innovation Cycle: The View From the Public Utility Commission*, 65 Hastings L.J. 1345, 1368-77 (2014).

Apples and Oranges: Assessing the Stringency of EPA's Clean Power Plan

by Jeremy M. Tarr and David Hoppock

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Summary

An accurate assessment of the stringency of state emission goals under EPA's proposed Clean Power Plan compares state emission goals to adjusted state emission rates that incorporate known and reasonably foreseeable measures that will affect CO_2 emissions from existing power plants. These adjusted emission rates may include projections of actual generation and emissions, which may differ from the building block assumptions used in EPA's Clean Power Plan. In addition, projections in performance levels can reflect the emission and generation impacts that compliance measures will have on the electricity system. Consideration of these impacts can lead to a more accurate comparison of a state's projected CO_2 performance level to its final emission goal under the Clean Power Plan and result in state plans that are optimized for the degree of required emission reduction.

I. Introduction

On June 18, 2014, the U.S. Environmental Protection Agency (EPA) proposed the Clean Power Plan[1] to regulate carbon dioxide (CO_2) emissions from existing power plants. The Agency's proposal, made under §111(d) of the Clean Air Act (CAA),[2] generates unique CO_2 emission goals for each state using a formula that includes assumptions about various emission control strategies.

While the proposal provides clear emission goals for each state, understanding the stringency of those goals is less straightforward. The form of state §111(d) emission goals is an emission rate (pounds of CO_2 emissions per megawatt hour (MWh)) that is adjusted to incorporate, among other things, the effects of zero-emission electricity generation and cumulative demand-side energy efficiency. Though tempting, comparison of a state's §111(d) emission goal to the current average emission rate of the state's fleet of fossil fuel-fired power plants is an apples-to-oranges comparison that provides an inaccurate picture of the rule's stringency. A more meaningful comparison would evaluate a state's §111(d) emission goal against a projected adjusted emission rate for the state that reflects transitions in the power sector that are already underway, such as increases in generation from natural gas and renewable energy facilities. Using a more apples-to-apples comparison can better estimate the degree of improvement in power plant performance levels that the Clean Power Plan requires and equip a state to identify compliance strategies that achieve low-cost emission reductions. This Article offers a framework for assessing the stringency of the Clean Power Plan and identifies key concepts useful for generating an apples-to-apples comparison.

II. The Clean Power Plan's Building Blocks and State Emission Goals

A. *The Building Blocks*

The CAA requires that §111(d) performance standards "reflect the degree of emission limitation achievable through the application of the best system of emission reduction [BSER] which . . . the Administrator determines has been adequately demonstrated."[3] EPA developed an interim and final emission goal for each state using what the Agency considers the BSER for CO_2 emissions

1. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014) [hereinafter Proposed Clean Power Plan].
2. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
3. 42 U.S.C. §7411(a)(1) (2012).

from existing power plants.[4] EPA determined the BSER to include four categories, or "building blocks," of carbon emission-reduction measures[5]:

- Building Block 1: Efficiency improvements at individual coal-fired units;
- Building Block 2: Increased use of existing natural gas combined cycle (NGCC) units in place of higher emitting coal (as well as oil and natural gas) steam-generating units;
- Building Block 3: Power generation from zero-carbon units, such as renewable energy or nuclear facilities; and
- Building Block 4: Demand-side energy-efficiency measures.

EPA developed assumptions for each building block that serve as the basis for calculating the state-specific emissions goals, as discussed below. The Agency justified inclusion of Building Blocks 2-4 as part of the BSER by reasoning that they are technically feasible, can be implemented at reasonable cost, and will result in greater CO_2 reductions than can be achieved through heat-rate improvements alone.[6] Further, EPA reasoned that states already use these measures to reduce carbon emissions and that the BSER determination ensures reliability of the electricity system.[7]

B. Application of the Building Blocks to Each State

EPA calculated an interim and final goal for each state, which are output-weighted average emission rates (adjusted emission rates) that result from application of the four building blocks. To develop each state's interim and final goals, EPA began with each state's 2012 average emission rate—pounds of CO_2 per MWh net generation—from affected fossil fuel-fired units. The Agency then adjusted that 2012 average emission rate by applying what it considered "reasonable"[8] assumptions about each building block through a formula that adjusts emissions in the numerator and generation in the denominator. Figure 1 visually represents in a very general sense how the building blocks operate to adjust the 2012 emissions rate of fossil units subject to the Clean Power Plan. Assumptions from Building Blocks 1 and 2 decrease the amount of carbon emissions in the numerator. Assumptions about generation and energy savings from Building Blocks 3 and 4 increase the denominator. The overall effect is an adjusted emission rate fraction that is smaller than the 2012 average emission rate of fossil units.

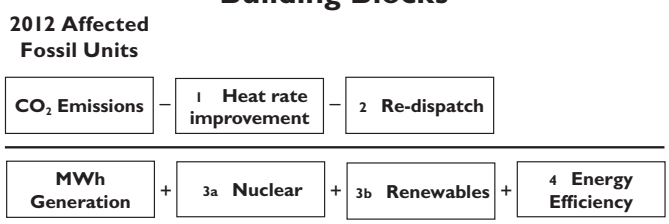
To apply Building Block 1, the Agency reduced the numerator (emissions) of each state's 2012 rate to reflect a 6% heat-rate improvement from coal units operating in 2012.[9] For Building Block 2, EPA shifted dispatch from coal (as well as oil and natural gas) steam-generating units to existing NGCC units by increasing generation up to a 70% capacity factor (utilization) at NGCC units operating in 2012.[10] For NGCC units that were not operating in 2012 but began construction by January 8, 2014, and are covered under the proposal, EPA assumed a 55% capacity factor prior to re-dispatch and increased utilization of these units up to a 70% capacity factor. Application of Building Block 2 increases emissions from NGCC units while simultaneously reducing emissions from existing fossil steam units, which are more carbon-intensive. This dynamic results in an overall decrease in the adjusted emissions rate.[11]

Next, EPA applied Building Blocks 3 and 4 to adjust the denominator (MWhs of generation) of each state's performance goal. EPA began with 2012 generation from affected units and added generation from renewables, nuclear, and energy efficiency based on generalized assumptions about those resources. Building Block 3 consists of zero-emitting generation, including non-hydro renewables and nuclear power. Total renewable energy under Building Block 3 results from growing each state's renewable generation from 2012 levels using an annual growth factor that is based on the year 2020 average renewable portfolio standard of states in the same region.[12] Nuclear estimates reflect the amount of capacity under construction (if any) in each state and approximately 5.8% of a state's 2012 nuclear capacity (to reflect existing capacity at risk of retirement), operated at a 90% utilization rate.[13] Finally, to apply Building Block 4 (demand-side energy efficiency), EPA estimates the cumulative energy savings (avoided MWh of generation) each year that would be achieved by annual incremental savings of up to 1.5%.[14]

4. Proposed Clean Power Plan, *supra* note 1, 79 Fed. Reg. at 34856.
5. *Id.*
6. *Id.* at 34877.
7. *Id.* at 34836.
8. *Id.*
9. *Id.* at 34859-61. Building Block 1 does not not assume any dispatch changes as a result of increased effriciency at coal units.
10. A unit's capacity factor reflects the amount of electricity generated relative to the unit's maximum potential output when running at full power over the same period of time. U.S. Energy Information Administration, Frequently Asked Questions, http://www.eia.gov/tools/faqs/faq.cfm?id=187&t=3.
11. Proposed Clean Power Plan, *supra* note 1, at 34896. For natural gas combined cycle (NGCC) units that began construction by January 8, 2014, but did not operate in 2012, EPA adds the generation and emissions at 55% capacity factor to the emissions rate equation without adjusting emissions or dispatch from other affected units. Because NGCC units are more carbon-efficient than fossil steam units, this reduces the adjusted emissions rate in states with NGCC units under construction. *Id.*
12. *Id.* at 34866-69. EPA determines a renewable energy percentage of total generation for different regions of the country based on average renewable portfolio standards (RPS) in each region among states with RPS and calculates a growth rate to meet the regional target based on 2012 regional renewable generation (growth rate is calculated from 2017 to 2029). *Id.*
13. *Id.* at 34870-71.
14. *Id.* at 34872-73. For states that are net importers of electricity, EPA adjusted the energy savings downward to reflect the fact that some of the generation and emissions reductions associated with in-state energy-efficiency programs would reduce out-of-state emissions. U.S. EPA, Technical Support Document (TSD) for the CAA Section 111(d) Emission Guidelines for Existing Power Plants: Goal Computation Technical Support Document p. 17, note 22 (June 2014), http://www2.epa.gov/sites/production/

EPA performed these computations separately for each year in the 2020-2029 period. A state's interim goal is the average of annual adjusted emissions rates computed for each year during that 10-year period, and the final state goal is the rate computed for year 2029.[15] The Clean Power Plan allows states to comply by achieving either the rate-based emission goals or mass-based equivalents.[16]

Figure 1: Visual Representation of the Clean Power Plan's Building-Block Formula[17]



Note that in Figure 1, Building Block 3 (zero-carbon generation) is broken into two categories: nuclear and renewable energy.

III. Assessing the Stringency of State Goals

As states and stakeholders evaluate the Clean Power Plan, many seek to understand the level of additional emission reduction that the interim and final emission goals require beyond a state's current performance levels. To calculate the emission goals' stringency, some may compare the §111(d) state goals to the average emissions rate of in-state fossil units today or in a prior year. For example, if a state had a 2012 average fossil emission rate of 2,000 lbs./MWh and a final goal under the Clean Power Plan of 1,500 lbs./MWh, one might conclude that the proposal requires a 25% improvement in performance. This, however, is an apples-to-oranges comparison. A state's final emission goal is an output-weighted average emission rate (apples), while the average fossil emission rate is unadjusted (oranges), meaning it does not account for rate adjustments to reflect zero-emitting generation and demand-side energy efficiency.

A more accurate method for evaluating the stringency of a state's final goal is to compare it to an adjusted emission rate that reflects foreseeable future circumstances. To develop such a rate, a state could, for example, begin with its average fossil emission rate for affected units and then adjust that rate using known or anticipated changes in the power sector. The state's average fossil emission rate could be adjusted to reflect any improvement in emission rates at coal units since 2012 and any scheduled or completed retirements. Further adjustments could include anticipated generation from renewable facilities, under-construction nuclear units once completed, and uprated nuclear units.[18] In addition, states could project generation and CO_2-emission impacts on affected units based on state legal requirements, such as renewable portfolio standards (RPS) or energy-efficiency resource standards, as well as on electric utility-integrated resources plans. States also might consider trends such as load growth and state economic incentives for renewable energy and demand-side management programs.[19]

When adjusting the state's average fossil emission rate using known and projected values, states also should be mindful that under the proposed Clean Power Plan the BSER rules for adjusting a state's average emissions rate to develop state goals differ from the rules on adjusting a rate to determine compliance. EPA's calculation of state-specific performance goals using the building blocks are based on specific assumptions that do not predict actual MWh of generation or CO_2 emissions from various energy resources. When demonstrating compliance, however, a state would include in its adjusted emissions rate total generation and emissions from all affected fossil units, including, for example, existing NGCC generation above a 70% capacity factor. Similarly, total generation from an under-construction nuclear unit would be included in the calculation, even if the unit runs at a capacity factor higher than the standard assumption in Building Block 3 of a 90% utilization rate. In addition, the building block formula does not account for broader emission reduction impacts (extended impacts) that the building block measures would have on the power system. When using these same emission-reduction measures for compliance, states incorporate a fuller range of impacts (discussed below) into the adjusted rate. The development of an adjusted emission rate for comparison to emission goals should incorporate these dynamics that are unique to a compliance calculation.

files/2014-06/documents/20140602tsd-goal-computation.pdf [hereinafter Goal Computation TSD].

15. For a more detailed description of the Clean Power Plan, see Jeremy M. Tarr & Sarah K. Adair, The EPA's Proposed Guidelines for Regulating Carbon Dioxide Emissions From Existing Power Plants (2014), http://nicholasinstitute.duke.edu/climate/publications/epa%E2%80%99s-proposed-guidelines-regulating-carbon-dioxide-emissions-existing-power-plants#.VEA8QYeSM3s. For a detailed video explanation of the building block formula, see David Hoppock & Jeremy M. Tarr, Webinar: EPA's Proposed Clean Power Plan, YouTube (2014), http://youtu.be/lejjD3CtliA?list=PLs7HlaDdvJH_BRD-fg526r2mTjtu0RfDq.
16. Proposed Clean Power Plan, *supra* note 1, at 34897. Mass-based goals limit total tons of CO_2 emissions, while rate-based goals govern emission rates.
17. EPA uses the following formula to express the operation of the building block assumptions for calculating annual adjusted emission rates: [(Coal gen. × Coal emission rate) + (OG gen. × OG emission rate) + (NGCC gen. × NGCC emission rate) + "Other" emissions]/[Coal gen. + OG gen. + NGCC gen. + "Other" gen. + Nuclear gen. + RE gen. + EE gen.]. *Id.* at 34986, n.265.
18. *Id.* at 34923.
19. EPA provides a partially adjusted 2012 emission rate for each state that incorporates affected fossil, renewable, and at-risk nuclear generation. The Agency appears to calculate this adjusted rate to provide states a better comparison point for assessing the stringency of their emission goals. This adjusted 2012 rate, however, is of limited value because it does not account for many of the dynamics identified in this Article, including future projections of fossil, renewable, and nuclear generation; demand-side energy-efficiency impacts; and extended impacts that measures will have in displacing fossil generation. Goal Computation TSD, *supra* note 14, at 26-28.

IV. Extended Impacts of Emission-Reduction Measures

Key to assessing the stringency of state emission goals is understanding not only the difference between an adjusted and unadjusted emission rate and between the rules for calculating emission goals and compliance, but also the extended impacts of strategies for reducing CO_2 emissions under the Clean Power Plan. A basic understanding of electricity dispatch is important for assessing the variety of potential extended impacts. Electricity demand varies throughout the day based on factors such as the weather, day of the week, and economic activity. Electricity supply meets this demand precisely and in real time by varying the amount of power supplied to the electric grid. Electric utilities and grid operators operate, or dispatch, the lowest operating cost (marginal cost) generation resources first and increase generation based on minimizing operating costs, subject to technical and regulatory constraints.

This means that the highest operating cost units, typically oil-fired generation, only operate on very high demand days, whereas low operating cost generation, such as nuclear power plants and renewable generation with zero fuel costs, such as solar and wind, tend to operate whenever they are available.[20] Adding new generation or retiring existing generation therefore shifts the dispatch of other existing units in the system. For instance, adding wind generation, which has a negligible operating cost, may decrease dispatch of some higher cost existing units, depending on load growth and other factors. Given the dynamic nature of electricity dispatch, emission-reduction measures can impact the generation of affected units. Inclusion of these extended impacts, discussed below, can help a state develop a more apples-to-apples comparison.

A. *Heat-Rate Improvements at Existing Coal Plants*

Heat-rate improvements at existing coal units, which reduce fuel use per MWh of generation and therefore marginal operating costs, will potentially cause them to dispatch more frequently. However, the ability to increase the dispatch of more-efficient coal plants is limited to some extent by the rule itself. This is because even after efficiency improvements, the average emission rates of existing coal units are higher than states' interim and final emissions goals.[21] States that choose to achieve a limit on total tons of CO_2 emissions rather than a rate-based goal would have a similar incentive to limit relatively carbon-intensive coal generation in order to temper the emissions from affected units.

B. *Increased Dispatch of Existing NGCC Units*

Increasing the dispatch of NGCC units that were operating in 2012 should reduce emissions from fossil fuel-fired steam-generating units roughly as projected by EPA, provided that a level of re-dispatch is similar to that in EPA's Building Block 2 assumptions. There may be added emissions savings if the re-dispatched NGCC units have lower emission rates than the 2012 average NGCC emission rate.[22] Similarly, emission savings beyond those in Building Block 2 assumptions can occur if the units experiencing reduced dispatch have higher emission rates than the applicable average emission rate in 2012 of steam-generating units.

C. *Under-Construction NGCC Units*

For NGCC units that were not operating in 2012 but began construction by January 8, 2014 (under-construction NGCC units), EPA assumed in Building Block 2 operation at a 55% capacity factor, but made no assumptions about how they will affect the dispatch of other covered sources. It is likely that these NGCC units will displace generation and emissions from covered sources, even without any additional re-dispatch to aid compliance with state emission goals. Furthermore, though Building Block 2 assumes that later model NGCC units will perform at the average 2012 NGCC emission rate nationally (907 lbs./MWh), newer NGCC units tend to have lower emissions rates (824 lbs./MWh).[23] Assuming that under-construction NGCC units displace generation of covered sources, a lower emission rate likely would reduce further emissions from covered sources.[24]

D. *New NGCC Units*

Generation and emissions from new NGCC units may not count toward a state's emission goal.[25] The proposal explains that compliance in a mass-based approach will depend upon emission from affected sources, not new sources. But the Agency seeks comment on the role of emissions and generation from new NGCC units in compli-

20. U.S. EPA, Technical Support Document (TSD) for the CAA Section 111(d) Emission Guidelines for Existing Power Plants: GHG Abatement Measures, at 3-2 to 3-3 (June 2014) [hereinafter GHG Abatement Measures TSD], http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-ghg-abatement-measures.pdf.
21. This assumes a 6% heat rate improvements. U.S. EPA, Clean Power Plan Proposed Rule, Data File: Goal Computation—Appendix 1 (xls), http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule-technical-documents (showing that the adjusted coal rates (Column L) is higher than the interim and final goals for each state (Columns BA and BB, respectively)).
22. Under Building Block 2, the emission impact of increasing utilization of NGCC units operating in 2012 is based upon the average 2012 emission rate for in-state NGCC units. Goal Computation TSD, *supra* note 14, at 4, 8. Similarly, the emission impacts of dispatching away from steam EGUs depends upon the average emission rates of coal as well as oil and gas steam units in 2012. *Id.*
23. U.S. Energy Info. Admin. (EIA), Annual Energy Outlook 2014, Electricity Market Module Assumptions Report, *available at* http://www.eia.gov/forecasts/aeo/assumptions/pdf/electricity.pdf.
24. This may not be the case if covered sources increase generation due to load growth or other factors.
25. "New units" refers to units that had not begun construction by January 8, 2014, or the date §111(b) standards are finalized. Proposed Clean Power Plan, *supra* note 1, at 34923.

ance calculations under a rate-based plan.[26] New units are likely to displace generation and emissions from covered sources, potentially easing a state's compliance pathway. To the extent new NGCC units displace the least-efficient coal units in a state's fleet, the average emission rate of remaining coal units would improve.

E. Existing Nuclear Power Plants

Generation from existing nuclear plants is unlikely to significantly impact emissions from covered sources unless existing nuclear units had low capacity factors in 2012. However, any incremental nuclear generation from uprates at existing nuclear plants could reduce generation and emissions from covered sources, and all generation from uprates is added to the denominator.[27] The retirement of an existing nuclear plant may increase generation from affected sources, depending on demand and other new generation that has or soon will come online.

F. Under-Construction Nuclear Units

EPA added under-construction nuclear generation to the denominator in the emission goal computation for three states without any re-dispatch of existing units,[28] though nuclear units have low operating costs and will presumably be dispatched to the maximum extent possible. As a result, these units could displace significant amounts of generation and emissions from covered sources. If capacity factors for under-construction nuclear units exceed 90%, the additional zero-carbon generation beyond EPA's assumption would be added to the denominator.

G. Non-Hydro Renewable Energy

In formulating states' emissions goals, EPA included increases in renewable generation to the denominator of states' emission-rate goal equation without adjusting dispatch from existing fossil generation.[29] But generation by renewable capacity added to comply with emission goals may displace covered generation, especially if they track Building Block 3 assumptions. The regional renewable growth rates used in Building Block 3 all exceed expected demand growth. The regional growth rates used by EPA range from 6-17% annually,[30] while the U.S. Energy Information Administration (EIA) projects national electricity demand to increase 0.8% per year, with growth rates as high as 1.3% in the West and around 1% in the South.[31]

The proposal does not require states to generate renewable energy at the levels included in Building Block 3, but current trends in renewable energy-capacity additions suggest continued growth in renewable generation. Solar additions in 2012 totaled 3,369 MW and then increased to 4,751 MW in 2013. Projections for 2014 anticipate even higher rates of installed capacity.[32] In 2012, the country saw 13,131 MW of newly installed wind capacity.[33] While that number dropped to only 1,084 MW in 2013,[34] as of April 2014, approximately 13,000 MW of wind capacity was under construction.[35] In addition, 29 states have passed RPS that mandate generation from renewable resources to meet demand into the future.[36] Both ongoing capacity installations and RPS requirements for additional renewable generation likely will reduce dispatch of covered sources as well as increase the amount of renewable energy generation added to the denominator.[37]

H. Demand-Side Energy Efficiency

In the proposed rule, EPA allows demand-side efficiency measures taken after the release of the proposed rule and that produce savings during the compliance period to count toward compliance.[38] Ongoing energy-efficiency programs in states, accounting for measure life,[39] may reduce dispatch of covered sources as well as the need for increases in generation and capacity. If cumulative demand-side energy-efficiency measures reduce demand at a greater rate than underlying demand growth, dispatch of covered sources should decrease. Annual incre-

26. *Id.* at 34923-24.
27. *Id.* at 34923.
28. The five nuclear units considered under construction in the proposal are Watts Bar Unit 2 in Tennessee, Vogtle Units 3 and 4 in Georgia, and VC Summer Units 2 and 3 in South Carolina. *Id.* at 34970.
29. Iowa, Maine, Minnesota, and South Dakota have renewable generation that already exceeds their regional goal. EPA does not add additional renewable energy to the denominator in these states. GHG Abatement Measures TSD, *supra* note 17, at 4-29 to 4-30.
30. In the proposed Clean Power Plan, EPA uses region-specific assumptions to develop annual renewable energy growth factors to calculate reasonable renewable energy assumptions. The regional growth factors are as follows: Alaska 11%, East Central 17%, Hawaii 9%, North Central 6%, Northeast 13%, South Central 8%, Southeast 13%, West 6%. *Id.* at 4-18.
31. U.S. EIA, AEO Table Browser, Electric Power Projections by Electricity Market Module Region, United States, Reference case, http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=6-AEO2014&table=62-AEO2014&region=3-22&cases=ref2014-d102413a [hereinafter AEO 2014 Table] (select publication as "Annual Energy Outlook 2014," subject filter as "Electric Power Sector," table as "Electric Power Projections by Electricity Market Module," and region as desired. Then reference cell at the intersection of row titled "Total Sales" under section "Electricity Sales" and column titled "Growth Rate (2012-2040)).
32. Solar Energy Indus. Ass'n, Solar Market Insight Report 2013 Year in Review, http://www.seia.org/research-resources/solar-market-insight-report-2013-year-review (last visited Oct. 28, 2014).
33. American Wind Energy Ass'n, AWEA U.S. Wind Industry Fourth Quarter 2013 Market Report 3 (2014), http://awea.files.cms-plus.com/FileDownloads/pdfs/AWEA%204Q2013%20Wind%20Energy%20Industry%20Market%20Report_Public%20Version.pdf.
34. *Id.*
35. American Wind Energy Ass'n, U.S. Wind Industry First Quarter 2014 Market Report 3 (2014), http://awea.files.cms-plus.com/FileDownloads/pdfs/1Q2014%20AWEA%20Public%20Report.pdf.
36. U.S. Dep't of Energy & N.C. Clean Energy Technology Center, Database of State Incentives for Renewables & Efficiency (DSIRE), http://www.dsireusa.org/documents/summarymaps/RPS_map.pptx.
37. Note that renewable capacity additions in 2012 are not fully accounted for in the 2012 generation totals that EPA used to determine state emissions goals, as this capacity only operated in part of 2012.
38. Proposed Clean Power Plan, *supra* note 1, at 34918.
39. "Measure life" is the estimated time period an end-use efficiency measure will achieve energy savings. Building Block 4 assumes an average measure life of 10 years, distributed from one to 20 years. GHG Abatement Measures TSD, *supra* note 17, at 5-35 to 5-36.

mental efficiency savings of 1.5%, the Building Block 4 assumption, exceed EIA projections for U.S. demand growth of 0.8%.[40]

I. Projected and Planned Coal Unit Retirements

Approximately 50,000 MW of coal units that were available to operate in 2012 are projected to retire by 2020,[41] with the bulk of the retirements occurring as the Mercury and Air Toxics Standards rule comes into force in 2015 and 2016.[42] The generation and emissions from these units are included in EPA's 2012 baseline for setting the states' emissions rate goals, but the units will not be operating during the compliance period. The effect of coal and other covered source retirements[43] on a state's future emissions rate will largely depend on what replaces the generation from these retiring sources. Generation and emissions shifted to other covered sources, such as remaining coal plants, would be included in a state's adjusted emissions rate, whereas generation from new NGCC units may not.[44] States with forthcoming coal retirements thus will need to determine what types of units will replace them and how their emissions and generation will fit into the §111(d) compliance framework.

V. Estimating Current and Projected Adjusted State Emissions Rates

Accounting for all of the factors that affect a state's projected adjusted emission rate requires an understanding of electricity demand and dispatch in a state as well as assumptions about future conditions. Some assumptions about the future may be fairly straightforward, such as the minimum generation from renewables because of a renewable portfolio standard. In addition, owners of power plants and economic regulators may have data about projected generation from under-construction nuclear units and anticipated plant retirements because of the Mercury and Air Toxic Standards and other factors. Integrated resource plans may provide an indication of future nuclear uprates, new NGCC units, and growth in renewable energy generation. But other dynamics may be less predictable, such as load growth and relative fuel input prices.

Despite any imprecision in projections, development of a forward-looking adjusted emission rate allows a more accurate assessment of the rule's stringency for a state because it accounts for the dynamic changes underway in the power sector rather than looking backward at a static snapshot of where the state was in 2012 or where it is today. In addition, development of a projected adjusted emission rate allows for a more fair comparison with the state's emission targets under the Clean Power Plan by allowing an apples-to-apples comparison of adjusted emission rates.

Comparing a state's emission goals to where the state is headed anyways (its projected adjusted emission rate) may reveal that the Clean Power Plan's emissions goals are less burdensome than they appear at first blush. The delta between a state's emission goals and projected adjusted emission rate may be less than that between the emission goals and an unadjusted state average fossil rate. Similarly, the relative parity of compliance burdens from state to state may look different when comparing Clean Power Plan goals to each state's projected adjusted emission rate rather than its unadjusted fossil emission rate at a prior year. Identifying the degree of required improvement in performance levels also will enable states to determine the compliance paths that are least-cost and maintain electricity reliability. Further, this approach allows state plans to better align with changes already underway in the power sector[45] and to hedge the risk of additional environmental compliance obligations in the future.[46]

VI. Conclusion

State emission goals under EPA's proposed Clean Power Plan are adjusted emission rates that include zero-emitting generation and energy savings from demand-side energy efficiency. Statewide average fossil emission rates are unadjusted rates. As a result, comparing state emission goals under the Clean Power Plan to average fossil emission rates is an apples-and-oranges comparison that does not provide an accurate assessment of the degree of reduction in CO_2 emission levels that the Clean Power Plan requires of a state. A better estimate of stringency would come from comparing state emission goals to an adjusted state emission rate that incorporates known and reasonably foreseeable measures that will affect CO_2 emissions from existing power plants.

When developing adjusted emission rates, states and stakeholders can consider projections of actual generation and emissions, which may differ from the building block assumptions used in the BSER when calculating state goals. In addition, projections in performance lev-

40. AEO 2014 Table, *supra* note 27 (select publication as "Annual Energy Outlook 2014," subject filter as "Electric Power Sector," table as "Electric Power Projections by Electricity Market Module," and region as "United States." Then reference cell at the intersection of row titled "Total Sales" under heading "Electricity Sales" and column "Growth Rate (2012-2040)).

41. AEO 2014 Table, *supra* note 27 (select publication as "Annual Energy Outlook 2014," subject filter as "Electric Power Sector," table as "Electric Power Projections by Electricity Market Module," and region as "United States." Then reference the cell at the intersection of row "Coal" under heading "Cumulative Retirements" and column "2020").

42. Affected units must comply with Mercury and Air Toxics Standards in 2015, but units can receive a one-year extension each to install technology and to ensure grid reliability. U.S. EPA, Fact Sheet Mercury and Air Toxics Standards for Power Plans 2, http://www.epa.gov/airquality/powerplanttoxics/pdfs/20111221MATSsummaryfs.pdf (last visited Oct. 28, 2014).

43. *Id.* at 1.

44. *See supra* notes 25-26 and accompanying text.

45. Jonas Monast & David Hoppock, Designing CO_2 Performance Standards for a Transitioning Electricity Sector: A Multi-Benefits Framework (2014), http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_r_14-04_final_0.pdf.

46. Jeremy M. Tarr & Jonas Monast, Beyond Carbon Dioxide: Capturing Air Quality Benefits With State 111(d) Plans (2014), http://nicholasinstitute.duke.edu/sites/default/files/publications/wp_14-04.pdf.

els can reflect the emission and generation impacts that compliance measures will have on the electricity system. Many of these extended impacts are not included in the building block formula that EPA used to compute proposed state emission goals but count toward compliance. Consideration of these impacts can lead to a more accurate comparison of a state's projected CO_2 performance level to its final emission goal under the Clean Power Plan. Accurate estimates of reduction requirements can enable the development of state plans that are optimized for the degree of required emission reduction and can further other state priorities.

Section 111(d) and the Clean Power Plan: The Legal Foundation for Strong, Flexible, and Cost-Effective Carbon Pollution Standards for Existing Power Plants

by Megan Ceronsky and Tomás Carbonell

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Summary

EPA's Clean Power Plan is a rational, solid rulemaking designed to deliver flexible, efficient control of greenhouse gas emissions from existing fossil fuel-fired power plants. EPA has identified the best system of emission reduction that allows states and companies to adjust to locally relevant factors and generation-fleet characteristics, deploying the emission-reduction strategies most appropriate and effective. The Clean Air Act allows a system-based approach under §111 and, in fact, this approach is optimal in satisfying the statutory requirements by securing the cuts in carbon pollution that are needed and doing so through locally appropriate and innovative solutions.

I. Introduction

The Intergovernmental Panel on Climate Change's (IPCC's) recent report, *Climate Change 2013: The Physical Science Basis*, includes several grim findings:

- Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases (GHGs) have increased.[1]
- It is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century.[2]
- Continued emissions of GHGs will cause further warming and changes in all components of the climate system. Limiting climate change will require substantial and sustained reductions of GHG emissions.[3]

Climate impacts are already affecting American communities, and the impacts are projected to intensify. The U.S. Global Change Research Program has determined that if GHG emissions are not reduced, it is likely that American communities will experience:

- increased severity of dangerous smog in cities[4];
- intensified precipitation events, hurricanes, and storm surges[5];
- reduced precipitation and runoff in the arid West[6];
- reduced crop yields and livestock productivity[7];

Authors' Note: The authors wish to express their sincere gratitude to all those who contributed to the development of this Article, and welcome further comments and suggestions. To contact the authors, please write to Megan Ceronsky, Environmental Defense Fund, 1875 Connecticut Ave., NW, Washington, D.C. 20009, or e-mail to mceronsky@edf.org. The Environmental Defense Fund is a nonprofit, nonpartisan, nongovernmental environmental organization that combines law, policy, science, and economics to find solutions to today's most pressing environmental problems.

1. Intergovernmental Panel on Climate Change (IPCC) Working Group I, *Summary for Policymakers* 4 (2013), *available at* http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf.
2. *Id.* at 17.
3. *Id.* at 19.
4. U.S. Global Change Research Program, *Global Climate Change Impacts in the United States* 92-93 (2009), *available at* http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf.
5. *Id.* at 34-36.
6. *Id.* at 45.
7. *Id.* at 74-75, 78.

- increases in fires, insect pests, and the prevalence of diseases transmitted by food, water, and insects[8]; and
- increased risk of illness and death due to extreme heat.[9]

Extreme weather imposes a high cost on our communities, our livelihoods, and our lives. The National Climatic Data Center reports that the United States experienced seven climate disasters each causing more than one billion dollars of damage in 2013, including devastating floods in Colorado and extreme droughts in western states.[10] These are precisely the type of impacts projected to affect American communities with increasing frequency and severity as climate-destabilizing emissions continue to accumulate in the atmosphere.

Power plants are far and away the largest source of GHG emissions in the United States. In 2012, fossil fuel-fired power plants emitted more than 2 billion metric tons of carbon dioxide equivalent (CO_2e), equal to 40% of U.S. carbon pollution and nearly one-third of total U.S. GHG emissions.[11]

Section 111 of the Clean Air Act (CAA)[12] provides for the establishment of nationwide emission standards for major stationary sources of dangerous air pollution—including, since 1971, power plants. In response to the U.S. Supreme Court's decision in *Massachusetts v. EPA*[13] that the CAA's protections encompass GHG emissions, and to the U.S. Environmental Protection Agency's (EPA's) science-based determination that these climate-destabilizing emissions endanger public health and welfare,[14] EPA is now developing §111 Carbon Pollution Standards for power plants.

EPA is developing separate carbon pollution-reduction frameworks for new and existing power plants under CAA §111(b) and (d), respectively. Emission standards for existing pollution sources are developed and implemented through a dynamic federal-state collaboration, the legal underpinnings of which are described here. Through this collaboration, reflected in the Clean Power Plan proposed by EPA in June 2014 under §111(d), EPA and the states can put in place strong standards that will drive cost-effective reductions in carbon pollution and support our nation's transition to a cleaner, safer, smarter power infrastructure.

II. Background

Section 111(b) directs EPA to identify ("list") categories of stationary sources that significantly contribute to dangerous air pollution, and to establish emission standards for air pollutants emitted by new sources in the listed categories.[15] Power plants were listed in 1971.[16] Section 111(d) directs the development of emission standards for pollutants emitted by existing sources in the listed categories. Emission standards are not established under §111(d) if a source category's emissions of a specific pollutant are regulated under the provisions of the CAA addressing hazardous or criteria air pollutants.[17] Emission standards developed under §111(d) must apply to "any existing source."[18]

The CAA provides that an emission standard (for new or existing sources) must reflect the emission reductions achievable through application of the "best system of emission reduction" (BSER) that EPA finds has been adequately demonstrated, taking into account costs and any non-air quality health and environmental impacts and energy requirements.[19] For existing sources, once EPA guidance is issued identifying the BSER and the emission reductions achievable under that system, the standards are implemented through state plans submitted to EPA for

8. *Id.* at 82-83.
9. *Id.* at 90-91.
10. National Climatic Data Ctr., Billion-Dollar U.S. Weather/Climate Disasters 1980-2013 (2014), *available at* www.ncdc.noaa.gov/billions/events.pdf.
11. U.S. Envtl. Prot. Agency (EPA), Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012, at ES-5 to ES-7, tbl. ES-2 (Feb. 2014), *available at* http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Main-Text.pdf. Of the heat-trapping pollutants emitted by sources in the United States, CO_2 is by far the most prevalent. Transportation emissions are the only GHG emission source that approaches the scale of power plants.
12. Clean Air Act (CAA), 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
13. 549 U.S. 497, 37 ELR 20075 (2007).
14. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009).
15. 42 U.S.C. §7411(b)(1).
16. Air Pollution Prevention and Control: List of Categories of Stationary Sources, 36 Fed. Reg. 5931 (Mar. 31, 1971) (listing "Fossil fuel-fired steam generators of more than 250 million B.t.u. per hour heat input").
17. 42 U.S.C. §7411(d). The U.S. Congress enacted §111 in the 1970 CAA Amendments. Emissions of criteria pollutants from all sources are addressed through the detailed State Implementation Plan process set forth in §110, *id.* §7410, and hazardous air pollutants are the subject of a detailed framework of protections set out in §112, *id.* §7412. In its 1975 implementing regulations and for the subsequent 15 years, EPA treated §111(d) as a means of "filling the gap," and addressing pollutants that were not otherwise covered by §110 or §112. *See* 40 Fed. Reg. 53340, 53340 (Nov. 17, 1975). In 1990, the U.S. House of Representatives and the U.S. Senate passed conflicting amendments to §111(d), both of which were included in the CAA Amendments of 1990. In a 2005 rulemaking, after conducting a thorough analysis of the language and legislative history of the two versions, EPA described one way to reconcile them in a manner that comported with the overall thrust of the CAA Amendments of 1990. EPA concluded that it has authority under §111(d) to regulate any air pollutant not listed under §112(b) (i.e., any nonhazardous air pollutant), even if the source category to be regulated under §111 is also being regulated under §112. *See* 70 Fed. Reg. 15994, 16030-32 (Mar. 29, 2005). Thus, the only pollutants EPA may *not* regulate under §111(d) are hazardous air pollutants emitted from a source category that is actually being regulated under §112 and criteria pollutants.
18. 42 U.S.C. §7411(d).
19. *Id.* §7411(a)(1).

approval.[20] These plans must provide for the enforcement of the emission standards.[21]

III. Understanding §111(d)'s Dynamic Federal-State Collaboration

Section 111(d) provides for federal-state collaboration in securing emission reductions from existing sources, with state flexibility to identify the optimal systems of emission reduction for their state while achieving the necessary environmental performance. EPA's long-standing §111(d) implementing regulations[22] provide for EPA to issue "emission guidelines" in which the Agency fulfills its §111 duty to identify the BSER for a specific pollutant and listed source category.[23] EPA then identifies the emission reductions achievable using that system. States are given the flexibility to deploy different systems of emission reduction than the "best" system identified by EPA, so long as they achieve equivalent or better emission reductions.[24] The achievement of equivalent emission reductions enables state plans to be deemed "satisfactory" in the statutorily required review.[25] The statute provides that when states do not submit a satisfactory plan, EPA must develop and implement emission standards for the sources in that state.[26]

A. *The Statute Gives EPA Ample Authority to Oversee State Compliance With §111(d)*

Although some have posited that the states have the sole authority to determine the stringency of emission standards under §111(d), this disregards the plain language of §111. Section 111(a)(1) elucidates that it is EPA, not the states, that identifies the BSER considering the statutory factors.

The term "standard of performance" means a standard for emissions of air pollutants that reflects the degree of emission limitation achievable through the application of the BSER that (taking into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements) *the Administrator determines* has been adequately demonstrated.[27]

The definition specifically refers to "the Administrator"[28] as the entity that "determines" what constitutes the BSER based on the statutory factors such as optimal environmental performance ("best") and cost. It is the Administrator who "tak[es] into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements." Significantly, that definition is explicitly made applicable to the entirety of §111.[29]

Under §111(d)(1)(A), state plans must impose "standards of performance" on existing sources[30] according to the criteria provided in the "standard of performance" definition quoted above.[31] Section 111(d)(2) directs states to submit "satisfactory" plans, implementing such standards of performance, to EPA for review and approval.[32] EPA's regulations and emission guidelines have long interpreted the Agency's §111(d) responsibility to determine whether state plans are "satisfactory" as governed by whether the plans implement emission standards that reflect the emission reductions achievable under the BSER identified by the Administrator.[33]

EPA's review of state plans is guided by the statutory parameters defining a "standard of performance": Do state plans establish emission standards that achieve emission reductions equivalent to or better than those achievable using the BSER? This manifest interpretation of the statute flows inexorably from its plain language and structure, and EPA's interpretation of its substantive role under §111(d) carries the weight of nearly four decades of Agency statutory interpretation and practice under the 1975 §111(d) implementing regulations.[34] It is implausible that the U.S. Congress provided statutory criteria that state plans must meet and further provided for EPA to review state plans, but did not intend for the statutory criteria to direct the review.[35] Indeed, for EPA

20. *Id.* §7411(d)(1)(A).
21. *Id.* §7411(d)(1)(B).
22. 40 C.F.R, pt. 60, subpt. B. EPA's regulations for the general implementation of §111(d) have not been challenged since they were promulgated in 1975. *See* 40 Fed. Reg. 53340 (Nov. 17, 1975); *see also* Clean Air Mercury Rule, 70 Fed. Reg. 28606 (May 18, 2005), *vacated on other grounds by* New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008). Any challenge would now be time-barred. 42 U.S.C. §7607(b); *see also* American Rd. & Transp. Builders Ass'n v. EPA, 705 F.3d 453, 457-58, 43 ELR 20014 (D.C. Cir. 2013); American Rd. & Transp. Builders Ass'n v. EPA, 588 F.3d 1109, 1113 (D.C. Cir. 2009).
23. 40 C.F.R. §60.22(b)(5) (guidelines will "reflect[ ] the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved").
24. *See* 40 C.F.R. §60.24.
25. *Id.*; 42 U.S.C. §7411(a); *id.* §7411(d)(2).
26. 42 U.S.C. §7411(d)(2).
27. *Id.* §7411(a)(1) (emphasis added).
28. *Id.* §7602(a) (defining "Administrator" to be "the Administrator of the Environmental Protection Agency").
29. *See id.* §7411(a) ("For purposes of this section . . . .").
30. *Id.* §7411(d)(1)(A).
31. *Id.* §7411(a) (all definitions, including "standard of performance," apply "[f]or purposes of this *section*" (emphasis added)).
32. *Id.* §7411(d)(2) (discussing results if "the State fails to submit a *satisfactory* plan" (emphasis added)).
33. *See* State Plans for the Control of Existing Facilities, 39 Fed. Reg. 36102 (Oct. 7. 1974); *see also* State Plans for the Control of Certain Pollutants From Existing Facilities, 40 Fed. Reg. 53340, 53342-44 (Nov. 17, 1975) (rejecting commenters' argument that EPA does not have authority to require states to establish emissions standards that are at least as stringent as EPA's emission guidelines); *id.* at 53346 (defining "emission guideline" as "a guideline . . . which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities").
34. *Id.* EPA has issued §111(d) emission guidelines for a number of source categories. *See* 42 Fed. Reg. 12022 (Mar. 1, 1977) (phosphate fertilizer plants); 42 Fed. Reg. 55796 (Oct. 18, 1977) (sulfuric acid plants); 44 Fed. Reg. 29828 (May 22, 1979) (kraft pulp mills); 45 Fed. Reg. 26294 (Apr. 17, 1980) (primary aluminum plants); 61 Fed. Reg. 9905 (Mar. 12, 1996) (municipal solid waste landfills).
35. EPA noted in its 1975 implementing regulations that §111(d) is silent on the criteria by which state plans might be judged "satisfactory," and that therefore those criteria must be inferred from the context of §111. *See* 40 Fed. Reg. at 53342. The criteria were located in §111(a)(1)'s definition of "standard of performance," mirrored in EPA's definition of "emission guideline." *Compare* Pub. L. No. 91-604, §4(a), 84 Stat. 1676, 1683 (1970), *with*

to approve state plans without regard to whether those plans satisfy the statutory criteria for standards of performance would be arbitrary.

Yet, the language of §111 requires substantive review of state plans by EPA even more directly. A "standard of performance" is defined as "a standard for emissions of air pollutants *which reflects the degree of emission limitation achievable through the application of the best system of emission reduction*" identified by the Administrator (emphasis added). An emission standard that fails on its face to secure the degree of emission reductions achievable under the BSER is outside the statutory definition of standards of performance and does not meet the requirement that the "State establish[ ] standards of performance" for existing sources. State plans that fail to include a standard of performance cannot be approved as "satisfactory" by EPA under any reading of §111.

In addition to being inconsistent with the language of §111, exclusive state authority over the substance of existing source standards would be contrary to the purpose of the 1970 CAA—"to provide for a more effective program to improve the quality of the Nation's air"[36]—because air quality could *worsen* if state plans were not subject to any enforceable substantive standards. Evidence of the central role for protective federal standard-setting is found throughout the CAA, including in §116, which prohibits the states from adopting or enforcing emission standards less stringent than those set by EPA.[37]

Preserving that basic role for EPA in protecting the nation's air quality was a central theme of the regulations EPA adopted in 1975 to implement §111(d). As EPA noted in the rulemaking:

> [I]t would make no sense to interpret section 111(d) as requiring the Administrator to base approval or disapproval of State plans solely on procedural criteria. Under that interpretation, States could set extremely lenient standards—even standards permitting greatly increased emissions—so long as EPA's procedural requirements were met. Given that the pollutants in question are (or may be) harmful to public health and welfare, and that section 111(d) is the only provision of the Act requiring their control, it is difficult to believe that Congress meant to leave such a gaping loophole in a statutory scheme otherwise designed to force meaningful action.[38]

In sum, both the language of §111 and the overall purpose of the 1970 CAA Amendments require a strong substantive role for EPA in ensuring that standards for existing sources meet the statutory requirements.

B. EPA's Responsibility Includes Promulgation of Binding Emission Guidelines for the States

Similarly, some stakeholders have questioned EPA's authority to establish binding emission guidelines that identify the BSER and the resulting emissions reductions that each state plan must achieve. That argument fails in light of the structure of §111(d) and in light of congressional intent. It is also contrary to EPA's reasonable interpretation of its statutory responsibility, laid out in the long-established regulations implementing §111.

EPA's interpretation of §111(d) as authorizing it to adopt emission guidelines makes eminent sense in light of the statute's overall structure. As EPA ultimately must approve state plans for existing sources under §111(d), the states benefit from EPA giving them initial guidance on what the Agency will be expecting to see in their state plans. That guidance, in the form of emission guidelines, helps the states avoid wasting valuable time and resources as they develop their standards. The guidelines do so by providing states with the parameters a state plan must fit within in order to be found "satisfactory" by the Administrator.

Moreover, while Congress did not detail the process by which EPA would evaluate and approve state plans, there is considerable evidence that Congress subsequently recognized and approved the guidelines process that EPA established in its 1975 regulations. In 1977, for example, when Congress modified the definition of "standard of performance," the U.S. House of Representatives committee explained that under §111(d) "[t]he Administrator would establish *guidelines* as to what the best system for each . . . category of existing sources is."[39] Then, in 1990, in §129 of the CAA, Congress directed EPA to adopt standards for solid waste combustion that would mirror the §111 process, expressly referring to the "*guidelines* (under section 7411(d) of this title . . .)."[40] Thus, Congress has both recognized and legislated in reliance upon EPA's guidelines process under §111(d).

Congress is not alone in affirming the place of emissions guidelines in the §111(d) structure. The Supreme Court recently noted that states issue §111(d) standards "in compliance with [EPA] guidelines and subject to federal oversight."[41]

In the 1975 rulemaking to implement §111(d), EPA received a number of comments questioning the Agency's authority to set those substantive guidelines.[42] In response, EPA demonstrated its authority to do so with a detailed analysis of the language, purpose, and legislative history of §111(d).[43] EPA's authority to issue emission guidelines has long been settled.[44]

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40 Fed. Reg. at 53346. Moreover, the Agency suggested that the criteria for state plans served the same function as the criteria for standards of performance issued under §111(b). *See* 40 Fed. Reg. at 53342 ("it seems clear that some substantive criterion was intended to govern *not only the Administrator's promulgation of standards but also his review of State plans*" (emphasis added)). Thus, EPA's emission guidelines have always been closely tied to the statutory definition of "standard of performance" in §111(a)(1).

36. CAA Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, 1676.
37. 42 U.S.C. §7416.
38. 40 Fed. Reg. at 53343.
39. H.R.. Rep. No. 95-294, at 195 (1977) (emphasis added).
40. 42 U.S.C. §7429(a)(1)(A) (emphasis added).
41. American Elec. Power Co. v. Connecticut, 131 S. Ct. 2527, 2537-38, 41 ELR 20210 (2011).
42. 40 Fed. Reg. at 53342.
43. *Id.* at 53342-44.
44. *See* 42 U.S.C. §7607(b) (60-day review period for CAA rulemakings).

C. States Can Deploy Locally Designed Solutions to Meet EPA's Emission Guidelines

Although EPA adopts emission guidelines identifying the BSER, §111(d) (and EPA's implementing regulations) provide for state tailoring and flexibility in meeting those guidelines. The statute does not require states (or sources) to use the exact system of emission reduction identified by EPA. Instead, states simply must achieve the level of emission reductions that would be achieved under that best system, and can deploy the system or systems of emission reduction most appropriate for the emission sources in their state.[45]

With this federal-state collaboration, §111 is very similar to the process implemented under §110, under which states put in place plans to achieve national ambient air quality standards (NAAQS) for criteria pollutants. Section 111 in fact provides that EPA establish "a procedure similar to that provided by" §110, under which states develop their plans and submit them to EPA for review.[46] Under §110, the safe level of ambient pollution is an expert, science-based determination made by EPA, but states have considerable discretion in determining how to reduce emissions to that level. The state plan submission and review "procedure" under §110 provides for EPA review of each state plan to ensure that "it meets all the applicable requirements" of §110—including implementation and enforcement of the NAAQS as well as other requirements relevant to ensuring the effectiveness of the plans.[47] Sections 110 and 111 are given this parallel structure under the statute—in which EPA uses its expertise to identify the emission reductions that must be achieved, states use their discretion to develop plans to achieve the emission reductions, and EPA reviews plans to ensure they are meeting the relevant statutory criteria.

In sum, §111(d) establishes a collaborative federal-state process for regulating existing sources in which EPA establishes quantitative emission guidelines and the states deploy locally tailored and potentially innovative solutions to achieve the required emission reductions.

IV. A System of Emission Reduction That Achieves the Rigorous Cuts in Carbon Pollution Demanded by Science and Does So Cost Effectively Is Eminently Consistent With the §111 Criteria and Is Plainly Authorized by §111

In the proposed Clean Power Plan, EPA has identified the BSER as a flexible, system-based framework comprised of four building blocks: (1) heat rate (efficiency) improvements at coal-fired power plants; (2) shifting utilization from higher emitting coal-fired power plants to underutilized natural gas combined cycle power plants; (3) deploying zero-carbon energy such as wind and solar; and (4) improving demand-side energy efficiency.

This system of emission reduction mirrors what is happening on the ground. Across the country, states and power companies are reducing emissions from fossil fuel-fired power plants by making those plants more efficient, increasing the use of lower carbon-generation capacity and zero-emitting energy, and investing in demand-side energy efficiency. At their core, these approaches all have the same result—reducing emissions from existing high-emitting fossil fuel-fired power plants and improving the emission performance of the power plant source category. The broad employment of this system across the country indicates that it is demonstrated in practice, and indeed these approaches have been in use for decades.[48]

When seen through the lens of §111, the system described above is fundamentally an emissions-averaging system, achieving broadly based reductions from the power plant source category. Improving efficiency at plants, deploying zero-emitting energy on the grid, investing in demand-side energy efficiency to reduce demand, and shifting utilization toward lower emitting generation all reduce emissions from fossil fuel-fired units as a group. This system of emission reduction is conceptually more expansive than the typical pollution-control technology installed at a plant but satisfies the statutory language and purpose of §111(d) and is a reasonable interpretation of that provision. The system will employ emissions averaging across the regulated sources in order to recognize the pollution reductions achieved by changes in utilization at plants and among plants.

45. *See id.* §7411(a) (a "standard of performance" must "reflect[ ]" the emission reductions achievable through use of the best system, but need not actually *use* the best system).
46. *Id.* §7411(d)(1).
47. *Id.* §7410(k)(3). Section 110 requires, inter alia, state plans to provide for "implementation, maintenance, and enforcement of" NAAQS, *id.* §7410(a)(1), the use of emissions monitoring equipment as prescribed by EPA, *id.* §7410(a)(2)(F), and any air quality modeling requirements prescribed by EPA, *id.* §7410(a)(2)(K). *See, e.g.*, North Dakota v. EPA, 730 F.3d, 750, 760-61, 43 ELR 20219 (8th Cir. 2013) (holding that EPA is charged with "more than the ministerial task of routinely approving SIP submissions" under CAA §169A) (citing Alaska Dep't of Envtl. Conservation v. EPA, 540 U.S. 461 (2004); Oklahoma v. EPA, 723 F.3d 1201, 43 ELR 20160 (10th Cir. 2013)).
48. *See, e.g.*, World Res. Inst. (WRI), *Power Sector Opportunities for Reducing Carbon Dioxide Emissions: Michigan* (Sept. 2013), *available at* http://www.wri.org/publication/power-sector-opportunities-for-reducing-carbon-dioxide-emissions-michigan; WRI, *Power Sector Opportunities for Reducing Carbon Dioxide Emissions: North Carolina* (Sept. 2013), *available at* http://www.wri.org/publication/power-sector-opportunities-for-reducing-carbon-dioxide-emissions-north-carolina; WRI, *Power Sector Opportunities for Reducing Carbon Dioxide Emissions: Ohio* (Aug. 2013), *available at* http://www.wri.org/publication/power-sector-opportunities-for-reducing-carbon-dioxide-emissions-ohio. *See generally* WRI, *GHG Mitigation in the United States: An Overview of the Current Policy Landscape* 10-12 (2012), *available at* http://www.wri.org/publication/ghg-mitigation-us-policy-landscape; Database of State Incentives for Renewables and Efficiency, http://www.dsireusa.org/ (last visited Feb. 27, 2014).

By incorporating an averaging framework, this system can create flexibility to identify the most cost-effective emission reductions across the regulated sources. Because sources are allowed to average emission reductions, the system will give sources flexibility to reduce emissions onsite or secure emission reductions from other sources that can achieve reductions beyond those necessary for their own compliance at lower cost. Each source will be required to comply with the emission standard established but can meet its compliance obligation by securing emission reductions at other units in the source category. By recognizing the emission reductions achieved by the deployment of low-carbon generation, shifts in utilization toward lower or non-emitting generation, and improvements in demand-side energy efficiency, the system will create flexibility for states and regulated sources and enhance the cost-effectiveness and environmental co-benefits of the emission standards.

As discussed below, the language of §111 is broad enough to encompass such an emission reduction system. Moreover, under §111(d), where the goal is maximizing the reduction of carbon pollution from existing power plants considering cost and wider environmental and energy impacts, this emission reduction system best satisfies the statutory factors.

A. *Section 111 Gives EPA Wide Discretion to Establish a System of Emission Reduction That Achieves Rigorous Reductions in Carbon Pollution Through Locally Tailored Solutions*

The language and structure of §111 give EPA expansive authority to determine which system of emission reduction best serves the statutory goals. The marked breadth of the language indicates Congress' intention to provide EPA with ample flexibility in conceiving systems of emission reduction. Neither the term "best system of emission reduction" nor its components are given technical definitions in the Act. In common usage, a "system" is defined as "a complex unity formed of many often diverse parts subject to a common plan or serving a common purpose."[49] Clearly, the ordinary meaning of the term "system" does not limit EPA to choosing end-of-pipe control technologies or other mechanical interventions at the plant. Rather, EPA may choose any "complex unity . . . serving a common purpose" that meets the other statutory requirements. A system of emission reduction that reflects the unified nature of the electric grid and achieves cost-effective emission reductions from the source category by treating all fossil fuel-fired power plants as an interconnected group, averaging emissions across plants and recognizing changes in plant use that reduce emissions, fits securely within this framework.

The history of §111 demonstrates that Congress deliberately rejected terms that were more restrictive than "best system of emission reduction," and that it was especially important to Congress for EPA to have flexibility in identifying solutions to reduce emissions from existing sources. The original 1970 language provided a definition of the standard applicable to existing sources under §111 that is rather similar to the current definition: "a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated."[50] Congress subsequently identified this standard as a "standard of performance," the same term Congress used to describe the standards applicable to new sources under §111.[51]

The 1970 legislative history reveals that the terms "standard of performance" and "best system of emission reduction" rely on broad concepts beyond mere add-on technologies. Because the current definition is almost identical to the 1970 definition,[52] we can look to the 1970 legislative history to inform our understanding of the phrase "standard of performance."

Section 111 was first adopted in the CAA Amendments of 1970.[53] To understand the 1970 legislative history, it is necessary to distinguish between provisions in the precursors to §111 related to *new* sources and those related to *existing* sources.

In the House bill (H.R. 17255), proposed §112 would have added a new section to the CAA titled Emission Standards for New Stationary Sources.[54] That provision used the phrase "emission standards," which was not defined anywhere in the bill. The House bill only focused on these emission standards for new sources; it did not have a provision providing for emission standards for existing sources.

The U.S. Senate bill (S. 4358), by contrast, called for federal regulation of both existing sources (proposed §114[55]) and new sources (proposed §113).[56] For existing

49. Webster's Third New International Dictionary 2322 (1967).

50. CAA Amendments of 1970, Pub. L. No. 91-604, §4(a), 84 Stat. 1676, 1683. The original definition lacks the language directing EPA to consider "any nonair quality health and environmental impact and energy requirements." 42 U.S.C. §7411(a)(1).

51. *See* Pub. L. No. 95-95, §109(b), 91 Stat. 685, 699 (1977).

52. Again, the only difference between the current definition of "standard of performance" and the 1970 definition is that now it specifies that EPA must also consider "any nonair quality health and environmental impact and energy requirements." 42 U.S.C. §7411(a)(1). The language about "nonair quality health and environmental impact and energy requirements" was added in 1977. *See* Pub. L. No. 95-95, §109(c), 91 Stat. 685, 700 (1977).

53. CAA Amendments of 1970, Pub. L. No. 91-604, §4(a), 84 Stat. 1676, 1683.

54. H.R. 17255, 91st Cong. §5, 116 Cong. Rec. 19225 (1970) (proposing a new §112 for the CAA).

55. Proposed §114 did not expressly refer *just* to existing sources; on its face, it made no distinction between new or existing sources. S. 4358, 91st Cong. §6(b) (1970). However, the Senate report (S. Rep. No. 91-1196) plainly said that §114 "would be applied to existing stationary sources." S. Rep. No. 91-1196, at 19 (1970). Furthermore, Sen. John Sherman Cooper from Kentucky, the ranking Republican member on the main Senate committee considering the bill, also plainly stated that §114 would apply to existing sources. *See* 116 Cong. Rec. 32918 (1970) (stating in floor debate that "section 114 requires the Secretary to set emission standards for specific industrial pollutants—applicable to old plants as well as new. This procedure would apply to the same industries designated for new source standards of performance in section 113.").

56. S. 4358, 91st Cong. §6(b) (1970).

sources, the bill expected "emission standards" (an undefined term). For new sources, the bill expected "standards of performance"[57] (the phrase later codified in §111).

The Senate bill included broad language describing what a "standard of performance" would entail. The "standards of performance" called for by proposed §113 for new sources were to "reflect the greatest degree of emission control which the Secretary determines to be achievable through application of the *latest available control technology, processes, operating methods, or other alternatives*."[58] Thus, it is plain that the Senate contemplated that standards of performance would be based on more than add-on technologies alone.

Moreover, the Senate report accompanying the bill revealed that the standards of performance would not be limited to just reducing pollution, but could also *prevent* pollution. From the Senate committee report: "[P]erformance standards should be met through application of the latest available emission control technology or through other means of *preventing or controlling* air pollution."[59]

The Senate report went on to emphasize how innovative this new concept of a "standard of performance" was. The report noted that this was "a term which has not previously appeared in the Clean Air Act" and that the term "refers to the degree of emission control which can be achieved through process changes, operation changes, direct emission control, or other methods."[60]

That broad, innovative concept from the Senate of a "standard of performance" was incorporated into the version of §111 proposed by the Conference Committee and ultimately codified. Although the definition of "standard of performance" in §111(a)(1) of the Conference bill did not define that phrase exactly as the Senate had with reference to "latest available control technology, processes, operating methods, or other alternatives," the Conference bill used an equally broad and equally innovative phrase—"best system of emission reduction."[61]

The Conference bill did not define the BSER, and the Conference Committee report did not discuss that phrase, but the Senate deliberations after the Conference Committee confirmed that the final version of the bill reflected the Senate's broad understanding of the basis for the standards. The Senate's summary of the conference bill stated: "The [Conference] agreement authorizes regulations to require new major industry plants . . . [to] achieve a standard of emission performance based on the latest available control technology, processes, operating methods, and other alternatives," reflecting the language the Senate originally used to describe a "standard of performance."[62] This broad inquiry, well beyond mere add-on technology, would be accomplished by the federal government looking to the BSER as the basis for the §111 standards.

The Senate also contributed something else very important to the Conference bill: the idea of regulating existing sources. Section 114 of the Senate bill was the only provision in either chamber that required existing source standards. The Conference bill then took that concept and included it as subsection (d) of §111.[63] Section 111(d) in the final bill is identical to today's version in all respects except one: In 1970, existing sources were subject to "emission standards," an undefined term, rather than "standards of performance."[64] In 1977, Congress amended §111(d) to provide specifically that existing sources, like new sources, would be subject to "standards of performance."[65] Thus, the legislative history of the phrase "standard of performance" from 1970—emphasizing a broad inquiry into processes, operating methods, and other alternatives to reduce and prevent pollution—is entirely relevant in interpreting the present version of the existing source standards under §111(d), and supports the flexible, systemwide approach taken by EPA in the proposed Clean Power Plan.

Furthermore, although Congress made changes to the definition of "standard of performance" in 1977 that introduced additional requirements and distinctions between the standards for new and existing sources, with the 1990 Amendments, Congress essentially restored the 1970 version of the term. Changes to the definition made in the 1977 Amendments to the CAA required §111 standards for new sources to reflect "the best *technological* system of *continuous* emission reduction."[66] In contrast, the §111 standards for existing sources were to reflect the "best system of continuous emission reduction,"[67] which, as clarified by the Conference Report, need not be a technological system.[68]

In 1990, Congress removed the requirements that standards for new sources be based on "technological" systems and that standards for both new and existing sources achieve "continuous" reductions, restoring use of broad "system" language for both new and existing source

57. *Id.*
58. *Id.* (emphasis added).
59. S. Rep. No. 91-1196, at 16 (1970) (emphasis added).
60. *Id.* at 17.
61. H.R. 17255 (conf. bill), 91st Cong. §4(a) (as reported by Senate-House Conf. Comm., Dec. 17, 1970) (enacted); H.R. Rep. No. 91-1783 (1970).
62. 116 Cong. Rec. 42384 (1970) (Senate Agreement to Conference Report on H.R. 17255). That same Senate statement also noted that the "conference agreement, as did the Senate bill, provides for national standards of performance on emission from new stationary sources," again confirming the analogy to the prior Senate version. *Id.* at 42385.
63. H.R. 17255 (conf. bill), 91st Cong. §4(a) (1970) (enacted); H.R. Rep. No. 91-1783 (1970); Pub. L. No. 91-604, §4(a), 84 Stat. 1676, 1684. The Senate version of the existing source provision (proposed §114) and the final version differed in this respect: The Senate would have required EPA to set and enforce the standards for existing sources, with the states having an option to take over enforcement. *See* S. 4358, 91st Cong. §6(b) (1970). The final bill, rather than simply offering an opportunity to the states, required the states to submit plans, along the lines of §110, for EPA approval. H.R. 17255 (conf. bill), 91st Cong. §4(a) (1970) (enacted).
64. 42 U.S.C. §1857c-6(a)(1) (1970).
65. *See* Pub. L. No. 95-95, §109(b), 91 Stat. 685, 699 (1977).
66. CAA Amendments of 1977, Pub. L. No. 95-95, §109(c)(1)(A), 91 Stat. 685, 699-700 (emphases added).
67. *Id.*
68. The conference committee explained that the amendments "make[ ] clear that standards adopted for existing sources under section 111(d) of the act are to be based on available means of emission control (*not necessarily technological*)." H.R. Rep. No. 95-564, at 129 (1977) (Conf. Rep.) (emphasis added).

standards.[69] Thus, the 1990 version of §111 that Congress adopted was strikingly similar to the 1970 version, calling for "standards of performance" for both new and existing sources that would reflect the BSER. It is noteworthy that even during the period of time when Congress determined a more specific definition of "standard of performance" was advisable for new sources, it did not take this approach for existing sources. The current text of the CAA reflects both Congress' more recent decision to allow EPA to select a non-technological system of emission reduction when promulgating standards for new sources under §111, as well as Congress' long-standing policy of allowing that approach for existing sources.

Courts have recognized that the identification of the BSER is an expansive, flexible endeavor, in the service of securing the maximum emission reductions, finding that EPA may weigh "cost, energy, and environmental impacts in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present."[70] Further, courts have noted that EPA's choice of the BSER should encourage the development of systems that achieve greater emission reductions at lower costs and deliver energy and non-air health and environmental benefits.[71]

In short, §111 gives EPA wide discretion to identify an emission reduction system that relies on solutions such as averaging to maximize environmental performance and enhance cost-effectiveness.

B. The Language of §111 Is Sufficiently Broad to Authorize the Selection of an Averaging System as the BSER

Although the term "best system of emission reduction" is broad, it is not unbounded. Section 111 requires the "best" system to be the system adequately demonstrated to achieve the maximum emission reductions from the regulated sources, considering cost and impacts on non-air quality health or environmental impacts and energy requirements. The system must also provide the foundation for state standards of performance to apply a "standard for emissions" to "any existing source" in the listed category. EPA must seek out the system that best serves these clearly enunciated goals of §111.

There are many available options for reducing CO_2 emissions from existing power plants through modifications or upgrades at these plants. In order to satisfy the statutory criteria described above, such an analysis of "onsite" measures would by necessity be expansive in scope—including not only significant improvements to the efficiency or "heat rate" of the plant, but also other emission reduction measures such as co-firing or re-powering with lower carbon fuels[72]; utilizing renewable energy sources to provide supplemental steam heating[73]; using available waste heat to remove moisture from coal or switching to higher-rank coal[74]; and implementing combined heat and power (CHP) systems at plants near industrial facilities or district heating systems,[75] among other solutions. For example, engineering firms have estimated that with modest modifications, coal-fired power plants can derive as much as 50% of their heat input from natural gas.[76] Co-firing at this level could yield emission reductions of 20%, and could be combined with heat rate and other improvements to achieve even deeper reductions at a specific plant.

In some circumstances, however, averaging systems may distinctively further the statutory factors.[77] Flexible averaging programs implemented under the CAA and by states and companies have demonstrated that they can significantly lower the cost of cutting pollution because they facilitate capture of the lowest-cost emission reduction opportunities.[78] In the context of carbon pollution standards for existing power plants, a flexible averaging framework that rigorously quantifies the emission reductions achieved via increased utilization of lower and zero-emitting generation and investments in demand-side energy efficiency can achieve very substantial carbon pollution reductions cost effectively while enabling proactive management of generation capacity and enhancement of grid reliability. Indeed, a flexible system will facilitate efficient compliance not only with the Clean Power Plan, but also with other applicable air quality and energy regulations,

69. CAA Amendments of 1990, Pub. L. No. 101-549, §403(a), 104 Stat. 2399, 2631.
70. Sierra Club v. Costle, 657 F.2d 298, 321, 330, 11 ELR 20455 (D.C. Cir. 1981).
71. *Id.* at 346-47.
72. *See* F.J. Binkiewicz Jr. et al., *Natural Gas Conversions of Existing Coal-Fired Boilers* (2010), http://www.babcock.com/library/Documents/MS-14.pdf; Brian Reinhart et al., *A Case Study on Coal to Natural Gas Fuel Switch* (2012), http://bv.com/Home/news/thought-leadership/energy-issues/paper-of-the-year-a-case-study-on-coal-to-natural-gas-fuel-switch.
73. *See* Craig Turchi et al., National Renewable Energy Lab., Solar-Augment Potential of U.S. Fossil-Fired Power Plants (2011), *available at* http://www.nrel.gov/docs/fy11osti/50597.pdf. Several projects are currently underway to augment existing coal-fired power plants in Australia and the United States with concentrated solar thermal power systems. *See Hybrid Renewable Energy Systems Case Studies*, Clean Energy Action Project, http://www.cleanenergyactionproject.com/CleanEnergyActionProject/Hybrid_Renewable_Energy_Systems_Case_Studies.html (last visited Feb. 27, 2014).
74. *See* U.S. EPA, Available and Emerging Technologies for Reducing Greenhouse Gas Emissions From Coal-Fired Electric Generating Units 31-33 (Oct. 2010), *available at* http://www.epa.gov/nsr/ghgdocs/electricgeneration.pdf (describing a commercially available on-site drying process that can reduce CO_2 emissions from a pulverized coal boiler by approximately 4%).
75. *See id.* at 34-35.
76. *See* Reinhart et al., *supra* note 72.
77. EPA has allowed averaging or trading programs where they provide greater emissions reductions than source-specific technology standards. *See*, *e.g.*, Regional Haze Regulations, 64 Fed. Reg. 35714, 35739 (July 1, 1999) (allowing state plans "to adopt alternative measures in lieu of BART where such measures would achieve even greater reasonable progress toward the national visibility goal").
78. For example, a recent survey of economic research found that the CAA's flexible Acid Rain Program has achieved "a range of 15-90 percent savings, compared to counterfactual policies that specified the means of regulation in various ways and for various portions of the program's regulatory period." Gabriel Chan et al., *The SO_2 Allowance Trading System and the Clean Air Act Amendments of 1990: Reflections on Twenty Years of Policy Innovation* 5 (2012), *available at* http://belfercenter.ksg.harvard.edu/files/so2-brief_digital4_final.pdf.

allowing states and companies to make sensible investments in multi-pollutant emission reductions and clean, safe, and reliable electricity infrastructure. Such a system will enable states to consider the "remaining useful life" of sources as the CAA provides[79] and optimize investments in existing and new generation to secure the necessary emission reductions. A flexible system that facilitates a variety of emission reduction pathways is also the system already being deployed by a number of states and companies, mobilizing innovative emission reduction measures and securing significant reductions in carbon pollution.[80]

EPA has long interpreted the statute to authorize the Agency to determine when an averaging framework is an appropriate emission reduction system for a §111(d) standard. In one of its first §111(d) rulemakings after the CAA Amendments of 1990, EPA's 1995 emission guidelines for existing municipal waste combustors allowed states to establish averaging and trading programs through which these sources could meet standards for nitrogen oxides (NO_x) emissions.[81]

In addition, the CAA provides that the procedure for establishing standards of performance for existing sources under §111(d) is to be "similar" to that of §110,[82] and §110 expressly provides that emission limitations and control measures can include "fees, marketable permits, and auctions of emissions rights."[83] The direct link to §110 thus further reinforces the appropriateness of such flexible approaches under §111(d).

In the context of §111 and GHG emissions, a flexible system that enables a wide variety of available solutions to achieve rigorous and cost-effective carbon pollution reductions manifestly fulfills the statutory criteria for the "best" system.

V. Conclusion

Across the country, states and power companies are reducing emissions from fossil fuel-fired power plants by improving plant efficiency, by increasing the use of lower carbon generation capacity and zero-emitting energy, and by investing in demand-side energy efficiency and demand management. The widespread and long-established use of this system and its success in achieving cost-effective carbon pollution reductions for diverse states and companies indicate that it satisfies the statutory criteria for the BSER This system allows states and companies to adjust to locally relevant factors and generation-fleet characteristics, deploying the emission reduction strategies most appropriate and effective. The language of §111 is sufficiently broad to encompass a system-based approach to securing carbon pollution reductions from existing power plants. Indeed, the constraints provided by §111—directing EPA to identify the system of emission reduction best able to secure rigorous carbon emission reductions considering cost and impacts on energy and other environmental considerations—strongly suggest that a system-based approach is optimal in satisfying the statutory requirements by securing the vital cuts in carbon pollution that science demands through locally tailored and innovative solutions.

79. 42 U.S.C. §7411(d)(1).

80. Some have suggested that the general CAA definition of "standard of performance" in §302(l) also applies in the context of §111, and precludes an averaging approach because it requires "continuous emission reduction." *Id.* §7602(l). It is unlikely that the §302(l) definition applies, given that Congress provided a specific and different definition of the term "[f]or purposes of" §111, 42 U.S.C. §7411(a). *See* Reynolds v. United States, 132 S. Ct. 975, 981 (2012) (specific statutory language supersedes general language); Fourco Glass Co. v. Transmirra Prods. Corp., 353 U.S. 222, 228 (1957) (same). However, even if §302(l) were found to apply, an averaging approach qualifies as "a requirement of continuous emission reduction" per the §302(l) definition because covered sources must collectively achieve the emission limitations, which apply continuously. Even in a flexible program, each source meets its obligations continuously. Under an averaging framework, each source must secure the emission reductions needed, onsite or from other plants, to continuously be in compliance with the standard. It is also worth noting that the generally applicable definition of "emission standard" in §302(k) likely does inform the otherwise undefined phrase "standard for emissions" within the definition of "standard of performance" in §111(a)(1). *See* 42 U.S.C. §7416 (referring to an "emission standard or limitation . . . under section 7411"). A §302(k) "emission standard" or "emission limitation" is defined as "a requirement . . . which limits the quantity, rate, or concentration of emissions of air pollutants *on a continuous basis*." *Id.* §7602(k) (emphasis added). An averaging approach qualifies as an "emission standard" or "emission limitation," because covered sources must meet a limitation that applies continuously. Indeed, Congress used the term "emission limitation" in 1990 to describe its Acid Rain Program. *See id.* §§7651b(a)(1), 7651c(a).

81. 40 C.F.R. §60.33b(d)(2). This provision is still in effect. EPA also designed a trading program for mercury from power plants under §111(d), 70 Fed. Reg. 28606 (May 18, 2005), but the regulation of mercury under §111(d) was found to violate the Act's requirement that hazardous air pollutants be regulated under §112, *see* New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008), *cert. dismissed*, 555 U.S. 1162 (2009), *cert. denied*, 555 U.S. 1169 (2009).

82. 42 U.S.C. §7411(d)(1).

83. *Id.* §7410(a)(2)(A).

Historical Perspectives on §111(d) of the Clean Air Act

by Robert R. Nordhaus and Avi Zevin

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Summary

Looking at the history of the Clean Air Act provides some guidance on what Congress intended when it required the "best system of emission reduction" under §111(d) and on EPA's supervisory authority over state plans. But the drafting error, where the conflicting House and Senate amendments to §111(d) were not reconciled, remains largely uninformed by the legislation's history and will have to be resolved by EPA and, ultimately, the courts.

On June 18, 2014, the U.S. Environmental Protection Agency (EPA) published in the *Federal Register* its proposed rule regulating carbon dioxide (CO_2) emissions from existing power plants under §111(d) of the Clean Air Act (CAA).[1] The proposal, known as the Clean Power Plan (CPP), uses §111(d) to require a projected 30% reduction in CO_2 emissions from existing electric generating units (EGUs) by 2030. It does so by setting state-specific carbon intensity (pounds CO_2 per megawatt hour) targets (or "state goals"). Each state is required to draft a compliance plan that demonstrates how it will meet its EPA-set state goal by 2030. While states have significant flexibility in the emission reduction measures that may be used, the plan must be approved by EPA as "satisfactory." If a state does not submit such a plan or if EPA does not find the plan satisfactory, EPA is required to issue its own federal compliance plan.

This Article reviews the history of §111(d) and the relevance of that history to EPA's authority to regulate such CO_2 emissions. Specifically, this Article addresses three key areas for which EPA has relied on the legislative history of §111 in its proposed CPP. First, EPA has proposed to interpret its authority to determine the "best system of emission reduction . . . adequately demonstrated," which forms the basis of the stringency of the state goals, to include measures that occur both at existing power plants and measures that occur beyond those power plants, but that reduce emissions at power plants. Section II.A. discusses how the legislative history of §111 may implicate EPA's authority to make this interpretation.

Second, EPA has proposed that it has authority not only to require states to submit plans, but that it also has authority to set substantive criteria for approving a state plan, including that it has the authority to set state goals. Section II.B. discusses how the legislative history of §111 may implicate EPA's authority to make this interpretation.

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1. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Proposed Rule, 79 Fed. Reg. 34830 (proposed June 18, 2014) (to be codified at 40 C.F.R. pt. 60) [hereinafter EGU Emission Guidelines]. The CAA is codified at 42 U.S.C. §§7401-7671q, ELR Stat. §§CAA 101-618.

Third, EPA has interpreted the scope of its authority under §111(d) to include the regulation of pollutants, such as CO_2, that are neither "criteria pollutants" (defined below) nor "hazardous air pollutants" (HAPs). This interpretation reflects EPA's attempt to resolve an apparent drafting error introduced when the U.S. Congress amended §111(d) as part of the CAA Amendments of 1990. Sections II.C. and II.D. discuss the implications of the drafting error on EPA's authority, what the legislative history suggests was Congress' intent in revising §111(d) in 1990, and how a court may view this unique circumstance when this issue is eventually litigated.

But first, in Section I, we outline the relevant history of the key provisions.

I. History of §111(d)

A. 1970 Origins of §111(d)

The CAA Amendments of 1970 were enacted in the almost-forgotten era when congressional committees marked up bills, amendments were offered on the floor of the U.S. House of Representatives and the U.S. Senate, conference committees reconciled the differing versions passed by the two Houses, and Congress enacted major regulatory legislation. The political context was also noteworthy. Richard Nixon and Edmund Muskie were positioning themselves for the 1972 presidential election. The 1970 legislation, as it was being developed, became a key part of their respective campaign strategies. For that reason, the 1970 CAA Amendments were a high-visibility exercise that captured the attention of those involved on Capitol Hill, as well as in the nascent environmental movement and much of the business community.

On February 10, 1970, the Nixon Administration submitted a relatively simple proposal to Congress that, among other things, recommended amendments to the CAA.[2] Legislation reflecting President Nixon's proposal was introduced in the Senate on February 18, 1970.[3] The proposal's most important elements regarding air pollution from stationary sources included giving the then-U.S. Department of Health, Education, and Welfare (HEW) (EPA had not yet been established)[4] authority to prescribe what are now known as national ambient air quality standards (NAAQS) applicable to criteria pollutants[5]; to use a state implementation plan mechanism to implement the NAAQS[6]; and to establish federal emission standards for emissions from selected classes of new stationary sources that are major contributors to air pollution (comparable to current law's new source performance standards (NSPS))[7]; as well as emissions from new and existing stationary sources that were "extremely hazardous to health" (roughly equivalent to today's HAPs).[8] (Throughout this Article, we use terminology that reflects the current regulatory jargon, not the terms used in the bills at the time.)

The House bill[9] largely followed the Nixon Administration proposal. Relevant to the discussion of §111(d), the House bill authorized HEW to prescribe NAAQS for criteria pollutants, to approve state implementation plans, to establish NSPS, and to control emissions of HAPs from new and existing stationary sources.[10] Except for regulation of emissions of criteria pollutants pursuant to state plans and HEW regulation of HAP emissions, the House bill had no provision for regulating existing stationary sources.

In March 1970, Senator Muskie introduced a more ambitious proposal in the Senate.[11] In September, the Senate Committee on Public Works Subcommittee on Air and Water Pollution reported out a bill that combined the Nixon Administration's proposal and Senator Muskie's alternative bill.[12] This bill, which foreshadowed much of the 1970 statute, would ultimately pass the Senate.[13] The Senate bill included the key stationary source provisions of the Nixon Administration bill: NAAQS for criteria pollutants; state implementation plans; provisions akin to the 1970 Act's NSPS; and regulation of HAPs. It also added a mysterious §114[14] to the CAA that would have given HEW

2. *See* Richard Nixon, *Special Message to the Congress on Environmental Quality*, *The American Presidency Project* (Feb. 10, 1970), http://www.presidency.ucsb.edu/ws/?pid=2757.
3. S. 3466, 91st Cong. (1970), *as reprinted in* 2 Committee on Public Works, A Legislative History of the Clean Air Amendments of 1970, 1474-94 (1974) [hereinafter 1970 Leg. Hist.].
4. EPA was established by Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15623 (Oct. 6, 1970), which was submitted to Congress under special procedures on July 9, 1970, and became effective on Dec. 2, 1970, 84 Stat. 2086. The principal environmental functions of HEW and a number of other agencies were transferred to EPA as of that date. While all of the major 1970 CAA Amendment proposals were introduced prior to the reorganization and therefore placed implementing responsibility with HEW, the final 1970 CAA was enacted on Dec. 31, 1970, and placed implementing responsibility with the EPA Administrator.
5. S. 3466, §7, *as reprinted in* 2 1970 Leg. Hist. at 1484-89. "Criteria pollutants," under current law, are pollutants for which EPA prescribes air quality criteria under CAA §108. Once criteria are issued for a pollutant, EPA must prescribe NAAQS for that pollutant under CAA §109(a).
6. *Id.*
7. *Id.*
8. *Id.* §8, *as reprinted in* 2 1970 Leg. Hist. at 1489-21 (equivalent to CAA §§112(a) & (b), 42 U.S.C. §§7412(a) & (b) (2012)).
9. H.R. 17255, 91st Cong. (1970), *as reprinted in* 2 1970 Leg. Hist. at 910-40.
10. *Id.* §5, *as reprinted in* 2 1970 Leg. Hist. at 920-24.
11. S. 3546, 91st Cong. (1970), *as reprinted in* 2 1970 Leg. Hist. at 1451-69.
12. S. 4358, 91st Cong. (1970), *as reprinted in* 1 1970 Leg. Hist. at 531-625.
13. *Compare* S. 4358 (as passed Senate, Sept. 17, 1970), *as reprinted in* 1 1970 Leg. Hist. at 531-625, *with* CAA Amendments of 1970, Pub. L. No. 91-604, *as reprinted in* 1 1970 Leg. Hist. at 67-104.
14. S. 4358 §6, *as reprinted in* 1 1970 Leg. Hist. at 560-65. Section 114 of the Senate bill was not a model of clarity. By its terms, it appeared to apply to new and existing sources, even though its coverage would overlap that of §113 (the then-equivalent analog to current NSPS). The Committee report was equally confusing. The Committee's report indicated that the pollutants subject to §114 include:

> agents which are not emitted in such quantities or are not of such a character as to be widely present or readily detectable on a continuous basis with available technology in the ambient air. The presence of [which] is generally confined, at least for detection purposes, to the area of the emission source.

S. Rep. No. 91-1196, at 18 (1970). The report, however, goes on to state that because §114 standards can be established for any pollutants not considered hazardous under §115, "there should be no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare." *Id.* at 20.

authority to regulate "selective pollution agents"—if they were emitted by a source that was part of a source category subject to the then-equivalent of NSPS. These were pollutants that (using current regulatory jargon) were neither criteria pollutants nor HAPs.

The House/Senate conference on the legislation convened during the lame duck session of the 91st Congress, following the 1970 congressional elections. The Senate had urged inclusion of its §114 to cover emissions of non-criteria, non-HAP pollutants from existing sources that would be subject to its version of NSPS if new.[15] The House, however, refused to accept the Senate §114; it objected to giving EPA[16] authority to prescribe emissions for existing sources' emissions of non-criteria, non-HAP pollutants at a time when it was not known how extensive either the criteria pollutant category or the HAP category would be, so that the gap to be covered by §114 could be a very narrow class of pollutants or a very broad one.

The ultimate compromise was the 1970 version of §111(d) under which states would establish "emission standards" for emissions of certain pollutants emitted from existing sources that, if new, would be subject to NSPS for those pollutants.[17] These pollutants were those not regulated under §108 as criteria pollutants, nor included on a list of HAPs under §112(b)(1)(A)[18]—in the words of the Senate conferees, pollutants that "cannot be controlled through the ambient air quality standards and which are not hazardous substances."[19] These emission standards would be incorporated into state plans[20] that would have to be "satisfactory" to the newly established EPA.[21]

The term "emission standards" was not defined in the Act. However, the 1970 statute contained a definition of "standard of performance," relevant for regulation of new sources under §111(b), that was very similar to today's definition. A standard of performance would reflect the "degree of emission limitation achievable through application of the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated."[22] However, because the 1970 CAA version of §111(d) required states to establish "emission standards" and not "standards of performance," the definition applied only to new sources under §111(b) and did not apply to regulation of existing sources under §111(d).

The §111(d) compromise was enacted into law as part of the 1970 CAA Amendments,[23] and EPA issued general implementing regulations in 1975.[24] It issued guidelines for only one existing source category before enactment of the 1977 CAA Amendments.[25]

B. 1977 CAA Amendments

The CAA Amendments of 1977 made several significant changes affecting §111(d). The first was a change in the scope of the definition of "standard of performance," which until then applied only to new sources. In 1977, §111(d)(1)(A) was amended to substitute "standard of performance" for "emission standards," so that states would establish standards of performance (as defined in §111(a)), rather than emission standards for existing sources.[26] Second, the definition of "standard of performance" was significantly modified. Instead of referring to "best system of emission reduction," it referred to "best technological system of continuous emission reduction" for new sources.[27] For existing sources under §111(d) (to which, up until 1977, the definition of "standard of performance" did not apply), the definition was framed in terms of "best system of continuous emission reduction."[28] Third, several other minor amendments to §111(d) were made, including one directing the states (and EPA in a federal plan) to consider an existing source's remaining useful life.[29]

Shortly after enactment of the 1977 CAA Amendments, EPA issued three additional emission guidelines for source categories under §111(d).[30] The section was then largely forgotten until after the 1990 Amendments, when EPA issued two emission guidelines based solely on its §111(d) authority.[31] In 1996, EPA issued emission guidelines for municipal

15. S. 4358, §6 (adding §114 of the CAA), *as reprinted in* 1 1970 Leg. Hist. at 560-65.
16. By the time of the Conference, Reorganization Plan No. 3 had been ratified by Congress and the responsibilities that had been given to HEW under the House and Senate bills were rewritten to apply to EPA. *See* H.R. Rep. No. 91-1783, at 13 (1970).
17. CAA §111(d)(1), 42 U.S.C. §1857c-6(d)(1) (1970).
> The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan which (A) establishes emission standards for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) or 112(b)(1)(A) but (ii) to which a standard of performance under subsection (b) would apply if such exiting source were a new source, and (B) provides for the implementation and enforcement of such emission standards.
18. CAA §112(b)(1)(A), 42 U.S.C. §1857c-7(b)(1)(A) (1970).
> The Administrator shall, within 90 days after the date of enactment of the Clean Air Amendments of 1970, publish (and shall from time to time thereafter revise) a list which includes each hazardous air pollutant for which he intends to establish an emission standard under this section.
19. S. 3546, S. 4358, 91st Cong., 116 Cong. Rec. 20601 (1970) (Senate consideration of the Report of the Conference Committee).
20. CAA §111(d)(1), 42 U.S.C. §1857c-6(d)(1) (1970).
21. CAA §111(d)(2), 42 U.S.C. §1857c-6(d)(2) (1970).
22. CAA §111(a)(1), 42 U.S.C. §1857c-6(a)(1) (1970).
23. CAA §111(d), 42 U.S.C. §1857c-6(d) (1970).
24. State Plans for the Control of Certain Pollutants From Existing Facilities, 40 Fed. Reg. 53340, 53346 (Nov. 17, 1975) [hereinafter 1975 Standards for State Plans].
25. Phosphate Fertilizer Plants, Final Guideline Document Availability, 42 Fed. Reg. 12022 (Mar. 1, 1977).
26. CAA Amendments of 1977, Pub. L. No. 95-95, §109(b)(1), 91 Stat. 685 (amending 42 U.S.C. §7411(d)(1)).
27. *Id.* §109(c)(1)(A) (amending 42 U.S.C. §7411(a)(1)).
28. *Id.* (amending 42 U.S.C. §7411(a)(1)(C)).
29. *Id.* §109(b)(1) (amending 42 U.S.C. §7411(d)).
30. Emission Guideline for Sulfuric Acid Mist, Final Rule, 42 Fed. Reg. 55796 (Oct. 18, 1977); Kraft Pulp Mills, Final Guideline Document, 44 Fed. Reg. 29828 (May 22, 1979); Primary Aluminum Plants, Availability of Final Guideline Document, 45 Fed. Reg. 26294 (Apr. 17, 1980).
31. Note that EPA has also issued emission guidelines for six categories under CAA §129, which requires the use of §111(d) to regulate hazardous pollutants from waste combustion categories. *See* Emission Guidelines and

solid waste landfills[32]; and in 2005, EPA issued the now-vacated emission guidelines for emissions of mercury from power plants.[33]

C. 1990 CAA Amendments

In the CAA Amendments of 1990, Congress again amended the §111(a) definition of "standard of performance," retreating from "best technological system of continuous emission reduction" for new sources and "best system of continuous emission reduction" for existing sources, and going back to "best system of emission reduction," so that the definition of "standard of performance" was very close to the 1970 definition.[34] The newly amended definition of standard of performance was made applicable to both new and existing sources.[35]

The other important but enigmatic change to §111 was to §111(d)(1)—the much discussed "drafting error." By way of background, the House and Senate had passed different amendments to the same provision of §111(d). The version of the 1990 Amendments initially passed by the House would have struck out §111(d)(1)'s cross-reference to "112(b)(1)(A)"—the pre-1990 reference to the list of HAPs to be regulated under §112—and inserted one text.[36] The version passed by the Senate would have struck out the same cross-reference and inserted another text.[37] Then, in the confusion following an all-night session of the House/Senate conference, the Conference Report (which was filed the next day) included, in separate titles of the Report, both amendments to the same cross-reference to §112 that had appeared in §111(d)(1)(A).[38]

The two amendments have been read to reflect sharply different positions. The policy was clear on the Senate side. It changed the cross-reference from the pre-1990 list of HAPs at §112(b)(1)(A) to the post-1990 list of HAPs at §112(b). By so doing, the Senate amendment essentially continued the 1970 policy. The scope of pollutants to be covered by §111(d) were non-HAP, non-criteria pollutants, and the Senate made just a simple conforming change in §111(d) to reflect an organizational change in §112.

The scope of the change intended by the House's amendment was less clear. Under §111(d) as amended by the House, EPA would prescribe state plan regulations under which states would "establish[ ] standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) *or emitted from a source category which is regulated under section 112* . . . ."[39]

There are numerous potential readings of this change. The most common reading of the House amendment is that §111(d) applies only to non-criteria pollutants emitted from a source category not regulated under §112.[40] Under this reading, CO_2 emissions from existing EGUs could not be regulated since EGUs are now regulated under §112 by reason of the Mercury and Air Toxics Standards (MATS) Rule.[41]

This interpretation is consistent with one theory of the underlying purpose of the House amendment. The amendment to §111(d) that was included in the bill that was ultimately passed by the House and went to conference actually originated from the initial White House proposal for the 1990 CAA Amendments,[42] and was passed by the House without change. The White House proposal (and the House-passed bill) also contained a provision that became §112(n) of the amended CAA, which allowed EPA to regulate EGUs under §112 only after finding that "such regulation is appropriate and necessary" based on the

Compliance Times for Large Municipal Waste Combustors, 60 Fed. Reg. 65415 (Dec. 19, 1995) (codified at 40 C.F.R. pt. 60, subpt. Cb); Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators, 62 Fed. Reg. 48379 (Sept. 15, 1997) (codified at 40 C.F.R. pt. 60, subpt. Ce); Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units, 65 Fed. Reg. 76384 (Dec. 6, 2000) (codified at 40 C.F.R. pt. 60, subpt. BBBB); Emission Guidelines for Commercial/Industrial Solid Waste Incinerators, 65 Fed. Reg. 75362 (Dec. 1, 2000) (codified at 40 C.F.R. pt. 60, subpt. DDDD); Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units, 70 Fed. Reg. 74907 (Dec. 16, 2005) (codified at 40 C.F.R. pt. 60, subpt. FFFF); Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units, 76 Fed. Reg. 15404 (Mar. 21, 2011) (codified at 40 C.F.R. pt. 60, subpt. MMMM). However, these guidelines do not raise questions regarding the conflict between §111(d) and §112, because §129 prohibits the use of §112 to regulate these categories. CAA §129(h)(2), 42 U.S.C. §7429(h)(2) (2012).

32. Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills, Final Rule and Guideline, 61 Fed. Reg. 9905, 9906 (Mar. 12, 1996) [hereinafter 1996 MSWL Rule].
33. Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, Final Rule, 70 Fed. Reg. 28606, 28657 (May 18, 2005) [hereinafter CAMR].
34. *Compare* CAA Amendments of 1990 §403(a), Pub. L. No. 101-549, 104 Stat. 2399, 2631 (1990) [hereinafter 1990 CAA], *with* CAA §111(a)(1), 42 U.S.C. §1857c-6(a)(1) (1970).
35. CAA §111(a)(1) & (d)(1), 42 U.S.C. §7411(a)(1) & (d)(1) (1994).
36. S. 1630, 101st Cong., §108(f) (as passed by House, May 23, 1990), *as reprinted in* 2 A Legislative History of the Clean Air Act Amendments of 1990, at 1979 (1993) [hereinafter 1990 Leg. Hist.].
37. S. 1630, 101st Cong., §305(a) (as passed by Senate, Apr. 3, 1990), *as reprinted in* 3 1990 Leg. Hist. at 4534.
38. *See* 1990 CAA §§108(g) & 302(a), Pub. L. No. 101-549, 104 Stat. 2399, 2465 & 2574.
39. *See* H.R. Rep. No. 101-490, at 443-44 (1990), *as reprinted in* 3 1990 Leg. Hist. at 3467-68 (showing changes relative to then-current law for §111(d)).
40. *See, e.g.*, Pet. for Extraordinary Writ at 6, In re Murray Energy Corp., No. 14-1112 (D.C. Cir. June 18, 2014) [hereinafter Murray Energy Pet.] ("Thus, once a source category is regulated under section 112, EPA may not mandate state-by-state emission standards for that source category.").
41. 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, Final Rule, 77 Fed. Reg. 9304 (Feb. 16, 2012) (codified at 40 C.F.R. pts. 60, 63) [hereinafter MATS Rule].
42. *Compare* H.R. 3030, 101st Cong. §108(d) (1990) (as introduced in House, July 27, 1989), *as reprinted in* 2 1990 Leg. Hist. at 3857 (introduced at the request of President H.W. Bush by Rep. John Dingell), *with* Clean Air Act Amendments (Part 3): Hearing on H.R. 4 and H.R. 2585 Before the Subcomm. on Health and the Environment of the Comm. on Energy and Commerce, 101st Cong. (June 22, 1989), Serial No. 101-116, at 95 (1990) [hereinafter CAA Hearing].

results of a study EPA was directed to perform.[43] Because of this provision, there was a possibility that this large source category that emitted listed HAPs would be outside the scope of §112. If that happened without revising §111(d) to cover the potential gap created by §112(n), those pollutants would also be outside the scope of §111(d) by reason of the fact that they were listed HAPs, even though they were emitted by sources that could not be regulated under §112. This theory is reinforced by an additional provision from the White House proposal (which was ultimately dropped from the House bill) that would have only required EPA to regulate half of the source categories listed under §112, and so would have necessitated even more category-based gap-filling.[44] Under this interpretation, the purpose of striking out the reference to non-HAP pollutants and inserting instead the reference to pollutants emitted by a source category subject to §112 was to close the potential gaps created by the ultimately deleted White House proposal and the adopted §112(n).

Thus, in the context of the statutory scheme of the House bill, even after the deletion of the White House proposal, there would be a policy rationale for the interpretation that §111(d) applies to a source category's non-criteria pollutant emissions if the category is not regulated under §112.

However, this interpretation of the House amendment is not the only one. As we outline in the Appendix to this Article, there are at least five other readings of the House provision, four of which interpret the House amendment more broadly, and would permit CO_2 regulation of existing power plants.

In sum, the enactment of both the House and Senate amendments to the same cross-reference (as well as the multiple potential interpretations of the underlying House amendment) create a massive ambiguity in the coverage of §111(d). If the House amendment is read as limiting §111(d) to non-criteria pollutants emitted by sources regulated under §112 (only one of several readings of the House amendment), EPA would not be able to regulate any source under §111(d) that is in a source category regulated under §112. Now that EGUs, by virtue of the MATS Rule, are a source category regulated under §112, they would be outside the reach of §111(d). The Senate amendment, by contrast, would continue the 1970 policy: namely, any non-HAP, non-criteria pollutant would be within the ambit of §111(d). CO_2 is a non-HAP, non-criteria pollutant, and so EGU emissions could be reached by §111(d). As a result, EPA and the courts are faced with a significant ambiguity that goes to the heart of whether EPA can regulate existing EGU CO_2 emissions under §111(d) at all.

II. Observations

Stepping back from the details of this short history, one can make several observations:

A. *"Best System" Under Definition of Standard of Performance*

The history of the amendments to the definition of standard of performance is instructive. In 1977, Congress marched up the hill of "best technological system of continuous emission reduction" for new sources (and the hillock of "best system of continuous emission reduction" for existing sources), and then marched down again in 1990. The 1990 retreat could certainly support arguments that what is contemplated now by the definition of standard of performance is not limited to hardware at the end of the pipe, and that a much broader suite of technologies and operational techniques could be included. Whether this broader suite includes the full range of "Building Block" measures that EPA uses to construct state emission rate goals under its proposed CPP is a more difficult question.[45]

B. *EPA Authority Over State Plans*

The 1970 version of §111(d) gave EPA authority to impose a federal plan if a state's plan was not "satisfactory." In promulgating its 1975 implementing regulations, EPA interpreted its authority—based on Congress' directive that EPA disapprove plans that are not satisfactory—to include the authority to set substantive criteria for the approval or disapproval of state plans, including numerical emission limits, as part of establishing emission guidelines.[46] Congress significantly strengthened EPA's hand when, in 1977 and 1990, it made a series of changes both to the text of §111(d) and to the definition of standard of performance to make it clear that what states establish under their §111(d) plans are "standards of performance" (rather than "emission standards") and that, under the definition of "standards of performance," the standards must reflect an emission limitation that is achievable through the application of the best system of emission reduction that *EPA*

43. *See* H.R. 3030, 101st Cong. §301 (1990) (as introduced in House, July 27, 1989), *as reprinted in* 2 1990 Leg. Hist. at 3945-46; S. 1630, 101st Cong. §301 (1990) (as passed by House, May 23, 1990), *as reprinted in* 2 1990 Leg. Hist. at 2148-49.

44. Specifically, the White House proposal only required that 25% of listed categories be regulated after four years and an additional 25% of listed categories be regulated after seven years. EPA was required to evaluate, but not necessarily regulate, all other listed categories within 10 years. H.R. 3030, 101st Cong. §301 (as introduced in House, July 27, 1989), *as reprinted in* 2 1990 Leg. Hist. at 3937. If the pre-1990 scope of §111(d) was retained, EPA would have been prevented from regulating HAPs under §111(d) for any of the remaining 50% of categories EPA chose not to regulate under §112. That is, without the change to §111(d) that ultimately became the House amendment, the White House proposal would have opened a potentially very large category-based gap in the regulation of HAPs. The House rejected the element of the White House proposal giving discretion to EPA as to which categories to regulate under §112. House Debate on H.R. 3030 (May 21, 1990), *as reprinted in* 2 1990 Leg. Hist. at 2561. The House bill sent to conference would have required regulation of *all* listed categories within 10 years. *See* S. 1630, 101st Cong. §301 (1990) (as passed by House, May 23, 1990), *as reprinted in* 2 1990 Leg. Hist. at 2137-38.

45. *See* EGU Emission Guidelines, *supra* note 1, 79 Fed. Reg. at 34885-86. For review of key issues, see Robert R. Nordhaus & Ilan W. Gutherz, *Regulation of CO_2 Emissions From Existing Power Plants Under §111(d) of the Clean Air Act: Program Design and Statutory Authority*, 44 ELR 10366, 10383-90 (May 2014).

46. 1975 Standards for State Plans, *supra* note 24, 40 Fed. Reg. at 53342.

determines has been adequately demonstrated.[47] EPA thus has two supervisory tools over state plans: (1) the general authority to reject a plan that is not "satisfactory"; and (2) the more specific authority to determine the "best system of emissions reduction" that must be reflected in the state plan's standards of performance.

C. Section 111(d) Coverage and the 1990 "Drafting Error"

It is clear that the original intention in 1970 was that §111(d) would be a gap-filler. Up until 1990, it was also clear that the gap to be filled was emissions of non-HAP, non-criteria pollutants by existing sources that would be subject to NSPS if new. Post-1990, §111(d) still appears to be a gap-filler, but because of the dueling amendments to §111(d), there is confusion as to what gap should be filled (and even arguments that the 1990 Amendment was intended to create a gap rather than fill one).[48] There are at least four potential interpretations.

Interpretation 1: Senate Policy Only

The first interpretation is that §111(d) still applies to the 1970 gap: non-criteria, non-HAP pollutants from existing sources that would be subject to NSPS if they were new sources. Under this interpretation, the House amendment was effectively included as a mistake and only the Senate amendment would apply. However, there is little evidence, either from the text or the legislative history, to lend support for this position. Perhaps, the strongest argument for the theory is the idea that Congress would not have intended such a significant change to the scope of §111(d) without clear indication.[49] However, as we explain below, there are plausible contextual arguments that rebut the position that the inclusion of the House amendment was a simple mistake.

Interpretation 2: House Policy Only

A second interpretation is that Congress affirmatively intended to change the scope of §111(d) by making it apply only to source categories not already regulated by §112. This theory views the House amendment as controlling, reads it to amend §111(d) to apply only to non-criteria pollutants emitted from source categories not regulated under §112, and views the inclusion of the Senate amendment as the drafting error. Advocates of this theory primarily point to the headings used in the 1990 CAA Amendments.[50] The House amendment is included with a handful of other small but substantive changes in §108 of the 1990 CAA Amendments, a section given the heading "Miscellaneous Provisions."[51] In contrast, the Senate amendment is in §302 of the 1990 CAA Amendments in a section given the heading "Conforming Amendments."[52] This interpretation relies on the idea that substantive changes should take precedence over conforming "ministerial" changes or that amendments under the section heading "Miscellaneous" somehow trump those under "Conforming."[53] The argument is unpersuasive as it assumes, without justification, that in making the "conforming amendment" the Senate did not affirmatively intend to retain the pre-1990 gap-filling nature of §111(d).[54]

Interpretation 2 also appears to be consistent with EPA's initial interpretation of the drafting error. In a 1995 background document for its municipal landfill emissions rule,[55] EPA acknowledged the dueling amendments to §111(d),[56] treated the inclusion of the Senate amendment as an error, and regarded the House amendment as controlling.[57] EPA pointed out that §112 itself was amended to regulate HAPs emitted from designated source categories and argued that

47. CAA §111(a)(1), 42 U.S.C. §7411(a)(1).
48. On the same day that EPA published the EGU Emission Guidelines in the *Federal Register*, Murray Energy Corp. (Murray Energy) filed a challenge to the proposed rule in the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit claiming that EPA had violated its discretionary authority by proposing to regulate EGUs under §111(d) because they are already a category subject to regulation under §112. *See* Murray Energy Pet., *supra* note 40. Murray's primary argument relies on the House amendment and argues that Congress affirmatively intended to "prohibit double regulation" of existing sources between §112 and §111(d). *Id.* at 8-9. The court ordered EPA to file a response to the petition. Order, In re Murray Energy Corp., No. 14-1112 (D.C. Cir. Sept. 18, 2014). EPA did so on November 3, 2014, Response to Pet., In re Murray Energy Corp., No. 14-1112 (D.C. Cir. Nov. 3, 2014), arguing, among other things, that the court does not have jurisdiction to hear Murray Energy's challenge, *id.* at 7-18, that Murray Energy does not have standing to challenge the proposed rule at this time, *id.* at 19-20, and that on the merits, EPA should not be prohibited from proposing the CPP. *Id.* at 21-30 (arguing, consistent with the interpretations outlined in the Appendix to this Article, that the language of the House amendment is not clear). The court has not made a ruling in this case.
49. *See, e.g.*, Br. of Envtl. Pet'rs at 23, New Jersey v. EPA, 517 F.3d 574 (D.C. Cir. 2008) ("Neither the House nor the Senate amendment changed this status quo. . . . Both amendments were plainly for housekeeping purposes.").
50. Br. of the States of West Virginia, Alabama, Alaska, Kentucky, Nebraska, Ohio, Oklahoma, South Carolina, and Wyoming as *Amici Curiae* in Support of the Petitioner, In re Murray Energy Corp., No. 14-1112 (D.C. Cir. June 25, 2014) [hereinafter State Amicus Br.].
51. 1990 CAA Amendments, Pub. L. No. 101-549, §108, 104 Stat. 2399, 2465.
52. *Id.* §302, 104 Stat. at 2574.
53. State Amicus Br., *supra* note 50, at 9 ("When this conforming amendment is applied after *all* the substantive amendments, as is required by basic legislative drafting rules, it is no longer necessary.").
54. There is, in fact, no recognized tool of statutory construction that conforming amendments should take precedence over or be applied after substantive amendments. The case that State Amici cite for that proposition holds the opposite, stating that even an apparent scriveners error involving a conforming amendment "gives us no reason to depart from" the "statutory language and probative legislative history." Am. Petroleum Inst. v. SEC, 714 F.3d 1329, 1337, 43 ELR 20146 (D.C. Cir. 2013). Moreover, while section headings can be used as interpretive tools, "headings and notes are not binding, may not be used to create an ambiguity, and do not control an act's meaning by injecting a legislative intent or purpose not otherwise expressed in the law's body." 2A Norman J. Singer, Sutherland on Statutes and Statutory Construction §47:14 (7th ed. 2014); *see also* Bhd. of R.R. Trainmen v. Balt. & O.R. Co., 331 U.S. 519, 528-29 (1947) ("[T]he heading of a section cannot limit the plain meaning of the text.").
55. *See* U.S. EPA, Air Emissions From Municipal Solid Waste Landfills—Background Information for Final Standards and Guidelines (Pub. No. EPA-453/R-94-021) (Dec. 1995) [hereinafter MSWL BID].
56. *Id.* at 1-5.
57. *Id.* ("The EPA also believes that section 108(g) is the correct amendment. . . .").

§111(d) should be consistent with this change.[58] It discounted the Senate provision by pointing out that it is a "simple substitution of one subsection citation for another, without consideration of other amendments of the section in which it resides, section 112."[59]

The Municipal Solid Waste Landfills (MSWL) BID in which EPA made this interpretation functioned as the Agency's response to comments and main technical support document to the 1996 MSWL Rule.[60] However, EPA's interpretation was not itself subject to notice-and-comment rulemaking and was not necessary to the regulation of municipal solid waste landfills, which at the time were not in a source category regulated by §112. It is therefore not clear what weight this interpretation has as Agency precedent. And, of course, EPA is free to change its interpretation (so long as it properly justifies that change),[61] which in fact it has done in the Clean Air Mercury Rule (CAMR) and CPP rules. (See below.)

A more substantive argument for the second interpretation is that changes to §112 had reduced the universe of non-HAP, non-criteria pollutants to close to zero; thus, the original 1970 gap no longer needed to be filled. Before 1990, EPA retained significant discretion to include or not include pollutants on the list that had previously been at §112(b)(1)(A).[62] However, primarily because EPA had failed to use its discretion, the 1990 Amendments reduced EPA's discretion and included a long statutory list of HAPs.[63] It also directed EPA to administer the program on a source category-by-source category basis.[64] Since Congress had effectively listed the most significant known HAPs in 1990, there may have been less concern that there were significant pollutants left out that required use of §111(d).

Nonetheless, Congress deleted a number of known pollutants from the HAP list in the course of consideration of the 1990 Amendments,[65] and it also gave EPA the authority to add or delete pollutants from the HAP list.[66] There remained a possibility that unlisted non-criteria pollutants (such as CO_2) or pollutants that Congress or EPA removed from the HAP list would be completely exempt from regulation without a pollutant-focused gap-filling section such as §111(d) as it had existed since 1970.[67]

Moreover, the reading of the House amendment discussed above (non-criteria pollutants from non-§112 sources) is not the only reading of that amendment. In the Appendix to this Article, we point out how semantic and syntactic ambiguities in §111(d)(1)(A)(i), as amended by the House, create at least five additional textual readings of §111(d), four of which, if taken literally, would permit regulation of CO_2 emissions from existing EGUs under that section. EPA and the courts, before they address the dueling House and Senate amendments, will have to sort out (or at least acknowledge) the plethora of different readings of the House amendment. Even if the Senate amendment was included in the conference substitute by mistake, as this interpretation posits, these other readings of the House amendment would permit regulation of existing EGU emissions of CO_2.

Interpretation 3: Combine House and Senate—Narrow Coverage

A third interpretation could be that Congress intended §111(d) to cover only non-criteria, non-HAP pollutants emitted from source categories not covered by §112, the narrowest possible outcome. That is, by including both amendments, Congress should be assumed to have intended that both exclusions to §111(d) be given effect, and that they should operate independently. The basis for this theory is that since each amendment functions as an independent limitation on the scope of §111(d), they should not, together, be less limiting than either individually. Advocates for this theory have claimed that Congress' purpose was to preclude "duplicative or overlapping regulation" of certain source categories.[68] In effect, this interpretation presumes Congress intended to create a large gap in the scope of the CAA, so that neither HAP emissions from non-§112 source categories nor non-HAP emissions from §112 source categories were covered. However, there is no structural or legislative history-based evidence that Congress in fact intended the 1990 CAA revisions to §111(d) to create a gap in the scope of existing source emissions that may be regulated under the Act. The CAA is full of instances of multiple regulatory requirements affecting

58. *Id.* ("[T]he Clean Air Act Amendments revised section 112 to include regulation of source categories in addition to regulation of listed hazardous air pollutants, and section 108(g) thus conforms to other amendments of section 112.").
59. *Id.*
60. *Supra* note 32, 61 Fed. Reg. 9905.
61. FCC v. Fox Television Stations, Inc., 556 U.S. 502 (2009).
62. CAA §112(b)(1)(A), 42 U.S.C. §1857c-7(b)(1)(A) (1970).
63. *See* CAA Hearing, *supra* note 42, at 2.
64. CAA §112(c), 42 U.S.C. §1857c-7(c) (1970).
65. *Compare* H.R. 4, 101st Cong., *as reprinted in* 2 1990 Leg. Hist. at 4041-46, *with* CAA §112(b)(1), 42 U.S.C. §1857c-7(b)(1) (1970) (including 15 known pollutants as listed HAPs in the bill that was the precursor to §112(b) as enacted, including aldrin, ammonia, benzo(a)pyrene, butyl benzyl phthalate, dicofol, dieldrin, hydrogen sulfide, 2-methoxy ethanol, nitric acid, nitrogen, osmium tetroxide, terophthalic acid, and thallium). In fact, some pollutants that the Senate had intended the precursor to §111(d)—§114—to cover (e.g., copper, vanadium, barium) continued to be unlisted in §112 even after the 1990 Amendments. *Compare* S. Rep. No. 91-1196, at 18 (1970), *with* CAA §112(b)(1), 42 U.S.C. §1857c-7(b)(1) (1970).
66. CAA §112(b)(2), 42 U.S.C. §7412(b)(1) (2012).
67. Advocates of this theory also point to the approach of Law Revision Counsel, the congressional office responsible for creation of the *United States Code*. The *United States Code* contains the House amendment because the Senate amendment to modify the cross-reference to §112(b)(1)(A) could not be made after the House amendment had already removed the reference to that section. The mere fact that only the House amendment is included in the *United States Code* is not dispositive, because when the *United States Code* conflicts with the Statutes at Large, the Statutes at Large should prevail. *See* United States Nat'l Bank of Or. v. Indep. Ins. Agents of Am., Inc., 508 U.S. 439, 448 (1993). Moreover, the Law Revision Counsel's methodology is inconsistent with the principle of legislative drafting that all provisions of an Act are deemed to be enacted at the same time. *See* Antonin Scalia & Bryan A Garner, Reading Law: The Interpretation of Legal Texts 189 (2012).
68. State Amicus Br., *supra* note 50, at 15.

the same source, including existing sources,[69] and there is no evidence that Congress was particularly concerned with the potential in this instance.

Interpretation 4: Combine House and Senate—Broad Coverage

A fourth interpretation is that the Senate amendment was intended to fill the original 1970 gap and the House amendment was intended to fill a potential new gap created by the 1990 CAA changes to §112, and specifically to deal with the inclusion of §112(n). Since they were both included in the 1990 CAA Amendments, together they should be interpreted to amend the scope of §111(d) to fill both gaps.

This explanation leaves open the question of why the House proposal would have opened a non-criteria, non-HAP pollutant gap in §111(d) while attempting to close the newly created §112(n) gap. One answer is that, as we discuss in the Appendix, it was not clear from the House bill what the intended scope of §111(d) was to be. The inclusion of both the House and Senate amendments in the final 1990 CAA can be read to mean that, in fact, when Congress closed the §112(n) gap, it did not intend to reopen the original non-criteria, non-HAP gap that was closed in 1970. That is, the very inclusion of the Senate amendment is evidence that Congress did not intend to abandon the pre-1990 CAA gap-filling function of §111(d).

Interpretation 4 thus attempts to give effect to the respective intentions of each house of Congress and to reconcile the conflicting provisions of the enacted statute. The Senate could be presumed to have intended to maintain the purpose of §111(d) as a gap-filling measure for non-HAP, non-criteria pollutants. The purpose of the House amendment, while uncertain, seems most likely to have been an attempt to ensure that §111(d) could be used as a backstop measure should emissions of HAPs from a source category such as EGUs not be unregulable if EPA determined §112 was not "appropriate and necessary," but not necessarily to open a new gap in §111(d).

And, in fact, this is the interpretation the George W. Bush Administration's EPA tried to effectuate under CAMR.[70] After reversing the Clinton Administration's "appropriate and necessary" determination for EGUs,[71] the Bush Administration's EPA interpreted the two amendments together to exclude only criteria pollutants and HAP pollutants emitted from source categories already regulated under §112.[72]

> Where a source category is being regulated under section 112, a section 111(d) standard of performance cannot be established to address any HAP listed under section 112(b) that may be emitted from that particular source category. Thus, if EPA is regulating source category X under section 112, section 111(d) could not be used to regulate any HAP emissions from that particular source category.[73]

The U.S. Court of Appeals for the District of Columbia (D.C.) Circuit vacated CAMR's regulations for new and existing EGUs without ruling on EPA's interpretation of the conflicting amendments (holding that EPA had not properly followed §112's procedure for removing EGUs from the list of categories to be regulated under §112).[74] In the proposed CPP, EPA has again embraced this interpretation.[75] In fact, EPA has cited directly to its interpretive analysis in the CAMR rulemaking as its primary justification for its authority to promulgate a CO_2 emission guideline for EGUs.[76] As articulated in the CPP:

> [T]his approach reasonably interprets the Section 112 Exclusion to give some effect to both amendments. The EPA emphasized that it is not reasonable to give full effect to the House language because a literal reading of that language would mean that the EPA could not regulate any air pollutant from a source category regulated under section 112, a result that would be inconsistent with (i) Congress' desire in the 1990 CAA Amendments to require the EPA to regulate more substances, and not to eliminate the EPA's ability to regulate large categories of air pollutants, and (ii) the fact that the EPA has historically regulated non-hazardous air pollutants under section 111(d), even where those air pollutants were emitted from a source category actually regulated under section 112.[77]

D. Application of the Chevron Doctrine

Ultimately, the courts will be faced with the question of how to resolve the 1990 drafting error, as well as the underlying ambiguity in the House amendment. While statutory interpretation is a familiar function for courts,

69. For example, *existing* EGUs are regulated under state implementation plans, including under the cross-state air pollution rule under the good neighbor provisions of §110; under Title IV of the sulfur dioxide trading program; under the MATS Rule under §112; under the regional haze program under §169A; and under the nonattainment provisions.
70. *See* Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, Final Rule, 70 Fed. Reg. 15994, 16029-32 (Mar. 29, 2005) [hereinafter EGU Delisting Rule].
71. *Id.* at 1600-08.
72. *See* CAMR, *supra* note 33, 70 Fed. Reg. 28606.
73. EGU Delisting Rule, *supra* note 70, 70 Fed. Reg. at 16031-32.
74. *See* New Jersey v. EPA, 517 F.3d 574, 583 (D.C. Cir. 2008) (vacating "CAMR's regulations for both new and existing EGUs"), *cert. denied sub nom.* Util. Air Reg. Grp. v. New Jersey, 555 U.S. 1169 (2009). Note that the regulations defining "designated pollutant" in 40 C.F.R. §60.21(a) were *not* regulations for existing *EGUs* but instead regulations of the emissions guidelines process generally. It is, therefore, not clear that the interpretation of §111(d) was vacated. However, in 2012, in its rule establishing emissions standards for HAPs emitted from EGUs under §112, the Obama Administration removed the interpretation of the two amendments from the *Code of Federal Regulations*. *See* MATS Rule, *supra* note 41, 77 Fed. Reg. at 9447.
75. *See* U.S. EPA, Legal Memorandum for Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units 22-27 (2014), http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf.
76. *Id.* at 26-27.
77. *Id.*

this drafting error appears to be a special case. Unlike a more conventional "scrivener's error,"[78] there is no clear, but obviously wrong text. First, there is no clear, single text of §111(d) at all and no obvious way of applying the two amendments that is consistent with both. Perhaps more problematically, there is no obvious congressional purpose undergirding the dueling amendments.[79] There are no floor statements or committee reports that directly answer the question of what Congress intended when amending §111(d) in the 1990 CAA and a number of the theories outlined above appear at least reasonable. One approach would be to regard this as a simple *Chevron* issue.[80] Under that doctrine, when Congress has directly spoken to the question at issue, determined using the traditional tools of statutory interpretation,[81] the Agency is required to implement congressional intent. If Congress' intent is not clear, any permissible (that is, reasonable) interpretation of the statute by the Agency will be given deference by the courts. Here, Congress could not have been more unclear—it enacted two dueling amendments to the same cross-reference, one of which is itself ambiguous.

But before marching through the familiar *Chevron* analysis, another question must first be answered: Does *Chevron* apply at all in this circumstance? The *Chevron* doctrine, typically discussed as a "two step" analysis,[82] has, since 2001, become effectively three-stepped. Before even determining whether Congress has spoken directly to the question at issue in the statute, a court must first determine if Congress intended to delegate interpretive power to the Agency at all.[83] Referred to as *Chevron* "step zero,"[84] this inquiry looks at whether Congress has delegated rulemaking authority to the Agency and the Agency has used appropriately accountable procedures such as notice-and-comment rulemaking.[85]

This past term, in the case *Scialabba v. Cuella de Osorio*, this question was addressed by the U.S. Supreme Court in the context of a similar but not identical situation to that at issue here.[86] *Scialabba* involved the Board of Immigration Appeals (BIA) interpretation of a "Janus-faced"[87] statute, rather than two conflicting amendments to the same section of a statute. A majority of the nine Justices appear to view *Chevron* as applicable in the circumstance of that case. Three members of the majority[88] held that:

> internal tension makes possible alternative reasonable constructions, bringing into correspondence in one way or another the section's different parts. And when that is so, *Chevron* dictates that a court defer to the agency's choice—here, to the Board's expert judgment about which interpretation fits best with, and makes most sense of, the statutory scheme.[89]

The plurality ultimately held that BIA's interpretation, prioritizing one of the conflicting parts of the conflicting provision, was a "textually reasonable construction consonant with its view of the purposes and policies underlying immigration law."[90] In addition, two or three of the dissenters[91] appear to believe that *Chevron* applies to a case where there is a direct conflict,[92] but that "BIA's construction was impermissible."[93]

However, three members of the Court, two concurring in the judgment[94] and one dissenting,[95] took the position that in cases of direct conflict, *Chevron* does not apply at all. In Chief Justice John Roberts' words, writing for himself and Justice Antonin Scalia, "[d]irect conflict is not ambiguity, and the resolution of such a conflict is not statutory construction but legislative choice. *Chevron* is not a license for an agency to repair a statute that does not make sense."[96] It is not clear how Chief Justice Roberts would

78. *See* Michael S. Fried, A Theory of Scrivener's Error, 52 Rutgers L. Rev. 589, 593 (2000) (defining scrivener's error as "a typographical mistake or other error of a clerical nature in the drafting of a document").
79. *See* United States v. X-Citement Video, Inc., 513 U.S. 64, 82 (1994) (Scalia, J., dissenting) ("For the *sine qua non* of any 'scrivener's error' doctrine, it seems to me, is that the meaning genuinely intended but inadequately expressed must be absolutely clear; otherwise we might be rewriting the statute rather than correcting a technical mistake."); Appalachian Power Co. v. EPA, 249 F.3d 1032, 1041, 31 ELR 20635 (D.C. Cir. 2001) ("[F]or the EPA to avoid a literal interpretation at *Chevron* step one, it must show either that, as a matter of historical fact, Congress did not mean what it appears to have said, or that, as a matter of logic and statutory structure, it almost surely could not have meant it.") (citing Engine Mfrs. Ass'n v. EPA, 88 F.3d 1075, 1089, 26 ELR 21477 (D.C. Cir. 1996)).
80. Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc., 467 U.S. 837, 14 ELR 20507 (1984).
81. *Id.* at 843 n.9.
82. Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs., 545 U.S. 967, 986 (2005).
83. *See* United States v. Mead Corp., 533 U.S. 218, 226-27 (2001).
84. *See* Cass R. Sunstein, *Chevron* Step Zero, 92 Va. L. Rev. 187, 197 (2006).
85. *See* City of Arlington, Tex. v. FCC, 133 S. Ct. 1863, 1885-86, 43 ELR 20112 (2013) (Beyer, J., dissenting). However, Justice Stephen Breyer has attempted to push the step zero inquiry into a case-by-case inquiry focusing on whether Congress intended to give the Agency power to decide the particular question at issue.
86. Scialabba v. Cuellar de Osorio, 134 S. Ct. 2191, 2203 (2014) (Kagan, J., plurality opinion); *id.* at 2219-20 (Sotomayor, Breyer, Thomas (partial) JJ., dissenting).
87. *Id.* at 2203. ("Its first half looks in one direction, . . . the section's second half looks another way[.] . . . The two faces of the statute do not easily cohere with each other: Read either most naturally, and the other appears to mean not what it says.").
88. Justice Elena Kagan drafted a plurality opinion joined by Justices Anthony Kennedy and Ruth Bader Ginsberg. *Id.* at 2196-213. Chief Justice John Roberts drafted a concurring opinion for himself and Justice Antonin Scalia that agreed in outcome but specifically disagreed as to this point. *Id.* at 2214-16 (Roberts, C.J., concurring).
89. *Id.* at 2203.
90. *Id.* at 2213.
91. Justice Sonia Sotomayor drafted a dissenting opinion joined by Justice Breyer and (perhaps) Justice Clarence Thomas. *Id.* at 2216 (Sotomayor, J., dissenting). Justice Thomas did not join in footnote 3 of the dissenting opinion, relating this case to a prior one, *National Ass'n of Home Builders v. Defenders of Wildlife*, 551 U. S. 644 (2007), in which the Court found the conflict between two separate statutes sufficient to create ambiguity and allow *Chevron* deference. *Scialabba*, 134 S. Ct. at 2220-21. The full implication of Justice Thomas' failure to join in this footnote is not clear.
92. To be sure, the dissent does not directly state this. However, the opinion engages in significant analysis under *Chevron*. *Scialabba*, 134 S. Ct. 2191. Moreover, Justice Samuel Alito wrote separately to make the point that a direct conflict is not a situation for which *Chevron* deference is appropriate, suggesting that Justice Sotomayor's dissent did accept that premise. *Scialabba*, 134 S. Ct. at 2216 (Alito, J. dissenting).
93. *Id.* at 2221.
94. *Id.* at 2214-16 (Roberts, C.J., concurring).
95. *Id.* at 2216 (Alito, J. dissenting).
96. *Id.* at 2214 (citation omitted) (Roberts, C.J., concurring).

resolve such a direct conflict. In *Scialabba*, the Chief Justice offered a reading that obviated his need to do so, finding that there was no conflict at all and that the BIA's reading was the only permissible one.[97] Section 111(d)'s ambiguities could offer a similar out. Although the two amendments change the same existing language in different ways, the ambiguities in the House amendment that we point out in the Appendix might permit it to be reconciled with the policy of the Senate amendment.

Absent such a reconciliation, it is unclear how Justices Roberts, Scalia, and Alito would ultimately resolve a direct conflict. Perhaps, resolution of directly conflicting amendments is ultimately a question for the courts, not the Agency, and that the courts will muddle through, doing their best to divine the intent of Congress, using all of their tools of statutory construction (such as the rarely used but occasionally discussed option to pick the last provision in arrangement[98]) without any particular deference to the Agency. Another option would be to find the conflicting attempts to modify §111(d) void,[99] returning §111(d) to the pre-1990 text,[100] or conceivably rendering §111(d) void in its entirety.

Assuming the courts ultimately apply the *Chevron* analysis to §111(d) (either because they determine *Chevron* applies to "direct conflicts" or because they find no "direct conflict"), the courts would determine whether, using the "traditional tools of statutory construction," Congress has spoken directly to the question at issue, in which case, EPA would be constrained to an interpretation consistent with the Court's construction.

More likely, courts may find that, as has been the initial reaction of many lawyers, "this is the kind of case *Chevron* was built for"[101]—it is perfectly clear that Congress' intent is perfectly unclear. If the courts agree, this issue would be resolved at *Chevron* step 2. The *Scialabba* opinion is again instructive as to the extent of discretion the courts may give to EPA at *Chevron* step 2. In the plurality opinion, Justice Elena Kagan held that the BIA's interpretation—effectively picking one of the two conflicting positions, based on statutory structure and administrability—was an acceptable reading of the statute.[102] Justice Sonia Sotomayor dissented, stating that even if there is sufficient ambiguity for some BIA discretion,[103] what was *not* a reasonable interpretation was picking one provision at the exclusion of the other.[104] The Agency should have, instead, interpreted the seemingly conflicting statute to give effect to both provisions.[105] EPA's proposed interpretation—giving effect to both amendments with a construction that is not wholly consistent with the text of either one read alone—appears consistent with at least one reasonable interpretation of congressional intent. However, whether it is upheld as reasonable will depend largely on which of the *Scialabba* positions the courts find most apply to this case.

Thus, looking at this history, one can find some guidance as to what Congress might have intended on "best system" and on EPA's supervisory authority over state plans. But the one area in which we are likely to find less useful guidance is the 1990 drafting error. The question of the scope of §111(d) will ultimately have to be resolved by the D.C. Circuit or, more probably, by the Supreme Court.

Appendix: Syntactic and Semantic Ambiguity in 1990 House Amendment to CAA §111(d)(1)(A)(i)

Legislative draftsmen (and women) recognize several kinds of ambiguity in a statute. The first is semantic ambiguity—words and phrases have different or unclear meanings in common usage or in the context of a statute.[106] In particular, they point to ambiguities arising in the use of "and" and "or." Specifically, does "or" mean "and/or," or does it mean "or but not and"?[107] The second is syntactic ambigu-

97. *Id.* ("I see no conflict, or even 'internal tension'"). Similarly, Justice Alito wrote separately to agree with Justice Roberts that direct conflict does not justify *Chevron* deference, but came to the opposite conclusion as to what the statute clearly said. *Scialabba*, 134 S. Ct. at 2216 (Alito, J. dissenting).

98. *See* Lodge 1959, Am. Fed'n of Gov't Employees v. Webb, 580 F.2d 496, 510 n.31 (1978) (citing 81 cases referencing the rule), *cert. denied sub nom.* Lodge 1959, Am. Fed'n of Gov't Employees v. Frosch, 99 S. Ct. 311 (1978). State court citations of this rule date almost exclusively pre-1950. *See, e.g.*, State ex rel. Boone v. Tullock, 72 Mont. 482, 234 P. 277, 278 (1925) ("It is the rule, of course, that where two provisions of an act of the Legislature are conflicting and cannot be harmonized, the last in order of arrangement controls.") (citation omitted)). Note, however, that almost all cases that cite this provision claim that, in fact, there is no unresolvable conflict. *See, e.g.*, In re Adoption of Chaney, 128 Ind. App. 603, 609-10, 150 N.E.2d 754, 758 (1958) ("There might be merit in this contention if the two quoted provisions of the statute were in conflict but we see none."). *But see* United States v. Moore, 567 F.3d 187, 191 (6th Cir. 2009) ("We find that the last in order of arrangement—§3559(e)(1)—controls, there is no inconsistency and no ambiguity, and the rule of lenity does not come into operation.") (citation omitted)), *cert. denied*, 130 S. Ct. 282 (2009).

99. *See* Scalia & Garner, *supra* note 67, at 134-39 (describing the unintelligibility canon: "When its command is garbled beyond comprehension, there is no command; and in our system of separated powers, courts have no power to devise one." *Id.* at 138.); *see also* Earl T. Crawford, The Construction of Statutes §166 (1940); Reed Dickerson, The Interpretation and Application of Statutes 228 (1975). *But see* In re Interrogatories Propounded by Senate, etc., 536 P.2d 308, 315 (Colo. 1975) (discussing and rejecting relevant state case law indicating, in dicta, that if irreconcilable amendments are enacted on the same day, they should both be rejected as void, noting that while this rule has been regularly stated, it has not been often applied to void two amendments).

100. Section 111(d) would be limited to non-criteria pollutants and pollutants not included on the nonexistent list at §112(b)(1)(A). CO_2 seems to fit the bill.

101. *Scialabba*, 134 S. Ct. at 2213 (Kagan, J., referring to *Scialabba*).

102. *Id.* at 2213 (Kagan, J.).

103. *Id.* at 2227 (Sotomayor, J. dissenting).

104. *Id.* at 2220-21 (Sotomayor, J. dissenting) (citing *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (1999) indicating that, when possible, "courts 'must,'. . . 'interpret the statute "as a . . . coherent regulatory scheme"' rather than an internally inconsistent muddle" and outlining ways in which both provisions could be read together).

105. *Scialabba*, 134 S. Ct. at 2220. *See also* Citizens to Save Spencer Cnty. v. EPA, 600 F.2d 844, 9 ELR 20194 (D.C. Cir. 1979) (holding that in the face of a drafting error creating an irreconcilable conflict, a creative EPA interpretation was reasonable).

106. Reed Dickerson, Fundamentals of Legal Drafting §§6.1-6.12 (1965); Donald Hirsh, Drafting Federal Law §§5.5-5.9 (1980); Lawrence E. Filson & Sandra L. Strokoff, The Legislative Drafting Desk Manual §19.4 (2d ed. 2008).

107. Dickerson, *supra* note 106, §6.2, points out the semantic ambiguities in the use of "or," distinguishing between "inclusive" and exclusive" uses of the

ity, which arises from sentence structure and grammar.[108] The House amendment to §111(d)(1)(A)(i) of the CAA exhibits both syntactic and semantic ambiguities that render its interpretation much less straightforward than most commenters assume.[109] The interpretation of the House amendment as restricting the coverage of §111(d) to non-criteria pollutants emitted by sources that are not regulated by §112 is just one of several readings of the amendment. The text of this Article discusses the first of these, but close analysis reveals many more.

Under the relevant provisions of §111(d)(1), as modified by the House amendment, EPA prescribes rules under which each state submits a plan that (among other things):

> (A) establishes standards of performance for any existing source for any air pollutant for which air quality criteria have not been issued
>
> (i) or which is not included on a list published under section 108(a) or emitted from a source category which is regulated under section 112 but
>
> (ii) to which a standard of performance under this section would apply if such existing source were a new source.[110]

For purposes of this analysis, this statutory text can be simplified to direct states to submit plans that establish standards for any existing source for:

> any pollutant for which criteria have not been issued or which is not listed under §108 *or emitted by a §112 source.*

(For simplicity, we do not include discussion of the additional requirement that the pollutant be one to which a standard of performance would apply if the existing source were a new source.)

Breaking the emission standard requirement into its elements, it says that §111(d) directs states to set standards for any existing source for:

> any pollutant—
>
> ➢ for which criteria have not been issued or
>
> ➢ which is not—
>
> • listed under §108, or
>
> • emitted from a §112 source.

Because of the ambiguities in sentence structure and usages of "or," these elements yield a number of potential readings, outlined below.

Reading (1): Non-Criteria Pollutants From Non-§112 Sources Only

The most common reading of §111(d), as modified by the House amendment, is that all three elements are exclusions (that is, that the negation "not" applies to each) and the elements are conjunctive. To conform §111(d) to the interpretation most commenters give it—that non-criteria pollutants emitted from §112 sources *cannot* be regulated under §111(d)—the relevant provision would look much different if carefully drafted:

> any pollutant—
>
> ➢ for which criteria have not been issued *and*
>
> ➢ which is—
>
> • *not* listed under §108, *and*
>
> • *not* emitted from a §112 source.

Because "or" may sometimes be read to mean "and/or," this could be regarded as a reasonable interpretation of the House amendment to §111(d)(1)(A)(i). CO_2 emitted by EGUs could not be regulated under this interpretation because, while CO_2 is a pollutant for which criteria have not been issued, and it is a pollutant which is not listed under §108, it is a pollutant which *is* emitted from the §112 source category at issue—EGUs. However, even then, it is not clear that reading the "ors" of §111(d) to mean "and/or" would yield this interpretation (since it requires reading "or" as "and" not "and/or"). Moreover, there are many more interpretations.

Reading (2): Any Pollutant Other Than a Criteria Pollutant From a §112 Source

If both "ors" were read as truly disjunctive (i.e., "or" but not "and/or"), §111(d)(1)(A) would be read to mean states set standards for any existing source for—

> any pollutant—
>
> ➢ for which criteria have not been issued, or
>
> ➢ which is *either*—
>
> • not listed under §108, or
>
> • *not* emitted from a §112 source.

That is, under this interpretation, meeting the criteria-have-not-issued element is sufficient for §111(d) to apply to an air pollutant, regardless of whether the pollutant is on the §108 list or is emitted for a §112 source. Similarly, meeting the not-listed-under-§108 element or meeting the not-emitted-from-a-§112 source element would be sufficient as well. Under this reading, the *only* pollutants to which §111(d) would not apply would be criteria pollutants emitted from a §112 source.

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word. Inclusive is "A or B or both"; exclusive is "A or B but not both." *See also* Hirsh, *supra* note 106, §5.9; Filson & Strokoff, *supra* note 106, §21.10.

108. Dickerson, *supra* note 106, §§6.4-6.12.

109. In its recent brief responding to Murray Energy Corp.'s Petition for an Extraordinary Writ, the Environmental Protection Agency (EPA) identified similar ambiguities in the meaning of the House amendment. *See* Response to Petition, In re Murray Energy Corp., No. 14-1112 (D.C. Cir. Nov. 3, 2014).

110. CAA §111(d)(1), 42 U.S.C. §7411(d)(1), *as modified by* CAA Amendments of 1990 §§108(g), 302(a), 104 Stat. 2465, 2574.

Because CO_2 is neither a pollutant for which criteria have been issued nor a pollutant on the §108 list, EPA would have authority to direct states to issue standards of performance for CO_2 from EGUs.

Reading (3): Any Non-Criteria Pollutant, Alternative A

Alternatively, the first "or" could be read as "and/or" but the second "or" could be read to be truly disjunctive. Under this reading, states set standards for any existing source for:

any pollutant—

- for which criteria have not been issued *and*
- which is *either*—
  - not listed under §108, or
  - *not* emitted from a §112 source.

Under this reading, for EPA to have authority to direct a state to issue standards of performance, the pollutant could not be one for which criteria have been issued. It must then also meet at least one of the following two elements: not listed under §108 or not emitted from a §112 source. However, because all pollutants for which criteria pollutants have been issued are included on the list of pollutants in §108, the §112 element is unnecessary—a pollutant need only satisfy the criteria-have-not-issued element and one of the remaining two, which will always occur.

Because CO_2 is not a pollutant for which criteria have been issued and is not on the §108 list, under this reading, EPA would have authority to regulate CO_2 from EGUs.

Reading (4): Any Non-Criteria Pollutant, Alternative B

Here, the first "or" could be read to have its common meaning of joining a disjunctive list. However, because the negation "not" modifies the second two elements, based on De Morgan's theorem,[111] the second two elements could be read to be the conjunction of two negations. That is, under this reading, states set standards for any existing source for:

any pollutant—

- or which criteria have not issued, or
- which is—
  - *not* listed under §108, *and*
  - *not* emitted from a §112 source.

This reading, which could be considered the most accurate textual reading based on formal logic, would also cover all non-criteria air pollutants, as the criteria-have-not-issued element is sufficient. It would also cover criteria air pollutants not on a §108 list that are not emitted from a §112 source. However, because EPA cannot designate a pollutant as a criteria pollutant unless it is included on the §108 list, this condition is not possible. Therefore, under this reading, a pollutant is either not a criteria pollutant and EPA could require states to set standards for it, or it is a criteria pollutant and §111(d) would be inapplicable. Because CO_2 is a non-criteria pollutant, EPA would have authority to require states to set standards under this reading.

Reading (5): Coverage of All §112 Source Pollutants

Another syntactical ambiguity under the House amendment arises from whether "emitted from a §112 source" modifies "which is" or "which is not." If the latter, §111(d), as amended by the House amendment, would be read such that states set standards for any existing source for:

any pollutant—

- for which criteria have not been issued, *or*
- which is—
  - *not* listed under §108, *or*
  - emitted from a §112 source.

This interpretation makes the emitted-from-a-§112 source element permissive rather than restrictive and sufficient to regulate the pollutant under §111(d). That is, it would apply §111(d) to any pollutant that was emitted from any §112 source. Because CO_2 from EGUs is an air pollutant emitted from a §112-regulated source, this reading would permit EPA's proposed rule. However, this reading would go against the syntactic canon of construction that a prepositive modifier to a parallel series applies to the whole series,[112] rather than to the nearest referent.[113] Moreover, stepping back from textual analysis, this reading is improbable since it would flip the 1970 policy so that HAPs from sources required to be regulated under §112 would be explicitly covered (rather than specifically excluded) under §111(d).

Reading (6): Broad Exclusion of §112 Source Pollutants

Finally, presuming the §112 source element is, in fact, an exclusion, there remains ambiguity as to the scope of that exclusion. Specifically, it is not clear whether it excludes pollutants that are emitted from *any* source category regulated under §112 or only those that are emitted from the source category at issue in the §111(d) regulation if *that* source category is regulated under §112. Under the first interpretation, the House amendment would direct states to set standards for any existing source for:

any pollutant—

- for which criteria have not been issued, *and*

111. *See* Scalia & Garner, *supra* note 67, at 119-21.

112. *Id.* at 147-51.

113. *Id.* at 152-53.

- which is—
  - not listed under §108, and
  - *not* emitted from a source *in any §112 category*.

This reading would effectively bar the use of §111(d) completely, as virtually all pollutants are emitted from at least one of the many source categories regulated under §112, even if that source category is not the source category to be regulated under §111(d). This reading can be avoided by distinguishing the use of the phrase "emitted from *a* source category which is regulated under §112" from the use of the phrases "*any* source category" and "*any* pollutant" earlier in the section.[114] Beyond the text, there is no legislative history indicating that the House amendment was intended to effectively void §111(d).

In sum, although many commenters read §111(d), as modified by the House amendment, to unambiguously prohibit the use of §111(d) to regulate CO_2 from EGUs, it is clear that there is significant ambiguity in how to interpret the amendment. At least four potential readings would leave open the possibility of EPA regulation of CO_2 emissions from existing EGUs. While the limited indicia of legislative history may suggest that Reading (1) is closest to what the House intended, from a strictly textual standpoint, Reading (4) may be the most consistent with the formal tools of statutory interpretation.

114. In fact, in its regulation promulgating the now-vacated CAMR, EPA adopted this distinction. *See* EGU Delisting Rule, *supra* note 70, 70 Fed. Reg. at 16031-32; CAMR, *supra* note 33, 70 Fed. Reg. at 28649.

RECENT DEVELOPMENTS

In the Courts

These entries summarize recent cases under the following categories: Air, Energy, Land Use, Toxic Substances, Waste, Water, and Wildlife. The entries are arranged alphabetically by case name within each category. This material is updated monthly. For archived materials, visit http://elr.info/articles/news-analysis/cases-update/archive.

AIR

Alliance of Automobile Manufacturers v. Environmental Protection Agency, No. 11-1334, 44 ELR 20230 (D.C. Cir. Oct. 21, 2014). The D.C. Circuit dismissed automobile industry groups' petition challenging an EPA rule intended to mitigate the misfueling of vehicles and engines with gasoline containing greater than 10% ethanol.

Nebraska v. United States Environmental Protection Agency, No. 4:14-CV-3006, 44 ELR 20221 (D. Neb. Oct. 6, 2014). A district court dismissed Nebraska's lawsuit challenging EPA's proposed standards to limit carbon dioxide emissions from new or modified fossil fuel-fired electric utility generating units.

New Era Group v. Environmental Protection Agency, No. 14-1054, 44 ELR 20223 (D.C. Cir. Oct. 3, 2014). The D.C. Circuit upheld EPA's denial of a petition to reconsider an Agency rule allocating production allowances for hydrochlorofluorocarbons, ozone-depleting refrigerants.

WildEarth Guardians v. United States Environmental Protection Agency, Nos. 12-9596 et al., 44 ELR 20229 (10th Cir. Oct. 21, 2014). The Tenth Circuit denied petitions for review challenging EPA's approval of a regional cap-and-trade program regulating sulfur dioxide emissions to address regional haze over the Colorado Plateau, a Class I area.

ENERGY

Sovereign Operating Co. v. Broomfield, City & County of, No. 14CV30092, 44 ELR 20225 (Colo. Dist. Ct. Sept. 25, 2014). A Colorado court held that a voter-approved local ban on hydraulic fracturing cannot apply retroactively to ban oil and gas operations that a city approved in a prior agreement.

LAND USE

National Parks Conservation Ass'n v. United States Department of Interior, Nos. 2:11-cv-578, -647, 44 ELR 20214 (M.D. Fla. Sept. 19, 2014). A district court upheld the National Park Service's plan to allow off-road vehicle use on designated trails in the "addition lands" of Florida's Big Cypress National Preserve.

Swan View Coalition v. Weber, No. 13-129, 44 ELR 20226 (D. Mont. Sept. 25, 2014). A district court granted in part and denied in part motions for summary judgment in a case involving logging projects in the Flathead National Forest.

Yount v. Salazar, Nos. 11-8171 et al., 44 ELR 20219 (D. Ariz. Sept. 30, 2014). A district court upheld DOI's decision to withdraw more than one million acres of federal land adjacent to the Grand Canyon National Park from uranium mining.

TOXIC SUBSTANCES

Bryant v. United States, No. 12-15424, 44 ELR 20222 (11th Cir. Oct. 14, 2014). The Eleventh Circuit dismissed military families' claims against the government under the Federal Tort Claims Act for various health problems due to their alleged exposure to toxic substances in the drinking water while living at a military base in North Carolina.

WASTE

Anthony Wayne Corp. v. Elco Industries, Inc., No. 3:13CV1406, 44 ELR 20231 (N.D. Ind. Oct. 17, 2014). A district court denied a manufacturing company's motion to dismiss a landowner's state-law claims against it for breach of contract and for waste, but granted the company's motion to dismiss the landowner's claims for cleanup costs under CERCLA and state law.

Boeing Co. v. Movassaghi, No. 11-55903, 44 ELR 20215 (9th Cir. Sept. 19, 2014). The Ninth Circuit invalidated a California law that prescribes cleanup standards for radioactive contamination at the Santa Susana Field Laboratory, a former federal nuclear testing facility near Los Angeles.

Florida Power Corp. v. First Energy Corp., No. 12-cv-1839, 44 ELR 20232 (6th Cir. Oct. 10, 2014). The Sixth Circuit held that a Florida utility's lawsuit to recover cleanup costs it has incurred in connection with the release of hazardous substances at two manufactured gas plant sites is time barred under CERCLA.

Shieldalloy Metallurgical Corp. v. Nuclear Regulatory Commission, No. 13-1259, 44 ELR 20227 (D.C. Cir. Oct. 14, 2014). The D.C. Circuit upheld an NRC order transferring regulatory authority over decommissioning activities at a former aluminum production plant to the state of New Jersey under the Atomic Energy Act.

WATER

Mingo Logan v. U.S. Environmental Protection Agency, No. 10-0541, 44

ELR 20217 (D.D.C. Sept. 30, 2014). A district court upheld EPA's revocation of a CWA §404 permit allowing a mining company to discharge fill material from its West Virginia mountaintop coal mine into two nearby streams.

Mobile Baykeeper v. U.S. Army Corps of Engineers, No. 1:14-cv-00032, 44 ELR 20233 (S.D. Ala. Oct. 16, 2014). A district court dismissed an environmental group's lawsuit challenging the U.S. Army Corps of Engineer's determination that Nationwide Permit 12 (NWP 12) applied to the discharge of dredged and fill material in Alabama's Big Creek Lake Watershed in connection with a larger pipeline construction project.

Ohio Valley Environmental Coalition v. Fola Coal Co., No. 2:13-5006, 44 ELR 20228 (S.D. W. Va. Sept. 30, 2014). A district court denied a mining company's motion for partial judgment in a case filed against it for alleged CWA and SMCRA violations.

Pebble Limited Partnership v. United States Environmental Protection Agency, No. 3:14-cv-0097, 44 ELR 20220 (D. Alaska Sept. 26, 2014). A district court dismissed a lawsuit challenging EPA's initiation of CWA §404(c) proceedings for the proposed Pebble Mine Project, a large copper and gold mine in the Bristol Bay region of southwest Alaska.

San Luis & Delta-Mendota Water Authority v. Jewell, No. 1:13-CV-01232, 44 ELR 20224 (E.D. Cal. Oct. 1, 2014). A district court granted summary judgment in favor of the U.S. Bureau of Reclamation on all but one claim filed against the agency challenging its decision in 2013 to make certain "flow augmentation releases" of water from a dam located in the Trinity River Division of the Central Valley Project to reduce fish die-off in the lower Klamath River.

Save Lake Peigneur, Inc. v. Louisiana Department of Natural Resources, No. 122358E, 44 ELR 20216 (La. Dist. Ct. Sept. 23, 2014). A Louisiana court held that the state erred in issuing a coastal use permit to a natural gas storage and transport company that was needed to create two new natural gas storage caverns in the Jefferson Island salt dome underneath Lake Peigneur.

WILDLIFE

Defenders of Wildlife v. Jewell, No. 13-0919, 44 ELR 20218 (D.D.C. Sept. 30, 2014). A district court upheld FWS' withdrawal of a proposed rule that would have listed the dunes sagebrush lizard as an endangered species.

In the Federal Agencies

These entries cover the period October 1, 2014, through October 31, 2014. Citations are to the *Federal Register* (FR). Entries below are organized by Final Rules, Proposed Rules, and Notices. Within each section, entries are further subdivided by the subject matter area, with entries listed chronologically. This material is updated monthly. For archived material, visit http://elr.info/daily-update/archives.

Final Rules

AIR

EPA finalized the residual risk and technology review of NESHAPs for the acrylic and modacrylic fibers production, amino/phenolic resins production, and polycarbonate production source categories and emissions during periods of startup, shutdown, and malfunction. 79 FR 60897 (10/8/14).

EPA delegated authority to Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming to implement new source performance standards. 79 FR 60993 (10/9/14).

EPA delegated authority to West Virginia to implement and enforce NESHAPs and new source performance standards. 79 FR 62136 (10/16/14).

EPA delegated authority to Virginia to implement and enforce NESHAPs and new source performance standards. 79 FR 62137 (10/16/14).

EPA expanded the list of acceptable substitutes for ozone-depleting substances under the Significant New Alternatives Policy program for use in the refrigeration and air conditioning, foam blowing, and fire suppression and explosion protection sectors. 79 FR 62863 (10/21/14).

EPA adjusted the annual consumption and production allowances for hydrochlorofluorocarbons (HCFCs) for 2015-2019, and made minor changes to the reclamation regulations, updated the use restrictions to account for a recent amendment to the CAA, and finalized a de minimis exemption to the use restrictions for certain uses of HCFC-225ca/cb and HCFC-124. 79 FR 64253 (10/28/14).

SIP Approvals: California (particulate matter emissions from agricultural compression engines and the definition of "hazardous air pollutants" for the Lake County air quality management district) 79 FR 60061 (10/6/14); (nitrogen oxide emissions from wallboard kilns and internal combustion engines in the Imperial County air pollution control district) 79 FR 60070 (10/6/14); (nitrogen oxide emissions from natural gas-fired water heaters, small boilers, and process heaters for the Placer County air pollution control district) 79 FR 60347 (10/7/14); (approval of four permitting rules, limited approval of one rule, disapproval of one rule, and repeal of one rule for the Monterey Bay unified air pollution control district) 79

FR 61794 (10/15/14); (attainment of the 1997 eight-hour ozone NAAQS in the Sacramento Metro nonattainment area) 79 FR 61799 (10/15/14); (redesignation to attainment of the 2006 24-hour fine particulate matter NAAQS for the Yuba City-Marysville nonattainment area) 79 FR 61822 (10/15/14); (volatile organic compound emissions from consumer products) 79 FR 62346 (10/17/14); (ozone precursor emissions inventories for Imperial County) 79 FR 63332 (10/23/14); (interstate transport requirements for 2006 24-hour fine particulate matter NAAQS) 79 FR 63536 (10/24/14). District of Columbia/Maryland/Virginia (redesignation to attainment of the 1997 annual fine particulate matter NAAQS and maintenance plan through 2025 for the Washington, D.C., nonattainment area) 79 FR 60081 (10/6/14). Florida (removal of unnecessary rules on new and existing sulfur storage and handling facilities) 79 FR 62006 (10/16/14). Illinois (gasoline volatility standards and motor vehicle refinishing regulations) 79 FR 60065 (10/6/14); (eight-hour ozone maintenance plan for the Greater Chicago area) 79 FR 60073 (10/6/14); (partial approval of infrastructure requirements for the 2008 ozone, 2010 nitrogen dioxide, and 2010 sulfur dioxide NAAQS) 79 FR 62042 (10/16/14); (gasoline vapor recovery requirements for the Chicago ozone nonattainment area) 79 FR 62352 (10/17/14). Indiana (infrastructure requirements for the 2008 lead NAAQS) 79 FR 62035 (10/16/14). Iowa (multi-year updates to the air quality ordinance for Linn County) 79 FR 62852 (10/21/14). Kansas (infrastructure requirements for the 2008 NAAQS for ozone) 79 FR 62861 (10/21/14); (infrastructure requirements for the 2010 NAAQS for nitrogen dioxide) 79 FR 63044 (10/22/14). Maryland (infrastructure requirements for the 2008 ozone NAAQS) 79 FR 62010 (10/16/14). Missouri (2008 lead NAAQS for the Herculaneum nonattainment area) 79 FR 62572 (10/20/14); (revisions to rule titled "Restriction of Emission of Particulate Matter From Industrial Processes") 79 FR 62844 (10/21/14); (revisions to rule titled "Control of Emissions From Hand-Fired Equipment") 79 FR 62856 (10/21/14). Nebraska (infrastructure and associated requirements for the 2008 NAAQS for lead) 79 FR 62832 (10/21/14). Nevada (redesignation to attainment of the coarse particulate matter NAAQS in the Las Vegas Valley and related revisions) 79 FR 60078 (10/6/14); (stationary source permitting-related rules for Clark County) 79 FR 62350 (10/17/14); (applications for, and issuance of, permits for stationary sources) 79 FR 62846 (10/21/14). New Mexico (regional haze and interstate transport revisions and withdrawal of federal implementation plan) 79 FR 60978 (10/9/14); (regional haze and interstate transport in San Juan County) 79 FR 60985 (10/9/14). North Dakota (removal of subsections on the treatment of excess emissions from sources inconsistent with CAA requirements) 79 FR 63045 (10/22/14). Ohio (infrastructure requirements for the 2008 lead and 2010 nitrogen dioxide NAAQS) 79 FR 60075 (10/6/14); (infrastructure requirements for the 2008 ozone NAAQS) 79 FR 62019 (10/16/14); (fine particulate matter) 79 FR 64119 (10/28/14). Pennsylvania (reasonably available control technology for the offset lithographic printing and letterpress printing, flexible package printing, and industrial solvent cleaning operations source categories) 79 FR 60059 (10/6/14); (state boards' requirements for all criteria pollutants and related infrastructure element for the 2008 lead NAAQS) 79 FR 62003 (10/16/14). Wisconsin (PSD and nonattainment new source review programs) 79 FR 60064 (10/6/14); (revision to PSD program) 79 FR 62008 (10/16/14). Wyoming (removal of an exemption on the treatment of excess emissions from sources) 79 FR 62859 (10/21/14).

CLIMATE CHANGE

EPA made revisions to the reporting and recordkeeping requirements of the Greenhouse Gas Reporting Program, including the addition of an alternative verification approach in lieu of collecting certain data elements for which EPA has identified disclosure concerns and for which the reporting deadline was deferred until March 31, 2015; the Agency also established final confidentiality determinations for the new data elements added in this action. 79 FR 63749 (10/24/14).

ENERGY

DOE issued final rulemaking that establishes standards under the Energy Conservation and Production Act for the green building certification system to be used for new or renovated federal buildings. 79 FR 61563 (10/14/14).

NATURAL RESOURCES

The Federal Highway Administration and Federal Transit Administration amended its NEPA-implementing regulations by adding new categorical exclusions and by giving state departments of transportation greater authority to process them under specific constraints and programmatic agreements. 79 FR 60100 (10/6/14).

DOI's Office of Natural Resources Revenue (ONRR) and Office of Hearing and Appeals amended and clarified regulations concerning certain aspects of appeals of ONRR correspondence, and clarified the final administrative nature of ONRR orders that are not paid or appealed. 79 FR 62047 (10/16/14).

TOXIC SUBSTANCES

EPA promulgated significant new use rules under TSCA for 52 chemical substances that were the subject of premanufacture notices, nine of which are subject to TSCA §5(e) consent orders issued by the Agency. 79 FR 63821 (10/27/14).

EPA denied a petition to initiate rulemaking under TSCA to address risks related to polyvinyl chloride, vinyl chloride, and phthalates used as plasticizers. 79 FR 64722 (10/31/14).

WASTE

EPA authorized revisions to Arkansas' hazardous waste management program under RCRA. 79 FR 59438 (10/2/14).

EPA approved DOE's request to implement the Run-of-Mine Panel Closure System at the Waste Isolation

Pilot Plant (WIPP) in southeastern New Mexico and amended the WIPP compliance criteria to allow an EPA-approved panel closure other than the currently required design. 79 FR 60750 (10/8/14).

EPA authorized revisions to Florida's hazardous waste management program under RCRA. 79 FR 60756 (10/8/14).

EPA gave final authorization to revisions to Arkansas' hazardous waste program under RCRA. 79 FR 64768 (10/31/14).

WILDLIFE

FWS announced a 12-month finding on a petition to list the Rio Grande cutthroat trout as endangered or threatened under the ESA; the agency found that listing is not warranted and removed the species from its candidate list. 79 FR 59140 (10/1/14).

FWS announced a 12-month finding on a petition to list the yellow-billed loon as endangered or threatened under the ESA; the agency found that listing is not warranted. 79 FR 59195 (10/1/14).

FWS determined threatened status under the ESA for the distinct population segment of the yellow-billed cuckoo in western portions of the United States, Canada, and Mexico. 79 FR 59991 (10/3/14).

FWS determined threatened status under the ESA for the straight-horned markhor, a goat-antelope native to Afghanistan and Pakistan. 79 FR 60365 (10/7/14).

FWS determined threatened species status under the ESA for the Dakota skipper, a butterfly currently found in Minnesota, North Dakota, South Dakota, Manitoba, and Saskatchewan, and endangered species status for the Poweshiek skipperling, a butterfly currently found in Michigan, Minnesota, Wisconsin, and Manitoba; both species will be added to the List of Endangered and Threatened Wildlife. 79 FR 63671 (10/24/14).

Proposed Rules

AIR

EPA proposed to supplement its rulemaking of November 23, 2011, with a revised technology review, a revised residual risk review, and new compliance requirements for the NESHAP in the ferroalloys production source category to improve reduction of fugitive manganese emissions. 79 FR 60237 (10/6/14).

EPA proposed to delegate authority to Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming to implement new source performance standards. 79 FR 61044 (10/9/14).

SIP Proposals: California (nitrogen oxide emissions from wallboard kilns and internal combustion engines in the Imperial County air pollution control district) 79 FR 60123 (10/6/14); (particulate matter emissions from agricultural compression ignition engines and the definition of "hazardous air pollutants" for the Lake County air quality management district) 79 FR 60124 (10/6/14); (nitrogen oxide emissions from natural gas-fired water heaters, small boilers, and process heaters for the Placer County air pollution control district) 79 FR 60405 (10/7/14); (volatile organic compound emissions from consumer products) 79 FR 62378 (10/17/14); (2002 volatile organic compound and oxides of nitrogen emissions inventories for Imperial County) 79 FR 63349 (10/23/14); (partial approval of infrastructure requirements for ozone, fine particulate matter, lead, nitrogen dioxide, and sulfur dioxide) 79 FR 63350 (10/23/14); (reasonably available control technology requirements for the 2008 eight-hour ozone NAAQS for the Ventura County air pollution control district) 79 FR 64353 (10/29/14). Illinois (gasoline volatility standards and motor vehicle refinishing regulations) 79 FR 60125 (10/6/14); (gasoline vapor recovery requirements for the Chicago ozone nonattainment area) 79 FR 62378 (10/17/14). Iowa (multi-year updates to the air quality ordinance for Linn County) 79 FR 62934 (10/21/14). Missouri (revisions to rule titled "Control of Emissions From Hand-Fired Equipment") 79 FR 62933 (10/21/14); (revisions to rule titled "Restriction of Emission of Particulate Matter From Industrial Processes") 79 FR 62935 (10/21/14). Nebraska (infrastructure requirements for the 2008 NAAQS for lead and conflict of interest provisions) 79 FR 62934 (10/21/14). Nevada (applications for, and issuance of, permits for stationary sources) 79 FR 62932 (10/21/14). Ohio (fine particulate matter) 79 FR 64161 (10/28/14). Pennsylvania (redesignation to attainment of the 1997 annual and 2006 24-hour fine particulate matter NAAQS and related actions for the Harrisburg-Lebanon-Carlisle-York nonattainment areas, contingent upon lifting of D.C. Circuit stay of its Cross State Air Pollution Rule) 79 FR 62389 (10/17/14); (particulate matter best available retrofit technology requirements) 79 FR 64539 (10/30/14). Rhode Island (decommissioning of stage II vapor recovery systems) 79 FR 63591 (10/24/14). Washington (partial approval of infrastructure submittal for fine particulate matter NAAQS) 79 FR 62368 (10/17/14); (partial approval of infrastructure submittal for the 2008 ozone and 2010 nitrogen dioxide NAAQS) 79 FR 62379 (10/17/14). Wisconsin (supplemental proposal on the nitrogen oxides combustion turbine rule for the Milwaukee-Racine area). 79 FR 61042 (10/9/14).

LAND USE

USDA proposed to amend its regulations concerning guidelines for designating biobased products for federal procurement to incorporate statutory changes to §9002 of the Farm Security and Rural Investment Act that went into effect when the Agricultural Act of 2014 was signed into law on February 7, 2014. 79 FR 63831 (10/27/14).

USDA proposed to amend its regulations concerning the Voluntary Labeling Program for Biobased Products to incorporate statutory changes to §9002 of the Farm Security and Rural Investment Act that went into effect when the Agricultural Act of 2014 was signed into law on February 7, 2014. 79 FR 63846 (10/27/14).

TOXIC SUBSTANCES

EPA proposed a significant new use rule for 15 related chemical substances commonly known as nonylphenols and nonylphenol ethoxylates. 79 FR 59186 (10/1/14).

WASTE

EPA proposed to amend the National Oil and Hazardous Substances Pollution Contingency Plan by broadening the methods by which the Agency notifies the public about Superfund activities. 79 FR 59179 (10/1/14).

EPA proposed to authorize revisions to Arkansas' hazardous waste management program under RCRA. 79 FR 59471 (10/2/14).

EPA proposed to approve revisions to Florida's hazardous waste management program under RCRA. 79 FR 60795 (10/8/14).

EPA proposed to give final authorization to revisions to Arkansas' hazardous waste program under RCRA. 79 FR 64721 (10/31/14).

WATER

EPA proposed to extend an exception under CWA §404(c) for continued operation and maintenance of an electrical transmission line and a distribution line at the Bayou aux Carpes site in Jefferson Parish, Louisiana, for dredge and fill activities. 79 FR 60464 (10/7/14).

EPA proposed to modify the designations for five ocean dredged material disposal sites around Puerto Rico to allow disposal of material from outside their own harbors. 79 FR 61591 (10/14/14).

EPA proposed technology-based pretreatment standards and oversight requirements under the CWA to control the discharge of mercury and other pollutant metals into POTWs from existing and new dental practices that discharge dental amalgam. 79 FR 63257 (10/22/14).

WILDLIFE

FWS proposed to list 21 plant and animal species from the Mariana Islands as endangered under the ESA and to list two other plant species as threatened. 79 FR 59363 (10/1/14).

FWS proposed to list the black pinesnake, a subspecies from Alabama and Mississippi, as threatened under the ESA. 79 FR 60406 (10/7/14).

FWS proposed to list the West Coast distinct population segment of fisher, a member of the weasel family from California, Oregon, and Washington, as threatened under the ESA. 79 FR 60419 (10/7/14).

FWS proposed to list Florida bristle fern, a plant subspecies from Miami-Dade and Sumter Counties in Florida, as endangered under the ESA. 79 FR 61135 (10/9/14).

FWS proposed to list the African lion as threatened under the ESA after completing its 12-month finding on a petition to list the subspecies; FWS also proposed a rule under ESA §4(d) to provide for conservation measures for the African lion. 79 FR 64471 (10/29/14).

FWS proposed to include the common snapping turtle, Florida softshell turtle, smooth softshell turtle, and spiny softshell turtle in Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to allow the agency to adequately monitor international trade in these species; to determine whether exports are occurring legally, with respect to state and federal law; and to determine whether further measures under CITES or other laws are required to conserve these species. 79 FR 64553 (10/30/14).

Notices

AIR

EPA announced the availability of the Motor Vehicle Emissions Simulator model (MOVES2014) for official use outside of California to estimate emissions from cars, trucks, buses, and motorcycles for SIPs and transportation conformity analyses. 79 FR 60343 (10/7/14).

EPA entered into a proposed consent decree under the CAA in *Wyoming v. McCarthy*, No. 2:14-cv-00042-NDF (D. Wyo.), that establishes a deadline for the Agency to take final action on Wyoming's nonattainment new source review SIP. 79 FR 61864 (10/15/14).

CLIMATE CHANGE

EPA issued a notice of data availability in support of its June 18, 2014, proposed rule titled "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," to provide additional information on the emission reduction compliance trajectories created by the interim goal for 2020 to 2029, certain aspects of the building block methodology, and the way state-specific carbon dioxide goals are calculated. 79 FR 64543 (10/30/14).

ENERGY

The president proclaimed October 2014 as National Energy Action Month. 79 FR 60053 (10/3/14).

LAND USE

The president proclaimed September 27, 2014, as National Public Lands Day. 79 FR 59419 (10/1/14).

NATURAL RESOURCES

The president proclaimed October 19 through October 25, 2014, as National Forest Products Week. 79 FR 63291 (10/23/14).

TOXIC SUBSTANCES

EPA announced the availability of guidance for applying quantitative data to develop data-derived factors for interspecies and intraspecies extrapolation when conducting chemical assessments. 79 FR 59768 (10/3/14).

WASTE

EPA entered into a proposed administrative settlement under CERCLA that requires the settling parties to pay $40,000 in U.S. response costs concerning the Strategic Sciences Superfund site in Sylmar, California. 79 FR 60157 (10/6/14).

EPA, as part of its evaluation of whether or not the Waste Isolation Pilot Plant continues to comply with the Agency's environmental radiation protection standards for the disposal of radioactive waste, seeks comment on all aspects of DOE's 2014 Compliance Recertification Application. 79 FR 61268 (10/10/14).

EPA Region 2 entered into a proposed cost recovery settlement agreement under CERCLA §122(h) that requires the settling party to pay $722,250 in past response costs incurred at the Hooker Chemical/Ruco Polymer Superfund site in Hicksville, New York. 79 FR 63918 (10/27/14).

WATER

EPA Region 1 announced the availability of the final NPDES non-contact cooling water general permit for Massachusetts and New Hampshire. 79 FR 59489 (10/2/14).

EPA announced its preliminary regulatory determination for five of the 116 contaminants listed on the Third Drinking Water Contaminant Candidate List, as is required every five years under the SDWA, and proposed to regulate strontium, but not the other four contaminants (1,3-dinitrobenzene, dimethoate, terbufos, and terbufos sulfone). 79 FR 62715 (10/20/14).

EPA and the U.S. Army Corps of Engineers announced the availability of the Science Advisory Board's final peer review of EPA's draft report, Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis, which has been placed in the docket for the proposed rule, "Definition of 'Waters of the United States' Under the Clean Water Act." 79 FR 63594 (10/24/14).

DOJ NOTICES OF SETTLEMENT

United States v. Delek Refining, Ltd., No. 6:14-cv-0783 (E.D. Tex. Sept. 29, 2014). A settling CAA defendant responsible for a pipe rupture and fire at its petroleum refinery in Tyler, Texas, must pay a $475,000 civil penalty and must perform corrective measures. 79 FR 60184 (10/6/14).

United States v. Blackwell Zinc Co., Inc., No. 5:14-cv-01050-M (W.D. Okla. Sept. 29, 2014). Settling CERCLA defendants responsible for violations at the Blackwell Zinc Superfund site located in Blackwell, Oklahoma, must pay $547,931.39 in past U.S. response costs and must pay all other site costs through September 1, 2023. 79 FR 60185 (10/6/14).

United States v. Griffin Pipe Products Co., LLC, No. 1:14-cv-00027-JAJ-RAW (S.D. Iowa Sept. 25, 2014). A settling CAA and CWA defendant responsible for violations at its facility in Council Bluffs, Iowa, must pay a $950,000 civil penalty and must implement other appropriate mitigation measures. 79 FR 60185 (10/6/14).

United States v. Boston and Maine Corp., No. 1:14-cv-13804 (D. Mass. Oct. 7, 2014). Settling CERCLA defendants responsible for violations at the Iron Horse Park Superfund site in North Billerica, Massachusetts, must pay $1,560,570 in U.S. response costs and must perform the EPA-selected remedial action at Operable Unit 4. 79 FR 61651 (10/14/14).

United States v. ATP Oil & Gas Corp., No. 2:13-cv-0262 (E.D. La. Oct. 16, 2014). A settling CWA and Outer Continental Shelf Lands Act defendant responsible for unauthorized discharges of oil and chemicals from an oil platform into the Gulf of Mexico must pay a $1 million civil penalty and must perform corrective measures. 79 FR 63167 (10/22/14).

United States v. Metal Dynamics Detroit, LLC, No. 14-13993 (E.D. Mich. Oct. 16, 2014). A settling CAA defendant that violated opacity limits and regulations that govern the handling and disposal of appliances containing refrigerant at a scrap metal and iron recycling facility in Detroit, Michigan, must pay a $110,000 civil penalty, must perform injunctive relief, and must perform two supplemental environmental projects at a cost of $400,000. 79 FR 63167 (10/22/14).

United States v. Niagara Mohawk Power Corp., No. 1:14-cv-1266 (N.D.N.Y. Oct. 16, 2014). A settling CERCLA defendant must perform remedial action at the Niagara Mohawk Power Corporation Superfund site in Saratoga Springs, New York. 79 FR 63439 (10/23/14).

United States v. Childress Royalty Co., No. 14-CV-633-CVE-FHM (N.D. Okla. Oct. 20, 2014). A settling CERCLA defendant that owned property where mining operations took place at the Tar Creek Superfund site in Oklahoma must pay $810,918 in U.S. response costs incurred and to be incurred at the site. 79 FR 63640 (10/24/14).

United States v. Chevron Mining Inc., No. 14cv783 KBM-SCY (D.N.M. Aug. 28, 2014). A settling CERCLA defendant, in a case involving natural resource damages in and about the former Molycorp Mining site near Questa, New Mexico, must transfer certain property to mitigate some of the injury at the site and must pay the federal and state natural resource trustees about $4 million to be used to restore, replace, or acquire resources at the site. 79 FR 63941 (10/27/14).

In re Getting Petroleum Marketing, Inc., No. 11-15606 (Bankr. Ct. S.D.N.Y. Oct. 21, 2014). Under a CERCLA settlement concerning the Newtown Creek Superfund site in Queens and Kings Counties, New York, the United States will be provided a $14,844,800 allowed general unsecured claim on behalf of EPA, and a $1,155,200 allowed general unsecured claim on behalf of DOI and NOAA. 79 FR 63942 (10/27/14).

United States v. Russell, No. 2:14-cv-01660-SU (D. Or. Oct. 21, 2014). Settling CERCLA defendants must pay a total of $1.2 million in U.S. response

costs incurred at the New York Mine Complex site, the Ajax and Magnolia Mines site, and the Independence Mine Group site in northeastern Oregon. 79 FR 64215 (10/28/14).

United States v. Kiryas Joel Poultry Processing Plant, Inc., No. 14 Civ. 8458 (S.D.N.Y. Oct. 23, 2014). Settling CWA defendants that discharged stormwater and untreated wastewater from their poultry processing plant and pretreatment facility in Monroe, New York, must pay a $330,000 civil penalty and must perform various injunctive relief. 79 FR 64408 (10/29/14).

In the State Agencies

The entries below cover state regulatory developments during the month of October 2014. The entries are arranged by state, and within each section, entries are further subdivided by subject matter. For material previously reported, visit http://elr.info/administrative/state-updates/archive.

ARIZONA

AIR

The Department of Environmental Quality and Air Quality Division issued a substantive policy statement, "Catalytic Converter Inspection for Area B Waivers." The purpose of the document is to clarify the circumstances in which a catalytic converter inspection would fail, preventing a certificate of waiver for vehicles in the Tucson Metropolitan Area from being issued. The policy was effective July 24, 2014. *See* http://www.azsos.gov/public_services/Register/2014//policy.pd38f.

WATER

The Department of Water Resources passed a final amendment to Ariz. Rev. Stat. §12-15-725.01 and repealed §12-15-725.02, pertaining to irrigation rights. The amendment and repeal provide for a delay in the reduction of the allocation factor used for calculating extinguishment credits in the Pinal Active Management Area (AMA), thereby giving irrigation grandfathered right holders the flexibility to explore alternatives for meeting the Pinal AMA's goals before 2019. The changes became effective September 12, 2014. *See* http://www.azsos.gov/public_services/Register/2014/40/final.pdf (p. 2673).

ARKANSAS

LAND USE

The Economic Development Commission adopted the Arkansas Energy Code for New Building Construction Supplements and Amendments 2014—Update to International Energy Conservation Code 2009. Changes took effect October 12, 2014. *See* http://www.sos.arkansas.gov/rulesRegs/Arkansas%20Register/2014/sept2014/0914Register.pdf.

The Agriculture Department, State Plant Board, adopted the "Emerald Ash Borer Quarantine." The rule took effect September 12, 2014. *See* http://www.sos.arkansas.gov/rulesRegs/Arkansas%20Register/2014/sept2014/0914Register.pdf.

WASTE

The East Arkansas Regional Solid Waste Management District adopted Rules Regarding: Administration of Recycling Fund Program 2014, Procedure for Obtaining Certificate of Need, the Licensing of Haulers of Solid Waste, and Implementation of Solid Waste Fee. All rules went into effect September 24, 2014. *See* http://www.sos.arkansas.gov/rulesRegs/Arkansas%20Register/2014/sept2014/0914Register.pdf.

WILDLIFE

The Game and Fish Commission adopted 2014-2015 Migratory Bird Regulations, 2015 General Fishing Regulations, and Various Regulation Codes. Regulations went into effect September 26, 2014. *See* http://www.sos.arkansas.gov/rulesRegs/Arkansas%20Register/2014/sept2014/0914Register.pdf.

CALIFORNIA

AIR

The Air Resources Board amended 17 Cal. Code Regs. §§94501, 94506, 94508-94509, 94512-94513, 94515, 94520-94526, 94528, and 94700, and repealed §§94560-94575. Changes pertain to regulations that govern various antiperspirants and deodorants, aerosol coating products, and consumer products, and reduce impacts to the formation of ground-level ozone by volatile organic compound emissions. The rule will become effective January 1, 2015. *See* http://www.oal.ca.gov/res/docs/pdf/notice/39z-2014.pdf (p. 1675).

The California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) readopted §§10080-10087 of Title 4 of the Cal. Code of Regs. The rules develop the Property Assessed Clean Energy (PACE) Loss Reserve Program to mitigate risk, detailing procedures through which CAEATFA can avoid default and foreclosure, and increase the ac-

ceptance of PACE loans in the marketplace. *See* http://www.oal.ca.gov/res/docs/pdf/notice/38z-2014.pdf (p. 1654).

The Air Resources Board amended 13 Cal. Code Regs. §§2030 and 2031 to streamline the process for certification of alternative fuel conversion systems. The amendments were proposed in response to industry requests to make this process faster and less expensive. Changes took effect September 15, 2014. *See* http://www.oal.ca.gov/res/docs/pdf/notice/39z-2014.pdf (p. 1674).

TOXIC SUBSTANCES

The Office of Environmental Health Hazard Assessment (OEHHA) is seeking public comment on a draft report concerning exposure levels of carbonyl sulfide, a byproduct of oil refining. The document is available on the OEHHA website. The deadline for comment is December 16, 2014. *See* http://www.oal.ca.gov/res/docs/pdf/notice/42z-2014.pdf (p. 1754).

WASTE

The California Department of Resources Recycling and Recovery proposed amendments to 14 Cal. Code Regs. Division 7, Chs. 1, 3, 3.1, 5, and App. 1, and the addition of Ch. 3.2. The new regulations benefit public health, safety, and the environment through more effective regulation of solid waste facilities that process compostable materials. The deadline for comment is December 5, 2014. A public hearing will be held December 10, 2014. *See* http://www.oal.ca.gov/res/docs/pdf/notice/41z-2014.pdf (p. 1725).

COLORADO

LAND USE

The Department of Agriculture, Conservation Services Division, proposed amendments to 8 Colo. Code Regs. 1206-2, Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act. Changes include the addition of plant species on List A and the Watch List, clarification of the rule by renumbering figures, updates to species management plans, transfer of species from List B to List C, and general typographical error corrections. *See* http://www.sos.state.co.us/CCR/Upload/NoticeOfRulemaking/ProposedRuleAttach2014-00985.pdf.

WATER

The Colorado Water Quality Control Commission proposed amendments to 5 Colo. Code Regs. §1002-35, Upper Gunnison Segment 13 of the Classifications and Numeric Standards for Gunnison. The changes added a temporary modification to the arsenic standard to keep it consistent with a previous decision regarding arsenic. A hearing will be held December 8, 2014. *See* http://www.sos.state.co.us/CCR/Upload/NoticeOfRulemaking/ProposedRuleAttach2014-00974.pdf.

The Water Quality Control Commission proposed amendments to 5 Colo. Code Regs. §1002-11, the Colo. Primary Drinking Water Regulation #11. Changes pertain to the Total Coliform Rule, Storage Tank Rule, Backflow Prevention, and Cross Connection Control Rule and Water Hauler Rule. A hearing will be held January 12, 2015. The deadline for comment is January 9, 2015. *See* http://www.sos.state.co.us/CCR/Upload/NoticeOfRulemaking/ProposedRuleAttach2014-00992.pdf.

DELAWARE

WATER

The Department of Natural Resources and Environmental Control, Division of Watershed Stewardship passed final amendments to 7 Del. Admin. Code §7401, Surface Water Quality Standards, and §7408, Total Maximum Daily Loads (TMDLs) for Nutrients for the Murderkill River Watershed. Changes reflect updates to the Murderkill River TMDLs based on recent studies, as well as other updates that bring the rules up to date with federal regulations. The amendments became effective October 11, 2014. *See* http://regulations.delaware.gov/register/october2014/final/18%20DE%20Reg%20312%2010-01-14.pdf and http://regulations.delaware.gov/register/october2014/final/18%20DE%20Reg%20316%2010-01-14.pdf.

DISTRICT OF COLUMBIA

WATER

The District of Columbia Water and Sewer Authority amended D.C. Regs. Ch. 1, ROW and PILOT Fees, and Ch. 41, Rates for Water and Sewer Service. The amendments raise the retail water and sewer service rates and decrease the PILOT fees, among other fee changes. The rules went into effect October 1, 2014. *See* http://www.dcregs.dc.gov/Gateway/NoticeHome.aspx?noticeid=5100665.

FLORIDA

WATER

A Rule Development Workshop was held by the St. Johns River Water Management District on October 22, 2014, to discuss Rule 40C-8.031 of the Fla. Statutes, Minimum Surface Water Levels and Flows and Groundwater Levels. The rule to be proposed pertains to minimum surface water levels for Lake Como, Banana Lake, Little Lake Como, and Lake Trone in Putnam County. *See* https://www.flrules.org/gateway/ruleNo.asp?id=40C-8.031.

HAWAII

WILDLIFE

The Department of Land and Natural Resources adopted amendments to Chapter 13-95.1 of the Haw. Admin. Rules, "Island-Based Fisheries." Changes introduce new bag and size limits on the island of Maui for goatfish and uhu

(parrotfish). *See* http://dlnr.hawaii.gov/dar/files/2014/05/Maui_13-95.1dr.pdf.

INDIANA

WASTE

The Solid Waste Management Division amended 329 Ind. Admin. Code 16-1-1, 16-2-26, 16-3-1, 16-5-1, 16-6-1, 16-7-1, 16-10-1, and 16-11-1, and adds 16-11-2, 16-11-3, 16-11-4, and 16-11-5, pertaining to electronic waste. The changes specify requirements for the deposit of solid waste or contaminants, and prohibit the open dumping of garbage or other solid waste. The rule became effective October 31, 2014. *See* http://www.in.gov/legislative/iac/20141001-IR-329140019PRA.xml.html.

WATER

The Natural Resources Commission proposed to amend 312 Ind. Admin. Code 12-2-4, pertaining to water well drilling and pump installations. The amendments clarify the minimum pump setting depths for small-capacity water wells that must be met to qualify for protection under Ind. Code 14-25-4 (Emergency Regulation of Ground Water Rights), and help enhance thermal conductivity and pumpability of various cement-based geothermal grouts. A hearing was held October 27, 2014. *See* http://www.in.gov/legislative/iac/20140917-IR-312140204PRA.xml.pdf.

WILDLIFE

The Natural Resources Commission passed 312 Ind. Admin. Code 9.5, In-lieu Fee Mitigation. The purpose of the article is to allow interested parties to request an in-lieu fee to mitigate negative impacts to fish, wildlife, or botanical resources for any circumstances in which a permit is required. The rule became effective October 22, 2014. *See* http://www.in.gov/legislative/iac/20140917-IR-312130528FRA.xml.pdf.

IOWA

WATER

The Environmental Protection Commission adopted and filed amendments to Iowa Admin. Code Ch. 64, "Wastewater Construction and Operation Permits," and Ch. 65, "Animal Feeding Operations." The amendments incorporate updates to EPA's concentrated animal feeding operations rule, which ensures compliance with NPDES permit requirements. The amendments became effective October 22, 2014. *See* https://www.legis.iowa.gov/law/administrativeRules/ruleMaking?pubDate=09-17-2014.

LOUISIANA

AIR

The Department of Environmental Quality has amended air regulations La. Admin. Code 33:III.711 and 918. Changes will bring the rule up to date with federal requirements, specifically NAAQS, and the Louisiana Designated nonattainment area for the sulfur dioxide standard. *See* http://www.doa.la.gov/osr/reg/1409/1409.pdf (p. 1689).

The Department of Environmental Quality intends to amend La. Admin. Code tit. 33:III, §509, by removing significant monitoring concentration (SMC) for fine particulate matter ($PM_{2.5}$), and by adding significant impact levels for coarse particulate matter, sulfur dioxide, nitrogen oxides, and carbon monoxide to Louisiana's PSD program. The removal of SMC for $PM_{2.5}$ is in response to a January 22, 2013, D.C. Circuit opinion. A public hearing was held on November 25, 2014, and the deadline for comment is December 2, 2014. *See* http://www.doa.la.gov/osr/reg/1410/1410.pdf (pp. 1961-63).

ENERGY

The Department of Natural Resources, Office of Conservation, intends to amend Chapter 1 of La. Admin. Code tit. 43:XIX to adopt recommendations of a performance audit of the oil and gas well permit system issued in May 2014. Changes include increasing financial security amounts and establishing periods for review for wells in future utility status. A public hearing was held on November 24, 2014, and the deadline for comment is December 1, 2014. *See* http://www.doa.la.gov/osr/reg/1410/1410.pdf (pp. 2156-59).

WASTE

The Department of Environmental Quality amended La. Admin. Code 33:V.105 and 4999, Appendix E, Hazardous Waste Regulations. The amendments grant Conrad Industries Inc. permission to exclude 4,000 tons of aggregate from the hazardous waste regulations. The aggregate was generated and used as fill in 1986. *See* http://www.doa.la.gov/osr/reg/1409/1409.pdf (p. 1691).

WATER

The Department of Environmental Quality amended La. Admin. Code 33:IX.4901 and 4903, pertaining to water quality regulations. The new rule incorporates annual updates, as well as recent federal regulations, to strengthen the enforceability of the Louisiana Pollutant Discharge Elimination System. *See* http://www.doa.la.gov/osr/reg/1409/1409.pdf (p. 1692).

WILDLIFE

The Department of Wildlife and Fisheries and the Fisheries and Wildlife Commission have adopted La. Admin. Code tit. 76:V, §133, regulating the purchase, possession, and exhibition of native Louisiana wildlife for use in the entertainment industry. Among other provisions, the rule establishes a permit system and minimum enclosure requirements. *See* http://www.doa.la.gov/osr/reg/1410/1410.pdf (pp. 1947-51).

MAINE

WILDLIFE

The Department of Marine Resources adopted emergency rule Ch. 25.04(B)(3), Lobster Trawl Limits Off Hancock County. The rule was enacted to prevent anticipated gear conflict between lobster trawl traps and herring purse seines and mid-water trawlers off Mount Desert Island. The rule went into effect September 12, 2014. *See* http://www.maine.gov/dmr/rulemaking/25.04trawllimitweb091214.pdf.

MARYLAND

WATER

The Secretary of the Environment adopted final amendments to Regulations .09 and .09-1 under Md. Code Regs. 26.08.04, Permits, as proposed on May 16, 2014. Changes pertain to Subtitle 08, Water Pollution, and went into effect September 29, 2014. *See* http://www.dsd.state.md.us/mdregister/4119.pdf (p. 1082).

MINNESOTA

AIR

The Minnesota Pollution Control Agency adopted permanent amendments to rules 7007.0502, Mercury Emission Reduction Plans. The changes contain general updates pertaining to the calculation of emissions, submission deadlines for the mercury emission reduction plans, and language. *See* http://www.comm.media.state.mn.us/bookstore/stateregister/39_12.pdf (pp. 386-89).

The Minnesota Pollution Control Agency adopted permanent amendments to Minn. R., Ch. 7005.0100, s. 35a. Changes pertain to Fugitive Emissions and Determining Potential to Emit. *See* http://www.comm.media.state.mn.us/bookstore/stateregister/39_12.pdf (pp. 394-96).

WASTE

The Minnesota Pollution Control Agency requests input on possible amendments to Minn. R., Ch. 7037, Governing Land Treatment Practices for Petroleum Contaminated Soil. The changes would update the 20-year-old rules to incorporate both experience and new scientific data. *See* http://www.comm.media.state.mn.us/bookstore/stateregister/39_12.pdf (pp. 398-99).

MISSOURI

AIR

The Department of Natural Resources amended 10 Mo. Code Regs. 10-5.220, "Air Quality Standards and Air Pollution Control Rules Specific to the St. Louis Metropolitan Area." Changes pertain to the control of petroleum liquid storage, loading, and transfer. *See* http://www.sos.mo.gov/adrules/moreg/current/v39n19/v39n19a.pdf (pp. 1577-81).

The Department of Natural Resources amended 10 Mo. Code Regs. 10-6.040, Reference Methods. The changes pertain to "Air Quality Standards, Definitions, Sampling and Reference Methods and Air Pollution Control Regulations for the Entire State of Missouri." *See* http://www.sos.mo.gov/adrules/moreg/current/v39n19/v39n19a.pdf (p. 1581).

MONTANA

WILDLIFE

The Department of Fish, Wildlife and Parks declined to adopt proposed rule 12 Mont. Admin. R. 1318 (July 24, 2014), pertaining to Wolf Management Stamps. The rule would have initiated a program where citizens could purchase stamps to donate to the department's wolf management programs. After public hearings on August 14, 2014, and receiving over 50,000 comments, the department decided to meet with stakeholders to explore future recommendations. *See* http://sos.mt.gov/arm/Register/archives/MAR2014/MAR14-19.pdf.

NEVADA

WATER

The State Environmental Commission proposed amendments to Nev. Revi. Stat. 445A, pertaining to public water systems. Changes include general updates to terms and language, as well as the incorporation of federal regulations by reference. *See* http://www.leg.state.nv.us/register/2014Register/R118-14P.pdf.

The State Environmental Commission proposed amendments to Nev. Rev. Stat. 445A.520, pertaining to water quality. Changes revise water quality standards for the South Fork Reservoir in Elko County. *See* http://www.leg.state.nv.us/register/2014Register/R103-14RP1.pdf.

NEW HAMPSHIRE

WATER

The Department of Environmental Services is proposing amendments to N.H. Rev. Stat. Ann. §485 that would revise standards for total coliform. The proposed standards are equivalent to those promulgated by U.S. EPA under the SDWA. A public hearing was held November 21, 2014, and the deadline for comment is December 2, 2014. *See* http://www.gencourt.state.nh.us/rules/register/2014/october-23-14.pdf (pp. 5-10).

NEW MEXICO

WATER

The New Mexico Water Quality Control Commission announced a public

hearing regarding proposed amendments to 20.6.6 N.M. Admin. Code, the Dairy Rule. The new regulations describe specific measures to be taken to monitor water quality and prevent water pollution. The hearing will be held on December 9, 2014. *See* http://164.64.110.239/nmregister/xxv/xxv18/WaterQualDairynoticeEnglish.htm.

NEW YORK

WILDLIFE

The Department of Environmental Conservation is proposing to amend N.Y. Comp. Codes R. & Regs. tit. 6, §§10.1-10.9, 18.1, 19.2 and 35.2 to revise sportfishing regulations following a biannual review. Proposed amendments also include regulation of commercial baitfish collection and sales. No hearing has been scheduled. *See* http://docs.dos.ny.gov/info/register/2014/oct15/pdf/rulemaking.pdf (pp. 7-9).

NORTH CAROLINA

TOXIC SUBSTANCES

The Department of Agriculture and Consumer Services Pesticide Board is proposing to adopt 02 N.C. Admin. Code 09L.0707, which would declare the eastern and hairy-tailed moles to be pests. The proposed rule regulates the use of pesticides to control the moles including limiting the areas where they can be used and their application near water bodies. The deadline for comment is December 15, 2014. *See* http://www.ncoah.com/rules/register/Volume%2029%20Issue%2008%20October%2015,%202014.pdf (p. 906).

WATER

The Department of Environment and Natural Resources adopted amendments to 15A N.C. Admin. Code 02B.0306, Broad River Basin. Changes were made to the Schedule of Classifications and Water Quality Standards for the Broad River Basin, enabling the placement of a water supply intake in Lake Adger by Polk County. *See* http://www.ncoah.com/rules/register/Volume%2029%20Issue%2007%20October%201,%202014.pdf (pp. 806-07).

WILDLIFE

The Department of Environment and Natural Resources, Marine Fisheries Commission, proposed to adopt 15A N.C. Admin. Code 03I.0122, 03K.0111, .0507-.0508, and 03R.0202; to amend 03I.0101, 03J.0207-.0209, .0301, 03K.0501,-.0502, 03L.0101, .0103, .0105, 03M.0101, .0510, .0513, 03O.0101, .0106, .0112-.0113, .0501, .0503; 03Q.0202, and 03R.0114-.0115; and to repeal 03K.0206 and .0303. Changes intend to improve fisheries data from the for-hire industry. The deadline for comment is December 1, 2014. *See* http://www.ncoah.com/rules/register/Volume%2029%20Issue%2007%20October%201,%202014.pdf (p. 735).

OHIO

WILDLIFE

The Department of Natural Resources, Division of Natural Areas and Preserves Recreation, proposed to amend 1501:18-1-03, Endangered and threatened species. Changes include the addition and removal of specific endangered and threatened plant species and the updating of plant names in accordance with current scientific standards. A hearing was held November 7, 2014. *See* http://www.registerofohio.state.oh.us/pdfs/phn/1501$18_NO_241139_20140929_1125.pdf.

PENNSYLVANIA

WILDLIFE

The Fish and Boat Commission amended Pa. Cons. Stat. Chs. 61 and 65 pertaining to Seasons, Sizes and Creel Limits; and Special Fishing Regulations. Changes ensure a greater level of protection of wild trout waters by regulating Class A wild trout streams as all other wild trout streams with respect to harvest during the extended season. The rule goes into effect January 1, 2015. *See* http://www.pabulletin.com/secure/data/vol44/44-38/1957.html.

SOUTH CAROLINA

AIR

The Department of Health and Environmental Control proposed amendments to S.C. Regs. 61-62, pertaining to Air Pollution Control Regulations and Standards and the South Carolina SIP. Changes exempt owners or operators of propane-fired units from the requirement to maintain a startup and shutdown log, and remove gaseous fluorides from the list of pollutants. A public hearing will be held December 11, 2014. *See* http://www.scstatehouse.gov/state_register.php?first=FILE&pdf=1&file=sr38-9.pdf (pp. 38-46).

The Department of Health and Environmental Control passed final amendments to S.C. Regs. 61-65, Air Pollution Control Regulations and Standards. Changes incorporate updates to federal regulations, which clarify and offer guidance on the new source performance standards and NESHAPs. *See* http://www.scstatehouse.gov/state_register.php?first=FILE&pdf=1&file=sr38-9.pdf (pp. 120-51).

WATER

The Department of Health and Environmental Control passed final amendments to S.C. Regs. 61-68, State Primary Drinking Water Regulations. Changes incorporate updates to federal regulations, which pertain to requirements for distribution systems with an indication of coliform contamination. *See* http://www.scstatehouse.gov/state_register.php?first=FILE&pdf=1&file=sr38-9.pdf (p. 151).

The Department of Health and Environmental Control proposed amendments to S.C. Regs. 61-65, pertaining

to Standards for Wastewater Facility Construction. The new rules incorporate technical and general design standards to reduce unit loading flows based on information regarding water savings fixtures and more-efficient design schemes. A public hearing will be held December 11, 2014. *See* http://www.scstatehouse.gov/state_register.php?first=FILE&pdf=1&file=sr38-9.pdf (pp. 102-06).

SOUTH DAKOTA

WATER

The Department of Environment and Natural Resources' Water Management Board is seeking comment on proposed amendments to its Surface Water Quality rules. Changes include technical updates, bringing the toxic pollutant criteria up to U.S. EPA standards, and multiple site-specific criteria amendments. A public hearing will be held on December 3, 2014, and the deadline to comment is December 2, 2014. *See* http://legis.sd.gov/docs/Rules/Register/10202014.pdf (pp. 73-74).

TENNESSEE

AIR

The Division of Air Pollution Control amended Tenn. Code R. 1200-03-18-.02 pertaining to volatile organic compounds. Changes incorporate nitrogen oxides by reference; add Knox, Blount, and Anderson Counties to the list of facility locations subject to the rule; and clarify reporting procedures for information and data concerning emissions from stationary sources. The rule becomes effective December 18, 2014. *See* http://www.tn.gov/sos/rules_filings/09-18-14.pdf.

WILDLIFE

The Fish and Wildlife Commission amended Proclamation 08-02, North Cumberland Wildlife Management Area. Changes add a new management unit, called the Tackett Creek Unit, to the North Cumberland Wildlife Management Area. The rule went into effect October 5, 2014. *See* http://tn.gov/sos/pub/proclamations/09-08-14.pdf.

TEXAS

WILDLIFE

The Texas Commission on Environmental Quality amended 31 Tex. Admin. Code §65.175, §65.176, pertaining to Threatened and Endangered Nongame Species, and §69.8, pertaining to Endangered and Threatened Plants. The changes update the scientific names of various species, and add several names to the list of endangered species. *See* http://www.sos.state.tx.us/texreg/archive/September262014/Proposed%20Rules/31.NATURAL%20RESOURCES%20AND%20CONSERVATION.html#81.

WASHINGTON

AIR

The Northwest Clean Air Agency adopted amendments to §§104, 324, 502, 504, 550, and 570. Amendments, which incorporate updates to federal regulations, pertain largely to outdoor burning, agricultural burning, asbestos programs, and fugitive dust requirements. The rule became effective October 12, 2014. *See* http://apps.leg.wa.gov/documents/laws/wsr/2014/19/14-19-054.htm

WYOMING

WASTE

The Department of Environmental Quality, Solid and Hazardous Waste Division, is proposing comprehensive revision of Wyoming's Hazardous Waste Rules and Regulations, reducing the regulations to a single chapter by using incorporation by reference of relevant portions of Title 40 of the *Code of Federal Regulations*. The deadline for comment is December 10, 2014, and public hearings will be held on January 14 and 15, 2015. *See* http://soswy.state.wy.us/Rules/RULES/9636.pdf.

In the Congress

Congress was on recess for most of October, so there are no congressional materials to report for that month. Please visit http://elr.info/legislative for current and archived materials.

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Nordhaus, Robert R. & Avi Zevn, *Historical Perspectives on §111(d) of the Clean Air Act*, 44 ELR 11095 (Dec. 2014).

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