Nos. 15A773, 15A776, 15A778, 15A787, and 15A793

IN THE SUPREME COURT OF THE UNITED STATES

STATE OF WEST VIRGINIA, ET AL., APPLICANTS
v.
ENVIRONMENTAL PROTECTION AGENCY, ET AL.

BASIN ELECTRIC POWER COOPERATIVE, ET AL., APPLICANTS
v.
ENVIRONMENTAL PROTECTION AGENCY, ET AL.

MURRAY ENERGY CORPORATION, ET AL., APPLICANTS
v.
ENVIRONMENTAL PROTECTION AGENCY, ET AL.

CHAMBER OF COMMERCE, ET AL., APPLICANTS
v.
ENVIRONMENTAL PROTECTION AGENCY, ET AL.

STATE OF NORTH DAKOTA, APPLICANT
v.
EPA, ET AL.

ON APPLICATIONS FOR IMMEDIATE STAY OF FINAL AGENCY ACTION

MEMORANDUM FOR THE FEDERAL RESPONDENTS IN OPPOSITION

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MEMORANDUM FOR THE FEDERAL RESPONDENTS IN OPPOSITION

The Solicitor General, on behalf of federal respondents, respectfully files this memorandum in opposition to the applications for a stay pending judicial review.

INTRODUCTION

The Clean Power Plan (the Rule) addresses the Nation's most important and urgent environmental challenge -- climate change -- by securing critical reductions in carbon dioxide (CO_2) emissions from fossil-fuel-fired power plants. The Rule implements the Clean Air Act (CAA), 42 U.S.C. 7401 et seq., and establishes a process under which the Environmental Protection Agency (EPA) and the States will work cooperatively to plan for and achieve such reductions over the coming decades. 80 Fed. Reg. 64,663-64,664 (Oct. 23, 2015). Under the Rule, States need not complete their plans until September 2018, and the Rule does not require regulated power plants to reduce their emissions until 2022 at the earliest. Id. at 64,669.

Applicants have filed petitions for judicial review of the Rule in the D.C. Circuit, and they sought a stay of the Rule pending that review. A panel of the D.C. Circuit unanimously denied that request, concluding that applicants had not satis-

fied the traditional requirements for such a stay. App., infra, 2a. Instead, the court established an expedited schedule for considering the merits of applicants' challenge to the Rule. Ibid. Under that schedule, all briefs will be filed by the end of April 2016, and oral argument will be held on June 2, 2016. Ibid. The D.C. Circuit therefore can reasonably be expected to issue its decision by late summer or early fall 2016.

Applicants now ask this Court to stay the Rule pending the final resolution of their petitions for review by the D.C. Circuit and, if necessary, by this Court. In requesting a "stay," however, applicants appear to seek much more than interim relief that would "temporarily divest[] [the Rule] of enforceability" while review is ongoing. Nken v. Holder, 556 U.S. 418, 428 (2009). Rather, they explicitly or implicitly ask this Court to toll all of the relevant deadlines set forth in the Rule, even those that would come due many years after the resolution of their challenge, for the period between the Rule's publication and the final disposition of their lawsuits. See, e.g., Appl. of Util. & Allied Parties for Immediate Stay of Final Agency Action Pending Appellate Review (Util. Appl.) 22. Entry of such a "stay" would mean that, even if the government ultimately prevails on the merits and the Rule is sustained, implementation of each sequential step mandated by the Rule

would be substantially delayed. A request for such tolling is inherent even in the applications that do not explicitly address that subject, as all of them rest on the premise that a stay would forestall harms alleged to arise from future deadlines.

The relief that applicants request would be extraordinary and unprecedented, and their applications should be denied. Applicants seek a stay before any court has expressed a view about, let alone rendered a final decision concerning, the merits of their legal claims. This Court is ordinarily "a court of final review and not first view," Department of Transp. v. Association of Am. R.Rs., 135 S. Ct. 1225, 1234 (2015) (citation omitted), and its traditional reluctance to address novel legal arguments in the first instance -- without the benefit of any sustained analysis by a lower court -- weighs strongly against intervention at this time. Applicants identify no case in which this Court has granted a stay of a generally-applicable regulation pending initial judicial review in the court of appeals. Applicants likewise have identified no case in which this Court has granted a "stay" that would have the sweeping prospective consequences, extending far beyond the actual pendency of the relevant judicial proceedings, that their current requests for relief would entail.

Such intervention is especially unwarranted in light of the nature of this case and the D.C. Circuit's considered decision to deny a stay and expedite its review. On the merits, applicants' challenge to the Rule implicates complex questions of statutory interpretation and environmental policy. Congress has channeled the review of nationally-applicable CAA regulations to the D.C. Circuit, which accordingly has specialized expertise on relevant CAA programs. 42 U.S.C. 7607(b)(1). The court of appeals should have the first opportunity to analyze the issues and render an opinion that would provide useful guidance to this Court.

In any event, the D.C. Circuit's analysis was correct: Applicants are not entitled to relief under the traditional stay factors. First, they cannot establish a likelihood that they will ultimately succeed on the merits of their claims. EPA has well-established authority under Section 111(d) of the CAA, 42 U.S.C. 7411(d), to limit CO_2 emissions from power plants. The Rule establishes standards of performance for power plants that reflect reasonable conclusions about the measures that regulated entities can take -- and in many cases are already taking -- to minimize pollution.

Applicants also have not shown that they will suffer irreparable harm during the relatively brief period of expedited

review in the D.C. Circuit. States can delay their submission of a plan for implementing the Rule's emission guidelines until September 2018. 80 Fed. Reg. at 64,669. Regulated entities face no compliance deadlines whatsoever until 2022 at the earliest, and they are not required to achieve full compliance until 2030. Ibid.; see id. at 64,785-64,786. At least one applicant has now acknowledged -- in a separate filing with EPA -- that some of the harms predicted in its application are unlikely to occur in the near term. See pp. 67-68, infra. Moreover, to the extent that applicants rely on harm that they will allegedly suffer after a potential D.C. Circuit decision rejecting their challenge, they remain free to seek a stay of the Rule if and when such a decision is actually issued. In ruling on such a request, this Court would have the benefit of the D.C. Circuit's merits analysis and could exercise its traditional function as a reviewing court.

Finally, applicants' proposed stay would disserve the public interest. A stay that delays all of the Rule's deadlines would postpone reductions in greenhouse gas emissions and thus contribute to the problem of global climate change even if the Rule is ultimately sustained.

For all of these reasons, the applications should be denied and this case should proceed in the expedited fashion mandated

by the D.C. Circuit. In no event should this Court grant a stay that would necessarily and irrevocably extend every deadline set forth in the Rule.

STATEMENT

Atmospheric greenhouse gases such as CO_2 have risen to unprecedented levels as a result of human activities, and they are the root cause of ongoing global climate change. 74 Fed. Reg. 66,517 (Dec. 15, 2009). Fossil-fuel-fired power plants are by far the highest-emitting stationary sources of CO_2, generating approximately 37% of all man-made CO_2 emissions in the United States.[1] The Rule at issue in this case is EPA's principal initiative to reduce CO_2 emissions from stationary sources in accordance with the CAA's mandates.

1. The CAA's core purpose is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. 7401(b)(1). The CAA establishes a comprehensive and detailed program for controlling air pollution through a system of shared federal and state responsibility.

[1] EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013, EPA 430-R-15-004, at 3-14 (Apr. 15, 2015), http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf; see 80 Fed. Reg. at 64,689.

The CAA's regulatory program addresses three general categories of pollutants emitted from existing stationary sources: (1) criteria pollutants (which are addressed under the National Ambient Air Quality Standards (NAAQS) program, see 42 U.S.C. 7408-7410); (2) hazardous air pollutants (which are addressed under the National Emission Standards for Hazardous Air Pollutants (NESHAP) program, see 42 U.S.C. 7412); and (3) "pollutants that are (or may be) harmful to public health or welfare but are not or cannot be controlled under [42 U.S.C. 7408-7410 or 7412]" (which are addressed under the New Source Performance Standards (NSPS) program, see 42 U.S.C. 7411). 40 Fed. Reg. 53,340 (Nov. 17, 1975). Together, these three programs constitute a comprehensive scheme to regulate air pollutants with "no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare." S. Rep. No. 1196, 91st Cong., 2d Sess. 20 (1970) (Senate Report).

2. EPA promulgated the Rule under the NSPS program, authorized by 42 U.S.C. 7411. Section 7411(b)(1)(A) directs the Administrator to list "categories of stationary sources" that "in [her] judgment * * * cause[], or contribute[] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." Section 7411(b) requires

EPA to prescribe federal "standards of performance" for emissions of pollutants from new or modified sources for each category of sources listed by the Administrator. 42 U.S.C. 7411(b)(1)(B). Section 7411(d), in turn, provides that EPA "shall prescribe regulations" addressing existing sources of such pollutants, subject to various conditions and exceptions. 42 U.S.C. 7411(d).

a. Until 1990, Section 7411(d)(1)(A) authorized EPA to prescribe regulations addressing existing sources of any air pollutant "for which air quality criteria have not been issued [under the NAAQS program] or which is not included on a list published under [S]ection 7408(a) [also under the NAAQS program] or 7412(b)(1)(A) [under the NESHAP program]." 42 U.S.C. 7411(d) (1988). Section 7411(d) thus operated as a gap-filling provision that empowered EPA to regulate pollution from existing sources that would otherwise escape regulation under the NAAQS and NESHAP programs.

In 1990, Congress completely redrafted 42 U.S.C. 7412, the provision establishing the NESHAP program. CAA Amendments of 1990 (1990 Amendments), Pub. L. No. 101-549, Tit. III, § 301, 104 Stat. 2531. That revision required Congress to update Section 7411(d)(1)(A)(i)'s cross-reference to Section 7412(b)(1)(A). The law that Congress enacted to accomplish that

purpose, however, contained two different provisions amending that cross-reference as part of its broader amendments to the CAA. As part of a provision entitled "Miscellaneous Guidance" and set forth at Section 108 of the 1990 Amendments, 104 Stat. 2465, Congress replaced Section 7411(d)(1)(A)(i)'s words "or [74]12(b)(1)(A)" with the phrase "or emitted from a source category which is regulated under [S]ection [74]12." § 108(g), 104 Stat. 2467. In a "Conforming Amendment[]" set forth at Section 302(a) of the 1990 Amendments, Congress replaced Section 7411(d)(1)(A)(i)'s reference to "[Section] [74]12(b)(1)(A)" with "[Section] [74]12(b)." 104 Stat. 2574.

When the 1990 Amendments were subsequently codified in the revised United States Code, the Law Revision Counsel responsible for the codification updated Section 7411(d)(1)(A)(i)'s cross-reference in the manner set forth by the first of those two amendments. 42 U.S.C. 7411 (Amend. 1990, Subsec. (d)(1)(A)(i)). The Law Revision Counsel declined to incorporate the second amendment, however, asserting that it "could not be executed" in light of the first. Ibid. Congress has not ratified that determination by re-enacting the codified version of Section 7411(d) as positive law.

b. As it now appears in the United States Code, Section 7411(d) requires EPA to establish regulations governing existing stationary sources, as follows:

> The Administrator shall prescribe regulations which shall establish a procedure * * * under which each State shall submit to the Administrator a plan which (A) establishes 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 [S]ection 7408(a) of this [T]itle or emitted from a source category which is regulated under [S]ection 7412 of this [T]itle but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance.

42 U.S.C. 7411(d)(1).

As that text makes clear, Section 7411(d) regulations promulgated by EPA do not directly regulate stationary sources. Rather, such regulations establish the process by which States submit plans establishing "standards of performance" for existing sources of relevant pollutants. Section 7411 elsewhere defines the term "standard of performance" 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 which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the [EPA] Administrator determines has been adequately demonstrated.

42 U.S.C. 7411(a)(1). Under that definition, the specific emission requirements imposed on particular sources must "reflect[]" a more overarching, preliminary determination -- made

by EPA -- of "the degree of emission limitation achievable through the application of the best system of emission reduction." Ibid. In making that determination, EPA (1) identifies the "system[s] of emission reduction" that are "adequately demonstrated" for a particular source category; (2) determines the "best" of those systems, based on the relevant criteria; and (3) derives from that system an "achievable" emission performance level for the relevant sources. 80 Fed. Reg. at 64,720 (brackets in original).

EPA promulgates its determination in a set of regulations known as "emission guidelines." See 40 C.F.R. Pt. 60, Subpt. B. The emission guidelines also set forth procedures for EPA's receipt and approval of individualized state plans, which, inter alia, specify the emission limitations applicable to particular sources within a State. 42 U.S.C. 7411(d)(1). If a State elects not to submit a plan to EPA, or submits a plan that EPA does not find "satisfactory," EPA must promulgate a federal plan that directly limits emissions from the State's existing sources. 42 U.S.C. 7411(d)(2).

3. In October 2015, EPA published two rules addressing CO_2 emissions from power plants. The first rule -- which is not directly at issue here -- establishes CO_2 emission standards under Section 7411(b) for new, modified, and reconstructed

plants. 80 Fed. Reg. at 64,510. The second rule is the Clean Power Plan, and it establishes Section 7411(d) emission guidelines for States to follow in developing plans to limit CO_2 emissions from existing power plants. Id. at 64,662.[2]

a. In the Rule, EPA explained that Section 7411(d) authorizes the agency to regulate CO_2 emissions from power plants. Acknowledging the two statutory amendments to that provision that Congress enacted in 1990, EPA interpreted Section 7411(d) to authorize EPA to regulate pollutants emitted by a particular source category so long as such pollutants are not otherwise regulated under the NAAQS or NESHAP programs. 80 Fed. Reg. at 64,712-64,715. EPA emphasized, inter alia, that its interpretation was the only one consistent with (1) Section 7411(d)'s longstanding purpose of filling any gap between the other regulatory programs, and (2) both of the statutory amendments that Congress enacted in 1990. Id. at 64,714-64,715.

b. The Rule also set forth EPA's determination that the "best system of emission reduction" "adequately demonstrated" for existing plants includes a combination of three measures, referred to as "building blocks":

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[2] On the same day, EPA proposed two approaches to a federal plan for States that do not submit an approvable plan, which can also serve as models for States in developing their own plans. 80 Fed. Reg. at 64,966.

> (1) improving heat rate at coal-fired steam plants;
>
> (2) substituting increased generation from lower-emitting existing natural gas combined cycle plants for generation from higher-emitting steam plants (which are primarily coal-fired); and
>
> (3) substituting increased generation from new zero-emitting renewable energy generating capacity for generation from fossil-fuel-fired plants (which are primarily coal- or gas-fired).

See 80 Fed. Reg. at 64,666-64,667. EPA determined that these measures were "adequately demonstrated" because each of them is already a "well-established" technique for reducing CO_2 emissions from power plants. Id. at 64,709. EPA further determined that these measures taken together constitute the "best system of emission reduction" because they can achieve substantial CO_2 reductions at reasonable cost, without adverse impacts on energy availability or otherwise. Id. at 64,744-64,751. EPA also determined that individual sources can implement all of these measures, including the second and third generation-shifting measures, through a set of actions that range from making direct investments in zero- or low-emitting plants to purchasing emission-rate credits from entities that have made such investments. Id. at 64,709.

Having identified the "best" CO_2 reduction system, EPA then quantified the degree of emission reduction achievable under that system for two subcategories of sources: steam units

(which are primarily coal-fired) and combustion turbines (which are primarily gas-fired). 80 Fed. Reg. at 64,663. To best reflect the Nation's interconnected electrical system, EPA quantified the reductions achievable in 2030 for each subcategory in each of three regions. Ibid.; see id. at 64,738. EPA then established uniform performance levels for each subcategory based on the least stringent of the three calculated regional rates. Id. at 64,741-64,742, 64,961 (Tbl. 1).

To enhance state planning flexibility, the Rule translates the uniform performance rates into equivalent statewide emission goals for 2030, expressed in terms of both the rate of emissions per unit of energy production ("rate-based goals") and the total mass of emissions ("mass-based goals"). 80 Fed. Reg. at 64,820. The Rule then gives each State the option of submitting a plan that either (1) simply applies the uniform performance rates to all sources within the State, or (2) otherwise satisfies either the equivalent rate-based or mass-based statewide goals. Id. at 64,832-64,838. Under the latter option, States can assign emission standards for particular plants that depart from the uniform performance rates, so long as the equivalent state goals are met. The Rule thus does not require any particular amount of reductions by any particular source at any particular time.

The Rule does not require that States or sources apply the specific "building block[]" measures that EPA identified as the "best system." 80 Fed. Reg. at 64,710. Instead, States and sources may choose from a wide range of measures, including technological controls such as carbon sequestration or gas co-firing, to achieve the emission limitations.[3] The Rule also accommodates (but does not require) trading-based emission programs and other compliance strategies that significantly enhance flexibility and cost-effectiveness for sources. Id. at 64,834-64,835.[4]

c. The Rule directs States to provide either a plan or an initial submission in September 2016. 80 Fed. Reg. at 64,669. By filing an initial submission, a State may extend until September 2018 the deadline for completing its plan. Id. at

[3] To enhance state flexibility, the Rule also authorizes States to pursue a "state measures" approach, under which they may avoid imposing any direct Section 7411(d) emission standards on power plants, and may instead choose to pursue other state-law-only measures (e.g., programs that encourage more efficient energy usage) to reduce power-plant emissions, subject only to a Section 7411(d) "backstop" program if the state measures prove insufficient to attain the interim and final state goals. 80 Fed. Reg. at 64,836-64,837.

[4] Trading-based emission programs can take different forms. Generally speaking, however, they provide incentives to develop cost-effective emission-reduction strategies by enabling companies to earn credits or allowances for projects that reduce emissions, which can then be sold to other facilities to meet emission requirements.

64,947. Such an initial submission must include only minimal information concerning the status of the State's planning efforts, specifically: (1) an identification of the various plan approaches under consideration, including any progress to date; (2) a description of opportunities for public input on the plan; and (3) an appropriate explanation for why the State requires more time. Ibid.[5]

The Rule makes clear that its requirements are to be gradually phased in over an extended period of time. The Rule does not require power plants to begin reducing their CO_2 emissions until 2022 at the earliest. 80 Fed. Reg. at 64,669, 64,785. In fact, most States could delay requiring reductions until 2024 and still meet the Rule's requirements. Id. at 64,785-64,786 & n.621. And regulated entities need not achieve full compliance until 2030. Id. at 64,785-64,786.

d. When promulgating the Rule, EPA also released a detailed assessment of its likely economic impact. EPA concluded that the Rule will not result in any substantial increase in elec-

[5] If a State declines to prepare and submit its own plan, the only consequence is that EPA will promulgate a federal plan for power plants in that State. 80 Fed. Reg. at 64,942. EPA is not authorized to impose sanctions on a State for failure to submit a state plan. Ibid. A State that declines to submit a plan by the applicable deadline could still choose, at any later point, to adopt an approvable state plan that would supplant any federal plan. Ibid.

tricity costs to the public. 80 Fed. Reg. at 64,679-64,681, 64,748-64,751; EPA, Regulatory Impact Analysis for the Clean Power Plan Final Rule, EPA-452/R-15-003, at 3-35 to 3-40 (Oct. 2015). EPA further explained that the Rule will not reduce the reliability of the electricity system and is consistent with long-term trends in the generation of energy. 80 Fed. Reg. at 64,671, 64,694-64,696, 64,709.

4. In October 2015, applicants sought judicial review of the Rule in the D.C. Circuit. See 15-1363 Docket (consolidated challenges to rule addressing existing power plants' CO_2 emissions). At the same time or shortly thereafter, applicants requested a stay of the Rule pending that court's decision on the merits. Numerous States, industrial entities, environmental organizations, public-health groups, and others intervened in support of the Rule and participated in briefing the stay motions. See generally ibid. Collectively, the parties' briefing on the stay requests encompassed approximately 360 pages of text and relied on more than 2500 pages of supporting declarations and exhibits. See ibid. Briefing on the stay motions was completed on December 23, 2015.

On January 21, 2016, a unanimous panel of the D.C. Circuit denied those motions, concluding that applicants "have not satisfied the stringent requirements for a stay pending court

review." App., infra, 1a-2a (citing Winter v. Natural Res. Def. Council, Inc., 555 U.S. 7, 20 (2008)). The court further ordered that consideration of the appeals be expedited and that oral argument will take place on June 2, 2016. Ibid. Applicants did not ask the en banc court to overturn the panel's denial of a stay.

ARGUMENT

Applicants ask this Court to stay the Rule pending judicial review in the court of appeals and, if necessary, in this Court. Courts typically consider four factors when deciding whether to grant a stay: "(1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) where the public interest lies." Nken v. Holder, 556 U.S. 418, 426 (2009) (quoting Hilton v. Braunskill, 481 U.S. 770, 776, (1987)). The last two factors "merge when the Government is the opposing party." Id. at 435.

In cases where an individual Justice is asked to stay an order while a case is pending in the court of appeals, that Justice must also "try to predict whether four Justices would vote to grant certiorari should the Court of Appeals affirm the

[order] without modification; try to predict whether the Court would then set the order aside; and balance the so-called 'stay equities.'" San Diegans for the Mt. Soledad Nat'l War Mem'l v. Paulson, 548 U.S. 1301, 1302-1303 (2006) (Kennedy, J., in chambers) (citation omitted). A stay on a matter currently pending before a court of appeals is an extraordinary remedy that is "rarely granted." Heckler v. Lopez, 463 U.S. 1328, 1330 (1983) (Rehnquist, J., in chambers) (quoting Atiyeh v. Capps, 449 U.S. 1312, 1313 (1981) (Rehnquist, J., in chambers)). The danger of premature intervention in lower-court proceedings is particularly acute here, where no court has yet analyzed the merits of applicants' claims. Applicants identify no case, and we are aware of none, in which the Court has granted a stay of an administrative rule before that rule has been reviewed by any court.

As noted above, the D.C. Circuit has already considered and denied applicants' requests for a stay. App., infra, 2a. The "general practice" in such circumstances is "not to disturb * * * interim determinations of the Court of Appeals in matters pending before it." O' Rourke v. Levine, 80 S. Ct. 623, 623-624 (1960) (Harlan, J., in chambers); see Williams v. Zbaraz, 442 U.S. 1309, 1312 (1979) (Stevens, J., in chambers). That general practice is particularly apt where, as here, (1) the governing

statutory scheme provides for initial review in the court of appeals, (2) this Court is asked to grant relief before any court has ruled on applicants' claims, and (3) the court of appeals' proceedings have been expedited. A lower court's decision to deny a stay "weigh[s] heavily" in the analysis of whether a stay should be granted, particularly in regard to that court's assessment of "the existence of potentially irreparable harm." Graves v. Barnes, 405 U.S. 1201, 1203-1204 (1972) (Powell, J., in chambers); see Williams, 442 U.S. at 1312.

Applicants thus bear a heavy burden to establish their entitlement to a stay. "Where there is doubt, it should inure to the benefit of those who oppose grant of the extraordinary relief which a stay represents." Williams, 442 U.S. at 1316. Applicants cannot satisfy their burden here. They are not likely to succeed on the merits; they will not suffer irreparable harm during the relatively brief period during which this case is likely to be pending before the D.C. Circuit; and the public interest weighs strongly in favor of leaving the Rule in place. After the D.C. Circuit issues its merits decision, the Court will be in a far better position to determine whether some form of interim relief is appropriate pending the disposition of any requests for this Court's review. The applications for a stay should be denied.

I. APPLICANTS CANNOT ESTABLISH A LIKELIHOOD OF SUCCESS ON THE MERITS

Applicants are unlikely to succeed in their challenge to the Rule. Contrary to applicants' contention, Section 7411(d)(1)(A) does not deprive EPA of authority to issue the Rule. The Rule is also consistent with the statute's other provisions, and with the Tenth Amendment and relevant federalism principles.

A. Section 7411(d)(1)(A)(i) Grants EPA Statutory Authority To Promulgate The Rule

EPA has well-established authority under Section 7411 to limit air pollution emitted by power plants. See generally American Elec. Power Co. v. Connecticut, 564 U.S. 410, 423-425 (2011) (AEP). Indeed, the existence of such authority was central to the AEP Court's conclusion that "the Clean Air Act and the EPA actions it authorizes displace any federal common-law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired powerplants." Id. at 424; see id. at 423-429.

As it appears in the United States Code, Section 7411(d)(1) authorizes EPA to prescribe regulations under which States shall submit plans establishing standards of performance for any existing source with respect to:

> any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under [S]ection 7408(a) of this [T]itle or emitted from a source category which is regulated under [S]ection

> 7412 of this [T]itle but (ii) to which a standard of performance under this section would apply if such existing source were a new source.

42 U.S.C. 7411(d)(1). The Rule interprets that language to permit EPA to regulate emissions of specific pollutants that are not themselves regulated under either the NAAQS program (set forth in Section 7408-7410) or the NESHAP program (set forth in Section 7412). 80 Fed. Reg. at 64,712-64,715; see p. 12, supra.

Applicants argue that, because EPA has regulated power-plant emissions of other pollutants under the NESHAP program, Section 7411(d)(1) no longer authorizes EPA to regulate CO_2 emissions from existing power plants. See, e.g., Appl. by 29 States & State Agencies for Immediate Stay of Final Agency Action During Pendency of Pets. for Review (States Appl.) 29-38; Appl. by Coal Indus. for Immediate Stay of Final Agency Action Pending Judicial Review (Coal Indus. Appl.) 12-23. They argue that this result follows if Section 7411(d)(1) is interpreted in accordance with its "literal," "straightforward," and "plain" meaning. See, e.g., States Appl. 29-31; Coal Indus. Appl. 13, 15-16. Applicants are mistaken. Literally construed, Section 7411(d)(1)(A) unambiguously authorizes EPA to regulate the CO_2 emissions at issue here. Applicants' interpretation also ignores Section 7411(d)'s gap-filling purpose within the CAA's comprehensive regulatory scheme, and it impermissibly disregards

the statutory text that Congress enacted in Section 302(a) of the 1990 Amendments. Applicants are not likely to succeed on this aspect of their challenge to the Rule.

1. Applicants' statutory argument cannot be squared with the literal, plain meaning of Section 7411(d)(1). As noted above, Section 7411(d)(1)(A) empowers EPA to prescribe regulations with respect to any air pollutant "[1] for which air quality criteria have not been issued * * * under [the NAAQS program] or [2] which is not included on a list published under [S]ection 7408(a) of this [T]itle or emitted from a source category which is regulated under [S]ection 7412 of this [T]itle." 42 U.S.C. 7411(d)(1)(A) (emphasis added). Under a literal interpretation, Congress's use of the word "or" to separate [1] and [2] in the preceding quotation means that Section 7411(d)(1)(A) identifies two independent bases on which EPA may regulate air pollutants for existing sources. See, e.g., Horne v. Flores, 557 U.S. 433, 454 (2009) ("Use of the disjunctive 'or' makes it clear that each of the provision's three grounds for relief is independently sufficient.").

It is undisputed that EPA has not issued air quality criteria for CO_2 emissions under the NAAQS program. See 80 Fed. Reg. at 64,713. Under a literal interpretation of Section 7411(d)(1)(A), that fact alone ensures that EPA has authority to

regulate such emissions from existing power plants. Ibid. Applicants simply ignore that aspect of the statutory text.

2. Applicants' argument focuses exclusively on Section 7411(d)(1)(A)(i)'s grant of authority to regulate with respect to pollutants that are not "emitted from a source category which is regulated under [S]ection 7412 of this [T]itle." 42 U.S.C. 7411(d)(1)(A)(i). In their view, that language means that, because EPA has identified power plants as a source category whose emissions of hazardous pollutants are regulated under Section 7412's NESHAP program, EPA cannot regulate any other harmful power-plant emissions under Section 7411(d). That argument lacks merit.

Section 7411(d)(1)(A)(i)'s words must be interpreted "in their context and with a view to their place in the [CAA's] overall statutory scheme." FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 133 (2000) (Brown & Williamson) (citation omitted). In particular, Section 7411(d)(1)(A)(i)'s cross-reference to Section 7412 must be interpreted in light of the text and purpose of that companion provision. Section 7412 addresses only "hazardous air pollutants" that appear on the statutory list of such pollutants set forth at Section 7412(b)(1) or are listed pursuant to Section 7412(b)(2), and EPA lacks authority under that provision to regulate other harmful

pollutants. Given Section 7412's exclusive focus on hazardous air pollutants -- and Section 7411(d)(1)'s historic gap-filling function -- EPA reasonably interpreted Section 7411(d)(1) to authorize regulation of other harmful pollutants that would otherwise escape regulation under the CAA altogether. 80 Fed. Reg. at 64,714-64,715; 40 Fed. Reg. at 53,340. That is precisely the sort of "reasonable, context-appropriate meaning" that this Court has directed EPA to give such ambiguous terms in prior cases. Utility Air Regulatory Grp. v. EPA, 134 S. Ct. 2427, 2440 (2014) (UARG).[6]

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[6] Applicants assert that EPA adopted their own more restrictive interpretation of Section 7411(d)(1)(A) in connection with a 2005 rulemaking. See, e.g., States Appl. 30-32. In fact, EPA made clear in that rulemaking that Section 7411(d)(1)(A) is most reasonably interpreted -- in light of its overarching purpose and the two changes to the provision that were enacted as part of the 1990 Amendments -- to allow EPA to regulate non-hazardous pollutants even when those pollutants are emitted from source categories whose emissions of hazardous pollutants are regulated under Section 7412. See, e.g., 70 Fed. Reg. at 16,031-16,032 (concluding that, "[w]here a source category is being regulated under [S]ection [74]12, a [S]ection [74]11(d) standard of performance cannot be established to address any [hazardous air pollutant] listed under [S]ection [74]12(b) that may be emitted from that particular source category.") That conclusion is consistent with EPA's conclusion in the Rule, and it supports EPA's authority to regulate CO_2 emissions from existing power plants. Notably, several of the state applicants in this case supported EPA's 2005 interpretation at that time. See, e.g., Joint Br. of State Resp.-Intervenors et al., New Jersey v. EPA, No. 05-1097, 2007 WL 3231261, at *25 (D.C. Cir. July 23, 2007) ("EPA developed a reasoned way to reconcile the conflicting language and the Court should defer to EPA's interpretation.").

Applicants' unduly restrictive interpretation of Section 7411(d)(1)(A)(i) plainly was not intended by Congress. Most importantly, their interpretation creates an unexplained gap in the CAA's otherwise comprehensive regulatory regime. It creates a category of pollutants -- non-hazardous, non-criteria pollutants that are emitted by existing sources whose emission of hazardous pollutants is regulated by Section 7412 -- that are subject to no CAA regulation whatsoever. That approach would disrupt Congress's longstanding view that the CAA should permit "no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare." Senate Report 20; see 80 Fed. Reg. at 64,711. As a practical matter, applicants' reading would strip Section 7411(d) of nearly all effect, since EPA has regulated more than 140 source categories for one or more hazardous pollutants.

Applicants suggest that Congress in the 1990 Amendments intentionally created this regulatory gap when it "replac[ed] [Section 7412's] prior pollution-specific focus (see 42 U.S.C. § 7412 (1988)) with an expansive new 'source category' structure and aligned Section [74]11(d) with this new source-category approach." Coal Indus. Appl. 13. But although the 1990 Amendments made certain changes to the Section 7412 NESHAP program, that program remains "pollution-specific" in the relevant sense,

i.e., it authorizes EPA to regulate only a specified category of hazardous air pollutants. See 42 U.S.C. 7412(b) (listing such pollutants and providing criteria for listing). None of the changes Congress made to the Section 7412 program requires or implies any determination that EPA's listing of a particular source category for regulation of hazardous pollutants under Section 7412 divests the agency of authority to regulate emissions of non-hazardous pollutants from the same sources. It is particularly unlikely that Congress would have made such a fundamental change -- and created a gap at odds with the CAA's historically comprehensive regulatory scheme –- through a "Miscellaneous Guidance" provision that appeared to generate no significant discussion at the time. 1990 Amendments § 108, 104 Stat. 2465; cf. Whitman v. American Trucking Ass'ns, 531 U.S. 457, 468 (2001) (Congress does not "hide elephants in mouseholes.").[7]

[7] The Coal Industry applicants describe (Appl. 17) Section 108 as "a substantive provision occupying five pages of the Statutes at Large * * * which rewrote Section [74]11 to mirror the new source-category focus and structure of Section [74]12." In fact, Section 108's "Miscellaneous Guidance" provision -- which appears in Title I of the 1990 Amendments, which was focused on making changes to the NAAQS program, see 104 Stat. 2399-2471 -- contained 17 different subsections, only three of which addressed Section 7411, see 104 Stat. 2465-2469.

Under applicants' interpretation of Section 7411(d)(1)(A)(i), EPA's prior decision to regulate power-plant emissions of hazardous pollutants under Section 7412 would have dramatic and unintended consequences. Section 7412(n)(1)(A) directs EPA to regulate power plants under Section 7412 "if the Administrator finds such regulation is appropriate and necessary." The statute makes clear that, when deciding whether to list power plants for regulation under Section 7412, EPA must assess the health and environmental effects posed by the emission of hazardous air pollutants by such plants. 42 U.S.C. 7412(n)(1)(A), (B), and (C). This Court held last Term that EPA could not decline to consider the financial costs that regulation would entail in determining whether regulation of power plants under Section 7412 is "appropriate and necessary." Michigan v. EPA, 135 S. Ct. 2699, 2706-2712 (2015).

If EPA's decision to regulate power plants under Section 7412 had the dramatic legal effect that applicants attribute to it -- i.e., if that decision foreclosed the agency from subsequently regulating power-plant emissions of non-hazardous pollutants under Section 7411(d) -- EPA would have been expected to take that consequence into account in determining whether regulation under Section 7412 was "appropriate and necessary." Nothing in the CAA suggests, however, that Congress expected EPA

to evaluate that tradeoff in deciding whether power plants should be regulated under Section 7412. Applicants likewise identify no evidence that EPA considered, or was asked to consider, this purported consequence of Section 7412 regulation when the agency listed power plants as a NESHAP source category.[8]

3. Applicants' interpretation of Section 7411(d)(1)(A) also directly contradicts the unambiguous text and purpose of Section 302(a) of the 1990 Amendments. As explained above, see pp. 8-9, supra, that provision modified the obsolete cross-reference that had appeared in the pre-1990 version of Section 7411(d)(1), updating that provision to refer to "[Section] [74]12(b)"

[8] Contrary to applicants' suggestion, footnote seven of this Court's opinion in AEP, 564 U.S. at 424 n.7, did not decide the interpretive question presented here. That footnote states that "EPA may not employ § 7411(d) if existing stationary sources of the pollutant in question are regulated under the [NAAQS] program, §§ 7408-7410, or the [NESHAP] program, § 7412." Ibid. Applicants interpret the footnote to support their view that Section 7411(d) prohibits regulation of any pollutant emitted by a source regulated under Section 7412. See, e.g., Coal Indus. Appl. 13. Applicants' interpretation of footnote seven logically suggests, however, that the same prohibition would apply to any pollutant emitted by a source that also emits criteria pollutants regulated under the NAAQS program. That result plainly contradicts the text of Section 7411(d)(1)(A)(i), which forecloses regulation of criteria pollutants under that provision but contains no barrier to regulation of non-criteria pollutants that are emitted by sources that also emit criteria pollutants. Footnote seven is best read simply to reflect the Court's recognition that EPA may not invoke Section 7411(d) to regulate pollution that is regulated under the NAAQS or NESHAP program.

instead of "[Section] [74]12(b)(1)(A)." 1990 Amendments § 302(a), 104 Stat. 2574; see 42 U.S.C. 7411(d)(1)(A)(i) (1988). Section 302(a) thus preserved EPA's longstanding authority to regulate non-hazardous pollutants emitted from stationary sources whose hazardous pollutants are regulated under Section 7412. 80 Fed. Reg. at 64,711-64,712 (explaining EPA's view of Section 302(a) and its relationship to the pre-1990 version of Section 7411(d)(1)(A)(i)).

a. Section 302's change to Section 7412(d)(1)'s cross-reference plainly differs from the text of Section 108(g) of the 1990 Amendments, which instead replaced the former cross-reference to "[Section] [74]12(b)(1)" with the phrase "or emitted from a source category which is regulated under [S]ection [74]12." 104 Stat. 2467. Applicants' primary solution to the difficult interpretive problem posed by the inconsistent statutory amendments is simply to ignore Section 302(a). See States Appl. 35-38; Coal Indus. Appl. 16-21. On their view, Section 302's status as a "conforming amendment" that appears on a subsequent page of the Statutes at Large means that it can appropriately be disregarded. Indeed, applicants claim that "Congress'[s] handiwork" in amending Section 7411(d)(1)(A)(i) -- despite the need to completely ignore a duly-enacted provision

of the statute -- is "clear and unambiguous." Coal Indus. Appl. 21.

Applicants cite no decision of this Court or any other court that has adopted their interpretive methodology. Section 108(g) and Section 302(a) are both properly classified as "conforming amendments," since each is "an amendment of a provision of law that is necessitated by the substantive amendments or provisions of the bill [here, the 1990 Amendments' wholesale revision of Section 7412]." Office of Legislative Counsel, U.S. Senate, Legislative Drafting Manual § 126(b), at 28 (1997) (Senate Drafting Manual) (defining "conforming amendment"). Such amendments are entitled to substantive effect. See, e.g., CBS, Inc. v. FCC, 453 U.S. 367, 381-382 (1981).

The fact that Section 108(g) appears before Section 302(a) in the text of the 1990 Amendments is irrelevant. See Coal Indus. Appl. 17-20. Both provisions were enacted by Congress as part of the same statute, and both simultaneously became law upon the President's signature. See Antonin Scalia & Bryan A. Garner, Reading Law: The Interpretation of Legal Texts 189 (2012) (Scalia & Garner) (rejecting view that lower-numbered statutory section should take precedence in reconciling inconsistent provisions within a single enacted law).

Applicants purport to ground their approach in the drafting manuals prepared by the respective Offices of Legislative Counsel of the Senate and House of Representatives. See, e.g., Coal Indus. Appl. 19 & n.21. Those manuals of course do not bind this Court. In any event, applicants misconstrue the relevant provisions, which address "Cumulative Amendments" (i.e., those that are intended to be executed together, in sequence) rather than a circumstance in which a single statutory term is simultaneously amended in two different ways. Senate Drafting Manual § 126(d), at 33; Office of Legislative Counsel, U.S. House of Representatives, House Legislative Counsel's Manual on Drafting Style § 332(d), at 42 (1995). Sections 108(g) and 302(a) were obviously not intended to be "[c]umulative." Ibid.[9]

When courts address potentially conflicting statutory provisions, the proper approach is to "fit, if possible, all parts into a harmonious whole." Brown & Williamson, 529 U.S. at 133

[9] The Law Revision Counsel's decision to incorporate Section 108(g) instead of Section 302 into the revised version of Section 7411(d) that appears in the United States Code is also irrelevant. The Statutes at Large constitute the legal evidence of the laws where, as here, the relevant provisions of the Code have not been enacted into positive law. See 1 U.S.C. 204(a); United States v. Welden, 377 U.S. 95, 98 n.4 (1964) (noting that "the Code cannot prevail over the Statutes at Large when the two are inconsistent") (citation omitted).

(citation omitted). Here, that means interpreting EPA's statutory authority under Section 7411(d)(1)(A) in a manner that is consistent with the underlying purpose of both Section 108(g) and Section 302(a). As the Rule explains, EPA's interpretation of Section 7411(d)(1)(A) is the most reasonable way of reconciling those provisions. 80 Fed. Reg. at 64,713-64,714.

b. Applicants alternatively contend that Sections 108(g) and 302(a) should be reconciled by applying both provisions simultaneously, such that "EPA would be prohibited from using Section [74]11(d) both for source categories regulated under Section [74]12 and for pollutants regulated under Section [74]12." Coal Indus. Appl. 16-17; see States Appl. 38. That approach is unreasonable. Section 7411(d)(1)(A) is framed as an affirmative grant of regulatory authority to EPA, not as a prohibition. If both Sections 108(g) and 302(a) are given full effect, EPA therefore must have authority to regulate existing sources pursuant to either affirmative grant of authority. Under that approach, EPA is entitled to regulate CO_2 emissions from existing sources in accordance with Section 302(a), irrespective of Section 108(g).[10]

[10] If this Court concludes that Sections 108(g) and 302(a) of the 1990 Amendments are irreconcilable, one possible interpretive approach would be to disregard them both. See Scalia & Garner 189 ("If a text contains truly irreconcilable provisions

4. At a minimum, the complexities associated with construing Section 7411(d)(1)(A) refute applicants' contention that the provision unambiguously forecloses EPA's interpretation of the statute. EPA's interpretation is reasonable, and it should accordingly be upheld under Chevron USA Inc. v. NRDC, Inc., 467 U.S. 837 (1984).

B. EPA Reasonably Established Emissions Guidelines Based On Its Determination Of The "Best System Of Emissions Reduction"

As explained above, Section 7411(d)(1)(A) empowers EPA to establish guidelines for States' submission of plans for establishing "standard[s] of performance" for existing sources that "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 [EPA] Administrator determines has been adequately demonstrated." 42 U.S.C. 7411(a)(1) and (d)(1). The Rule comports with that statutory mandate. Although applicants challenge various aspects of EPA's analysis -- most

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at the same level of generality, and they have been simultaneously adopted, neither provision should be given effect."). Under that approach, EPA would have authority to regulate such emissions because CO_2 "is not included on a list published under * * * [the now non-existent] Section 7412(b)(1)(A)." 42 U.S.C. 7411(d)(1)(A)(i) (1988).

notably, EPA's reliance on generation-shifting measures when determining the "best system of emission reduction" -- their arguments lack merit. Congress did not require EPA, in determining the "best system of emission reduction" for the largest CO_2 sources, to disregard the proven strategies that these sources are already effectively employing.

1. The Rule's emissions guidelines satisfy all of the key requirements of Section 7411. First, the guidelines are based on the application of a "system of emission reduction." 42 U.S.C. 7411(a)(1). The word "system" is expansive, encompassing a "set of connected things or parts forming a complex whole" or a "set of principles or procedures according to which something is done." Oxford Dictionaries, http://www.oxforddictionaries.com/us/definition/american_english/system (last visited Feb. 4, 2016). The three measures that form the basis of the emission guidelines -- (1) improving heat rates at coal-fired plants, (2) increasing utilization of existing low-carbon power generation, and (3) increasing utilization of new zero-carbon power generation -- indisputably constitute a "system of emission reduction" within the plain meaning of that phrase, whether those measures are viewed collectively or independently. 80 Fed. Reg. at 64,717.

Second, that system of emission reduction is "adequately demonstrated" in practice. 42 U.S.C. 7411(a)(1). All three measures that are the basis for the guidelines are already widely employed by power plants and are well-demonstrated and effective pollution-control strategies. 80 Fed. Reg. at 64,724-64,726.

Generation-shifting measures have functioned as particularly effective pollution-control strategies within the power industry as a result of that industry's uniquely integrated nature. 80 Fed. Reg. at 64,667, 64,762 n.468, 64,768-64,773, 64,795-64,811. Power generators produce a fungible product (electricity), and they operate within "an interconnected 'grid' of near-nationwide scope." FERC v. Electric Power Supply Ass'n, No. 14-840 (Jan. 25, 2016), slip op. 4. In that grid, electricity generally cannot be stored in large volumes, so generation and use must be balanced in real time. Id. at 4-5. Unlike in other industries where sources make decisions independently, electric generators therefore must closely coordinate their operations at all times. 80 Fed. Reg. at 64,725.

Because of these circumstances unique to the power industry, generation shifting is readily available to power generators -- and is widely utilized by them -- as a pollution-control strategy. 80 Fed. Reg. at 64,731. The Rule's preamble de-

scribes in detail the specific steps that any individual source may take to shift generation in order to comply with a particular emission standard that a State might adopt for that source. Id. at 64,731-64,735, 64,796, 64,804-64,806. For example, if a State established a mass-based trading program (i.e., a limit on the total mass of emissions from its sources), each source would be able to buy and sell emission allowances through a market. That approach provides market-based economic incentives that will shift generation to lower-emitting sources. Id. at 64,796. Similarly, if a State established rate-based limitations (i.e., limits expressed in the form of a maximum rate of emissions per unit of energy production) for its sources, a particular source might make direct investments in cleaner power generation, for which it could receive "emission rate credit[s]," or it could purchase credits from other sources that had invested in eligible measures. Id. at 64,731-64,732.

Third, EPA reasonably concluded that the system of emission reductions identified in the rule is the "best" such system available, taking into consideration "cost[s]," "health and environmental impact[s]," and "energy requirements." 42 U.S.C. 7411(a)(1); see 80 Fed. Reg. at 64,745-64,751. As the Rule explains, alternative systems for reducing CO_2 emissions either would be far more expensive to implement or would fail to

meaningfully reduce emissions of the pollutant. 80 Fed. Reg. at 64,748-64,751. While EPA found that other technology-based measures to reduce CO_2 (such as gas co-firing and carbon sequestration) are feasible for a segment of the industry, those technologies are currently much more expensive to implement than the demonstrated generation-shifting strategies that the electricity sector has been employing for decades to reduce pollution. Id. at 64,727-64,728. And even if EPA had based emission guidelines for CO_2 on the application of those more expensive technologies, sources likely would have used more cost-effective generation-shifting strategies to satisfy their resulting obligations. Ibid.

Finally, the Rule's emissions guidelines are based upon a reasonable determination of what emissions reductions are "achievable." 42 U.S.C. 7411(a)(1). As the Rule explains, there are sufficient amounts of unused existing natural gas-fired generation capacity and potential for new renewable energy capacity to enable all sources to successfully employ generation-shifting pollution-control strategies at reasonable cost and without causing adverse impacts on energy supply. 80 Fed. Reg. at 64,797-64,802, 64,806-64,811.

The Rule's emission-reduction requirements will be implemented gradually over a period of eight years beginning in 2022,

and they are consistent with prevailing trends in the energy sector towards more renewable and gas-fired generation. 80 Fed. Reg. at 64,785; see generally App., infra, 77a (noting that between 2004 and 2014, the share of electricity generated from coal fell from 50% to 39%, while the share of electricity generated from natural gas increased from 18% to 27%, and the share of electricity from renewables increased from nine percent to 14%); see also App., infra, 86a-87a (discussing trends). Overall, EPA expects that by 2030 the Rule will decrease total emissions by a total of 16% from 2020 levels. App., infra, 10a-11a. The Rule thus does not require any "fundamental redirection of the energy sector," 80 Fed. Reg. at 64,785, and it builds on industry trends that would likely continue even in its absence. EPA projects that the overall costs of implementing the Rule are in line with -- and in some cases less than -- the costs of other CAA rules for power plants. App., infra, 36a-37a.

2. Applicants contend that, rather than including generation-shifting measures within the best system of emission reduction, EPA should have confined its emission guidelines to certain limited actions that each power plant can take within the physical boundaries of its own facility. See, e.g., States Appl. 15-23, Coal Indus. Appl. 23-24, Util. Appl. 10-12; Appl.

of Bus. Ass'ns for Immediate Stay of Final Agency Action Pending Appellate Review (Bus. Appl.) 8-19. As the Rule makes clear, however, that approach either would have failed to achieve meaningful emissions reductions or would have resulted in a substantially more expensive rule. 80 Fed. Reg. at 64,745, 64,748, 64,756. EPA's reliance on generation shifting was both reasonable and consistent with the CAA.

a. EPA's reliance on generation-shifting measures comports with common sense. Electricity is generated by power-generation sources in an interconnected grid using processes that have vastly disparate air-pollution impacts. Because of the inter-connection among such sources, EPA's guidelines reasonably take account of the fact that power plants may reduce or offset their emissions by entering into arrangements that shift production to cleaner forms of power generation. 80 Fed. Reg. at 64,768-64,769. Other CAA requirements have already relied on generation shifting, and power plants already engage in that practice to comply with those requirements. Id. at 64,770-64,773.[11] State programs that reduce CO_2 emissions from power plants also rely on generation shifting. 79 Fed. Reg. 34,880 (June 18,

[11] See EPA, Legal Memorandum Accompanying Clean Power Plan for Certain Issues, EPA-HQ-OAR-2013-0602-36872, at 88-104 (Nov. 2015), http://www.epa.gov/sites/production/files/2015-11/documents/cpp-legal-memo.pdf.

2014). Such increased use of clean-energy production will often be far less costly for high-polluting plants than requiring them to engage in fuel substitution or to apply end-of-the-stack technologies such as carbon sequestration. 80 Fed. Reg. at 64,756. It is both sensible and consistent with established practice for EPA to exercise its statutory authority to incentivize regulated entities to produce electricity using the cleanest methods possible. App., infra, 38a; cf. EPA v. EME Homer City Generation, L.P., 134 S. Ct. 1584, 1593 (2014) (EME Homer) (upholding CAA regulation that incentivized production of electricity using cost-effective pollution controls premised in part on generation shifting).

b. Relying on this Court's decision in UARG, applicants argue that EPA lacks "clear congressional authorization" to rely on generation-shifting measures to abate power-plant contributions to climate change. See States Appl. 15 (citing UARG, 134 S. Ct. at 2444). They are mistaken. Although Section 7411(d)(1) does not expressly address such measures, it grants EPA discretion to issue emissions guidelines based on its assessment of the "best system of emission reduction." 42 U.S.C. 7411(a)(1) and (d)(1). It is "altogether fitting" that Congress designated EPA -- an "expert administrative agency" -- to serve "as primary regulator of greenhouse gas emissions."

AEP, 564 U.S. at 427-428. Nothing in UARG undermines the Rule's careful assessment of the "best system of emission reduction" under Section 7411(d)(1). See pp. 35-39, supra.

c. Applicants further argue that EPA's reliance on generation shifting is impermissible because Section 7411 addresses "standards of performance for any existing source," Bus. Appl. 8-13, or standards that "[a]pply" to such sources, States Appl. 21. But the fact that those standards are "for" or "[a]pply" to particular sources does not undermine EPA's reliance on generation shifting when determining what degree of emission reductions the standards must achieve. As explained above, EPA promulgates emissions guidelines based on its assessment of the "degree of emission limitation achievable through the application" of the "best system of emission reduction." 42 U.S.C. 7411(a)(1) and (d)(1). States then translate those guidelines into specific "standards of performance" for individual sources that "reflect[]" the prescribed degree of emission limitation. Ibid. The fact that standards of performance apply to particular sources does not preclude EPA from concluding that the "best system" of reduction encompasses steps that sources (and their owners) can take to shift energy production to cleaner sources.

More generally, applicants are wrong to suggest that Section 7411 emission standards must be achieved solely through

measures that particular source owners can implement at their own facilities. To comply with emission standards applicable to their own facilities, owners and operators of power plants routinely contract with other entities for the performance of off-site services whose ultimate effect is the reduction of on-site emissions. For example, owners and operators of power plants routinely arrange for third parties to pretreat coal or oil (i.e., to perform fuel-cleaning) off-site to enable the plants to meet Section 7411(b) sulfur emission standards. In determining the "best system" for achieving those standards, EPA has taken into account the availability and widespread use of third-party off-site fuel cleaning. See 80 Fed. Reg. at 64,765-64,766. Owners and operators likewise routinely rely on emissions averaging and trading programs in order to satisfy a wide range of other CAA compliance obligations. Id. at 64,770-64,773; 60 Fed. Reg. 65,402, 65,415 (Dec. 19, 1995). The Rule identifies numerous ways in which sources of all types and in all locations will be able to implement measures -- including generation shifting -- to comply with standards of performance applicable to individual sources. 80 Fed. Reg. at 64,731-64,735, 64,796, 64,804-64,806; see EME Homer, 134 S. Ct. at 1597 n.10.

Applicants are also wrong to suggest that EPA should not have based its analysis on measures that must be taken by source owners or operators, as distinct from the sources themselves. Bus. Appl. 9-11. The CAA holds owners and operators responsible for implementing the emissions limitations that EPA or States impose on sources. See 42 U.S.C. 7411(e) (requiring owners and operators of sources to comply with emission standards for sources). To satisfy those requirements, owners and operators routinely undertake such measures as purchasing and installing pollution-control equipment, changing fuels, reducing generation levels, and purchasing emission allowances or credits. "[S]tationary source[s]," defined by Section 7411(a)(3) as "[b]uilding[s], structure[s], facilit[ies], [and] installation[s]," obviously are incapable of taking such steps on their own. EPA correctly recognized that source-specific generation-shifting measures, like other pollution-control efforts, must ultimately be implemented by owners and operators on behalf of the regulated sources. 80 Fed. Reg. at 64,762.

d. Applicants also argue that the Rule's performance-rate guidelines for existing sources must be defective because they appear to impose less stringent standards than those that EPA promulgated for new sources under Section 7411(b). Bus. Appl. 13-15. But applicants' premise -- that the existing source

guidelines are necessarily more stringent than the new source standards -- is incorrect. In any event, the comparative stringency of the two is irrelevant to the legal issues raised here.

As EPA explained, the separate rules governing new and existing sources become applicable at very different points in time and have significantly different compliance periods. 80 Fed. Reg. at 64,785. Whereas the standards for new sources are immediately effective, ibid.; see 42 U.S.C. 7411(a)(2) and (b)(1)(B), existing sources do not become subject to any CO_2 performance standards until 2022 at the earliest (and in fact, States may delay imposing requirements until 2024 in most cases), and the standards are then gradually phased in through 2030. 80 Fed. Reg. at 64,785-64,786 & n.621. EPA is required to review and, if appropriate, revise the new-source standards no less frequently than every eight years -- i.e., by 2023. 42 U.S.C. 7411(b)(1)(B). The relative stringency of the new- and existing-source requirements therefore cannot cogently be assessed at this time.

In any event, "[n]o provision in [S]ection [74]11, nor any statement in its legislative history, nor any of its case law, indicates that the standards for new sources must be more stringent than the standards for existing sources." 80 Fed.

Reg. at 64,787. EPA gave a reasoned explanation for its conclusion that generation-shifting measures are part of the best system of emission reduction for existing sources but not for new sources. 80 Fed. Reg. at 64,626-64,628. Specifically, EPA noted that the robust trading market available to existing sources would not be available to new sources. Ibid. Applicants offer no reason to doubt EPA's conclusion.

3. Applicant North Dakota contends that EPA lacks authority to set any substantive emission guidelines for States. Appl. by the State of N.D. for Immediate Stay of Final Agency Action Pending Appellate Review (N.D. Appl.) 23-24. That is incorrect.

Section 7411(d)(1) provides that "[t]he Administrator shall prescribe regulations which shall establish a procedure * * * under which each State shall submit to the Administrator a plan which * * * establishes standards of performance for any existing source for any air pollutant." Section 7411(d) further requires States to submit a "satisfactory" plan to EPA, and it authorizes EPA to promulgate a plan for a State if EPA concludes that the state plan is not satisfactory. 42 U.S.C. 7411(d)(2)(A). In 1975, EPA promulgated regulations implementing Section 7411(d). See 40 Fed. Reg. at 53,340; see also 40 C.F.R. 60.21(e), 60.22(a). EPA noted that the emission guidelines that it promulgates under Section 7411(d)(1) should

provide States with the substantive criteria that would govern EPA's review of whether state plans are "satisfactory." See 40 Fed. Reg. at 53,343. EPA further noted that such guidelines would "reflect [EPA's] judgment of the degree of control that can be attained." Ibid.; see AEP, 564 U.S. at 424 (noting EPA's authority to promulgate substantive emission guidelines under Section 7411(d) and citing EPA's implementing regulations). That determination was based on a reasonable interpretation of the statutory text.[12]

North Dakota's application is mistaken in other respects as well. The Rule does not dictate specific emission limits that particular regulated sources in a State "must meet." N.D. Appl. 24. Rather, the Rule provides considerable flexibility to States in establishing emission standards for specific plants. 80 Fed. Reg. at 64,832-64,837. North Dakota also asserts (Appl. 25-26) that the Rule deprives States of the authority to consider the remaining useful lives of regulated sources. In fact, States are permitted to regulate particular plants more leniently based on their remaining useful lives or otherwise to design

[12] North Dakota's argument is also defective because it constitutes an untimely challenge to EPA's longstanding Section 7411(d) implementing regulations. See 42 U.S.C. 7607(b) (requiring a petition for review of any CAA regulation to be filed within 60 days after the rule is promulgated).

standards that reasonably account for the remaining useful lives of sources. 80 Fed. Reg. at 64,869-64,874.

C. The Rule Does Not Violate The Tenth Amendment Or Federalism Principles

Applicants contend that the Rule's emissions guidelines violate the Tenth Amendment and federalism principles. See, e.g., States Appl. 18-20, 23-29; Coal Indus. Appl. 25-29. But the Commerce Clause "permit[s] congressional regulation of activities causing air or water pollution * * * that may have effects in more than one State." Hodel v. Virginia Surface Mining & Reclamation Ass'n, 452 U.S. 264, 282 (1981). Congress expressly authorized EPA to issue emissions guidelines that establish a procedure by which States -- if they so choose -- can issue standards of performance for regulated sources under the CAA. 42 U.S.C. 7411(d); see Hodel, 452 U.S. at 288-289 (upholding similar program).

1. The Rule is a textbook exercise of cooperative federalism. States can develop their own plans to reduce power plants' CO_2 emissions under the Rule's flexible standards, or they can leave to EPA the task of directly regulating those sources' emissions. 80 Fed. Reg. at 64,986; see 42 U.S.C. 7411(d)(2). As in Hodel, "the States are not compelled to * * * participate in the federal regulatory program." 452 U.S. at 288. Rather, "[t]he most that can be said is that [Section 7411(d)]

establishes a program of cooperative federalism that allows the States * * * to enact and administer their own regulatory programs." Id. at 289.

Under the Rule, States retain the same authorities they have always exercised, such as the power to regulate retail electricity sales in intrastate markets and to license new power-generation facilities. While the Rule may ultimately cause some power generators to spend more to comply with CO_2 standards applicable to their plants, the imposition of such costs on sources does not usurp a State's authority over its energy market. As with all air-pollution standards, state regulators will continue to decide the rates that state ratepayers should bear, and they can choose to reflect the costs of CO_2 controls in those rates. States also retain their prior authority over licensing decisions for new proposed power facilities. The fact that emission requirements might indirectly affect the types of projects that power generators propose does not usurp state authority to determine whether to license those projects. See 80 Fed. Reg. at 64,782-64,785.

As explained above, the Rule does not require States to impose the same emission-limitation measures that EPA relied upon when determining the achievable degree of emission limitation. A State can impose different obligations on its sources, so long

as the overall level of emission limitation is at least as stringent as the level specified in the guidelines. 80 Fed. Reg. at 64,736. For example, States may require technological controls (e.g., gas co-firing or carbon sequestration) at regulated plants. States can also rely on state-law mechanisms, such as existing or planned programs for increasing energy efficiency and reducing energy demand, to achieve CO_2 reductions from sources indirectly. Id. at 64,835-64,836.

2. Applicants argue that the Rule unlawfully commandeers state officials by using them as "implements of regulation" in violation of the Tenth Amendment. States Appl. 24 (quoting New York v. United States, 505 U.S. 144, 161 (1992)). They are mistaken. A State that declines to issue its own plan will face no new federal regulatory obligations as a result. 80 Fed. Reg. at 65,054. In such circumstances, sources within that State will be directly regulated by EPA through an appropriate federal plan, see id. at 64,986; see also 42 U.S.C. 7411(d)(2), which will be subject to judicial review upon promulgation. 42 U.S.C. 7607(b)(1).

If a particular State declines to promulgate its own plan, the State will retain its traditional authority to issue permits and take other regulatory actions at the request of private parties, but nothing in the Rule will compel the State to

implement the federal plan. See FERC v. Mississippi, 456 U.S. 742, 764-765 (citing Hodel, 452 U.S. at 288). A State would be free, for example, to refuse to grant a permit that would otherwise be required under state law for an action that a power plant wishes to take to comply with a federal plan. In such circumstances, the full burden of complying with the federal plan will rest with the power plant, which may, for example, pursue an alternative compliance method that is agreeable to state regulators or that does not require their approval.

The two decisions of this Court that applicants principally invoke in support of their commandeering argument are inapposite here. In Printz v. United States, 521 U.S. 898 (1997), the federal statute in question required state officers to conduct federally-mandated background checks. Id. at 904. Here, by contrast, neither the CAA nor the Rule requires state officials to implement the federal plan if a State chooses not to enact its own plan. Because the federal plan in those circumstances would "regulate individuals, not States," it would pose no Tenth Amendment problem. Id. at 920 (citation omitted).

Nor is this case analogous to New York, where the statute at issue presented States with an unenviable choice between regulating the disposal of hazardous waste and "tak[ing] title to the waste." 505 U.S. at 153-154; see id. at 175-177. In

that circumstance, a State's decision not to regulate triggered an even more burdensome mandate that Congress lacked authority to impose "as a freestanding requirement." Id. at 175. Here, by contrast, the alternative to state participation is the promulgation of a federal plan, under which EPA regulates sources -- not States -- directly under its Commerce Clause authority. As this Court explained in New York, there is no compulsion where, as here, "any burden caused by a State's refusal to regulate will fall on those [individuals] who generate waste and find no outlet for its disposal, rather than on the State as a sovereign." Id. at 174. Congress has "power to offer States the choice of regulating * * * activity according to federal standards or having state law pre-empted," and such cooperative federalism programs are "replicated in numerous federal statutory schemes." Id. at 167.

3. Applicants are likewise wrong in contending that the Rule is unconstitutionally coercive because it denies them a "legitimate choice" about whether to participate in the Section 7411(d) regulatory program. States Appl. 27 (quoting National Fed'n of Indep. Bus. v. Sebelius, 132 S. Ct. 2566, 2602 (2012) (NFIB)). In NFIB, this Court held unconstitutional a provision of the Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119, under which a State would lose federal

funds representing a significant portion of its budget if it declined to expand its state Medicaid programs. 132 S. Ct. at 2604-2605. The Rule, by contrast, expressly prohibits EPA from withholding "any existing federal funds." 80 Fed. Reg. at 64,942 (amending 40 C.F.R. 60.5736). A State that does not submit a Section 7411(d) plan thus faces no sanctions, pecuniary or otherwise. Id. at 64,882, 64,968.

Applicants argue that the Rule leaves States with no real choice because a State that declines to implement its own plan must nonetheless undertake "substantial regulatory actions to achieve the emission reductions that will apply under a Federal Plan." States Appl. 24. As noted above, however, if a State opts not to submit a plan, EPA will "not directly impose specific requirements on state and U.S. territory governments," but only "on affected [sources] located in states." 80 Fed. Reg. at 65,054. As noted above, there is no constitutional impediment to a federal program that "regulate[s] individuals, not States." Printz, 521 U.S. at 920.

II. APPLICANTS WILL NOT SUFFER IRREPARABLE HARM WHILE THIS CASE IS PENDING BEFORE THE D.C. CIRCUIT

Applicants have not established any likelihood of irreparable harm during the D.C. Circuit's expedited consideration of this case. The D.C. Circuit has scheduled oral argument on the consolidated petitions for review for June 2, 2016, and it can

be expected to issue a decision a short time thereafter. App., infra, 2a. States, with a readily obtained extension, need not submit plans to EPA until September 2018. The Rule does not require sources to begin reducing their CO_2 emissions until 2022 at the earliest. And applicants have identified no near-term effects that are traceable to the Rule and could justify a stay.

A. State Applicants Have Not Established A Likelihood Of Irreparable Harm

The state applicants assert that, unless a stay is granted, they will suffer irreparable harm during the pendency of the litigation, both because the Rule will impair their sovereign interests and because state officials will be forced to devote resources to the development of acceptable plans. Those arguments lack merit. The Rule does not intrude on States' sovereign interests, but rather balances federal and state prerogatives in a manner characteristic of cooperative-federalism programs. Compliance costs ordinarily are not treated as irreparable harm, and the state applicants identify no sound basis for applying a different rule here. In particular, the state applicants are very unlikely to suffer irreparable harm before the D.C. Circuit issues its decision, at which point this Court can assess -- with the benefit of the D.C. Circuit's analysis -- whether any interim relief is warranted during the remainder of the case.

1. State applicants argue (Appl. 39-41) that they will suffer irreparable harm to their purported sovereign interest in regulating the generation of electricity. That argument fails for many of the reasons set forth above. See pp. 48-53, supra. Consistent with principles of cooperative federalism, the Rule establishes guidelines for EPA's receipt and approval of individualized state plans, but each State retains its traditional authority to specify emission limitations applicable to particular existing sources within its borders. And although the Rule identifies statewide emission goals, it leaves to States the responsibility and flexibility to determine how to meet them. The Rule thus has a similar structure to numerous other CAA rules, including new and revised NAAQS and EPA requirements for States to implement those NAAQS. See App., infra, 18a-19a.

State applicants identify no decision holding that a State suffers irreparable harm simply because its exercise of regulatory authority is constrained by a federal law under a scheme of cooperative federalism. The decisions on which they rely (States Appl. 39) involved situations where the Court stayed a judicial decision that prevented a State from exercising its regulatory authority at all.[13]

[13] See Maryland v. King, 133 S. Ct. 1, 3 (2012) (Roberts, C.J., in chambers) (staying decision enjoining enforcement of

2. State applicants also assert (Appl. 41-45) that their environmental and public-utility agencies must expend resources to comply with the Rule. But they cite no case in which costs incurred by a State to comply with its statutory responsibilities was held to constitute irreparable harm. In any event, the Rule gives States considerable flexibility to determine the level and timing of any effort required to implement the Rule, including the option of obtaining an extension of the plan-submission deadline until September 2018.

a. In other contexts, "ordinary compliance costs are typically insufficient to constitute irreparable harm." Freedom Holdings, Inc. v. Spitzer, 408 F.3d 112, 115 (2d Cir. 2005); see, e.g., A.O. Smith Corp. v. FTC, 530 F.2d 515, 527-528 (3d Cir. 1976). That principle applies here. The fact that States may devote staff time to development of a plan to implement CAA

Maryland statute that provided for collection of DNA samples); New Motor Vehicle Bd. v. Orrin W. Fox Co., 434 U.S. 1345, 1351, 1353 (1977) (Rehnquist, J., in chambers) (staying decision enjoining enforcement of State's automobile franchise law); see also Kansas v. United States, 249 F.3d 1213, 1218 (10th Cir. 2001) (affirming injunction against enforcement of administrative decision preventing State from regulating casino construction on disputed property) (cited at N.D. Appl. 16). State applicants also cite (Appl. 39) Alfred L. Snapp & Son, Inc. v. Puerto Rico, 458 U.S. 592 (1982), but that case did not involve either a stay or an alleged intrusion on state sovereignty. Rather, the disputed issue concerned the nature of the quasi-sovereign interests that can give rise to parens patriae standing. Id. at 600-601.

requirements pursuant to an EPA rule before judicial review is complete is an inherent and foreseeable consequence of the CAA's basic design. The CAA requires both that States submit plans to EPA following promulgation of EPA regulations, e.g., 42 U.S.C. 7410(a), and that any petitions for review of those regulations be filed within 60 days, 42 U.S.C. 7607(b)(1). Because judicial review will thus necessarily take place during the period allotted for plan preparation, the CAA clearly contemplates that States will begin developing their plans before judicial review is complete.[14]

b. There is no reason to suppose that States' duties under the Rule will be especially onerous. A State can elect not to prepare a plan at all, but instead may allow EPA to develop and implement a federal plan for the sources in that State. See 80 Fed. Reg. at 64,986; 42 U.S.C. 7411(d)(2); see also App., infra, 26a-27a (noting that at least two state applicants have indicat-

[14] Under the CAA, States have been required to prepare within a few years many state plans of different types following action by EPA. See App., infra, 19a-25a, 89a-91a. Some of those state plans were of comparable complexity to the state plans required by the Rule and had a shorter submission schedule. See id. at 19a-25a, 90a-93a. Others, including state plans to achieve attainment of a NAAQS for an area with numerous stationary and mobile sources, had similar, or even shorter, submission schedules but were more complex because they entailed preparing source inventories for multiple source categories and complex air-quality modeling. Id. at 21a-24a.

ed that they will not or might not submit a plan); Mary Fallin, Exec. Dep't Exec. Order 2015-22 (Apr. 28, 2015), https://www.sos.ok.gov/documents/Executive/978.pdf (Oklahoma Governor's executive order forbidding state officials from working on a plan). A State that chooses to develop its own plan can join existing state trading programs (such as the Regional Greenhouse Gas Initiative), reduce generation through demand-side energy-efficiency measures, or simply adopt the Rule's emission performance standards without elaboration, leaving to the regulated facilities the decisions about how to meet those limits. 80 Fed. Reg. at 64,832-64,836; App., infra, 16a-18a. States may also adopt one of the model plans that EPA has proposed and intends to promulgate in the near future. See App., infra, 17a-18a (noting that EPA expects to finalize two model plans by the summer of 2016, and that some States have already expressed interest in such plans).

c. For purposes of this Court's stay decision, the relevant irreparable-harm question (even assuming that state compliance costs can constitute irreparable harm at all) is whether the Rule will require States to incur substantial costs while applicants' legal challenges are pending before the D.C. Circuit. There is no reason to suppose that the Rule will have that effect. Under the Rule, a State need not submit a plan

until September 2018 if it seeks a readily procurable extension. The submission required by September 2016 to obtain the extension is not burdensome and requires only that a State (1) generally identify the plan approaches under consideration, (2) describe opportunities for public input during plan development, and (3) explain why the State requires additional time. 80 Fed. Reg. at 64,856; App., infra, 12a-15a. State applicants make no substantial argument that preparing this submission will require significant resources. See App., infra, 12a-15a, 90a.[15]

Given the expedited briefing and argument schedule announced by the court of appeals, it is reasonable to expect that court to decide the case on the merits during the late summer or early fall of 2016, approximately two years before the September 2018 deadline for submitting a plan that applies to any State that obtains an extension. As explained above, it would be extraordinary and apparently unprecedented for this Court to stay an agency rule that has not yet been reviewed by any court. The Court should not take that step absent a showing that it is necessary to protect applicants from irreparable harm while this case is pending before the D.C. Circuit. Applicants cannot make

[15] North Dakota's claim of irreparable harm based on lost tax revenue (Appl. 19-20) lacks merit for the same reason, since there is no evidence that any such loss will occur while this case is before the D.C. Circuit.

that showing. Once the D.C. Circuit has issued its decision, the Court will be in a far better position to determine whether any form of interim relief should be granted during the pendency of further proceedings.

B. Industry Applicants Fail To Show That The Rule Will Inflict Irreparable Harm During The Pendency Of The D.C. Circuit Litigation

Industry applicants likewise fail to show that they will suffer irreparable injury as a result of the Rule during the expedited period in which the D.C. Circuit considers the Rule's merits. The Rule does not require regulated sources to reduce emissions until 2022 at the earliest, long after judicial review will be complete. And until States submit their plans (which for States that obtain extensions will occur in 2018), regulated parties will not know precisely what those requirements will be. Moreover, the Rule provides for gradual implementation of requirements over a number of years, and full compliance is not due until 2030.

1. Applicants' central claim is that the Rule will force the power industry to immediately retire high-emitting plants and focus on lower-emitting sources, which allegedly will lead to various immediate economic effects such as the closure of coal mines. See, e.g., Util. Appl. 17; Coal Indus. Appl. 29-30. Those claims are wholly speculative.

First, plant owners cannot know what requirements will be imposed on specific plants -- or what steps they will take in response to such requirements -- until they see the content of state plans. In all States that obtain extensions of the September 2016 deadline, those plans need not be submitted until September 2018, well after the D.C. Circuit can be expected to rule on the merits. See App., infra, 12a, 15a, 17a-18a. Compliance obligations under the Rule do not begin until 2022 at the earliest, and they are gradually phased in over eight years. Id. at 44a-45a; see 80 Fed. Reg. at 64,785-64,786; see also App., infra, 129a. As discussed above, moreover, the Rule gives States broad flexibility in developing source-specific requirements (including significant latitude to decide which sources to control, by how much, and when), and States may allow their sources comparable flexibility in meeting those requirements (as by purchasing allowances or credits). Applicants thus cannot reliably identify what their compliance obligations will be, and they likely will not know them until 2018.

For example, the compliance cost estimate derived by applicant Basin Electric Power Cooperative -- which applicants claim is illustrative of the Rule's overall compliance burden (see Util. Appl. 13-15) -- depends on a number of speculative assumptions, including: (1) that all of the States in which Basin

Electric operates will adopt rate-based rather than mass-based plans; (2) that each State's plan will require Basin Electric's plants to meet the performance levels for plant subcategories calculated by EPA in the guidelines; and (3) that emission trading will not be a functional part of any State's plan. See App., infra, 157a-158a. As Basin Electric's own Vice President for Cooperative Planning acknowledges, "it is not clear what requirements Basin Electric will be required to comply with under a mass based system until completion of state plans in 2016 or 2018." Id. at 157a. Other utility declarants likewise acknowledge that they will not know what the Rule actually "requires" -- and therefore cannot determine what steps to take in response -- until their States adopt finalized plans. See, e.g., id. at 148a-150a (noting that plant has no plans to shut down and that it is "far from clear" what the State will do); id. at 167a-168a (quoting recent public comments from the utility industry expressing similar views). Under this Court's precedents, it is not enough for a stay applicant to "simply show[] some 'possibility of irreparable injury.'" Nken, 556 U.S. at 434 (citation omitted).

Second, EPA's record also refutes applicants' general supposition that the Rule requires sources to take immediate action to build a significant amount of infrastructure. For example,

if States require sources to shift from coal-fired to gas-fired electric generation at existing natural gas combined cycle facilities, this measure would not require any construction of new capacity. The Rule's gradual implementation schedule also allows ample time to complete infrastructure improvements that might be needed to support greater use of such existing facilities, and there is no need for such sources to commence those improvements immediately. 80 Fed. Reg. at 64,798, 64,800-64,801. EPA similarly determined that application of the potential measure for shifting from fossil-fuel fired generation to new cleaner energy sources would not add significant transmission requirements in order to maintain grid reliability, as that measure too is phased in incrementally and capped at reasonable levels. See id. at 64,806-64,810.

By treating 2022 as though it were the deadline for full compliance, moreover, applicants underestimate the amount of lead time that the Rule will afford to plan for whatever infrastructure improvements may ultimately be necessary. See, e.g., Util. Appl. 20 ("[T]he rule forces utilities to act now to ensure necessary infrastructure is in place by 2022."). In fact, the Rule requires only that affected power plants begin achieving reductions in 2022; full compliance is not required until 2030. 80 Fed. Reg. at 64,785-64,786; see App., infra,

135a, 137a-142a. Indeed, the Rule contemplates that the overall emission reduction from covered sources will be one percent in 2022, and will increase another one to three percent each year thereafter until 2030, as compared to the baseline emission levels projected for 2020 without the Rule. App., infra, 11a.

Third, to the extent applicants elect to retire any coal-fired power plants during the period of litigation, they have not demonstrated that such retirements are required by the Rule or that a stay would prevent them from occurring. For many years, the Nation has been experiencing a significant and ongoing shift away from coal-fired power generation and towards greater generation from cleaner sources. 80 Fed. Reg. at 64,694-64,695, 64,795, 64,803-64,804; App., infra, 75a-80a. That "market shift towards gas-fired and renewable generation" is due to a variety of factors, including an "abundant supply of comparatively inexpensive natural gas," the "increasing competitiveness of renewable generation," and the "ability of gas-fired and renewable sources to produce electricity" with fewer or zero greenhouse gas emissions. App., infra, 133a; see id. at 79a-80a, 82a-86a.

Fourth, the industry applicants have represented to this Court, and presumably believe, that they are likely to prevail on the merits of their challenges to the Rule. If (as the

applicants anticipate) their lawsuit culminates in a judicial decision vacating the Rule, the requirements about which the industry applicants complain will be rendered nugatory years before their implementation is scheduled to begin. Applicants' claim of irreparable harm depends on the inherently unlikely premise that, during the pendency of the D.C. Circuit proceedings, numerous owners or operators will close power plants whose continued operation would otherwise be economically advantageous, simply in anticipation of regulatory requirements that will not take effect for several years and that applicants themselves believe will never take effect at all.

None of the declarants supporting the stay applications appears to identify a specific power plant or coal mine whose continued operation will depend on whether the Court enters or denies a stay. An analysis by utility applicants' own expert states that "it is very unlikely that there are significant numbers of coal retirements scheduled for 2016 that have not yet been announced." App., infra, 152a. And the coal applicants' expert agreed (as of October 2015) that "any unit intending to retire by the end of 2015 or even in 2016 would long since have announced that fact." Id. at 137a (citation omitted).

2. Instead of providing direct evidence that the Rule will force specific plants to close during the pendency of this

litigation, applicants rely on the forecast of 2016 coal generation capacity reductions that was produced by EPA's Integrated Planning Model (Model). See, e.g., Coal Indus. Appl. 29 (asserting that EPA's Model shows that the Rule will cause 53 coal-fired generating units to close in 2016); Util. Appl. 16; see generally EPA, Analysis of the Clean Power Plan, http://www.epa.gov/airmarkets/analysis-clean-power-plan (last visited Feb. 4, 2016) (providing links to Model Run files). Applicants' reliance on that Model is misplaced.

The Model's forecasts are not regulatory requirements of any kind. App., infra, 59a-60a. In addition, the Model is designed not to predict the impacts of control requirements on individual sources, but instead to gauge the overall, power-sector-wide impacts of control requirements in terms of costs, emission reductions, and economic impacts, primarily for the 2020-2030 period. Id. at 49a. The simplifications and constraints built into the Model mean that it is not designed to reliably forecast the Rule's impacts on specific power plants, particularly in the near-term period at issue here (i.e., during the pendency of this litigation). Ibid.; see id. at 51a. That is in part because the Model only forecasts impacts on "model plants," which are aggregates of actual electrical generating units and do not bear a direct relationship to those units. Id.

at 49a-50a. The Model also cannot account for the informational constraints that actual power-plant owners face, including their inability to predict what their state plans will eventually require and their uncertainty about the ultimate outcome of the pending lawsuits. Id. at 55a-56a.

Recent comments submitted by industry participants to EPA in the context of a different rulemaking -- EPA's proposed revisions to the Cross-State Air Pollution Rule (CSAPR) -- directly refute the predicted power plant closures described in the stay applications that are currently before the Court. See App., infra, 159a-170a; see also 80 Fed. Reg. 75,706 (Dec. 3, 2015). For example, utility applicants cite the EPA Model and assert (Appl. 19) that the Rule "will cause a net retirement" of 53 power plants "this year alone." But one of those applicants (the Utility Air Regulatory Group) commented during the CSAPR rulemaking that EPA should exclude the Clean Power Plan from CSAPR's baseline air quality modelling because the Model assumes the retirement of an amount of coal-fired generation by 2018 "that in fact will not be retired by that time." App., infra, 165a (citation omitted). In a similar vein, Arkansas Electric Cooperative -- a member of applicant National Rural Electric Cooperative Association -- commented that "any effects from the [Clean Power Plan] prior to 2020 are essentially nonexistent."

Ibid. (citation omitted). And although utility applicants assert (Appl. 16) that EPA's Model "predicts the immediate closure of 20% of the Southern Company's existing coal-fired fleet," the Southern Company itself has stated that it does not plan to close many of those plants by 2018. See App., infra, 166a-167a.

EPA has now conducted a review of information regarding the power plants that utility applicants assert are at risk of closure according to EPA's Model. App., infra, 160a-161a (discussing report cited at Util. Appl. 3 n.5). EPA has determined that few, if any, of the plants upon which utility applicants rely will actually retire in the near future -- and that those that do retire will do so for reasons not attributable to the Rule. Id. at 162a-163a. The available evidence thus refutes applicants' reliance on the Model as evidence that they will suffer irreparable harm during the pendency of this litigation unless the Rule is stayed.

3. Applicants also contend that their experience with the Mercury Air Toxics Standards (MATS) Rule demonstrates the need for a stay of the current Rule. See, e.g., Util. Appl. 3-4; Coal Indus. Appl. 3-4; see generally Michigan, supra; 77 Fed. Reg. 9304 (Feb. 16, 2012). In their view, EPA was able to obtain substantial compliance with the MATS Rule -- even though

it was ultimately held unlawful by this Court -- because the MATS Rule was allowed to go into effect even while litigation over its validity was ongoing.

The MATS rulemaking and litigation have no bearing on applicants' ability to show irreparable harm in this case. Unlike the extended schedule of compliance at issue here -- in which States can obtain extensions until 2018 to submit plans, and power plants need not reduce emissions until 2022 at the earliest -- the MATS Rule required full compliance within less than three and a half years, with the possibility of a one-year extension. 40 C.F.R. 63.9984 (requiring compliance for existing sources by Apr. 16, 2015); see 77 Fed. Reg. at 9304. And whereas the MATS Rule imposed specific requirements directly on covered sources, 77 Fed. Reg. at 9367-9370, the Clean Power Plan will be implemented through the state planning process, and the Rule gives States significant flexibility to devise appropriate requirements for particular plants. Nothing in the MATS Rule or in the litigation concerning it suggests that a stay of the Clean Power Plan is needed to protect applicants from irreparable harm.

III. THE BALANCE OF THE EQUITIES FAVORS EPA

The equities also weigh strongly against applicants' request for a stay. Climate change is the most significant

environmental challenge of our day, and it is already affecting national public health, welfare, and the environment. See, e.g., 80 Fed. Reg. at 64,677, 64,686-64,688; see generally App., infra, 95a-110a. Because atmospheric CO_2 is cumulative and long-lived, any delay in reducing emissions of greenhouse gases will increase the accumulation of these gases in the atmosphere and further contribute to, or even accelerate, the resulting public and environmental harms, such as the risk of more severe storms and droughts. 80 Fed. Reg. at 64,682-64,683; App., infra, 96a, 98a-107a. In Massachusetts v. EPA, 549 U.S. 497 (2007), this Court recognized that reductions in domestic greenhouse gas emissions can slow the pace of global emissions increases and mitigate the risk of "catastrophic harm" -- "no matter what happens elsewhere." Id. at 526. Fossil-fuel-fired power plants are the largest emitting stationary CO_2 generators in the United States, and by 2025 the Rule will generate a projected $10 billion in monetized climate benefits. 80 Fed. Reg. at 64,681, 64,688-64,689, 64,928-64,931.

As noted above, applicants appear to ask this Court not simply to suspend the Rule's legal effect for the duration of this litigation, but also to toll all of the Rule's deadlines, even those that do not come due until many years after applicants' challenge will likely have been resolved, for the period

of time between the Rule's publication and the ultimate disposition of this suit. Utility applicants explicitly request that relief (Appl. 22); no other applicant articulates any alternative understanding of what the requested "stay" would entail; and a central premise of all applicants' stay requests is the expectation that such relief will forestall alleged harm arising from future deadlines. The effect of such relief would be that, even if the Rule is ultimately held to be valid, every sequential step in the Rule's implementation (including, for example, the 2030 deadline for full compliance by regulated sources) would be delayed for a significant period. Applicants identify no case in which the Court has granted comparable relief under the rubric of a temporary "stay."

Granting the relief that applicants seek would create an obvious incentive for delay by the applicants in the conduct of the litigation. If the Rule is upheld, entry of such a "stay" would also needlessly delay the emission reductions that are the Rule's ultimate objective. Granting such relief would harm the public's interests in implementing this duly-promulgated Rule, in reducing the accumulation of greenhouse gases in the atmosphere, and in preventing the risk of "catastrophic harm." Massachusetts, 549 U.S. at 526. Delaying the Rule's implementation would also disrupt the United States' leadership on the

international stage, which has facilitated new emission-reduction commitments by countries representing 98% of global CO_2 emissions. See App., infra, 122a, 124a.

Applicants argue that the Rule should be stayed because coal-unit retirements and new infrastructure investments will rapidly transform the electricity sector, and could lead to rising electricity rates, employment losses, and costs to customers and States. See, e.g., States Appl. 45-47; Coal Indus. Appl. 34-36; Util. Appl. 14-17; N.D. Appl. 26-27. But applicants face no imminent compliance obligations, and they need not make any decisions to close existing generation sources or to build new generation or transmission during the period of expedited judicial review. See generally pp. 56-68, supra. Furthermore, similar prior warnings by the power industry that environmental regulation would disrupt the electric grid and raise electric bills have not proven accurate. App., infra, 36a-40a.

Some applicants contend that the equities favor a stay of the Rule because the electricity sector is already moving towards renewable and energy efficiency technologies and reducing CO_2 emissions. See Bus. Appl. 23. While near-term CO_2 reductions reflect market trends -- a fact that undercuts applicants' assertions of irreparable harm -- the Rule will

ultimately secure substantial additional reductions, particularly in later compliance years. Although the Rule imposes very little near-term burden, applicants' requested stay would rewrite the deadlines for more substantial, later-required reductions, and it would thus result in significant and irretrievable additional CO_2 emissions if the Rule is ultimately upheld.

In short, the balance of the equities weighs strongly against applicants' stay requests. This Court should allow the Rule to remain in effect while the D.C. Circuit conducts its expedited review of their claims.

CONCLUSION

The applications for an immediate stay of the Rule should be denied.

Respectfully submitted.

DONALD B. VERRILLI, JR.
Solicitor General

FEBRUARY 2016

APPENDIX

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1363 **September Term, 2015**

EPA-80FR64662

Filed On: January 21, 2016

State of West Virginia, et al.,

Petitioners

v.

Environmental Protection Agency and Regina A. McCarthy, Administrator, United States Environmental Protection Agency,

Respondents

American Wind Energy Association, et al.,

Intervenors

Consolidated with 15-1364, 15-1365, 15-1366, 15-1367, 15-1368, 15-1370, 15-1371, 15-1372, 15-1373, 15-1374, 15-1375, 15-1376, 15-1377, 15-1378, 15-1379, 15-1380, 15-1382, 15-1383, 15-1386, 15-1393, 15-1398, 15-1409, 15-1410, 15-1413, 15-1418, 15-1422, 15-1432, 15-1442, 15-1451, 15-1459, 15-1464, 15-1470, 15-1472, 15-1474, 15-1475, 15-1477, 15-1483, 15-1488

BEFORE: Henderson, Rogers, and Srinivasan, Circuit Judges

O R D E R

Upon consideration of the motion for stay and expedition and the motions for stay, the responses thereto, and the replies; the joint motion to establish briefing format and expedited briefing schedule, the responses thereto, and the replies; and petitioner LG & E and KU Energy's motion in No. 15-1418 to sever certain issues and hold them in abeyance and the oppositions thereto, it is

90-5-2-3-20604

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1363 **September Term, 2015**

ORDERED that the motions for stay be denied. Petitioners have not satisfied the stringent requirements for a stay pending court review. See Winter v. Natural Res. Def. Council, Inc., 555 U.S. 7, 20 (2008); D.C. Circuit Handbook of Practice and Internal Procedures 33 (2015). It is

FURTHER ORDERED that consideration of these appeals be expedited. It is

FURTHER ORDERED that the motion in No. 15-1418 to sever certain issues and hold them in abeyance be denied. It is

FURTHER ORDERED, on the court's own motion, that by noon on January 27, 2016, the parties submit a proposed format for the briefing of all the issues in these cases, as well as a proposed schedule that ensures that all initial briefs are filed by April 15, 2016, the deferred appendix is filed by April 18, 2016, and the final briefs are filed by April 22, 2016. The parties are reminded that the court looks with extreme disfavor on repetitious submissions, and the parties are encouraged to limit both the number and size of the briefs they propose to file. It is

FURTHER ORDERED that oral argument be scheduled before this panel on June 2, 2016, commencing at 9:30 a.m. The parties should also reserve June 3 in the event argument cannot be concluded on June 2nd.

The parties are directed to hand-deliver the paper copies of their submission to the court by the time and date due.

Per Curiam

FOR THE COURT:
Mark J. Langer, Clerk

BY:

John J. Accursio
Deputy Clerk/LD

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1363 **September Term, 2015**

EPA-80FR64662

Filed On: January 28, 2016

State of West Virginia, et al.,
Petitioners

v.

Environmental Protection Agency and Regina A. McCarthy, Administrator, United States Environmental Protection Agency,
Respondents

American Wind Energy Association, et al.,
Intervenors

Consolidated with 15-1364, 15-1365, 15-1366, 15-1367, 15-1368, 15-1370, 15-1371, 15-1372, 15-1373, 15-1374, 15-1375, 15-1376, 15-1377, 15-1378, 15-1379, 15-1380, 15-1382, 15-1383, 15-1386, 15-1393, 15-1398, 15-1409, 15-1410, 15-1413, 15-1418, 15-1422, 15-1432, 15-1442, 15-1451, 15-1459, 15-1464, 15-1470, 15-1472, 15-1474, 15-1475, 15-1477, 15-1483, 15-1488

BEFORE: Henderson, Rogers, and Srinivasan, Circuit Judges

O R D E R

Upon consideration of the proposed briefing formats and schedules, and the motion by amici curiae to exceed word limits, it is

ORDERED that the following briefing format and schedule will apply in these consolidated cases:

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1363 **September Term, 2015**

Briefs for Petitioners (no more than two briefs, not to exceed a combined total of 42,000 words)	February 19, 2016
Joint Brief for Intervenors in Support of Petitioners (not to exceed 10,000 words)	February 23, 2016
Brief(s) for Amici Curiae in Support of Petitioners (each brief not to exceed the word limit set forth in Fed. R. App. P. 29(d))	February 23, 2016
Brief for Respondent (not to exceed 42,000 words)	March 28, 2016
Briefs for Intervenors in Support of Respondent (no more than four briefs, not to exceed a combined total of 20,000 words)	March 29, 2016
Brief(s) for Amici Curiae in Support of Respondent (each brief not to exceed the word limit set forth in Fed. R. App. P. 29(d))	April 1, 2016
Reply Briefs for Petitioners (no more than two briefs, not to exceed a combined total of 21,000 words)	April 15, 2016
Joint Reply Brief for Intervenors in Support of Petitioners (not to exceed 5,000 words)	April 15, 2016
Deferred Appendix	April 18, 2016
Final Briefs	April 22, 2016

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1363 **September Term, 2015**

The court reminds the parties that

> In cases involving direct review in this court of administrative actions, the brief of the appellant or petitioner must set forth the basis for the claim of standing. . . . When the appellant's or petitioner's standing is not apparent from the administrative record, the brief must include arguments and evidence establishing the claim of standing.

See D.C. Cir. Rule 28(a)(7).

All issues and arguments must be raised by petitioners in the opening brief. The court ordinarily will not consider issues and arguments raised for the first time in the reply brief.

To enhance the clarity of their briefs, the parties are urged to limit the use of abbreviations, including acronyms. While acronyms may be used for entities and statutes with widely recognized initials, briefs should not contain acronyms that are not widely known. See D.C. Circuit Handbook of Practice and Internal Procedures 41 (2015); Notice Regarding Use of Acronyms (D.C. Cir. Jan. 26, 2010).

In addition to electronic filing, the parties are directed to hand deliver the paper copies of their briefs to the Clerk's office by the date due. All briefs and appendices must contain the date that the case is scheduled for oral argument at the top of the cover. See D.C. Cir. Rule 28(a)(8).

Because the briefing schedule is keyed to the date of oral argument, no requests for extension of time limits will be granted.

A separate order will issue regarding allocation of oral argument time.

Per Curiam

FOR THE COURT:
Mark J. Langer, Clerk

BY: /s/
Michael C. McGrail
Deputy Clerk/LD

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, ET AL., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL., Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF JANET G. MCCABE

Janet McCabe information

1. I, Janet G. McCabe, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. I am the Acting Assistant Administrator for the Office of Air and Radiation (OAR) at the EPA, a position I have held since July 19, 2013. I previously served as the Principal Deputy to the Assistant Administrator for this office from November 2009 to July 18, 2013. OAR is the headquarters-

based EPA office that administers the Clean Air Act (CAA) and develops national programs, technical policies and regulations for controlling air pollution and protecting public health and welfare. OAR is concerned with preventing and responding to air quality issues including industrial air pollution, pollution from vehicles and engines, toxic air pollutants, acid rain, stratospheric ozone depletion and climate change.

3. Prior to joining the EPA, I served as the Executive Director of Improving Kids' Environment, Inc., and as an adjunct faculty member at the Indiana University School of Medicine, Department of Public Health. From 1993 to 2005, I held several leadership positions in the Indiana Department of Environmental Management's Office of Air Quality and was the office's Assistant Commissioner from 1998 to 2005. Before coming to Indiana in 1993, I served as Assistant Attorney General for environmental protection for the Commonwealth of Massachusetts and Assistant Secretary for Environmental Impact Review. I received an undergraduate degree from Harvard College in 1980 and J.D. from Harvard Law School in 1983.

4. As part of my duties as Acting Assistant Administrator of OAR, I oversee the development and implementation of regulations, policy and guidance under section 111(d) of the Clean Air Act ("CAA" or "Act"), 42 U.S.C. § 7411(d), the existing source performance standard program, including the development of performance standards for carbon dioxide (CO_2) emissions

from fossil fuel-fired electric utility steam generating units and stationary combustion turbines (including combined cycle combustion turbines) (collectively, "power plants") that are the subject of this litigation.

Overview

5. EPA promulgated the Clean Power Plan (the "Rule") pursuant to section 111(d) of the CAA to require, for the first time, reductions in CO_2 emissions from fossil fuel-fired power plants to help protect human health and the environment from the substantial threats – which are affecting communities now and are increasing -- posed by climate change. 80 Fed. Reg. 64,662 (Oct. 23, 2015). The Rule, which resulted from an unprecedented level of outreach and engagement with the public and stakeholders, relies in large part on already-emerging growth in clean energy. The record EPA compiled for this rulemaking, including numerous technical analyses, studies and comments from a wide range of knowledgable stakeholders, supports the conclusion that the Rule will not compromise the reliability of our electric system or the affordability of electricity for consumers. In promulgating the Rule, EPA described its main elements in an Executive Summary. Id. at 64,663-82. In this declaration, I describe certain key aspects of the Rule relevant to issues addressed by certain of the pending motions to stay the Rule:

- Gradual Compliance Pathway with Ample Lead Time (¶¶ 6-9);

- State Plan Process (¶¶ 10-36);
- Requests by States to Allow Generation-Shifting Measures for Compliance (¶¶ 37);
- Notice and Comment Issues (¶¶ 38-41);
- Cost and Rate Projections in the Regulatory Impact Analysis (¶¶ 42-45); and
- Claims of Harm in Other Rulemaking (¶¶ 46-51).

Gradual Compliance Pathway with Ample Lead Time

6. The Rule requires reductions of CO_2 from power plants that can be achieved through the "best system of emission reduction." Our determination of the best system considered extensive comments on the amount of CO_2 emission reductions that power plants can achieve and the time period over which CO_2 reductions could be achieved. Considering those comments, we established a reasonable level of required emission reductions by 2030 and established a gradual phase-in for the emission reduction requirement over the preceding eight-year period, beginning in 2022. In this section, I describe these emission reductions and when they are required.

7. To determine the emission performance level that states must meet, EPA first identified the inventory of fossil fuel-fired power plants (primarily coal- and natural gas-fired) in 2012, which was the most current representative

year for which EPA had a fully adequate data set. EPA then applied the measures in the "best system of emission reduction" to the power plants to determine the emission performance level. Specifically, EPA phased in the application of the measures in the best system incrementally over three time-steps spanning the period between 2022 and 2029, applying the measures fully in 2030, and calculated the resulting emissions performance level in that year. 80 Fed. Reg. at 64,811-19.

8. The Rule is projected to achieve by 2030 a reduction in power plant CO_2 emissions of 21% from 2012 emissions levels. Regulatory Impact Analysis (RIA), Doc. No. EPA-HQ-OAR-2013-0602-36877, at 3-19, Table 3-5; eGRID 2012 Data File; CO2 Emission Performance Rate and Goal Computation Technical Support Document for CPP Final Rule, Appendix 1, EPA-HQ-OAR-2013-0602-36757 (Goal Computation TSD). EPA also projects that the emission performance levels will achieve a reduction of 16% from the levels of emissions that EPA projects would result in 2020 without the Rule (we refer to this as "business as usual" emissions). Because power plant CO_2 emissions have already been declining for many reasons, and are expected to continue to do so, even without this Rule,[1] our analysis shows a greater reduction in percentage

[1] In the Rule, EPA projected that the Rule will achieve a reduction of 32% of CO_2 emissions from 2005 levels power plants nationwide by 2030. 80 Fed. Reg. at 64,665. See RIA ES-8, Table ES-4.

terms – 21% -- compared to 2012 levels than the 16% reduction shown relative to emissions levels projected for 2020 without the Rule.

9. As described above, EPA based the emission performance levels in the Rule on a gradual phase-in of the emission reductions over the 2022-2030 period.[2] Assuming that states require their sources to reduce their emissions during that period in that same gradual way, the amount of emission reduction that the states would require in 2022 from power plants subject to the Rule would be, on average, 1% from projected business as usual mass levels in 2020 (or 6% from 2012 levels), and another 1-3% from those 2020 levels for each year thereafter, until 2030. Goal Computation TSD, Appendix 1 & 5; IPM Run Files: Illustrative Compliance Scenarios (EPA-HQ-OAR-2013-0602-36476, and EPA-HQ-OAR-2013-0602-36460).[3]

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[2] States are not required to follow this precise phase-in schedule; rather, states are afforded significant flexibility in determining their sources' compliance dates.

[3] The following are the year-by-year emission performance rates (lb/MWh) that EPA projected to gradually phase in the Rule's emission reduction requirements:

Nationwide Glide-path for Reduction Requirements for the Emission Performance Standards

Annual Category-specific Rates											
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Interim	Final
Fossil Steam	1,741	1,681	1,592	1,546	1,500	1,453	1,404	1,355	1,304	1,534	1,305
NGCC	898	877	855	836	817	798	789	779	770	832	771

Goal Computation TSD, at 19.

The State Plan Process

10. In this next part, I discuss in more detail the state plan process, particularly the tasks states must perform, and EPA assistance for those tasks.

11. By September 6, 2016, states must submit either a final state plan or an initial submittal seeking an extension. If a state does not submit either, the CAA authorizes EPA to develop a federal plan for affected sources in that state. For reasons described in the following paragraphs, I expect that any state that submits an extension request or a state plan will be able to meet the requirements without undue burden – no more than, and in some cases less than, the state would have for other CAA state plans. I also believe both the requirements for the initial submittal and state plan are achievable for development by states within the Rule's timelines.

12. An initial submittal does not require substantial tasks such as a demonstration that the plan will achieve the mass or rate goals; the promulgation of rules for monitoring, recordkeeping, and reporting; or the negotiation of agreements with other states to adopt optional multistate plans. Unlike a final state plan, an initial submittal need not contain any enforceable, adopted measures or supporting technical and legal analyses. Instead, it is effectively a report on the status of a state's plan development and the vehicle by which the state may request, and EPA may grant, an extension request for submission of a state plan.

13. The Rule requires that the initial submittal contains just three components: (1) an identification of, and progress report on, plan approaches under consideration; (2) an appropriate explanation for why the state requires an extension; and (3) a showing of engagement with the public and stakeholders for the initial submittal and a plan for similar engagement for the final submittal. These components reflect normal, common processes states follow when developing plans to meet other CAA requirements. EPA has also issued a guidance document to assist states with the preparation of the initial submittals. Memorandum from Stephen D. Page, Director, Office of Air Quality and Planning Standards, Initial Clean Power Plan Submittals under Section 111(d) of the Clean Air Act, at 2 (Oct. 22, 2015) ("Page Memo").

14. For the first component of an initial submittal, a state can simply describe which plan options it is considering and what related steps it has taken. States need not adopt any rules, and their identification of options under consideration does not bind them in any way. My staff and I have heard from many states about the steps they have already taken,[4] such as exploring tradeoffs among various state plan approaches, coordinating among state environmental agencies and energy regulators, and hosting public meetings. For the initial submittal, states can simply identify these steps that they are already

[4] This is true even for those states, noted below, that ultimately may elect not to submit state plans.

undertaking. I therefore expect that many states will be able to meet the first component with little difficulty, and, in fact, some may have already done so. Activities such as those currently underway in West Virginia, which is undertaking a feasibility study to determine what compliance options may be available, to be submitted to the state legislature on April 20, 2016,[5] are among the kinds of activities the Rule requires that would be consistent with the first component of the intitial submittal.

15. For the second component, a state may simply identify its next steps to develop a plan and a schedule for them. For example, a state may explain that it needs to go through a rulemaking process, or legislative process, or is consulting with other states; each of these activities could reasonably be expected to require additional time beyond September 2016. This component, too, presents little difficulty. Many states may submit a schedule that is a natural extension of the work they have already undertaken toward plan development.

16. States may meet the third component by summarizing steps they have taken to engage the public, including vulnerable communities, and their plan to continue this engagement for the final submittal. I expect that states, based on their longstanding experience with public outreach and the availability of

[5] http://www.governor.wv.gov/media/pressreleases/2015/Pages/Governor-Tomblin-Issues-Statement-Following-Announcement-of-President-Obama%27s-Visit-to-West-Virginia.aspx.

standardized tools for identifying vulnerable communities, should have little difficulty satisfying the third component, and some may have already done so. For example, the Missouri Department of Natural Resources held a stakeholder meeting on the Rule on September 23, 2015, to review state plan options with environmental groups, non-governmental organizations, academics, energy companies, and utilities. In materials for this meeting, Missouri indicated plans for public engagement, including with the state energy office and public service commission, affected sources, electricity grid operators, energy efficiency and renewable energy developers, and vulnerable communities. Missouri Department of Natural Resources, "Clean Power Plan Final Goals and Compliance Options (September 23, 2015). http://dnr.mo.gov/env/apcp/cpp/docs/9-23-15-clean.power.plan-final.goals.compliance.options.pdf. These are the kinds of activities we expect states would include in their initial submittal, and are well within the requirements of the Rule.

17. EPA's process for acting on the initial submittal is fast and efficient. If a state submits an extension request, it is considered granted unless EPA notifies the state within 90 days of receiving it that it does not meet the requirements of the initial submittal. 40 CFR 60.5765(b). Thus, states that provide an adequate initial submittal will quickly know that they have up to the full three years to develop the final plan.

18. To develop a state plan, states can choose among several different plan types, all of which I believe can be developed within 3 years. As discussed below, many of these plan types would not be resource-intensive to adopt. The available types range from those based on specific emission rates or limiting mass emissions to those that do not impose emission limits on sources, and instead rely on existing or planned state programs that reduce CO_2 emissions from power plants, such as renewable portfolio or energy efficiency standards. 80 Fed. Reg. at 64,835-36. Moreover, states (and power plants) may choose from a wider range of measures for reducing emissions than the specific measures identified by EPA as the "best system of emission reduction." Thus, states could require (or power plants could choose) measures such as replacing coal with natural gas or installing carbon sequestration equipment. EPA's record shows that for at least a segment of power plants, those controls are feasible.

19. The Rule provides streamlined options that states can use to minimize the resource burden and time required to produce a state plan. States can also minimize the effort required to produce a plan by simply by adopting certain emission standards and allowing the regulated utilities to determine the most effective way to meet them. 80 Fed. Reg. at 64,833. Additionally, there are two presumptively approvable options for states that adopt a mass-based emissions budget trading program at or below the state's mass-based goal—adoption of

EPA's new source complement budget for new and existing sources, or adoption of the final mass-based model rule's allocation strategy—that avoid the need for a technical demonstration regarding shifting of generation to new fossil-fuel fired power plants. Id. at 64,888.

20. The Rule also allows states to establish or join existing trading-based emission programs and compliance strategies, which significantly enhances flexibility and cost-effectiveness for regulated sources. For example, nine northeastern and mid-Atlantic states are already participating in an interstate cap-and-trade program, the Regional Greenhouse Gas Initiative, and others may join that program if they wish. California has developed a cap-and-trade program as well. Because of these programs, and more generally because pollutant trading programs are so well-established for this industry, I fully expect that more states will develop interstate emission trading programs to comply with this Rule. Another efficient option is a "ready-for-interstate-trading" plan, which allows states to enable interstate trading for their sources without the need to specify linkages with particular other states or to enter into a multi-state plan, which could require discussion and negotiation with those states. 80 Fed. Reg. at 64,832-33, 64,892, 64,910-11.

21. EPA has proposed both rate-based and mass-based model rules that serve as fully realized and presumptively approvable plans for states to adopt and submit. I expect that many states will adopt either one of the model rules

or a variant, because states have expressed interest in them, they closely track successful interstate trading programs for other power plant air pollutants, and a good number of states are considering an interstate trading program. EPA expects to finalize the model rules by the summer of 2016, allowing ample time for a state to adopt either before the 2018 deadline.[6]

22. Some states have expressed a concern that because the Rule offers so many options for state plans, it is burdensome to evaluate each and every one. I expect that many states will be able to select a plan approach relatively quickly and efficiently because many of the options are structured in ways that are categorically distinct from one another. The threshold decisions and choices a state makes inform which state plan options are relevant for consideration and which are not. For example, for states that opt to impose emission standards on affected electric generating units ("EGUs") sufficient to achieve the requisite emission performance level, this choice directs the states to the emission standards plan type rather than the state measures plan type.

23. Once states select an approach tailored to their particular circumstances, they can develop the state plan through processes the states and the EPA are very familiar with under other CAA programs. The effort to adopt and submit

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[6] In fact, if a state wishes to adopt into the state plan the proposed model rule before EPA finalizes it, EPA made clear that it could likely approve such a plan, in light of the fact that the proposed model rule is based closely on well-established CAA trading programs. 80 Fed. Reg. 64,966.

plans under these other programs is similar to that required for state plans under the Rule. For example, like the state plans required by the Rule, state implementation plans ("SIPs") must be adopted by the state through a public participation process before submission to the EPA. Emission limitations, control measures, and other measures that SIPs include must be designed to result in a certain emissions outcome. For SIPs and other plans required under the CAA, states engage in a stakeholder process with entities affected by measures that may be included in the plan. States also undertake technical, economic, and other analyses to determine which measures are appropriate for inclusion in a plan to achieve the required statutory or regulatory outcome. A number of states may be required to get legislative approval or approach their legislature for necessary enabling legislation in order to adopt a plan as required. These are all aspects of plan development that are true for states across all types of plans required by the CAA, not just the state plans required under the final Rule.

24. Given all of the state plan options and flexibilities, the final plan submittal should be a similar level of effort, and may be less so in some ways, than submittals states have routinely made to implement other CAA programs, such as SIPs addressing attainment of the national ambient air quality standards (NAAQS) or the interstate transport of air pollutants, and state plans

implementing the title V operating permit program. The first two of these examples are discussed next.

25. One example of submissions that states have routinely made to implement other CAA programs within similar or shorter deadlines than those afforded under the Rule is attainment plans required under Part D of Title I of the CAA. After EPA designates areas as nonattainment for a NAAQS, states must submit plans within three years (and within a shorter period if the Administrator so prescribes). Those plans must include a number of complex elements, such as: reasonably available control measures; a demonstration (often through modeling) that the plan will provide for attainment; provisions to ensure reasonable further progress; a comprehensive, accurate, and current inventory of actual emissions from all sources of the relevant pollutants; a permit program for new or modified stationary sources in the nonattainment area; any other measures (which may include enforceable emission limitations and other control measures, means, or techniques) necessary or appropriate to attain the standards by the attainment date; and contingency measures to be undertaken if the area fails to make reasonable further progress or attain the standards. See 42 U.S.C. § 7472(b), (c).

26. These attainment plans, with which states have a long history and much experience, are at least as complex and involved as state plans required under the Clean Power Plan, and in some cases more so. Nonetheless, the CAA

provides at most three years for the submission of these attainment SIPs, which is the total amount of time the Clean Power Plan affords states to submit state plans.

27. For example, initial attainment plans for nonattainment areas for fine particulate matter ($PM_{2.5}$) NAAQS must be submitted no later than 18 months after designation by the EPA, which is a shorter period than the Rule provides for state plans. See 42 U.S.C. § 7513 (a)(2)(B). The complexity of $PM_{2.5}$ attainment plans is comparable to the state plans required under the Clean Power Plan, and in some respects even greater. $PM_{2.5}$ results from direct emissions of $PM_{2.5}$ as well as emissions of precursors such as nitrogen oxide (NO_x), sulfur dioxide (SO_2), volatile organic compounds (VOC), and ammonia. As a result, $PM_{2.5}$ attainment plans typically must use photochemical grid modeling that is based on accurate current and future emission inventories, accurate representation of the location of sources of those emissions and of the topography in the area, and accurate meteorological data. This is a very resource-intensive task that the statute requires to be completed within 18 months. In contrast, the initial submittal due by September 6, 2016, under the Rule does not require any sort of modeling or technical analysis in order for states to procure an extension to submit a state plan. See Page Memo; 80 Fed. Reg. at 64,856. And as mentioned above, for a state plan, there are a number of options for which states would not be required to provide a technical

demonstration that the power plants will achieve the requisite emission performance level. 80 Fed. Reg. at 64,845.

28. Attainment plans addressing a NAAQS often must address a large number and wide range of sources, and often multiple pollutants in order to meet the air quality goal. They must contain an accurate, current, and comprehensive emissions inventory from all sources of the relevant pollutant, including its precursors. For PM2.5 attainment plans, for example, an emissions inventory would have to address emissions of primary, filterable, and condensable emissions of PM2.5, and the four precursor pollutants (NO_x, SO_2, ammonia, and VOC), from all stationary point and nonpoint, nonroad mobile, onroad mobile, biogenic, and geogenic emission sources present within each county within the nonattainment area. By contrast, state plans required under the Rule require an emissions inventory for emissions of one pollutant (CO_2) from just one source category (power plants) with an already existing and accurate set of emissions data based on in-stack emissions monitoring.

29. As a second example, after EPA promulgates a new or revised NAAQS, states have three years (or shorter period if the Administrator prescribes) to submit a SIP that determines the necessary emission reductions necessary to achieve attainment of the NAAQS, and which among other things, adequately addresses interstate transport of pollutants. To do so, states may have to participate in regional trading programs. In recent years, under a major program

that addressed interstate transport of pollutants from existing fossil fuel-fired power plants, known as the NOx SIP Call, states were required to submit SIPs on timelines similar to, or shorter than, provided in the Rule for the same industry, fossil fuel-fired power plants. Under this program, states submitted SIPs that included a regional allowance trading program -- one similar to the kind of trading programs states may adopt for the Clean Power Plan. States adopting an emissions trading program in response to the NO_x SIP call had to include in their SIPs such elements as: a budget demonstration; enforceable control measures; legal authority to implement and enforce the control measures; adopted control measure compliance dates and schedules; as well as monitoring, recordkeeping, and emissions reporting. These elements are similar to those that states would include in their plan if they choose to participate in an emissions trading program to meet the requirements of the Rule. See 40 CFR 60.5790(b).

30. In the NO_x SIP Call, the SIP submittal deadline was approximately 12 months after signature of the rule, or September 30, 1999. See 63 Fed. Reg. 57,374, 57,481 (Oct. 27, 1998) (rule was signed on September 24, 1998). This is a shorter period than the approximately 13 months from the date of signature (August 3, 2015, until September 6, 2016) that states are being given to submit a plan or an initial submittal under this Rule, and states in the NO_x SIP Call were not given the option of a readily-obtainable 2-year extension. The D.C.

Circuit Court of Appeals stayed the NO_x SIP Call (before ultimately upholding the Rule), so that the submittal deadline was delayed until October 30, 2000. This was still only about two years from the date of signature of that rule. The compliance deadline (which was also delayed by the period when the rule was stayed) was May 31, 2004. See 67 Fed. Reg. 33,788. Almost all (19 of the 20 jurisdictions subject to the NO_x SIP Call) submitted SIPs within 3 years of the original NO_x SIP Call, including SIPs that involved an emissions budget trading program similar to that which states can submit to meet the requirements of this Rule. See, e.g., 66 Fed. Reg. 28,063 (May 22, 2001) (EPA's approval of New Jersey's SIP submissions dated December 10, 1999, and July 31, 2000, including an emissions budget trading program that involves EGUs).

31. This history of the deadlines and state submittals under the NO_x SIP Call demonstrates that states have been able to submit plans addressing significant emissions reductions in the power sector in less than three years from the date of signature of a rule requiring such reductions, even where multi-state coordination was required for the implementation of emission-reduction programs applicable to the power sector. Given this prior history of deadlines and submissions for SIPs involving emissions reductions from the same industry as that covered under the Rule, I believe states similarly will be able to submit plans, which could involve multi-state coordination, within the three years afforded by the Rule.

32. Notably with respect to state plans, a number of available procedural mechanisms can help to reduce the workload for states during the three-year plan development process. One key mechanism is that states can submit revisions to their plans at a later date if circumstances warrant it. Specifically, state plans do not have to include provisions that meet requirements that would arise under certain future contingencies. Thus, for example, while the Rule requires that an emissions shortfall that arises during the course of plan implementation must be made up if plan performance unexpectedly falls short of achieving a required outcome, state plans by no means have to identify the measures that the state would put in place if such a circumstance arose. Rather, because of the Rule's provisions addressing plan revisions, it could be through future revisions that such a situation would be addressed. EPA has made it clear that with the long timeframe involved in this Rule, there may well be changes in circumstances that warrant plan revisions, and states need not try to plan for every potential contingency.

33. States' ability under the Rule to revise a state plan also ameliorates any potential burden on states resulting from, for example, the need to determine, before they submitted their plans, whether to join a multi-state plan or operate under an individual state plan. A state participating in a multi-state plan can submit a revision to withdraw from an initial multi-state plan if it wishes, subsequent to the approval of its plan. 80 Fed. Reg. at 64,861. Conversely, a

state originally operating under an individual state plan may join a multi-state plan later through the plan revision process. Therefore, states are not locked into the decisions they make regarding multi-state plans during the three-year planning period, but rather can revisit those decisions throughout the course of implementation as circumstances change. This ability to make changes along the way also applies to other decisions a state might make, such as how to allocate emission reductions among the power plants in the state.

34. In addition, a state can elect to expend no effort at all and simply opt to submit neither an initial submittal nor a state plan by September 6, 2016. For example, Indiana Governor Mike Pence and Mississippi Governor Phil Bryant have stated that they have not yet decided whether to submit a state plan. Harball, E. "Most states suing EPA's climate rule are also mulling how to comply," ClimateWire (Nov. 9, 2015) http://www.eenews.net/stories/1060027684 (subscription required) (Indiana); Henry, D. "Gov: Mississippi might not comply with climate rule," The Hill (July 24, 2015), http://thehill.com/policy/energy-environment/249144-gov-mississippi-might-not-comply-with-climate-rule (Mississippi). If a state makes this election, the EPA would then promulgate a federal plan which would establish standards of performance for the affected sources in that state. As noted in the final Rule, sources in those states will have more than five years to prepare for the first compliance period, which does not begin until 2022, a

lengthy period that will afford them the opportunity to plan before incurring significant expenditures. 80 Fed. Reg. at 64,744. If a federal plan is promulgated on a state's behalf, the state is free to replace it by submitting an approvable state plan to the EPA. Id. at 64,828 n.769. EPA's preference is always to approve a state plan, if possible, in lieu of implementing a federal plan. Another option is for a state to take delegation of implementation and enforcement of the federal plan, as states and air quality control districts have done for the prevention of significant deterioration (PSD) permit program. Finally, EPA has proposed to allow states to control certain aspects of implementation through a partial state plan (similar to abbreviated SIPs under the Cross State Air Pollution Rule ("CSAPR"), while EPA handles the remainder of the administrative obligations associated with a federal plan. Id. at 65,027.

35. Importantly, to assist states in the plan development process, the EPA began an extensive effort of communication and collaboration with the states regarding state plan development immediately upon finalization of the Rule. This effort, which is ongoing, continues the cooperative relationship states and the EPA have experienced for decades under the CAA. States both with and without well-established CO_2 control programs have been communicating with myself and other EPA staff through regularly scheduled calls and meetings,

including conference discussions upon a state's request.[7] I believe these ongoing discussions enable the states to more easily develop initial submittals and state plans as questions are responded to as quickly as possible and clarifications are provided by my staff as needed. Feedback my staff and I have received indicate that these calls and meetings have been very helpful to the states as they consider the threshold questions regarding the various state plan options available under the final rule by discussing practical considerations, hypothetical scenarios, and the benefits and advantages of certain options as well as potential difficulties and complications of other options, depending on a state's circumstances.

36. Finally, immediate decision-making by the states is not needed to ensure timely compliance by affected sources. Affected sources have ample time to comply with the requirements, and states have flexibility in determing when emission reductions must occur. A state may delay the start of reduction requirements for steam generators until 2023 or, for most states, 2024, and for combustion turbines in all states, until 2024. This added flexibility provides states and affected power plants with adequate time to consider any steps they need to take in order to meet the final rule requirements. Furthermore, multiple

[7] To date, my staff has engaged with the following states with one-on-one calls per their request: California, Colarado, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, New York, Vermont, and RGGI's member states participating jointly.

aspects of the final Rule allow for states and affected power plants to meet the requirements of the Rule in an orderly, cost-effective, and reliable manner. These aspects include the timing and flexibility noted above, the requirement that states consider reliability in developing their state plans, the ability to revise a state plan if needed to address a reliability concern, and the availability of a reliability safety valve in the event of an unanticipated, emergency event. The Rule also allows affected power plants to use trading options in order to comply with the Rule requirements, adding another layer of flexibility to the timing and method of complying with requirements.

Requests by States to Allow Generation-Shifting Measures for Compliance

37. In pre-proposal comments to the Agency, some states identified generation shifting measures such as greater use of existing natural gas combined cycle plants and increasing use of renewable energy resources as methods states and utilities should be able to use to meet section 111(d) obligations. See Letter from Eric C. Massey, Director, Air Quality Div., Ariz. Dep't Envt'l Quality, to Janet McCabe, Acting Assistant Administrator, Office of Air and Radiation, U.S. EPA, at 2, 5 (Dec. 17, 2013) (Arizona recommends EPA allow "renewable energy resources. . . as compliance credits" and allow states to choose "system-based" standard "that allows … the fastest and most economical means of compliance") (Attachment A); Letter from Richard Hyde,

Interim Exec. Director, Texas Comm'n on Envt'l Quality, and Brian Lloyd, Exec. Director., Pub. Util. Comm'n of Texas, to Gina McCarthy, Administrator, U.S. EPA, enclosure, at 2, 4 (Jan. 14, 2014) (Texas notes that increased natural gas generation "and overall lower outputs from coal units . . . of course result[] in lower GHG emissions;" requests 6 year implementation period on the assumption that generation shifting measures would be allowed for compliance) (Attachment B); Letter from Dan Wyant, Director, Mich. Dep't of Envt'l Quality, to Gina McCarthy, Administrator, U.S. EPA, at 3 (April 11, 2014) ("the future of GHG reductions lies in eliminating energy waste, renewable energy sources, and alternative fuel choices") (Attachment C). In the Rule, EPA provided the states the compliance flexibility that they requested.

Notice and Comment Issues

38. In this section, I respond to concerns expressed by Stay Movant North Dakota and its declarants that the EPA did not provide adequate opportunity for notice and comment. See, e.g., N. Dak. Mot. at 18-19; Glatt Decl. ¶ 20.

39. This Rule was the subject of an unprecedented public participation process. EPA engaged in extensive outreach with stakeholders and the general public at every stage of development of the Rule. EPA staff participated in over 600 meetings before proposing the Rule, including hundreds with state energy and environment officials and the utility power sector. In 2013, before

proposing the Rule, EPA held 11 public listening sessions nationwide, and the ideas we gathered informed the proposal. EPA Docket No. EPA–HQ–OAR–2014–0020, available at www.regulations.gov. EPA initially provided a 120-day public comment period on the proposal, from June 18, 2014, the day of publication in the Federal Register. 79 Fed. Reg. 34,830. In response to requests from stakeholders, EPA extended the comment period by 45 days, to December 1, 2014, giving the public a total of 165 days to comment. After proposal, EPA held a series of public hearings at which over 1300 people testified. Based on early feedback on the proposal, EPA published a "Notice of Data Availability" on October 30, 2014, 79 Fed. Reg. 64,543, to allow further comment on several aspects of the proposal. On November 13, 2014, EPA published a Technical Support Document providing options for translating CO_2 emission rates to mass-based goals. 79 Fed. Reg. 67,406. In all, EPA received over 4.3 million comments, the most it has ever received on any rule.

40. EPA recognizes that the final emission performance levels for most states differ from the emission performance levels in the proposed rule. The state goals provided in the proposed rule were based on one proposed methodology, but the proposed rule and the subsequent Notice of Data Availability identified a number of other methodologies. Accordingly, states were able to anticipate that their goals might change, including being significantly tightened, if the alternative methodologies were selected.

For example, the proposal provided notice that EPA was considering alternative values for available amounts of renewable energy. 79 Fed. Reg. at 34,869-70. The Notice of Data Availability indicated that EPA was considering different methods for calculating the amount of generation shift from high-emitting generation to lower- or zero-emitting generation. Id. at 64,552-53. The Notice of Data Availability also indicated that EPA was considering different approaches for "regionalizing" the measures for shifting generation from steam generators (mostly coal-fired) to natural gas combined cycle units and from fossil fuel-fired power plants to renewable generators, to reflect the interconnection of the grid. Id. at 64,549-52. These statements in the proposal and the Notice of Data Availability put states on notice that the assumptions regarding the application of the generation-shifting measures might change, and that states in regions with significant renewable energy potential or states without natural gas units might see an increase in stringency of their final goals. The EPA provided interactive workbooks to allow commenters to recalculate state goals using alternative assumptions. See Goal Computation Technical Support Document, at 21 (June 2014) (proposed Goal Computation TSD). In

fact, some of the alternatives, if finalized, would have resulted in goals more stringent than the final state goals.[8]

41. In addition, North Dakota's declarants, see Glatt Decl. ¶20, object that:

(1) The time to comment on the Notice of Data Availability and Technical Support Document was too short. However, these documents were available for review and comment weeks before the end of the comment period and numerous stakeholders provided extensive comment on the subject matter they contained. See Response to Comments, Ch. 3-4.

(2) North Dakota had insufficient notice regarding treatment of allowances and emission rate credits, and EPA's alleged "disallow[ance]" of crediting of certain renewable energy resources. However, the final Rule allows states to use a wide array of renewable energy technologies to generate credits based on principles outlined in the proposal, and the exclusion of existing renewables in the formula for determining the emission performance level was noticed in the proposal, see 79 Fed. Reg. 34,867; see also Response to Comments, Ch. 3C.

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[8] For example, if EPA had finalized its proposed alternative renewable values, its proposal to treat building block 3 and 4 replacement in the same manner as building block 2 replacement (i.e. considering renewable energy incremental generation as replacing historical fossil steam levels on a one-for-one MWh basis), and also adopted a regional approach to building block 2, North Dakota's final goal, calculated using the interactive workbooks, would have been 1183 pounds of CO_2 per net MWh, significantly more stringent than the state's actual final goal of 1305 pounds.

(3) EPA did not identify that renewable energy projects constructed before 2013 would not be eligible for compliance crediting. However, EPA proposed that measures constructed before the date of the proposal (in June 2014) would be ineligible for compliance crediting under a rate-based state plan, and requested comment on January 1, 2013, as an alternative. 79 Fed. Reg. at 34,918-19, 34,952.

(4) EPA did not give adequate notice of "new assumptions" regarding its building block methodology. However, as noted above, the changes to the building blocks were identified as alternatives in the proposal and Notice of Data Availability. For example, the Notice of Data Availability proposed alternatives for setting a natural gas utilization "floor" in states without significant natural gas combined cycle dispatch, id. at 64,550, and proposed regionalized levels for renewable energy to take the interstate nature of the grid into account. See id. at 64,545-47. See also Response to Comments, Ch. 3.

(5) EPA failed to adequately notice its criteria for adjusting hydroelectric generation in 2012. However, these criteria are a logical outgrowth of EPA's rationale for selecting 2012 as the baseline data year, see proposed Goal Computation TSD, at 4 , as well as EPA's specific identification of unique

issues associated with hydroelectric generation baseline in the proposal, see 79 Fed. Reg. at 34,869-70. See also 80 Fed. Reg. at 64,814-15.[9]

(6) EPA did not give notice of its intent to apply the building blocks to the three regional interconnection system regions. However, the proposed rule and Notice of Data Availability requested broad comment on a variety of regional approaches for applying the measures in the best system, 79 Fed. Reg. at 64,551-52, discussed the interconnected and integrated nature of the electric grid, id. at 34,880-81, and included structural analysis of the sector informed by regional transmission organizations and North American Electric Reliability Corporation ("NERC") regions. 79 Fed. Reg. at 64,551-52.

Cost and Rate Projections in the Regulatory Impact Analysis

42. EPA conducted a Regulatory Impact Analysis designed to assess the overall impacts of the Rule on the energy sector and the economy. EPA employed a highly transparent process and used methods and models approved by the Office of Management and Budget. EPA assumed that states would adopt one of two types of state plans, and relied on a computerized model, the

[9] Unlike other states that submitted extensive critical comments on the use of 2012 as the baseline year, North Dakota did not identify this as an issue when discussing the baseline in the State's comments to EPA. Glatt is incorrect that a hydroelectric adjustment was made for Minnesota.

Integrated Planning Model. EPA estimated the overall costs for compliance with the Clean Power Plan, including the amount of additional infrastructure (such as new gas pipelines) that would be needed for compliance; as well as the impacts on electricity rates. Based on these analyses, the RIA projects that the Rule will achieve its goal of reducing CO_2 emissions from power plants without causing any disruptions to the electricity sector and at costs that are in line with costs of other CAA requirements that power plants have successfully implemented in recent years.

43. As reflected in the RIA, EPA projects that the overall costs of the Clean Power Plan range from $1-3 billion in 2025 and $5.1-8.4 billion in 2030, depending on the type of state plans that are adopted. RIA at ES-9, Table ES-5. As the following table shows, these costs are in line with, and in some cases less than, the costs of other CAA rules for power plants:

Cost Comparison: Clean Power Plan and Other Power Plant Rules

All costs are annualized and are in 2011$ billion.[10]

Rule	Costs at 5 years or less	Costs at 10 years or less, and more than 5 years	Costs at 15 years
1979 NSPS[11]			>9.1 (16 years)
Acid Rain Program[12]	0.9 - 1.4 (3 years)	1.7 - 3.2 (8 years)	
NOx SIP Call[13]		2.7 (9 years)	
CAIR[14]	3.1 (5 years)	4.6 (10 years)	5.7 (15 years)
MATS[15]	10 (4 years)		
CPP[16]		1.0 – 3.0 (10 years, i.e., 2025)	5.1 – 8.4 (15 years, i.e., 2030)

[10] For a description of these power plant rules, except for the 1979 NSPS, see 80 Fed. Reg. at 64,662, 64,696-97. All costs not already in 2011$ were converted to 2011$ using the U.S. Bureau of Economic Analysis. Table 1.1.9. Implicit Price Deflators for Gross Domestic Product. Available at: http://www.bea.gov/iTable/iTable.cfm?reqid=9&step=3&isuri=1&903=13#reqid=9&step=3&isuri=1&904=1990&903=13&906=a&905=2012&910=x&911=0.

[11] 44 Fed. Reg. 33,580 (June 11, 1979) (standards of performance for SO_2, PM and NOx from new, modified and reconstructed electric utility steam generating units).

[12] Regulatory Impact Analysis of the Final Acid Rain Implementation Regulations, U.S. EPA, at 4-6, Ex. 4-2 (1992).

[13] Regulatory Impact Analysis for the NOx SIP Call, FIP, and Section 126 Petitions – Volume 1: Costs and Economic Impacts. EPA-452/R-98-003, Table ES-2, Addendum Tables 2, 4, and 6 (1998). http://yosemite.epa.gov/EE/EPA/ria.nsf/EIO/9051349471EC8109852566B000569EF5.

[14] Regulatory Impact Analysis for the Final Clean Air Interstate Rule, EPA-452/R-05-002 at 7-9, Table 7-3 (2005), http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2004-0008-0558.

[15] Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, EPA-452/R-11-011, at 3-14, Table 3-5 (2011), http://www.regulations.gov/#!documentDetail;D=EPA-HQ-OAR-2009-0234-20131.

[16] Clean Power Plan RIA, at ES-9, Table ES-5.

44. Each of the rules in the chart above has resulted in higher-emitting power plants incurring greater costs to comply with air pollution control requirements compared to lower-emitting plants, which has placed the higher-emitting plants at a competitive disadvantage.

45. With respect to electricity rates, EPA's analysis estimates that the Clean Power Plan would result in an increase in the national average (contiguous United States) retail electricity price of between 0.9 - 2.0 percent in 2025 and less than one percent in 2030. RIA at 3-38, 3-39.

Claims of Harm in Other Rulemakings

46. In this section, I note that just as for the Clean Power Plan, in another, recent CAA rule concerning power plants, industry claimed that the rule would have extremely negative impacts on the reliability of the electricity system, but those claims did not come to pass.

47. The Cross-State Air Pollution Rule (CSAPR), which was promulgatedin 2011, addresses interstate transport of ozone and fine particulate matter pollution that affects air quality in downwind states. The rule includes several cap-and-trade programs that apply to SO_2 and NO_X emissions from power plants in covered upwind states. EPA designed CSAPR as a two-phase program. For Phase 1, originally scheduled to begin in January 2012, EPA established emission limits based on cost-effective emission-reducing actions

that power plants could undertake with limited lead time. For Phase 2, originally scheduled to begin in January 2014, EPA established more stringent emission limits. See generally 76 Fed. Reg. 48,208 (August 8, 2011).

48. Industry and state litigants challenging CSAPR sought a stay of the rule. Some of these litigants claimed that, absent a stay, they would suffer irreparable harm arising from forced power plant shutdowns and consequent electricity blackouts. See, e.g., Kansas Utilities' Motion for Stay of Final Rule as Applied to Kansas 8-14, Doc. 1337158, No. 11-1302 (D.C. Cir. Oct. 21, 2011); [Kansas'] Motion for Stay of Final Rule 19-20, Doc. 1333691, No. 11-1302 (D.C. Cir. Oct. 5, 2011).

49. The D.C. Circuit granted the motions for a stay of CSAPR, but subsequently vacated the rule. See EME Homer City Generation, L.P. v. EPA, 696 F.3d 7 (D.C. Cir. 2012). The Supreme Court reversed the D.C. Circuit, EPA v. EME Homer City Generation, L.P., 134 S. Ct. 1584 (2014), and implementation of CSAPR began in January 2015. See Order, EME Homer City Generation, L.P. v. EPA, No. 11-1302 (D.C. Cir. Oct. 23, 2014).

50. However, even before implementation began in 2015 – and while there was no regulatory requirement to do so –the industry succeeded in meeting the Phase 1 budgets for each of the four CSAPR trading programs in the course of normal industry operations, and without forced shutdowns or blackouts. See Declaration of Reid Harvey ¶ 38 & Tables 1-4, Attachment A to (EPA)

Respondent's Motion to Lift the Stay Entered on December 30, 2011, Doc. 1499505, No. 11-1302 (D.C. Cir. June 26, 2014). Thus, the CSAPR stay movants' claims that there would be significant potential negative impacts on consumers if the rule were implemented proved to be unfounded.

51. Based on the information and analysis in the record of the Clean Power Plan, and based on numerous statements I have read and heard from utilities and other organizations since the Rule was finalized about the achievability of the reduction targets on the timeline the Rule provides, I believe that the claims being made by industry for the Clean Power Plan are just as unfounded as similar statements in the case of CSAPR.

December 3, 2015

Janet G. McCabe

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, ET AL. Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL. Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF REID P. HARVEY

I. Introduction

1. I, Reid P. Harvey, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. I am the Director of the Clean Air Markets Division in the Office of Atmospheric Programs within the Office of Air and Radiation at EPA. Since the early 1990s, the Division has operated several market-based clean air programs for large stationary sources of pollution, including EPA's Acid Rain Program, NO_x Budget Trading Program, Clean Air Interstate Rule (CAIR), and Cross-State Air

Pollution Rule (CSAPR). The Division designs and operates emissions trading programs to reduce emissions of air pollutants, creates public access to emissions data, facilitates emissions monitoring and reporting, assesses emissions control technology options, conducts atmospheric deposition monitoring and analysis, develops information systems for market-based programs, assesses environmental and human health effects, assesses benefits and costs of programs, and educates the public about acid rain, other regional and national air pollution problems, and market-based programs.

3. In my capacity as Director of the Division, I oversee EPA's implementation of major portions of the Clean Air Act (CAA) including Title IV (acid deposition control) and parts of Title I (air quality standards and associated emission limitations). In coordination with other EPA offices, I manage the promulgation of regulations pursuant to the CAA such as the Clean Power Plan and CSAPR, as well as regulations relating to the Acid Rain Program. I also manage and evaluate the implementation of such regulations from EPA headquarters. I manage all of the Division's activities as listed in ¶ 2, including overseeing EPA's collection of emissions data from the power sector (and other stationary emissions sources) under several programs including the Acid Rain Program and CSAPR. I have been the Director of the Division since late 2012.

4. Prior to becoming Director of the Division, I held several management positions in the Division and EPA's Office of Atmospheric Programs. Before joining

EPA in 1994, I was a project manager at ICF Consulting (now ICF International), engaged in energy and environmental policy analyses. I hold a master's degree in public policy from the University of California Berkeley's Goldman School of Public Policy and a bachelor's degree from Duke University.

5. I am familiar with the records and files in the Division's possession relating to the modeling for the Clean Power Plan.

6. The purpose of this declaration is to explain the modeling the Agency conducted for the Clean Power Plan (the Rule) and respond to a number of mischaracterizations of the modeling in the Movants' motions and attached declarations.

II. Summary of Declaration

7. I will provide an overview of EPA modeling using the Integrated Planning Model (IPM) and discuss its application to the Rule. In this discussion, I address the various assumptions that are integral to the Model, including the use of model plants, model years, perfect foresight of regulatory and market conditions, conditions for retirement, and application of parsing (see Sections III and IV below). I then explain that the Model does not reflect a prediction of near term consequences of the Rule in 2016, nor does it reflect or impose any near term requirements given that state plans will set the actual requirements on power plants. (Section V below).

8. After providing this overview and responding to specific assertions about these alleged near term impacts, I will respond to a number of methodological claims raised

by declarants (e.g., that EPA's base case over-predicts the number of coal unit retirements that would occur even in the absence of the Rule) (Sections VI and VII). Lastly, I will address claims that use of the IPM in MATS was improper or somehow flawed (Section VIII).

III. EPA Modeling using IPM – Description and Overview

9. Modeling is used to support many EPA actions. For this Rule, EPA's modeling is designed to provide a reasonable assessment of likely impacts of the regulatory policy, in the aggregate for the power sector nationwide, using two illustrative scenarios that reflect a multi-decade time horizon, consistent with the timescales of the Rule. The utility of specific modeling results needs to be understood in relation to the purpose the modeling serves.

10. Modeling is not designed to be a crystal ball; no model can predict the future. Further, the modeling for this Rule is designed to be informative at the national, regional, and state levels rather than the level of individual generating units. In the interest of completeness and transparency, EPA uses a post-modeling process to disaggregate the system-wide impacts from the modeling to illustrate representative impacts at the generating unit level. These disaggregated results illustrate possible ways in which individual generating units could behave under an illustrative form of a state plan implementing the Rule, but they in no way represent obligations or requirements for any individual generating unit. For this Rule, the disaggregated information was provided for the years 2025 and 2030, consistent with the focus of

the rulemaking and to assess the 2020-2030 period. The EPA did not produce any unit-level estimates as part of the final Rule for any other year, contrary to assertions made by Movants, who drew their own inferences about which units the modeling represented. In particular, EPA's modeling was not used to assess short-term impacts at the unit level for 2016, because this is before the time when state plans would be known, and the Rule does not impose any emission reduction compliance obligations on any power plants before 2022.

11. EPA typically uses the Integrated Planning Model (IPM), developed and owned by ICF International, to evaluate the potential impacts of Clean Air Act rules applicable to the power sector. EPA has used its own versions of IPM for over two decades to better understand potential power sector behavior under future business-as-usual conditions and evaluate the economic and emission impacts of prospective environmental policies. IPM is a multi-regional, dynamic, deterministic linear programming model of the contiguous U.S. electric power sector that simulates the economic decisions that power plant operators face. IPM is the best available modeling tool for assessing the possible impacts of air emission regulations for the power sector and is also used by a number of analysts in the public and private sectors for their own analyses. IPM is periodically updated to reflect the best information and modeling tools available. EPA is currently using IPM version 5.15.

12. IPM provides forecasts of least cost capacity expansion, electricity dispatch, and emission control strategies while meeting energy demand and environmental,

transmission, dispatch, and reliability constraints. IPM is designed to reflect electricity markets as accurately as possible. EPA uses the best available information from utilities, industry experts, gas and coal market experts, financial institutions, and government statistics as the basis for the detailed assumptions that inform power sector modeling. IPM modeling for these purposes is considered reasonable and EPA's application of IPM has been upheld multiple times by the courts. *E.g.*, *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118, 135-36 (D.C. Cir. 2015).

13. When used for its intended purpose, IPM produces a reasonable assessment and reflects the multitude of influences and dynamics that affect the power sector. For example, EPA analysis of the IPM projections used to assess the potential impacts of MATS yielded projected national average annual retail electricity impacts for 2015 that were consistent with actual national average retail electricity prices for 2015. The Regulatory Impact Analysis for MATS projected a modest price increase of 0.3 cents per kilowatt-hour (kWh) on average nationally as a result of MATS. Recently the U.S. Energy Information Administration (EIA) published new data showing that the average retail electricity price for all sectors for the annual period ending August 2015 was 9.30 cents/kWh ($2007), while the retail electricity price over the 12 month period just prior to MATS implementation was 9.29 cents/kWh

($2007).[1] In essence, as EPA projected, the price remained stable and consistent with historical levels at least in the immediate period after MATS went into effect.

14. EPA's projections for the potential impact of MATS on retail electricity prices were far more accurate than the modeling or analyses conducted by third parties attempting to discredit EPA's cost estimates for that rule. The American Coalition for Clean Coal Electricity (ACCCE) claimed that MATS would increase electric prices nationwide by 11.5%, relying on erroneous assumptions about the requirements of MATS and the cost of pollution control technologies.[2] Actual pollution-control costs so far have ended up being lower than anticipated, and bear no resemblance to the assumptions used by ACCCE.

IV. The IPM Modeling for this Rule

15. EPA used IPM version 5.15 (as applied to the Rule, I will refer to this as the Model) to estimate the costs, emission reductions, and economic impacts of two illustrative representations of the final Clean Power Plan (the Rule). To run the Model, EPA supplied input data that reflect our best assessment of the U.S. electric power generation fleet. This information for individual units is documented in the

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[1] U.S. Energy Information Administration, Form EIA-826, http://www.eia.gov/electricity/data/eia826/ (last visited Dec. 3, 2015); and U.S. Bureau of Economic Analysis, Quarterly Implicit Price Deflator (2015), *available at* https://research.stlouisfed.org/fred2/series/GDPDEF/downloaddata.

[2] *See* NERA Economic Consulting, Proposed CATR + MACT (May 2011) (prepared for ACCCE), *available at* http://www.americaspower.org/sites/default/files/NERA_CATR_MACT_29.pdf.

National Electric Energy Data System or "NEEDS" database. This database, which is included in the docket for the Rule, contains the generation unit profiles used to construct the "model" plants that represent existing and planned or committed units in EPA modeling applications of IPM. NEEDS includes basic geographic, operating, air emissions, and other data on these generating units.

16. The modeling for this Rule is most useful for assessing and estimating the aggregate impacts of regulatory policy over the timescale that the modeling was designed to address. To estimate the impacts of the Rule, EPA first modeled a scenario over the 40-year time horizon without the Rule. This scenario is called the "base case." EPA then made various assumptions regarding illustrative state plans, and ran the model again with these assumptions in place. This scenario is called the "policy case." For the Rule, EPA ran IPM based on two illustrative state plan approaches all states could take to implement the Rule. The two approaches were the "rate-based" illustrative plan approach and the "mass-based" illustrative plan approach. ("Policy case" as used here generally refers to the rate-based illustrative compliance scenario.[3]) The modeled impact of the Rule can be seen by comparing the

[3] In addition to the base and policy cases for illustration of the Rule's impacts, EPA included the following model runs in the docket to support its determination of the best system of emission reduction: Building Block 2 – 70% capacity factor for existing natural gas combined cycle units; Building Block 2 – 75% capacity factor for existing natural gas combined cycle units; Building Block 2 – 80% capacity factor for existing natural gas combined cycle units; Building Block 3 – cost-effectiveness scenario; and Building Block 3 – generation assignment scenario.

policy case projections and the base case projections for particular modeled years.

17. These scenarios are "illustrative," due to the range of choices available to states in developing their state plans, and the uncertainty about the specific choices states will make. For instance, the IPM runs did not model all of the possible "glide paths" states may develop during the interim period; rather, it modeled a single set of state goals that represent the interim period, based on the interim steps that were provided by EPA to help states in their planning processes. Because of the inclusion of simplified modeling assumptions that do not capture all the implementation flexibilities available to states, near term impacts on the power sector in the policy case will generally tend to be overstated. *See* McCabe Decl. ¶¶ 6-9.

18. In order to assess the potential impacts of the two illustrative scenarios, EPA designed the modeling to project aggregate impacts to the power sector over the period of time during which power plants would need to improve emissions performance under the Rule (i.e., the 2020s). EPA did not design this modeling to evaluate unit-level source impacts of the Rule, particularly before state plans are known. Nor did EPA rely on the Model's output data for 2016 in the final Rule. Furthermore, the agency did not rely in the Rule on any unit-specific outputs for any year. In order to better understand how the Model was designed for this purpose, I will explain several key aspects of the IPM modeling as it was designed and used to evaluate the impacts of this Rule.

19. **Model Plants:** IPM is based on information about power plants at the unit

level; however, for computing efficiency in running the model, EPA combines individual units with similar characteristics into a single entity, which EPA refers to as a model plant.[4] We combine actual units into model plants due to the excessive cost in time and resources that would be needed to run the IPM model with each individual power plant directly simulated while maintaining the Model's substantial level of detail about other aspects of the power sector that affect regional power sector operations.

20. **Model Years (or "run years"):** Similar to the aggregation of actual power plants into model plants, IPM modeling aggregates future calendar years into "model years" (also referred to as "run years"). We refer to these years as "model years" because in fact they may represent an averaging, or aggregation, of anticipated effects over a multi-year period. The years modeled are selected by EPA and determined based upon demand for analysis to support multiple EPA air regulatory efforts (e.g., CSAPR and MATS). For IPM v5.15, those model years are 2016 (2016 to 2017), 2018 (2018), 2020 (2019 to 2022), 2025 (2023 to 2027), 2030 (2028 to 2033), 2040 (2034 to 2045), and 2050 (2046 to 2054).

21. EPA presented aggregated information from its modeling runs in the Regulatory Impact Analysis for the final Rule for the "model years" 2020, 2025, and

[4] The "model plant" aggregation scheme encompasses a variety of different classification categories, including location, size, technology, heat rate, fuel choices, unit configuration, SO_2 emission rates, and environmental regulations among others. Units are aggregated together only if they match on all the different categories specified for the aggregation.

2030, which were the three model years EPA found most useful in providing relevant information on the longer-term impacts of the Rule. The model year 2020 represents an aggregation of the years 2019 – 2022, and illustrates potential scenarios at a point just prior to the beginning of the interim performance period in 2022 under the Rule. The model year 2025 is an aggregation of years 2023 – 2027, and illustrates potential scenarios at a point approximately midway into the interim period. Finally, the model year 2030 is an aggregation of years 2028 - 2033, and illustrates potential scenarios at the start of the final performance period in 2030.

22. Model year 2016 does not serve a representative purpose for the Rule. In addition, this model year is actually an aggregation of calendar years 2016 and 2017. In other words, the outputs for model year 2016 represent both calendar years, not 2016 in isolation.

23. Typically, IPM is configured to include modeled years in the shorter-term, the mid-term, and long-term. Where possible, and as is the case here, the earliest years of a modeled period are preferably those in which the new environmental standards or regulatory policies *are not* in effect. It is easy to over-interpret the first years' results and important to keep in mind that IPM will tend to show more immediate behavioral changes in the pre-compliance period than would be expected of real-world decision makers because of IPM's "perfect foresight."

24. **Perfect Foresight:** A critical aspect of IPM that is important to understand in order to be able to interpret its outputs meaningfully, especially for early years, is the

assumption of "perfect foresight." IPM's assumption of perfect foresight implies that agents know precisely the nature and timing of conditions in future years that affect the ultimate costs of decisions along the way. For example, IPM's algorithms assume complete foreknowledge by power plant owners and operators of future electricity demand, fuel supplies and prices, and other variables (including regulatory requirements and projected prices that are determined within the model based on supply and demand) that in reality are subject to uncertainty and limited foresight. Modelers frequently assume perfect foresight in order to establish a decision-making framework that can estimate cost-minimizing courses of action given the best-guess expectations of these future variables that can be constructed at the time the projections are made. With this "perfect foresight," the Model looks throughout the 2050 modeling horizon, and selects the overall lowest cost solution for the power sector over that time frame.

25. IPM will project actions in advance of a compliance deadline if completing those actions early will result in an overall lower-cost solution to the modeled constraints. For example, in the illustrative Rule scenarios, the model "sees" the future emission requirement starting in 2022 and will find a solution that optimizes the response over the entire time horizon of the model with the least cost. This is reflected, for instance, in the model projecting a 6 – 7% reduction in coal generating capacity over the base case as a result of the rule in the model year 2020. *See* RIA 3-31, Table 3-12. The model "knows," for instance, that an increase in natural gas-fired

power would be a cost-effective way to reduce emissions across the system, and will thus make earlier investments in natural gas production than may otherwise occur under real-world levels of uncertainty. Importantly, the model, unlike real-world actors, also "knows" the form of requirement that will be imposed by its state – i.e., the illustrative rate-based or mass-based policy scenario. These scenarios, however, do not capture all of the various options available to states in the design of their plans.

26. **"Retirements":** The "retirement" of a model plant occurs in IPM when "known" going-forward costs exceed "known" going-forward revenues—in any amount. Even a 1-cent difference between costs and revenues can lead to a unit retiring in the model, because the model has certainty that retiring the unit in that circumstance is a least-cost decision. The model treats a retirement as an enduring decision that is not revisited over time; there are no unforeseen changes in the perfect-foresight modeling horizon and hence no reason for a model plant to come back online once it ceases to be a part of the least cost solution for the entire sector. Of course, in the real world, actors lack perfect foresight and do not make investment or retirement decisions based on margins of one cent. Further, units do not always cease operating permanently; they can return to service, or undergo other modification or repurposing over time.

27. **"Parsing":** Once a model run is complete, it is possible for EPA to estimate projections for actual power plants based on a disaggregation of the model plants back to the original unit-level data that serve as the inputs to IPM. EPA calls this

disaggregation "parsing." The parsing process was designed to provide EPA with emissions data from power plants, which is used in air quality modeling and assessments. This is a resource-intensive process that EPA sometimes undertakes for certain model years in certain modeling scenarios. A "parsed" file of an IPM scenario, or IPM run, approximates the IPM results at the generating unit level for a particular year. Parsed data, representing model projections disaggregated to the unit level, will often differ from the corresponding variables (e.g., pollutant emission rates) historically reported for each unit, because the model may select different fuels, add new pollution control technologies, or revise the operation of particular units in response to future economic and regulatory conditions.

28. When this process is completed, it provides estimates of impacts, including projected closures, at the individual unit level. Parsing is useful for some purposes, but less so for others. EPA has typically parsed files in order to assess air quality impacts of our regulations. Parsing allows us to see with greater geospatial specificity how regulations can impact levels of emissions of conventional pollutants that may be relevant at a more local or regional scale. Parsed files, however, can create a false sense of certainty.

29. For this Rule, ICF parsed files for EPA for two model years – 2025 and 2030 – and for three IPM scenarios, (six parsed files in total). Those scenarios include the base case, the illustrative rate-based compliance scenario for the Rule, and the illustrative mass-based compliance scenario for the Rule. EPA chose to parse 2025

and 2030 because they are anticipated to best reflect the potential impacts of the Rule during the compliance period. Prior years, including model year 2016, were not parsed for this Rule because EPA concluded that the parsed results for years other than those relevant to the performance period would not be useful or meaningful at the unit level.[5]

30. Thus, EPA's IPM modeling, when used appropriately, provides the public and interested parties with a reasonable projection of the likely system-wide power sector impacts of the Rule. We do this not by focusing on unit-level IPM results, but by looking at the behavior of the system, which necessitates the simplifying assumptions of "model plants" in certain "model years" behaving with "perfect foresight." Modeling, especially of the type performed with IPM that can be run with many parameters and incredibly large data sets, inherently risks creating a false sense of certainty that can be misleading to the public and interested parties—particularly with respect to the outputs that it generates that are only indirectly related to the purposes for which the modeling is being conducted.

31. It is important, however, to distinguish between the modeled environment,

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[5] I would note that the parsed files for IPM model year 2018 of the "Ozone Transport Base Case" (which includes the Rule's rate-based illustrative policy case) are included in the docket for a separate EPA proposal, Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, EPA-HQ-OAR-2015-0500; RIN 2060-AS05 (hereinafter "CSAPR Update Proposal"), which was signed on November 16, 2015. The parsing in this instance was done primarily to support air quality modeling, for a time period in which (unlike under the Rule) EPA is considering imposing emission reduction requirements directly, and for a different pollutant (ozone-season NO_X).

which is designed to simulate the real world, and all the actual decision variables, opportunities, and costs that owners and operators of power plants face in the real world. The model, by necessity, must make simplifying assumptions about power sector operation, in spite of all the detail and data that the model contains. The model does not consider what may ultimately be in the best interests of an individual plant factoring in every real-world variable affecting that particular plant. In practice, of course, there are many factors that operators consider in their decision making, not all of which can be included in a modeled framework.

32. Further, if anything in the real world differs from the constraints or operating parameters or assumptions in the model, the modeled results will obviously not reflect what actually happens at the unit level. One key example for this Rule is that state plans may differ from the illustrative compliance scenarios we assumed. For example, the actual state plan may adjust the "glide path" so that only base-case level changes in emissions are set to occur in the early years of the interim period. States may give a particular unit a lower or higher rate-based emission standard compared to the standards assumed to apply in EPA's modeled scenario. Because states will ultimately make the unit-specific implementation decisions, the Model can do no more than provide illustrative benefits and costs.

V. IPM Results do not represent a prediction by EPA that the Rule will cause, much less require, identifiable retirements in 2016 or any other year.

33. Several declarants for Movants assert irreparable harm from the Rule based on

the 2016 modeling results, specifically focusing on the Model's projection of coal generation capacity reductions (which they refer to as plant "retirements"). *See, e.g.*, Pemberton Decl. ¶ 2 (assuming 4,200 MW of fossil-fuel retirements in 2016 based solely on IPM outputs); Heilbron Decl. ¶ 2 (assuming 2,600 MW of fossil-fuel retirements in 2016 based solely on IPM outputs); and Burroughs Decl. ¶ 2 (assuming 1,100 MW of fossil-fuel retirements in 2016 based solely on IPM outputs). These declarants treat the Model as somehow representing a "compliance solution" EPA has created for their states or utilities. *See, e.g.*, Pemberton Decl. ¶ 12; Green Decl. ¶ 14. This is a term EPA never used, and it is inaccurate. EPA's modeling is not a "compliance solution" for anybody, and especially for this Rule, in which states have the authority and the discretion to design state plans, which will in turn determine the actual compliance obligations for each individual plant.

34. Several declarants have further noted that the Model shows their own plants retiring in model year 2016. These declarants do not state affirmatively that they are in fact planning to retire generating units in calendar year 2016, and indeed some of them specifically disclaim such intentions. For instance, the Greene Declaration on behalf of Southern Company recognizes that state planning must take place in order for units to know what their regulatory obligations will be. Green Decl. ¶¶ 12-13. The Frenzel Declaration on behalf of Luminant explicitly recognizes that an allegedly modeled retirement in 2016 might be avoided through design options available to state plans such as various forms of interstate trading not included in the policy case.

Frenzel Decl. ¶¶ 41-42.

35. To the extent these declarants are asserting that EPA's Model is predicting individual unit retirements that may not occur in the real world, I agree with this assessment. Just because IPM projects a particular model plant to retire is no reason to assume that a real-world unit represented by that model plant will actually do so, much less that there is any *requirement* that it do so (model projections of the two illustrative compliance scenarios are not regulations).

36. Nonetheless, it is important to understand why the Model produces these outputs for model year 2016, despite the fact that the Rule's requirements would not apply at the earliest until 2022. The projected results in model year 2016 are a function of the model's optimizing for the least-cost solution over the entire modeled time frame with the assumption of perfect foresight. The model will take advantage of cost-saving opportunities by taking certain actions well in advance of when they may occur in the real world, if that early action results in a lower cost over the time frame analyzed.

37. Declarants have drawn attention to what they view as a surprising number of retirements that appear to occur in the model in model year 2016 rather than later in the period. Schwartz alleges that EPA's modeling shows 238 coal-fired power plant retirements from 2016 through 2018 and that all but 5 of those plants are shown to retire in 2016. Schwartz Decl. ¶ 36. First, Schwartz fails to acknowledge that our modeling shows the vast majority of those retirements occurring in the base case and

not caused by the Rule. Second, as explained above, the timing of retirements in the model is a function of IPM immediately optimizing for least cost with perfect foresight. In the real world, owners and operators of power plants may base their action on a variety of information and assumptions that will be different from what is, or can be, included in the Model. To make this point clearer, if we had assessed a time frame beginning in model year 2020 rather than model year 2016, the Model would have likely projected the retirement of a similar amount of capacity in that year as it did for 2016. This of course is not necessarily how each individual *real world* actor may be anticipated to behave in *calendar* year 2016.

38. Furthermore, the model adheres strictly to the least-cost solution, even at marginal cost differences that are well within real-world margins of uncertainty. (In other words, the model will retire a model plant if the cost to operate it is only slightly greater than the least-cost solution.) In the real world, power plant owners and operators do not have perfect knowledge; there are uncertainties about prices and other variables; and actors are free to make other decisions about these facilities. Most importantly, owners and operators may want to keep a marginally unprofitable plant open to retain more options for the future. Or, for various reasons, an owner/operator may delay taking action that would provide the substitute for the coal-fired power plant, and therefore need to keep it open longer. They may choose to maintain current operations at these facilities beyond 2016 and consider compliance-related operational changes at these facilities at a later point in time, given the long

lead-time EPA has provided ahead of the start of the first compliance period (2022). In no way do EPA's modeling results reflect any "requirements" that affected power plants take any Rule-related actions by 2016.[6]

39. The Utility declarations concerning the assumption that certain units must retire in 2022, at the latest, are similarly unfounded, and cannot be derived from any model results. For instance, the Brummett Declaration (on behalf of the San Miguel rural co-op in Texas) assumes that the plant will be forced to close in 2022. Brummett Decl.¶ 24. At the same time, it states that EPA modeling for the CSAPR and MATS rules incorrectly showed a retirement of the plant in question. The plant has apparently complied with CSAPR and MATS and has no plans to retire. Id. ¶ 14. Further, Brummett notes that it is "far from clear" what the state of Texas will do in the design of a state plan. *Id.* ¶ 18. *See also* Patton Decl. ¶ 18; Jura Decl. ¶ 19-21; Voyles Decl. ¶ 7.

40. These and similar assertions are apparently based on the fact that 2022 is the

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[6] As noted above, *see* note 5, EPA included the Rule in the base case modeling for the recently signed CSAPR Update Proposal, following historic practice and Executive Order direction to include all final rules in the analytic baseline when assessing the impacts of a new proposed regulation. However, recognizing the high degree of uncertainty associated with any Rule-related modeling prior to the finalization of state plans, EPA is requesting comment in that proposal on the appropriateness of including or excluding the Rule from the analytic baseline modeling in this instance. *See* Memorandum to Docket, Inclusion of the Clean Power Plan in the baseline for the proposed Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS (December 1, 2015) (EPA-HQ-OAR-2015-0500). This is consistent with the basic point I emphasize here: this Rule's modeling results for the early years are not meaningful with respect to any specific units.

start of the interim period, and thus—potentially (depending on the design of state plans)—the beginning of compliance obligations on the units. Jura Decl. ¶ 9, 26; Brummett Decl. ¶ 24. In other words, these declarants seem to proceed from the false premise that the start of the compliance period means that units "must" retire. The Rule, however is designed to reduce emissions from the power sector gradually and with considerable flexibility afforded to individual units within that system. The declarants fail to acknowledge that states are able to adjust the glide path or adjust plant-specific obligations to reduce the stringency of an emissions standard for particular units. Similarly, they do not acknowledge the availability of multi-year compliance periods that would allow for averaging of emissions over several years.

41. These declarations also fail to adequately consider the role of emissions trading—either at an intra- or inter-state scale—that would allow units for which emissions reductions might be particularly difficult or expensive (e.g., rural minemouth coal plants such as San Miguel, *see* Brummett Decl. ¶ 4) to continue emitting at historical levels. For instance, the Brummett declaration fails to establish that the simple acquisition of compliance instruments such as allowances or emission rate credits would be so prohibitively costly as to force the plant to shut down. The Ledger Declaration completely skips over the potential design options for an Arizona state plan and incorrectly assumes an "emission limitation" based on the *proposed* federal plan's approach to initial allowance *allocation* (which is not an emission limitation) within an emission trading program. Ledger Decl. ¶ 21. In short, the

declarants do not have meaningful IPM modeling results to support their assertion that the Rule will cause shutdowns of units in 2022.

VI. Methodological Attacks on EPA's Modeling Do Not Hold Up

42. Movants assert that EPA's modeling shows a level of retirements in the base case in the early years of the modeled period that are higher than the Movants' estimates of retirements. However, their estimates use different assumptions about economic trends and draw comparisons between a base case using one set of assumptions and a policy case using a different set of assumptions.

43. The projections of future electric generating capacity from IPM modeling that EPA relied on in the Regulatory Impact Analysis are in Table 3-12 in the RIA at 3-31. This table shows that in 2020, under the base case, there would be approximately 208 GW of coal generation capacity remaining, under a rate-based illustrative scenario there would be 195 GW, and under a mass-based scenario there would be 193 GW. According to Movants' expert consultants, EPA's base case estimate of 208 GW for 2020 means EPA "expects" a loss of 68 GW in coal generation capacity in the base case. *See* Heidell & Repsher Decl. ¶ 9.[7]

44. Moving beyond the modeling results EPA actually relied on in the RIA,

[7] It is unclear how Heidell & Repsher (PA Consulting) derived the 68 GW figure. The IPM System Summary Report for the Base Case shows 66 GW of cumulative reduced coal generation capacity in 2020. *See* IPM System Summary Report (EPA-HQ-OAR-2013-0602-36460), *available at* http://www2.epa.gov/airmarkets/analysis-clean-power-plan.

according to these declarants the modeling for the final Rule projected that 60 GW of coal generation capacity would retire in 2016 in the base case, and that 71 GW of coal generation capacity would retire in 2016 in the policy case. Thus, according to them, the Model projects 11 more GW of coal generation capacity losses by 2016 in the illustrative policy case than in the base case. *Id.* ¶ 8. (For all of the reasons discussed in the above sections, we do not take these assumptions regarding 2016 as given.)

45. Regardless of the cause of the modeled 2016 generation capacity changes (i.e., without distinguishing between the base case and policy case), these declarants assert that the amount of retirements in 2016 in IPM's base case is higher than other sources such as the U.S. Energy Information Agency's Annual Energy Outlook (AEO) reports. Similarly, these declarants believe there should be far fewer retirements in the base case by 2020 than EPA's Model shows. Nonetheless, they believe the total number of retirements by 2020 in EPA's *policy case* should be taken as correct and thus should be attributed almost entirely to EPA's Rule rather than the other factors in EPA's base case.[8] In essence, these declarants attempt to call into question the

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[8] PA Consulting's report would use different assumptions from those in the Model to reduce the amount of base-case coal generation capacity loss to 26 GW between 2015 and 2020. *See* PA Consulting report for the American Coalition for Clean Coal Electricity, at 13 (Attachment C to UARG's Motion for Stay) (hereinafter ACCCE). But it would continue to rely on the Model (and thus the Model's assumptions) for *total* coal capacity generation reduction (base case plus policy case) by 2020. By doing so, PA Consulting comes up with 50 GW of plant retirements as a result of the Rule by 2020. *Id.* at 14. This is in sharp contrast with EPA's estimate of an incremental 13-15 GW reduction in coal generation capacity by 2020 over the base case in RIA table 3-12.

reasonableness of EPA's Model where its results do not support their assertions of harm, but then rely heavily on the *same* Model where its results are more superficially consistent with their assertions. *See* ACCCE, at 12-14. Indeed, they are explicit about their preferred "mix-and-match" approach to forecasting. *Id.* at 12 ("[W]e broadly accept EPA's modeling of . . . the cumulative (base case plus CPP) coal retirements by 2020 . . . . However, we do not accept EPA's conclusions regarding the amount of retirements that will occur in the base case absent the CPP.").

46. Similarly, the Schwartz Declaration contradicts itself because it claims first that IPM erroneously *over-projects* retirements in the base case (i.e., IPM is trigger-happy), *see* Schwartz Decl. ¶ 32 (asserting EPA's base case overstates reduction in coal capacity in 2016 compared to AEO data). The Schwartz Declaration claims next that IPM *under-projects* retirements in the policy case (i.e., IPM is gun-shy), *see id.* ¶ 34 ("The units which EPA projects will retire in 2016 and 2018 in its base case should be considered as retiring due to the impact of the CPP.").

47. The positions of both Schwartz and PA Consulting are internally inconsistent for the same reason: they insist all of the early retirements must be assumed to occur (and thus produce a wide range of harms) under the policy case, but many of those same retirements must be rejected as implausible under the base case. They cannot have it both ways. The same inputs into the Model generated both results. These declarants' preferred approaches would use one set of inputs and assumptions for the base case and a different set of inputs and assumptions for the policy case. In my

experience managing economic and modeling analysis for EPA, the results of such a comparison would lack any analytical integrity or utility.

48. In my professional judgment, these declarants' methodologies for estimating near term impacts of the Rule should be considered with skepticism for additional reasons. PA Consulting expressly concedes that it "did not perform a comprehensive independent modeling analysis" of the Rule. ACCCE, at 6. Rather, PA Consulting relied for its estimate on "statements made in relation to the *proposed* rule rather than the final rule" (emphasis added), because "these sources conform to a market view that is closely aligned with PA's view of coal retirements under the final rule." ACCCE, at 14. "Studies, comments, and public statements made in anticipation of 50 GW of retirements are therefore a more credible indicator of the expected potential for irreparable harm…" *Id.* This is incomprehensible, not to mention tautological. ACCCE's consultants seem to be saying that they picked qualitative sources of information based on the *proposed* form of the rule rather than the final Rule, on the basis that such information aligned with their preexisting views.

49. The Schwartz Declaration makes backward-looking assumptions about energy markets that ignore current and likely future trends. Schwartz asserts that there is "good reason to doubt" anticipated demand reductions, for no other reason than that they would be "unprecedented." Schwartz Decl. ¶ 25. EPA's assumptions about renewable growth are similarly "aggressive" in Schwartz's view, because such growth rates would be higher than "the past 5 years." *Id.* ¶ 26. Whether EPA's estimates are

"aggressive" or not in relation to past trends, however, is not the question that is most relevant when selecting the inputs for modeling. Rather, we use the best and most up-to-date information on what power sector experts expect the future will look like. The Schwartz declaration asserts an "opinion" that certain energy trends in the future will be as they were in the past. The information from the real world that EPA used to run its modeling call that opinion into doubt. I will discuss this information, and the contrast between our assumptions and the U.S. Energy Information Administration's in the next section.

50. Finally, the report that the Electric Reliability Council of Texas (ERCOT) released in October, discussed in Lloyd Decl. ¶ 43, purports to model potential impacts of the Rule on grid reliability and resource mix in Texas, but is based on highly constrained modeling assumptions.[9] The use of artificially constrained modeling assumptions exaggerates the potential impacts of the Rule in the ERCOT region.

51. In particular, unlike IPM, which models the economic choice of whether to retire a coal unit, ERCOT did not model whether to retire units, but merely assumed that a coal unit that was predicted to generate less would retire if it generated below a threshold amount. Furthermore, ERCOT assumed a 1% reduction in load from

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[9] ERCOT, Analysis of the Impacts of the Clean Power Plan *Final Rule Update* (October 16, 2015) (hereinafter ERCOT), *available at* http://www.ercot.com/content/news/presentations/2015/ERCOT_Analysis_of_the_Impacts_of_the_Clean_Power_Plan-Final_.pdf.

energy efficiency each year in both its base case and core policy cases—substantially lower than reasonable assessments of anticipated energy efficiency growth under a policy case for the Rule. Finally, ERCOT models a mass-based "limit" scenario, but does not consider how a market-based trading approach could be used to help reduce the costs of compliance. These assumptions lead ERCOT's modeling to a much more severe forecast of the Rule's impacts on reliability and electricity rates than can reasonably be expected.[10]

VII. EPA Reasonably Rejected Movants' Preferred Modeling Assumptions as Less Accurate in Predicting Power Sector Trends

52. It is important to note several key differences between EPA's modeling using IPM and the U.S. Energy Information Administration's (EIA) projections from the Annual Energy Outlook. According to the U.S. EIA, its "projections provide a basis for examination and discussion of energy market trends and serve as a starting point for analysis of potential changes in U.S. energy policies, rules, and regulations, as well as the potential role of advanced technologies."[11] In EIA's view of its own data, "because of the uncertainties inherent in any energy market projection, the Reference case results should not be viewed in isolation. Readers are encouraged to review the

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[10] Even with these assumptions, however, the report suggests some impacts that are considerably more moderate than those portrayed by other declarants. For instance, the report shows no additional coal unit retirements above base case by 2030 under ERCOT's "CO_2 limit" policy case scenario. *See id.* at 7.

[11] U.S. EIA, Annual Energy Outlook 2015, http://www.eia.gov/forecasts/aeo/ (last visited Dec. 3, 2015).

alternative cases to gain perspective on how variations in key assumptions can lead to different outlooks for energy markets." *Id.*

53. One reason for the differences between EPA's Model results and the EIA's projections in its Annual Energy Outlook reports, is that the Annual Energy Outlook has tended to assume a lower rate of change in the cost of renewable energy technologies, which impacts their cost competitiveness. We did not rely on Annual Energy Outlook assumptions in this regard because we found that other sources of data were more reflective of current trends. It became difficult to justify continued reliance on the EIA's assumptions for new renewable energy technologies when some of their stated cost assumptions for various technologies for modeled projections in 2020 and beyond were higher than prices in contracts for these technologies that are being signed today in the marketplace.

54. In our modeling for the final Rule, EPA used National Renewable Energy Lab (National Lab) cases for future renewables costs. EPA determined that the National Lab estimates were more likely to be representative of future renewable prices than the Annual Energy Outlook estimates originally used in the proposed rule. *See* Greenhouse Gas Mitigation Measures TSD, at 4-12 ("EPA selected the [National Lab's] 2015 . . . estimates based on the quality of its data and consistency with recent [renewable energy] cost and performance trends."); *id.* at 4-13 n.20. For instance, EPA found that rapid cost declines for wind and solar have been well documented and that costs are significantly lower than near-term and longer term AEO forecasts.

Mitigation Measures TSD, at 4-14.

55. Similarly, EPA used independent natural gas supply information showing a steady supply and relatively stable prices over the long-term, suggesting that natural gas generation would likely become increasingly cost-competitive with coal-fired generation. *See* Mitigation TSD, at 3-4 to 3-19. This information is reflected in the IPM modeling for the final Rule. *Id.* at 3-20 to 3-22.

56. At the same time, the price of coal, again reflected in EPA's IPM modeling, has historically been rising, making coal generation less cost-competitive, even in the absence of the Rule. *See* RIA at 2-43. EPA used different assumptions than EIA regarding coal supply, resulting in projections of delivered coal prices that are slightly higher than EIA's on average. We perform a detailed bottom-up analysis of all mines across the country and different coal types in each mine, which are mapped to certain power plants based on coal supply transportation networks. The analysis indicates that coal is getting more expensive to extract. EPA's projections of coal price follow the same trajectory as EIA's projections but are a few percent higher, which is one reason we project a larger amount of coal generating capacity retiring than EIA does.

57. Declarants take issue with the fact that EPA updated inputs for the modeling between the proposed rule and the final Rule. This appears to imply that models should be static and not be updated based upon better and more recent data and information. Indeed, with no evidence to support the assertion, the Schwartz declaration implies that EPA's choice of modeling inputs was in bad faith or

"artificial." *See* Schwartz Decl. ¶ 4. This suggestion is groundless. In fact, the changes in assumptions made by EPA between the modeling conducted for the proposed rule and final Rule simply reflect good modeling practice of using the best and most up-to-date real world information as modeling inputs and they follow from EPA's requests for comment on the data and information used to develop the proposed-rule analysis.

58. In short, these inputs reflect trends including the fact that renewable energy prices have dropped and are anticipated to continue to drop, natural gas prices have been and will likely remain relatively low and stable, and coal prices have increased. *See* Culligan Decl. ¶¶ 7-19 (providing an overview of power sector trends). EPA's modeling would only have been "artificial" had EPA ignored public comments and continued to rely on outdated information about the relative cost-competitiveness of various energy resources as inputs to IPM.

VIII. IPM Modeling for MATS was Reasonable; Higher Rate of Retirements is due to Economic Factors

59. The Schwartz Declaration argues that experience with the MATS rule should be taken as indicative of flaws in the IPM modeling for this Rule. Schwartz alleges that IPM under-estimated coal plant retirements due to the MATS rule. Schwartz Decl. ¶ 44. Schwartz fails to establish, however, that the larger number of coal plant retirements actually occurring was in fact due to MATS, rather than a combination of economic factors affecting coal generation in combination with regulatory costs.

60. In fact, the economic evidence suggests that much of the retired coal

generation capacity that has occurred in the relevant time period has been driven by continuing broader economic trends, including substantially lower and more stable natural gas prices, relatively low electric demand during that time period, and the deployment of new electric generating capacity like renewables and natural gas facilities that compete with the existing and aging coal fleet. *See* Culligan Decl. ¶¶ 7-19.[12] For instance, the market experienced a sustained drop in natural gas prices in the years preceding the first compliance year for MATS (i.e., 2015), something the model had not projected based on our inputs at the time the analyses were conducted. The model also did not fully capture the ultimately realized, sustained weakness in electric demand growth. When electric demand and gas prices are considerably lower than expected, there is downward pressure on wholesale electric prices and gas power plants are much more competitive, which exerted significant pressure on the least economic units (older and less efficient coal plants).

61. These are market impacts, not the impacts due to MATS. Nonetheless, I would continue to maintain that EPA's assumptions at the time of the MATS analysis were reasonable. While in hindsight we know these economic trends were more powerful than we thought, this proves no more than that a model's results will reflect its assumptions. Furthermore, an underestimate of *economic trends* certainly does not mean

[12] *See also, e.g.*, Susan Tierney, Power Magazine, Why Coal Plants Retire: Power Market Fundamentals as of 2012 (July 30, 2012), http://www.powermag.com/why-coal-plants-retire-power-market-fundamentals-as-of-2012/ (last visited Dec. 3, 2015).

that EPA underestimated the *cost* of the regulation. Indeed, had EPA used different assumptions about economic trends in the sector (e.g., regarding natural gas supply) for its MATS analysis, EPA would have likely projected the overall cost of the MATS rule to be lower, as in fact might actually be the case, *see supra* ¶¶ 13-14.

December 3, 2015

Reid P. Harvey

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, ET AL., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL., Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF KEVIN P. CULLIGAN

1. I, Kevin P. Culligan, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. Since 2010, I have served as the Associate Division Director for the Sector Programs and Policy Division within EPA's Office of Air Quality Planning and Standards. As part of my duties as Associate Division Director of the Sector Programs and Policy Division, I coordinate cross-office air regulatory efforts including the final Mercury and Air Toxics Standards, and greenhouse gas rulemakings under Clean Air Act section 111, 42 U.S.C. § 7411. Those

responsibilities include coordinating the development of the Rule that is the subject of this litigation.

3. I have 23 years of technical regulatory experience at EPA, where my focus has been air regulations affecting the electricity sector. Among the major regulations I have provided significant technical expertise for are the NO_x SIP Call, the Clean Air Interstate Rule, and the Cross-State Air Pollution Rule (all three addressing interstate air pollution from power plants); MATS (limiting toxic air pollution from power plants); and electricity sector rules promulgated under Clean Air Act section 111(d) including the Clean Air Mercury Rule (CAMR), and the Clean Power Plan.

4. Prior to my current position, I served in several other management and leadership roles at EPA, during which I have overseen engineers, economists, and other technical staff working on numerous rules affecting the electricity sector. From 2005 to 2010, I was Branch Chief for the Programs Development Branch in the EPA's Clean Air Markets Division, where I lead a technical staff responsible for most of EPA's air regulations for the electricity sector. From 2000 to 2005, I led a team in the Clean Air Markets Division responsible for developing key economic and technological analyses for the Clean Air Interstate Rule. I received a bachelor of science in mechanical engineering (with a focus on energy) from the University of Michigan in 1991.

I. Overview

5. In developing the Clean Power Plan ("the Rule"), EPA closely reviewed the structure of the electricity sector in the United States and the recent and projected trends within the electricity sector relating to (1) generation capacity (*i.e.*, the total resources available to generate electricity), and (2) actual electricity generation. These recent and projected trends show a continued increase in capacity and generation from natural gas and renewable energy, and corresponding decreases from coal.

6. Principal reasons for these trends are market-driven cost advantages of natural gas and renewable energy vis-a-vis coal, an aging coal fleet, and reduced electricity demand.

II. Recent Trends in the Electricity Sector

7. The electricity sector is experiencing ongoing, significant trends away from coal-fired generation, and toward low- and zero-emitting sources (*i.e.*, natural gas and renewable sources) that can produce the same amount of electricity as coal but with 59–100% fewer CO_2 emissions.[1] There are also significant trends toward energy efficiency. All of these trends have existed for many years, beginning well before the promulgation of the Rule.

[1] See U.S. EPA, GHG Mitigation Measures Technical Support Document, p. 3-4.

8. For over a decade, coal's share of total U.S. electricity generating capacity has been declining, while capacity from natural gas and renewables has increased. Increases in wind and solar capacity have been particularly significant.[2] Between 2000 and 2013, roughly 90% of the new electricity generation capacity built in the U.S. was either natural gas or renewable facilities.[3] From 1998 to 2013, non-hydropower renewable energy capacity for the total U.S. electric power industry increased by 15 times, to over 80,000 megawatts ("MW").[4] Between 2004 and 2014, cumulative installed renewable energy capacity grew 83%.[5] Construction of new capacity and retirement of existing capacity in 2014 (the most recent calendar year before signature of the Rule) is illustrative of this preexisting trend away from coal-fired generation, and toward low- or zero-emitting generation. Of the 18,791 MW of new generating capacity added that year, 53% was renewable, 47% was natural gas, and only 1% was coal.[6] By contrast, more MW of retired generating capacity in 2014 came from coal-fired power plants than from any other source.[7] In 2014 overall, the nation's

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[2] Dep't of Energy, National Renewable Energy Laboratory, *2014 Renewable Energy Data Book* (Nov. 2015), p. 11, *available at* http://www.nrel.gov/docs/fy16osti/64720.pdf (last accessed Nov. 25, 2015) (hereinafter "NREL Renewable Energy Data Book"), reproduced as Figure A-1 in the appendix to this declaration.
[3] 80 FR 64694-96.
[4] Id.
[5] NREL Renewable Energy Data Book, p. 18.
[6] Id., p. 13 (reproduced as Figure A-3 in the appendix to this declaration).
[7] Id.

electricity sector saw a net loss of approximately 3,254 MW in coal-fired generation capacity, contrasted with a net gain of approximately 15,721 MW in gas-fired or renewable generation capacity.[8]

9. The trends in terms of actual electricity generation have been even more dramatic. Over the past decade, generation from natural gas and renewable sources has increased as coal-fired generation has declined. The following table illustrates how, in recent years, coal has been producing a smaller and smaller share of U.S. electricity while natural gas and renewables have been responsible for a greater and greater share:

Table 1: U.S. Electricity Generation by Source[9]

	Coal	Natural gas	Renewables
2004	49.7%	17.8%	8.8%
2005	49.5%	18.7%	8.8%
2006	48.9%	20.0%	9.5%
2007	48.4%	21.5%	8.5%
2008	48.1%	21.4%	9.3%
2009	44.4%	23.3%	10.6%
2010	44.7%	23.9%	10.4%
2011	42.2%	24.7%	12.6%
2012	37.3%	30.2%	12.4%
2013	38.7%	27.6%	13.1%
2014	38.5%	27.3%	13.5%

[8] Id.

[9] See NREL Renewable Energy Data Book, p. 13 (full chart reproduced as Figure A-2 in the appendix to this declaration).

10. In 2004, coal-fired generators supplied nearly half of the nation's electricity, while natural gas and renewables combined for roughly a quarter.[10] Within eight years however, by 2012, the trends away from coal and toward low- and zero-emitting electricity were such that the country was generating less electricity from coal than it was from the combination of natural gas and renewables.[11] From 2000 to 2012, generation from natural gas-fired power plants increased by more than four times.[12] From 2005 to 2014, net natural gas generation increased by about 32%.[13] From 2005 to 2013, electricity generated from renewable sources (including conventional hydropower) increased from 9% of total U.S. electricity to 13%.[14] Annual non-hydro renewable electricity generation more than doubled between 2004 and 2014.[15] Since 2009, the cost of wind power has declined by two-thirds, [16] and U.S. wind generation has tripled.[17] Meanwhile, the cost of solar generation has declined by more than half,[18]

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[10] Id. In 2004, natural gas generated 17.8% of the nation's electricity, and renewables generated 8.8%. Id.
[11] Id.
[12] 80 Fed. Reg. 64795.
[13] Id. 64694-96.
[14] Id.
[15] NREL Renewable Energy Data Book, p. 18.
[16] Daniel Cusick, *Wind Power Industry Catches Another Breeze*, CLIMATEWIRE, Oct. 23, 2015, http://www.eenews.net/climatewire/stories/1060026805 (last accessed Nov. 25, 2015).
[17] 80 Fed. Reg. 64694-96; see also NREL Renewable Energy Data Book, p. 54 (reproduced as Figure A-4 in the appendix to this declaration) (illustrating this trend for wind).
[18] See U.S. Dep't of Energy, *Revolution…Now: The Future Arrives for Five Clean Energy Technologies – 2015 Update*, pp. 6–7 (Nov. 2015)

and U.S. solar generation has grown by 20 times.[19] By 2014, the most recent year before signature of the Rule, natural gas and renewables were generating nearly 41% of our nation's electricity, compared to just over 38% from coal.[20]

11. While gas-fired and renewable generation has increased, generation from coal and oil/gas steam fell by about 30% between 2000 and 2012.[21] The decreased demand for coal-fired electricity is also reflected in reduced coal production from mining. Between 2012 and 2013 alone, the total number of U.S. mines producing coal dropped by 14%.[22] The coal industry idled or closed 271 mines in 2013, and began production at fewer new (or reactivated) coal mines that year than at any time in at least a decade.[23] There were fewer active coal mines in 2013 than have ever been recorded.[24] According to the U.S. Energy Information Administration, an independent statistical agency within the U.S. Department of Energy, "The declining

[19] 80 Fed. Reg. 64694-96; see also NREL Renewable Energy Data Book, p. 63 (reproduced as Figure A-5 in the appendix to this declaration) (illustrating this trend for solar photovoltaic).
[20] See NREL Renewable Energy Data Book, p. 13 (reproduced as Figure A-2 in the appendix to this declaration). By 2014 natural gas generated 27.3% of the nation's electricity, and renewables generated 13.5%. Id.
[21] U.S. Energy Info. Admin., *Coal Mine Starts Continue to Decline*, TODAY IN ENERGY (Sept. 23, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=23052 (last accessed Nov. 30, 2015).
[22] Id.
[23] Id.
[24] Id. While preliminary mining data from 2014 shows a small increase in production and in the number of new and reactivated mines, the levels will remain below recent highs. Id.

number of new mines reflects reduced investment in the coal industry, strong competition from natural gas, stagnant electricity demand, a weak coal export market, and regulatory and permitting challenges"[25]—all of which preceded the Rule.

12. Recently published data demonstrates that these trends toward low- and zero-emitting sources of energy (and away from coal) not only long predate the Rule, but in fact continued in the period leading up to signature.[26] In the third quarter of 2015 alone, the U.S. installed more wind generation capacity—1,602 MW—than was installed in the entire first *three* quarters of 2014.[27] Solar photovoltaic generation capacity has grown by more than 1,000 MW for seven consecutive quarters, with installations of 1,393 MW in the second quarter of 2015 alone.[28]

13. The trend toward natural gas and away from coal continued in the months leading up to signature of the Rule. April and July 2015 were the first two months in American history that the U.S. generated more electricity from natural gas alone than

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[25] Id.

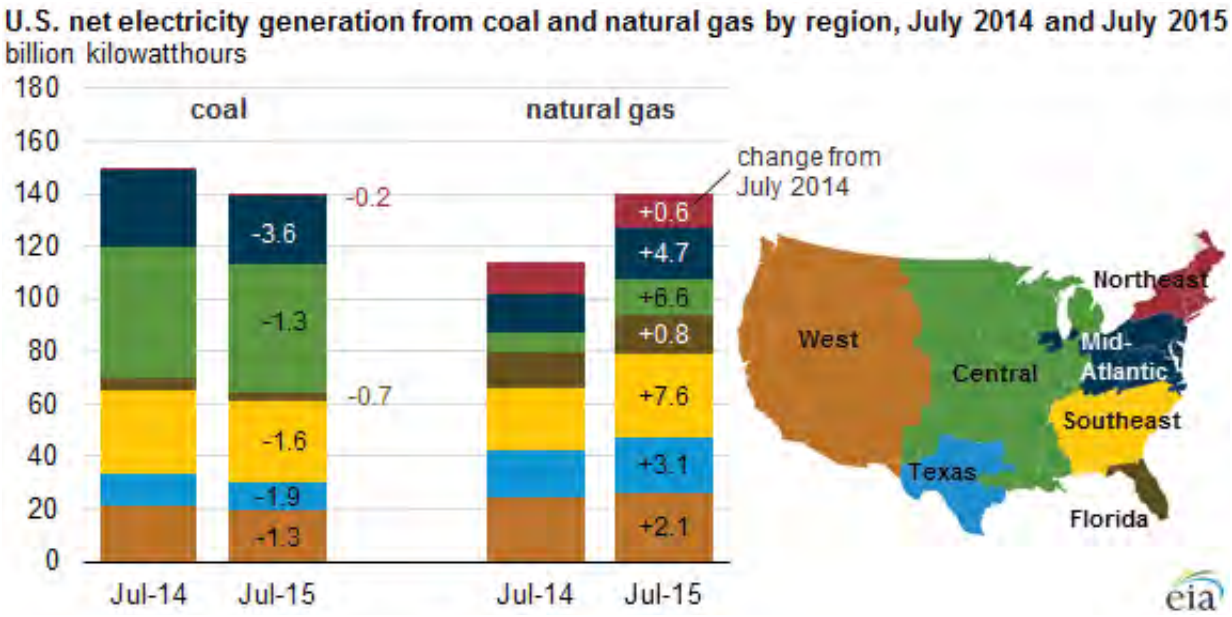
[26] To ensure that changes affected by the finalization of the Rule are not included within a business-as-usual (i.e. base case) scenario, this paragraph and the following paragraph include only data published since signature that describes actions taken or set in motion before signature.

[27] Daniel Cusick, *Wind Power Industry Catches Another Breeze*, CLIMATEWIRE, Oct. 23, 2015, http://www.eenews.net/climatewire/stories/1060026805 (last accessed Nov. 25, 2015).

[28] GTM Research/Solar Energy Industry Ass'n, *Solar Market Insight Report 2015 Q2,* U.S. SOLAR MARKET INSIGHT (Sept. 2015), https://www.seia.org/research-resources/solar-market-insight-report-2015-q2 (last accessed Nov. 30, 2015).

from coal.[29] In July 2015, in every region of the country, natural gas generation was higher (up 23.2% overall)—and coal generation was lower (down 6.3% overall)—than it had been in the previous July, as illustrated in the following figure from the independent U.S. Energy Information Administration:[30]

Figure 1[31]



[29] U.S. Energy Info. Admin., *Nationwide, Electricity Generation from Coal Falls While Natural Gas Rises*, TODAY IN ENERGY (Oct. 7, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=23252 (last accessed Nov. 30, 2015). In July 2015, natural gas generated 35% of U.S. electricity, while coal generated 34.9%. Id.

[30] Id. The largest decline in coal-fired generation came in the Mid-Atlantic region, followed by Texas. The Southeast and Central regions saw the largest increases in natural gas generation. See id.

[31] Id.

Those year-over-year trends were a continuation of changes seen from June 2014 to June 2015 (natural gas up 22.3%, coal down 7%),[32] and August 2014 to August 2015 (natural gas up 13.8%, coal down 8.6%).[33]

14. A main driver of these trends has been the continued decline in the price of natural gas. Between July 2014 and July 2015, the monthly average price of natural gas at Henry Hub, a major gas trading point, declined nearly 30%—from $4.14 to $2.91 per million Btu (MMBtu). Those prices have continued to drop; in September 2015, natural gas was down to $2.72/MMBtu. The price of natural gas also compares favorably to coal. Last July, in New York City, the average wholesale price of natural gas ($2.06/MMBtu) was less than the average wholesale price of Central Appalachian coal ($2.31/MMBtu)—even *before* accounting for the fact that natural gas power plants generate more electricity per MMBtu than coal-fired power plants do.[34]

15. In addition to these reductions in natural gas price, a second reason for these trends is that as the coal-fired fleet ages, more and more coal-fired power plants are

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[32] U.S. Energy Info. Admin., *EIA Electricity Monthly Update* (Aug. 26, 2015), *available at* http://www.eia.gov/electricity/monthly/update/archive/august2015/ (last accessed Nov. 25, 2015).
[33] U.S. Energy Info. Admin., *EIA Electricity Monthly Update* (Oct. 27, 2015), *available at* http://www.eia.gov/electricity/monthly/update/archive/october2015 (last accessed Nov. 25, 2015).
[34] U.S. Energy Info. Admin., *Nationwide, Electricity Generation from Coal Falls While Natural Gas Rises*, TODAY IN ENERGY (Oct. 7, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=23252 (last accessed Nov. 30, 2015).

retiring. Even in the absence of the Rule, much of the coal-fired fleet will need modernization and replacement. In the nearly five years preceding signature of the Rule, the average age of a retiring coal plant was 55 years old.[35] Over the next five years, coal plants representing about 23 GW of capacity are already scheduled for retirement.[36]

16. A third reason for the trend away from coal is the overall slowed growth in electricity demand. There has been a strong trend toward increasing demand-side energy efficiency. On the federal level, two statutes—the Energy Policy Act of 2005 and Energy Independence and Security Act of 2007—created new energy efficiency standards (including for household appliances like dishwashers, refrigerators, and freezers), required improvement of lighting efficiency by more than 70% by 2020, and required strict energy efficiency measures for federal buildings (including for public and assisted housing). In addition, the 2009 federal economic stimulus bill (*i.e.*, the

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[35] This is the average age at retirement of the approximately 28 GW of coal steam capacity that reported retirement to U.S. Energy Information Administration during this period. U.S. Energy Info. Admin., Form 860, 2014 Early Release, Table 3-1 (Generator, Operable, Retired and Cancelled), *available at* http://www.eia.gov/electricity/data/eia860/ (last accessed Nov. 25, 2015); U.S. Energy Info. Admin., *Electric Power Monthly,* Table 6.4, (June 2015), *available at* http://www.eia.gov/electricity/monthly/current_year/june2015.pdf (last accessed Nov. 25, 2015).

[36] Mark Chediak, *Why Coal Burners Don't Totally Hate Obama's Climate Plan*, BLOOMBERG BUSINESS (Nov. 14, 2015), *available at* http://www.bloomberg.com/news/articles/2015-11-13/why-coal-burners-don-t-totally-hate-obama-s-climate-plan (last accessed Nov. 25, 2015).

American Recovery and Reinvestment Act) provided funding for state energy efficiency programs. As a result of U.S. Department of Energy rulemakings, federal legislation, and consensus standards, more than 50 types of commercial and residential equipment have become subject to minimum energy efficiency standards.[37]

17. States have also heavily promoted demand-side energy efficiency. Twenty-four states have fully-funded specific energy savings targets.[38] Fifteen states (and the District of Columbia) have established appliance efficiency standards stricter than federal requirements,[39] which further drive advances in the national and global appliance industries. Budgets for electric efficiency programs totaled $5.9 billion in 2012, following rapid growth in funding for energy efficiency programs.[40]

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[37] U.S. Energy Info. Admin., *Consensus Process Provides Alternate Approach to Energy Efficiency Standard Development*, TODAY IN ENERGY (July 21, 2015), http://www.eia.gov/todayinenergy/detail.cfm?id=22152 (last accessed Nov. 25, 2015).

[38] American Council for an Energy-Efficient Economy, *State Energy Efficiency Resource Standards* (April 2015), *available at* http://aceee.org/sites/default/files/eers-04072015.pdf (last accessed Nov. 25, 2015). The count of 24 includes 22 with a stand-alone policy and two that count energy efficiency toward their renewable energy standards; it does not include Ohio or Indiana, which have eliminated their policies.

[39] Center for Climate and Energy Solutions, *Appliance Efficiency Standards*, *available at* http://www.c2es.org/us-states-regions/policy-maps/appliance-energy-efficiency (last accessed Nov. 25, 2015).

[40] 80 FR 64694-96, citing Annie Downs *et al.,* American Council for an Energy Efficient Economy, *The 2013 State Energy Efficiency Scorecard* (Nov. 2013), *available at* http://aceee.org/sites/default/files/publications/researchreports/e13k.pdf (last accessed Nov. 30, 2015).

18. The combination of federal, state, and local programs and market forces have resulted in real-world advances in energy efficiency that have driven down demand for electricity. For example, U.S. homes built in since 2000 use only 2% more energy than older homes, despite being an average of 30% larger.[41] From 1980 to 2009, energy use decreased by about 50% for new central air conditioners, by about 65% for new refrigerators, and by about 70% for new washing machines.[42] Over the same period, in the industrial sector, the amount of energy necessary to produce the same value of an average product dropped almost 40%.[43] Although U.S. electricity demand continues to increase, it is currently growing at its slowest rate in decades—in large part due to policies improving energy efficiency in homes, businesses, and technological devices.[44]

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[41] U.S. Energy Info. Admin., *Newer U.S. homes are 30% larger but consume about as much energy as older homes*, TODAY IN ENERGY (Feb. 12, 2013), http://www.eia.gov/todayinenergy/detail.cfm?id=9951 (last accessed Nov. 25, 2015).
[42] Steven Nadel, Neal Elliott, and Therese Langer, American Council for an Energy-Efficient Economy, *Energy Efficiency in the United States: 35 Years and Counting* (June 2015), p. 7, available at http://aceee.org/sites/default/files/publications/researchreports/e1502.pdf (last accessed Nov. 25, 2015).
[43] Steven Nadel, Neal Elliott, and Therese Langer, American Council for an Energy-Efficient Economy, *Energy Efficiency in the United States: 35 Years and Counting* (June 2015), p. vi, available at http://aceee.org/sites/default/files/publications/researchreports/e1502.pdf (last accessed Nov. 25, 2015).
[44] Dep't of Energy, QUADRENNIAL TECHNOLOGY REVIEW (Sept. 2015), p. 17, available at http://energy.gov/sites/prod/files/2015/09/f26/QTR2015-01-Challenges.pdf (last accessed Nov. 25, 2015).

19. All of these observed trends are projected to continue. With or without the Rule, natural gas and renewable energy generation is projected to increase, while coal-fired generation is projected to continue its decline.[45]

III. EPA's Regulatory Impact Analysis Projects That the Rule Will Modestly Impact Coal-Fired Generation Rates

20. The Rule is consistent with the long-term trends in the electricity sector discussed above, which have been in place for many years and are expected to continue—*i.e.*, reduced generation from coal-fired power plants and increased generation from gas-fired and renewable facilities. Part of the CO_2 reductions that the Rule is projected to achieve would have been achieved anyway due to those trends.

21. EPA prepared a Regulatory Impact Analysis to estimate potential impacts of illustrative approaches that states may implement to comply with the Rule. As indicated in the Regulatory Impact Analysis, EPA "expect[s] that the main impact of [the] rule on the nation's mix of generation will be to reduce coal-fired generation, but in an amount and by a rate that is consistent with recent historical declines in coal-fired generation. Specifically, from approximately 2005 to 2014, coal-fired generation declined at a rate that was greater than the rate of reduced coal-fired generation that we expect to result from this rulemaking [by] 2030. In addition, under this rule, the trends for all other types of generation, including natural gas-fired generation, nuclear

[45] 80 Fed. Reg. 64695/1-2.

generation, and renewable generation, will remain generally consistent with what their trends would be in the absence of this rule. In addition, this rule is expected to result in increases in demand-side [energy efficiency]."[46]

22. EPA projects that with the Rule, in 2030 coal-fired generation will represent 27.4% of total generation—only 5.4% less than projected without the Rule.[47] As noted in the preamble, by the time the Rule is fully implemented, those reductions are projected to be less than (and to have occurred more gradually than) the reductions that already occurred between 2002 and 2012.[48]

23. A large amount of the retirements projected to occur by 2030 are merely because the coal fleet is aging. By 2030, the average coal-fired power plant will be approximately 60 years old—five years older than the average age that coal-fired power plants have been retiring in recent years.

24. Similarly, significant renewable energy capacity is projected to be built by 2030 with or without the Rule. Although the Regulatory Impact Analysis projects that there will be an additional 90.3 GW of renewable capacity with the Rule in place, a full 74.1 GW of that total is expected to occur without the Rule, under business as usual.

December 3, 2015 Kevin P. Culligan

[46] 80 Fed. Reg. 64,785.
[47] RIA 3-27, Table 3-11.
[48] RIA 2-5.

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, ET AL., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL., Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF TERESA MARKS, FORMER DIRECTOR, ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

1. I, Teresa Marks, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. I served as Director of the Arkansas Department of Environmental Quality (ADEQ), the state's largest environmental policy and regulatory agency, from 2007 – 2014, and as President of the Environmental Council of the States, the national non-partisan association of state and territorial environmental agency leaders, from 2012 – 2013. Before my appointment as Director, I worked in the Arkansas Office of

Attorney General for 12 years, most recently as Deputy Attorney General for the Public Protection Department, where I represented the interests of consumers and state agencies in consumer protection, antitrust, utilities and environmental matters. Currently, I am the Principal Advisor to the EPA Administrator for Unconventional Oil and Gas.

3. As Director of ADEQ, I oversaw the work of approximately 400 employees charged with protecting, enhancing and restoring the environment for Arkansans. In that role, I worked closely with Colette D. Honorable, then Chair of the Arkansas Public Service Commission and now Commissioner of the Federal Energy Regulatory Commission. Together, on June 25, 2014, we held the first of many stakeholders' meetings on the Clean Power Plan in an effort to develop recommendations for Arkansas' 111(d) State Plan.

4. ADEQ's Air Division implements the federal Clean Air Act in the state and has received all delegable air programs, including Title V permitting, New Source Performance Standards, National Emission Standards for Hazards Air Pollutants, Prevention of Significant Deterioration, and National Ambient Air Quality Standards implementation.

5. Based on my experience, I believe Arkansas is well-positioned to prepare and submit a satisfactory 111(d) State Plan to implement the Clean Power Plan within the time frame allowed under the Rule.

6. During my time as Director of ADEQ, the Air Division successfully prepared and submitted several state plans implementing EPA air programs. Many of these state plans were the result of extensive public outreach and required close coordination with interested parties, including from the regulated community, other state agencies and local jurisdictions, the EPA, and every day Arkansans. Some plans required complex modeling and source inventory analyses covering numerous diverse stationary and mobile sources. One plan required the development of a state emissions budget and implementation of a trading program. See Appendix A. Put simply, the Air Division is well versed in handling complex regulatory undertakings required by the Clean Air Act.

7. As ADEQ's Declarant states, "The usual timeline to develop a [state implementation plan] averages 18 months," and, as he also notes, this process is similar to what would be required for developing a 111(d) State Plan. See Spencer Decl. ¶ 4. The Clean Power Plan, however, allows up to 36 months to prepare and submit a State Plan.[1] If Arkansas chooses not to submit a State Plan, EPA will

[1] On October 22, 2015, EPA issued a memorandum to assist states in preparing extension requests by September 6, 2016. See Memorandum from Stephen D. Page, Director, EPA Office of Air Quality Planning and Standards, *Initial Clean Power Plan Submittals under Section 111(d) of the Clean Air Act* (Oct. 22, 2015), available at http://www3.epa.gov/airquality/cpptoolbox/cpp-initial-subm-memo.pdf. According to ADEQ's Declarant, Arkansas appears to have already taken a number of steps satisfying the elements of the initial submittal. See Spencer Decl. ¶ 4.ii. Thus, I believe the State can easily prepare an extension request for submitting a State Plan by September 6, 2018.

implement a federal plan, which can be replaced by an approved State Plan at any time. This means that Arkansas is not required to expend *any* resources to comply with the Clean Power Plan and may focus instead on other sovereign priorities. However, should the state choose to develop its own plan, I believe Arkansas has the experience to develop an approvable State Plan and can do so within the EPA's timeline.

8. Unlike the various state plans identified in Appendix A, which addressed a broader range of sources and were prepared in comparable time frames, Arkansas' 111(d) State Plan need only target a small number of sources. For example, EPA's 2012 Unit-Level Data File identified only seven coal-fired steam units at five coal-fired plants in Arkansas. See 2012 Unit-Level Data Using the eGRID Methodology (EPA-HQ-OAR2013-0602-0254) (1 unit at John W. Turk Jr. Power Plant; 2 units at White Bluff Generating Plant; 1 unit at Flint Creek Power Plant; 2 units at Independence Steam Station; and 1 unit at Plum Point Energy Station). Furthermore, many of these sources are subject to the state's other regulatory programs, including the state's various implementation plans, and are represented by stakeholders who have been involved in developing recommendations for Arkansas' statewide 111(d) plan since at least June 25, 2014. Thus, ADEQ employees are already highly familiar with the specific units and stakeholders that would be subject to a 111(d) State Plan. Given the Air Division's experience in preparing and implementing other complex

plans under the Clean Air Act, I believe the Division is entirely capable of preparing the State's 111(d) plan within the time frame provided by the Rule.

9. Designing an approvable 111(d) State Plan is within the core competence of the Air Division and does not intrude on the "division of authority over electricity markets under the Federal Power Act," as claimed by Declarant from the Arkansas' Public Service Commission. See Thomas Decl. ¶ 6. As noted above, many of the sources that would be regulated under Arkansas' 111(d) State Plan are subject to other air regulatory programs. While these other programs inevitably influence the cost of producing electricity, and thus may affect the balance of generation, those ADEQ programs do not intrude on the authority of the Arkansas Public Service Commission and do not disrupt the division of authority within the state over electricity markets. The same is true with the Clean Power Plan. In fact, ADEQ and the Arkansas Public Service Commission "have consulted and their unified position is that there is a way to craft a state strategy that accounts for utility planning and decisions already underway and results in real and quantifiable reductions in carbon dioxide ('CO_2') emissions, all while preserving the 'remaining useful life' of the State's power plants and limiting . . . opportunities for overreach and encroachment upon the State's rights . . . ." ADEQ, *Arkansas's State Strategy re: EPA's "Clean Power Plan"* (Oct. 9, 2015), available at https://www.adeq.state.ar.us/air/planning/cpp/pdfs/meeting_handouts_no_blank_pages_20151009.pdf.

10. Compared to many other air programs, the Clean Power Plan affords states greater flexibility in designing approvable state plans to achieve the emission standards reflected in the emission guidelines. For example, Arkansas can simply establish emission limits for individual units within its jurisdiction. Alternatively, it could develop a trading program that allows sources to meet their emission allowances in whatever way they deem appropriate. As the State's Declarant states, "At this point in time, all options are on the table and under consideration". See Spencer Decl. ¶ 4(ii). Thus, Arkansas has before it every avenue to pursue a 111(d) State Plan that is customized to its unique circumstances and also ensures the protection, enhancement and restoration of the environment for current and future Arkansans.

11. Furthermore, contrary to one Declarant's assertions, the Clean Power Plan does not require "the reduction in overall energy consumption by every single current and future consumer of electric power" and is not based on "end-use energy efficiency". See Thomas Decl. ¶¶ 2 & 12. Indeed, these claims appear to be based on the inclusion of "building block 4," which relied on reductions in demand in electricity from whatever source, in EPA's Proposed Rule. The Final Rule, however, is not based on demand-side reduction. As EPA plainly states "neither the final guidelines' [best system of emission reduction] determination nor the emission performance rates for the two subcategories of affected EGUs take into account demand-side [energy efficiency]." 80 Fed. Reg. at 64,673. Accordingly, many of the

"requirements" Arkansas Declarant alleges are unprecedented or would "require legislative and constitutional changes on the state level" are not required by the Clean Power Plan.

December 3, 2015

Teresa Marks

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

State of West Virginia, et al., Petitioners, v. United States Environmental Protection Agency, et al., Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF CHRISTOPHER B. FIELD

1. I, DR. CHRISTOPHER FIELD, pursuant to 28 U.S.C. § 1746, declare, under penalty of perjury, that the following statements are true and correct based upon my personal knowledge of the scientific literature or upon information that I reviewed that was developed as part of definitive international and national assessments, as cited below.[i]

2. I am a climate scientist with more than 25 years of experience researching climate-change impacts. Professionally, I am the founding director of the Carnegie Institution for Science's Department of Global Ecology and the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies at Stanford University. My research, reflected in more than 250 scientific papers cited more than 50,000 times, ranges from studies on natural ecosystems, agriculture, and the global carbon

cycle to techniques for improving climate models and prospects for renewable energy systems.

3. I was, from 2008 to 2015, co-chair of Working Group II of the Intergovernmental Panel on Climate Change (IPCC) where I led the effort on the IPCC Special Report on "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation" (2012) (*1*) and the Working Group II contribution to the IPCC Fifth Assessment Report (2014) (*2, 3*) on Impacts, Adaptation, and Vulnerability. My scientific accomplishments have earned many recognitions, including election to the US National Academy of Sciences, the American Academy of Arts and Sciences, the Max Planck Research Award, the BBVA Frontiers of Knowledge Award, and the Roger Revelle Medal.

4. My bachelor's degree is from Harvard in biology in 1975. My PhD in biological sciences is from Stanford University, in 1981.

5. With continuing climate change, the world faces increasing risks of impacts. The risk of severe, widespread, and irreversible impacts rises quickly with the amount of warming. Because CO_2 emissions are extremely long-lived, the problem is cumulative: emissions contribute to the total concentration of CO_2 in the atmosphere and so, as a consequence, to risks and impacts identified in this declaration. Accordingly, any delay in reducing emissions, even by a few years, puts the world in the crosshairs for risks that are systematically more grave, more complicated, and more diverse.

6. Many impacts of climate change are already being felt, and risks of impacts will be exacerbated if we do not reduce our emissions in the near term. Other devastating impacts that could unfold over centuries may be irrevocably triggered without emissions reductions in the near-term. While many of the potential impacts can only be expressed as risks, it is important not to discount the possible impacts of climate change even when the impacts are not certain. Although the likelihood of some impacts may be relatively small, their consequences would be so enormous or grave that we must give ample consideration to even small chances of such outcomes. Many climate-change risks rise quickly with the amount of warming and thus with the amount of carbon dioxide emitted.

7. This declaration briefly summarizes current knowledge about three categories of risk where near-term action is critical and where any delay in emissions reductions leads to increased risk. The first category involves risks of extreme events that have already increased as a consequence of climate changes to date. For these risks, every increment of emissions has the potential to further shift the odds of potentially devastating extremes. A second category concerns the challenge of limiting cumulative emissions of carbon dioxide. If the world is to limit the likelihood of exceeding 2°C over pre-industrial temperatures, the window for cost-effective action is narrow and rapidly closing. A delay of only a few years will increase the likelihood of missing the target as well as the cost and complexity of reaching it. A third category involves major global-scale tipping points, thresholds beyond which the

earth is irreversibly committed to very large changes. Some of the tipping-point changes are massive impacts. Others are vicious-cycle processes that amplify warming. Evidence for the risk of tipping points is strong, but confidence about the precise level of warming sufficient to trigger each is low. For the three tipping points discussed here, the threshold may be near, and any delay in reducing emissions increases the risk of large, irreversible changes.

8. Actions taken by the United States have the potential to meaningfully reduce or exacerbate these risks because US actions are important on the global scale. By any measure, US emissions from fossil fuel combustion and cement production are a significant fraction of the global total (*4, 5*). For example, 2014 CO_2 emissions from the United States from fossil fuel combustion and cement production were 5.2 billion tons of CO_2. This constitutes 14% of total global emissions of CO_2 from fossil fuel and cement. Globally, the US is the country with the second largest annual emissions, behind only China. On a per capita basis or a cumulative basis, US emissions are the highest of any major country.

Risks Associated with Extreme Weather Events

9. Impacts of climate changes that have already occurred are widespread and consequential. Many of the most challenging impacts take the form of more frequent or more powerful extreme events, for example heat waves, heavy rain, regional drought, or coastal flooding. For extreme events with a link to climate change, each

increment of emissions has the potential to increase risks from climate changes already underway. The risk of extremes is already increasing. For example:

10. **Heat waves:** Most parts of the world have already experienced an increase in the frequency of high-temperature extremes. Across all land areas and in most individual areas, extremely warm summer temperatures and winter temperatures both occurred with increasing frequency from 1950 to 2000 (*6*). In the US, especially in the West, heat waves have become more frequent and intense (*7*). Recent advances in climate analysis make it possible to determine, often with a high degree of confidence, whether human-caused warming altered the odds of a particular extreme event. Across recent extreme heat events examined to date, human-caused warming has been implicated in increasing the odds in about 95% (*8*). For example, human-caused warming at least doubled the risk of the 2003 European heat wave, an event that led to an estimated 14,000 premature deaths in France and many more across Europe (*9*).

11. **Heavy precipitation:** The number of heavy precipitation events has likely increased in many land regions, especially North America (*1*). Across the continental US, once-in-five-year events from 2001 to 2012 occurred with a frequency about 40% greater than the average from 1901 to 1960. For the US, the fraction of rainfall occurring in the heaviest 1% of all rain events increased from 1958 to 2012 by 71% in the Northeast, 37% in the Midwest, and 27% in the Southeast (*10*). Of the recent extreme precipitation events carefully studied, human-caused climate change has

increased the odds in about 40% (*8*), including extensive floods in England and Wales in 2000 (*11*) and the deadly Himalayan snowstorm of 2014 (*12*).

12. **Severe drought in California:** California has been in the grip of a drought for the last four years. It is almost certainly the most severe drought in more than 500 years. In California, drought risk spikes when conditions are both dry and warm. The frequency of dry years in California has been relatively stable over the last century, but the number of unusually warm years has increased dramatically. As a consequence, it is now much more likely that, when conditions are dry, they are also warm, setting the stage for drought (*13*).

13. **Sea level rise and coastal flooding:** Across 55 US cities, sea level rise that has already occurred plus that expected through 2030 at least doubles the risk of a once-in-a-century-scale flood. For over half the cities, sea level rise more than triples the risk (*14*). Hurricane Sandy was a very unusual event, but the probability of water reaching the height of the Hurricane Sandy surge has increased one-third to two-thirds as a result of the sea level rise since 1950 (where the relative sea level rise in New York includes some subsidence of the land) (*15*). Since the mid-19th century in New York City, the highest-in-10-year storm tide has increased by 0.28m, and sea-level rise is 0.44m. Together, these effects increase the annual probability of a storm event overtopping a typical Manhattan seawall from less than 1% historically to 20-25% currently (*16*).

14. **Catastrophic western wildfires:** Over the past several decades, wildfires in the Western US have become an increasingly serious problem, with increases in the number of large fires and in the area burned. Earlier Spring snowmelt, one of the most consistent features of a warming climate, dramatically increases wildfire risk (*17*). The relationship between warming and fire across the West is so sensitive that, over the period 1950 to 2003, conditions only 1°C above average led to an increase in the area burned of over 200% across most of the region and more than 400% over parts of Arizona, Colorado, Idaho, Montana, Oregon, Utah, and Wyoming (*18*).

15. **Strong hurricanes:** Since 1970 in the North Atlantic, the overall frequency of hurricanes has increased, as well as the frequency and intensity of the strongest storms (*19*). Globally, maximum wind speeds in the strongest hurricanes are increasing (*20*), and hurricanes are reaching maximum intensity farther from the equator (*21*). The trend is noteworthy, because hurricanes are among the costliest of climate-related disasters (*1*).

16. These trends in extreme events are already occurring, with many clear links to climate change. Continued high emissions increase the risk of extremes with large consequences for people, businesses, nature, and society. Any delay in reducing emissions, even by a few years, has the potential to increase the odds of devastating extreme weather events.

Risks Associated with Warming Above Two Degrees Celsius

17. Cumulative emissions of greenhouse gases are approaching a level that commits Earth to sustained warming greater than 2°C (3.6°F) above pre-industrial levels. There is a rapidly closing window of opportunity for affordable emissions reductions that avoid unacceptable climate-change risks.

18. The goal of the UN Framework Convention on Climate Change is "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." There is no such thing as a guardrail temperature below which safety for all is assured, and impacts of climate changes to date have caused real harm. However, there has been a very active international and national discussion on a warming threshold that is broadly protective, while also economically and technically feasible. In 2010, parties to the UN Framework Convention on Climate Change recognized the need for urgent action to hold total warming below a warming threshold of 2°C above pre-industrial temperatures. Many lines of evidence document that 2°C above pre-industrial temperatures is a broadly protective upper limit (*22*). A wide range of risks increase as warming approaches or passes 2°C.

19. In its 2014 report, the IPCC assessed more than 100 key risks that cause reasons for concern in a changing climate, concluding that risk levels rise rapidly with warming, that we are already seeing increased risk from the nearly 1°C of warming through today, and that many risks become widespread and severe as warming approaches or rises past 2°C above preindustrial. Above 2°C warmer than

preindustrial, many risks become not only widespread and severe but also potentially irreversible, even with ambitious adaptive measures (*23*).

20. Risks of dangerous climate-change impacts vary across regions of the world and sectors of the economy (*2, 3*). Many involve threats to health and safety. These include risks from heat stress, food insecurity, and severe storms. Others involve threats to the economy from, for example, disrupted supply chains, decreased labor productivity, crop failures, and damage to infrastructure. Still others entail threats to the natural world, including species extinctions, biological invasions, and increased wildfire. Many climate-change risks are amplified by interactions with other stresses, for example crowding in urban areas, overallocation of freshwater supplies, or large numbers of people marginalized through conflict or poverty or displaced by persistent drought or a rising sea.

21. We are rapidly exhausting the remaining carbon budget necessary to manage these risks. A two-in-three probability of limiting warming from all greenhouse gases to less than 2°C above pre-industrial temperatures requires limiting future CO_2 emissions to less than 900 billion tons of CO_2 (*22*). Because warming from CO_2 persists for many centuries, the remaining budget is all we have, for the entire next millennium. Since the beginning of the industrial revolution, cumulative CO_2 emissions have been approximately 2000 billion tons, well over half of the total budget of 2900 billion tons of CO_2 for a two in three probability of limiting warming to 2°C or less. We emitted the first 2000 billion tons over more than 250 years, but at

2014 emission rates, we burn through the remaining budget of 900 billion tons of CO_2 in only 24 years. In every passing year without action, CO_2 emissions consume about 4% of the total remaining budget. Against this background, it is apparent why delaying emission reductions by even a few years can make a big difference for our prospects for staying within this budget and limiting the risks of severe consequences.

22. At the same time, the costs of holding warming to less than 2°C increase rapidly with delays. For any warming limit, a delay in implementing emissions reductions will require reductions that are more rapid, once they are started. Such accelerated emissions reductions will involve more drastic steps that tend to increase costs, add complexity, and broaden the scope for errors.

Risks Associated with Tipping Points

23. The world is approaching dangerous but poorly known emissions thresholds, beyond which massive changes could become unstoppable. For each of these thresholds, very large potential consequences create high risk, even when probabilities of worst-case outcomes are low or difficult to quantify. Examples of these dangerous tipping points include:

24. **Commitment to loss of a major ice sheet:** Two gigantic ice sheets on land, the Greenland Ice Sheet and the West Antarctic Ice Sheet, are at risk of crossing a tipping point leading to irreversible melting. This tipping point may occur at temperatures near present conditions. The Greenland Ice Sheet contains enough water to raise global sea level by about 7m (24 ft). Potential sea level rise for the West

Antarctic Ice Sheet is about 3m (10 ft). During the period from 129,000 to 116,000 years ago, when Earth's temperature was approximately 2°C warmer than present, sea level was at least 5m higher, with major contributions from both ice sheets (*24*). The best available calculations indicate that Greenland will pass a threshold of commitment to loss of the entire ice sheet at temperatures in the range of 1 to 4°C above pre-industrial, with many simulations initiating melting very near current conditions. Once melting passes the tipping point, it is effectively irreversible, because melting lowers the surface elevation, moving the ice surface into progressively warmer elevation zones. The threshold for irreversible melting of the West Antarctic Ice Sheet is estimated to be in the same range as that for Greenland, with recent papers suggesting that the threshold is very near or perhaps already transgressed (*25*). Melting of either ice sheet would proceed over several centuries, but with consequences that would fundamentally reshape the world's coastlines and eliminate low-lying islands. With complete loss of either the Greenland or West Antarctic ice sheet, large areas of land would disappear, including substantial parts of Alaska, Florida, Louisiana, Maryland, North Carolina, and Texas.

25. **Commitment to a mass extinction:** Plant and animal species everywhere face a host of challenges. Additional risks from a changing climate and an acidifying ocean interact with and often amplify pressures on species from land use, invasive species, air and water pollution, and hunting and fishing. A large fraction of land plants and animals cannot shift locations quickly enough to track suitable climates

(*23*). Some kinds of environments, for example warm-water coral reefs and sea ice habitats, may disappear completely. Based on species already extinct, rare, or endangered, some studies conclude that we are already in the early stages of a mass extinction event (*26*), something that could shape Earth's biological prospects for many millions of years.

26. **Initiation of major "vicious-cycle" warming:** Since the beginning of the industrial revolution, some of the human emissions of carbon dioxide have been removed from the atmosphere, with about half of the CO_2 from fossil fuels dissolving in the oceans or taken up through growth of plants (*27*). There is a risk that, at some level of warming, these natural processes will shift their direction and change from storing carbon to releasing it. This would cause a vicious cycle, where warming triggers release of carbon dioxide or methane to the atmosphere, which further increases warming.

27. Two kinds of environments are potentially vulnerable to vicious-cycle behavior. One is high-latitude ecosystems on permanently frozen soils or permafrost. The quantity of carbon in permafrost is huge, with more than twice as much as the total in the atmosphere. When permafrost soils thaw, the carbon is quickly converted to carbon dioxide and methane, which is an even more powerful greenhouse gas. One recent estimate is that, even with ambitious mitigation, permafrost releases of carbon dioxide and methane during the 21st century could produce warming equal to 20-30% of the remaining CO_2 budget for limiting warming to 2°C or less (*28*). With

continued high emissions, thawing permafrost could release sufficient carbon dioxide and methane to account for 60 to 100% of the budget for limiting warming to 2°C.

28. The other vulnerable carbon pool is in tropical forests. Warming can lead to drying that makes forests susceptible to drought and large, destructive wildfires that can convert large amounts of forest biomass into atmospheric carbon dioxide (*29, 30*). While the total quantity of carbon in tropical forests is not as large as that in permafrost, some areas are already near tipping points, with recent droughts decreasing the amount of carbon these forests are absorbing (*30*).

29. Because the warming levels sufficient to trip the triggers for these catastrophic events are not known with precision, but may be near, any delay in the near term in reducing emissions increases the risk of these severe and irreversible consequences.

December 3, 2015

Christopher Field

DR. CHRISTOPHER FIELD

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IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, ET AL. Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL. Respondents.	No. 15-1363 (and consolidated cases)

DECLARATION OF TODD STERN

1. I, Todd Stern, pursuant to 28 U.S.C. § 1746, declare, under penalty of perjury, that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Department of State (DOS), or on information supplied to me by employees under my supervision and employees in other DOS offices.

2. I am the Special Envoy for Climate Change at the State Department, a position I have held since January 26, 2009. In my role as Special Envoy for Climate Change I have played a central role in developing the U.S. international policy on climate change and have served as President Obama's chief climate change negotiator,

representing the U.S. internationally at the ministerial level in all bilateral and multilateral negotiations regarding climate change.

3. In my role as Special Envoy, I also oversee or supervise DOS employees who work on international climate change policy and international climate change negotiations, and I regularly meet with other U.S. government officials and managers to coordinate the work of my office with the work of other offices and agencies, including the U.S. Department of Treasury, the U.S. Department of Agriculture, the U.S. Department of Energy, and the U.S. Environmental Protection Agency.

4. My staff and I meet regularly with heads of state, lead climate negotiators, and other senior government officials from other countries and regional organizations, including the European Union, China, India, Canada, Brazil, and Mexico, to better understand each country's plans and actions to control Greenhouse Gas (GHG) emissions, to encourage them to take strong action, and to find areas of common ground in the negotiations under the U.N. Framework Convention on Climate Change (UNFCCC) and in other international fora. Such meetings have provided me an understanding of other countries' circumstances and of the influence of U.S. actions on their decisions. In particular, my role as co-chair of the U.S.-China Climate Change Working Group, including the Enhanced Policy Dialogue on climate change and the Domestic Policy Dialogue, during 2013-2015, provided

insight into the dynamics affecting China's decisions on climate change policy and the influence of U.S. actions and leadership on those decisions.

5. I have 18 years of experience working on climate change in a variety of roles, and have personal knowledge of the international negotiations on climate change. At the U.S. Department of the Treasury from 1999 to 2001, I advised the Secretary on the policy and politics of a broad range of economic and financial issues. I served in the White House from 1993 to 1999, where I played a central role in preparing key issues of domestic, economic and national security policy for the President's decision. From 1997 to 1999 I coordinated the Administration's initiative on global climate change and acted as the senior White House negotiator in climate negotiations. I have also been an Adjunct Lecturer at Harvard's Kennedy School of Government and a Resident Fellow at the German Marshall Fund of the United States, and I am a member of the Council on Foreign Relations.

6. The Climate Action Plan announced by President Obama in June 2013 contains a number of policies and programs that are intended to cut pollution that causes climate change and affects public health, including carbon dioxide (CO_2) and other Greenhouse Gases (GHGs).

7. When he announced the Climate Action Plan, President Obama stated that:

> "The actions I've announced today should send a strong signal to the world that America intends to take bold action to reduce carbon pollution. We will continue to lead by the power of our example, because that's what the United States of America has always done."

President Obama, Georgetown University, June 25, 2013.

8. The Climate Action Plan includes practical and cost-effective actions to reduce carbon pollution, including modernizing and strengthening the electricity supply grid, accelerating the supply of renewable energy, improving vehicle fuel economy standards, improving efficiency standards for appliances and government buildings, curbing emissions of hydrofluorocarbons, and other actions. The Clean Power Plan is a central part of implementing the U.S. Climate Action Plan, addressing the largest source of U.S. carbon dioxide (CO_2) emissions, the GHG that has consistently been shown to be the primary driver of recent anthropogenic climate change.

9. In my experience, the Clean Power Plan and other U.S. actions in the U.S. Climate Action Plan put us in a stronger, more credible position in the international effort against climate change. Other countries see what we are doing and are taking note of our actions. U.S. action to control GHG emissions complements and encourages increasingly ambitious actions by other countries. As the biggest economy and second largest emitter of GHGs, U.S. commitment and leadership are indispensable to effective international action.

10. The Clean Power Plan, finalized in August 2015, demonstrated U.S. resolve to address climate change and cemented the U.S. commitment to action. This and other U.S. climate pollution mitigation efforts helped encourage other countries to submit Intended Nationally Determined Contributions (INDCs), which have flooded in to the United Nations this year ahead of the December climate negotiations in Paris and are projected to bend the GHG emissions curve more than any other global action in history.

11. A stay of the Clean Power Plan might prompt other countries to scale back or renege on their own domestic mitigation efforts.

12. This is a critical time for action to address climate change. The science tells us that although we still have a window of time to prevent the worst impacts of climate change, that window is closing quickly. The Intergovernmental Panel on Climate Change (IPCC), which the U.S. and other countries involved in the climate negotiations rely upon as the most recent, carefully vetted science on climate change, has reviewed significant quantities of scientific evidence and concluded that:

- Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.
- Human influence on the climate system is clear. Human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, in global mean sea level rise, and in changes in some climate extremes. It is extremely likely that

human influence has been the dominant cause of the observed warming since the mid-20th century.

- Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system.

- Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions.

- Increasing magnitudes of warming increase the likelihood of severe, pervasive, and irreversible impacts.

- The overall risks of climate change impacts can be reduced by limiting the rate and magnitude of climate change.

- the longer the world delays addressing climate change, the more our options narrow and the more expensive it will become to address it.

- Effective mitigation will not be achieved if individual agents advance their own interests independently.

IPCC 5th Assessment Report, 2013, 2014.

13. The 21st Conference of the Parties (COP 21) of the UNFCCC is being held in Paris from November 30, 2015 to December 11, 2015. COP 21 is expected to adopt an ambitious, durable, and effective climate change agreement for the post-2020 period. UNFCCC Parties have decided to negotiate a global agreement at COP 21 that applies to all countries, both developed and developing.

14. The 194 countries participating in this negotiation have recognized that climate change is a global problem and that addressing it will require action on the part of emitters across the world. This need for action is particularly acute from those

large economies that account for the bulk of emissions of the pollutants that cause climate change, including the United States, the European Union, Brazil, China, and India.

15. The current negotiation departs from the approach taken in the Kyoto Protocol, in which developed countries each undertook a target that was internationally negotiated and binding as a matter of international law, while developing countries did not have targets. In contrast, the regime that is being developed calls upon each country, including the United States, to devise its own nationally determined post-2020 target or goal. This approach is designed to encourage ambition and broad participation in the agreement, including by developing countries, which effectively did not have any commitments, targets or otherwise, in the Kyoto Protocol, and which would be unlikely to accept negotiated targets. UNFCCC Parties also decided that prior to COP 21, Parties should submit Intended Nationally Determined Contributions (INDCs) to meet the goal of stabilizing emissions.

16. It is hoped that the COP 21 negotiation will result in ambitious climate action by all Parties, coupled with a robust transparency system for the reporting and review of each Party's actions. Realizing this goal requires the development of mutual trust and confidence among the UNFCCC Parties, and in particular the major

greenhouse gas emitters, such as China, India, the European Union, and the United States.

17. UNFCCC Parties have previously noted the need for urgent action to hold the increase in the global average temperatures below 2 degrees Celsius above pre-industrial levels, in order to lessen the impacts of climate change. This means that all countries with major economies, including the United States, will need to take significant action to control emissions, and that they will need to make substantial progress on controlling emissions in the near term. The successful implementation of the Clean Power Plan will enable our nation to continue leading by example.

18. The negotiations in Paris that are expected to conclude with the adoption of an agreement represent a key point in the effort to tackle the causes of climate change, but they do not represent an end point. Parties will still need to decide whether to join the agreement, which will not take effect until 2020. Parties will also be working to implement their contributions, and will be expected to come back to the table regularly to assess collective progress, and to table new nationally determined mitigation contributions. The successful implementation of the Clean Power Plan will enable the United States to continue leading by example as other major countries are poised to take significant action to address climate change.

19. U.S. leadership on climate change has positively influenced the climate change policies of major emitters around the world, including developing countries with significant emissions such as China, India, Brazil, and Mexico.

20. Based on my experience as the lead U.S. climate negotiator, I believe that the ambition and implementation of many other countries' current and future emission control actions depends significantly on the understanding by their leaders of the seriousness of the U.S. commitment to address emissions. For many countries, willingness to take action depends on collective trust that the major emitters are taking action. If a stay of the Clean Power Plan is granted, there is a real threat that some other countries, including major emitters, might reduce the intensity or pace of their actions or even fail to achieve their commitments.

21. China's recent efforts to control emissions bear special mention. There can be no solution to the problem of climate change without strong action by both the U.S. and China, the largest two emitters, simply due to the unforgiving math of emissions.

22. In the November 2014 U.S.-China Joint Announcement on Climate Change (Joint Statement), China and the U.S. announced their respective post-2020 actions on climate change. China announced that it intends to achieve the peaking of CO2

emissions around 2030 and to make best efforts to peak early, and that it intends to increase the share of non-fossil fuels in primary energy consumption to around 20% by 2030. In June 2015, China formally submitted its INDC to the United Nations climate negotiation process, which included both of these targets. In addition, China included in its INDC a commitment to reduce carbon emissions per unit of GDP by 60 to 65 percent, and a commitment to increase forest stock by around 4.5 billion cubic meters, from 2005 levels by 2030. For China to achieve their targets for non-fossil fuels and emissions peak requires a substantial increase in effort beyond business-as-usual. China will need to build an estimated 900 Gigawatts of new non-fossil capacity in order to achieve its non-fossil fuel target.

23. China outlined additional actions it plans to take to achieve its targets in a September 25, 2015 U.S.-China Joint Presidential Statement on Climate Change. In that statement, President Obama and China's President Xi Jinping reaffirmed their shared conviction that climate change is one of the greatest threats facing humanity and that the U.S. and China have a critical role to play in addressing it. China further affirmed that it would take significant new actions to achieve its targets, including the use of a "green dispatch" system that prioritizes power generation from renewable sources; the launch in 2017 of a national emissions trading system covering CO_2 emissions from power generators and other key

sectors; and the commitment of $3.1 billion to help developing countries combat climate change.

24. The actions outlined in the two joint statements supplement a significant set of actions already underway in China to reduce emissions. China is rapidly increasing wind and solar capacity, as well as the share of natural gas in its energy supply. Between 2005 and 2013, China tripled its installed renewable energy capacity in the power sector. China ranked first in the world in installed wind power in 2014. China ranked second in the world in installed solar power capacity in 2014. China accounted for nearly a third of global renewable energy investment in 2014, ranking first in renewable energy investment.

25. While China is still building new electric power plants that use fossil fuels (coal, and increasingly, natural gas), the new plants are far more efficient than older plants, many of which China is shutting down. An increasing proportion of new fossil-fuel power plants are highly efficient natural gas plants, which emit far less CO_2 than coal-fired power plants. The new coal plants use far less coal per unit of electricity produced than the older power plants that they displace. By producing electricity from coal more efficiently, these power plants lead to lower emissions per unit of electricity produced.

26. China and the United States are not the only countries taking action. To date, more than 180 countries have submitted their plans for addressing climate change, representing 98% of all global greenhouse gas emissions. This includes all of the world's largest emitters - among them India, Russia, Japan, South Korea, Canada, Indonesia, Mexico, Brazil, Australia, and South Africa. This process of setting national targets or goals and developing plans to meet them builds momentum for concrete climate action.

27. The steps being taken by other countries are striking. For example, Germany already generates 27 percent of its electricity from non-hydro renewable sources, while Denmark generates more than 40 percent from such sources. The United Kingdom announced plans to shut down all of its coal-fired power plants by 2023, except those that convert to alternate fuels or install carbon capture and storage equipment. In March 2015, the European Union (E.U.) submitted its INDC to the UNFCCC. The E.U. INDC commits to at least 40 percent GHG reductions below 1990 levels by 2030.

28. India submitted its INDC in September, 2015, pledging to raise the share of zero-carbon electricity generating capacity to 40% of the total by 2030, a massive increase from about 15% today, and to reduce the emissions intensity of the economy - the amount of greenhouse gases emitted per unit of Gross Domestic Product (GDP) - by 33-35% by 2030, compared to 2005 levels. Since the

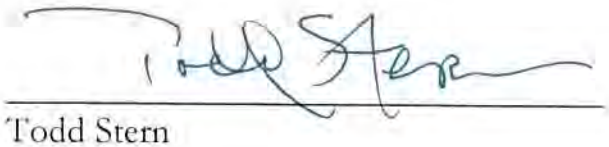
population and economy of India are still growing rapidly, with hundreds of millions of people still living in poverty with little or no access to electricity, India framed one target in its INDC in terms of emissions intensity. This includes plans for generating 175 GW of renewable energy by 2022. Although more than 300 million people in India currently lack access to electricity, Prime Minister Modi has announced plans to produce enough solar electricity to power a light bulb in every home by 2019.

29. In September, 2015 Brazil announced at the U.N. its pledge to cut carbon emissions by 37 percent by 2025 (from 2005 levels). This is a reduction in absolute emissions, not in emissions intensity. Brazil also committed to end illegal deforestation, and restore millions of acres of degraded forest. Limiting deforestation and restoring degraded forests helps to store CO_2 that would otherwise be emitted to the atmosphere.

30. In March, 2015 Mexico submitted its INDC, committing to reduce its emissions of GHGs 22 percent below business-as-usual by 2030. In April 2012 Mexico adopted the General Law on Climate Change, one of the first climate laws in a developing country. Under this law, Mexico aims to reduce its emissions by 50% from 2000 levels by 2050. Mexico is working to develop additional actions to achieve this objective.

31. The U.S.' willingness to make significant reductions -- including from power plants, our single largest source of climate pollution -- has helped establish U.S. leadership with respect to climate change internationally. The Clean Power Plan and other U.S. climate pollution mitigation efforts have had a very positive impact on efforts by other countries to control their emissions. The successful implementation of the Clean Power Plan will enable the United States to continue leading by example and support the building global momentum, garnered over the past several years in no small part by U.S. action and leadership, to take concrete actions to control GHG emissions and meaningfully address climate change.

December 3, 2015



Todd Stern

ORAL ARGUMENT NOT YET SCHEDULED

No. 15-1363 and Consolidated Cases

(15-1364, 15-1365, 15-1366, 15-1367, 15-1368, 15-1370, 15-1371, 15-1372, 15-1373, 15-1374, 15-1375, 15-1376, 15-1377, 15-1378, 15-1379, 15-1380, 15-1382, 15-1383, 15-1386, 15-1393, 15-1398, 15-1409, 15-1410, 15-1413, 15-1418, 15-1422, 15-1432)

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

WEST VIRGINIA, et al.,

Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY
AND REGINA A. MCCARTHY, ADMINISTRATOR,

Respondents.

DECLARATION OF J.D. FURSTENWERTH

I, J.D. Furstenwerth, do hereby declare that the following statements made by me under oath are true and accurate to the best of my knowledge, information and belief:

1. I am Senior Director of Environmental Services with Calpine Corporation ("Calpine"). I am providing this declaration in support of the Power Companies' response in opposition to the motions for stay filed by several Petitioners in the above-captioned litigation.

2. Calpine owns 83 natural gas-fired and renewable geothermal power plants in operation or under construction that are capable of delivering nearly 27,000 megawatts of electricity to customers in the United States ("U.S."). Of the 10 largest U.S. electricity generators, Calpine has the lowest emissions intensity for both nitrogen oxides and sulfur dioxide, two major contributors to soot and smog pollution.[1] Calpine also has the lowest emissions intensity for carbon dioxide ("CO_2") among the fossil fleets of those 10 largest electricity generators.[2]

3. Calpine supports the final rule issued by the U.S. Environmental Protection Agency ("EPA") entitled "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units" 80 Fed. Reg. 64,662 (Oct. 23, 2015) (hereinafter "Clean Power Plan" or "Plan"). This support has been unwavering since the Clean Power Plan's infancy, as demonstrated through Calpine's submission of multiple comments, both as a group and individually, which supported its objectives, legality and reasonableness.[3] When the Clean Power Plan was

[1] Natural Resources Defense Council et al., Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States, at 10 (2015), *available at*: http://www.nrdc.org/air/pollution/benchmarking/files/benchmarking-2015.pdf (emissions and generation data from 2013).

[2] *Id.*

[3] *See* Letter from J.D. Furstenwerth, Senior Director, Environmental Services, Calpine to EPA (Nov. 26, 2014), EPA-HQ-OAR-2013-0602-22799; Letter from Calpine Corporation et al. to EPA (Dec. 1, 2014) EPA-HQ-OAR-2013-0602-23167 (joint comments on proposed CPP by companies including Calpine, National Grid, and Seattle City Light); Letter from Michael J. Bradley, Director, The Clean Energy Group to EPA (Dec. 1, 2014) EPA-HQ-OAR-2013-0602-23169 (comments on proposed CPP by the Clean Energy Group, a diverse coalition including Calpine).

prematurely challenged by several parties, including Petitioners in these proceedings, Calpine supported EPA by filing an *amicus curiae* brief, wherein it urged the Court to dismiss those challenges and refrain from short-circuiting the ordinary rulemaking process.[4]

4. Calpine's support for the Clean Power Plan stems from its commitment to environmental excellence and belief that strong environmental objectives can operate in tandem with sound business objectives. In step with this commitment, Calpine was proud to join the White House's American Business Act on Climate Pledge, through which we pledged to continue our efforts to work with the states where we operate to help develop the most effective implementation plans for Clean Power Plan compliance, support market-based solutions aimed at lowering emissions in the power sector and explore investment in carbon technologies, such as efficient natural gas turbines, renewable and battery storage and.[5]

5. The tremendous flexibility afforded to states to develop plans suited to their unique needs and mix of electric generating units is one of the greatest virtues of

[4] Brief for Calpine as Amicus Curiae Supporting Respondents, *In re Murray Energy Corp.*, 788 F.3d 330 (D.C. Cir. 2015).

[5] *See* "Fact Sheet: White House Announces Commitments to the American Business Act on Climate Pledge", The White House, Office of the Press Secretary (Oct. 19, 2015); *available at*: https://www.whitehouse.gov/the-press-office/2015/10/19/fact-sheet-white-house-announces-commitments-american-business-act (announcing that 81 companies, with operations in all 50 states, employing over 9 million people, representing more than $3 trillion in annual revenue, and having a combined market capitalization of over $5 trillion, signed the American Business Act on Climate Pledge to demonstrate support for action on climate change and the conclusion of a climate change agreement in Paris that takes a strong step forward toward a low-carbon, sustainable future).

the Clean Power Plan. The Plan operates by requiring states to develop plans that provide for the establishment of emission limitations for two subcategories of affected units, which limitations must reflect the best system of emissions reduction that has been adequately demonstrated (hereinafter, the "BSER"). In turn, the Plan provides states a great deal of flexibility to adopt those limitations in different forms, including market-based programs that allow owners of the affected units significant flexibility in demonstrating compliance.

6. In evaluating the strategies that power generators and states were already effectively using to reduce CO_2 emissions from the affected units, EPA determined that the BSER should be based on the emission reduction potential achievable by use of three "building blocks", including (1) heat rate improvements at affected steam generating units, (2) shifting generation from higher-emitting affected steam generating units to lower-emitting existing natural gas combined cycle ("NGCC") units, and (3) increasing generation from new zero-emitting renewable sources in place of affected fossil fuel-fired generating units. By evaluating what reductions were achievable through application of these existing strategies, EPA calculated two nationally uniform CO_2 emission performance rates to be achieved by affected generating units: 1,305 pounds ("lb") of CO_2 per megawatt-hour ("MWh") for fossil fuel-fired steam generating units, and 771 lb CO_2 / MWh for stationary combustion turbines. These represent the final rates to be achieved by the affected generating units in 2030 and thereafter, with a gradual phase-in of the building blocks and resulting emission reduction obligations before then.

7. Rather than prescribing how each affected unit must achieve these rates (*i.e.*, by mandating application of each building block in a particular manner at a particular time), EPA provided states broad and open-ended flexibility to design implementation plans suited to their unique needs and circumstances. Recognizing that implementation would take time, EPA set generous deadlines for submittal of final state implementation plans (September 6, 2018), interim compliance (over the period of January 1, 2022 to December 31, 2029), and final achievement of the emission performance rates or equivalent state rate- or mass-based goals (starting in 2030).

8. Calpine has long supported the extended time horizons and flexibility inherent in the Clean Power Plan's structure, recognizing that it provides states the opportunity to tailor carbon reduction programs to the unique needs of their affected generating units. In particular, Calpine supports this flexibility because it allows states to harness the efficiency of the market to achieve reductions by establishing trading programs, including mass-based allowance trading programs. Calpine believes that such trading programs are the optimal method for reducing CO_2 emissions from the power sector and best reflect the interconnected market realities that define it. Calpine has experienced the success of these programs first-hand through its participation in California's Cap-and-Trade program implemented under Assembly Bill ("AB") 32 and nine northeastern states' Regional Greenhouse Gas Initiative ("RGGI"). This experience has demonstrated to Calpine how particularly well-suited trading programs—and, in particular, mass-based allowance trading programs—are to reducing CO_2 emissions from the power sector.

9. Successful trading programs have developed in numerous other contexts directly affecting the power sector, such as under the Acid Rain Program, Clean Air Interstate Rule ("CAIR"), the Cross State Air Pollution Rule ("CSAPR"), and the Houston area's Mass Emissions Cap-and-Trade Program for NO_x. Some of these programs have been implemented for many years, like the Acid Rain program, which first went into effect two decades ago. In fact, many of the states and utility-sector Petitioners in this case have experience implementing and complying with these programs. Calpine likewise has experience complying with these programs, and its experiences have only strengthened its support for trading through emission markets as the most appropriate means for achieving cost-effective emission reductions from the power sector.

10. The Clean Power Plan will apply to affected generating units no differently than many existing and historic programs under the Clean Air Act designed to reduce emissions from the power sector, which operate by considering reductions available across the electric grid and creating incentives both to reduce the emissions rate of individual units and to shift dispatch from higher- to lower-emitting units. Despite assertions to the contrary, the power sector has grown accustomed to meeting these obligations, the costs of which are regularly incorporated into wholesale power prices and commercial terms, no differently than other generation costs. For instance, Calpine regularly includes provisions addressing greenhouse gas and other emissions in its power purchase agreements to address the parties' respective obligations with respect to both existing and potential future regulatory obligations.

11. Additionally, generators and utilities are used to working with independent system operators and regional transmission organizations to build emissions costs into their market rules; an example of this includes the California Independent System Operator's ("CAISO") adoption of tariff revisions in 2012 to address AB 32 compliance costs, which were subsequently approved by FERC.[6] Since adoption of the tariff revisions, a generator's projected emissions costs are built into its bids on the CAISO markets and recovered in the market clearing price of power. Examples like this demonstrate that these costs can be incorporated into power prices without impairing the operation of the power market or the reliability of the electricity grid.

12. The cost of compliance under existing CO_2 trading programs has been reasonable in Calpine's experience and never approached the "exorbitant" heights that certain Petitioners have warned.[7] Stable, predictable emissions markets with appropriately priced allowances or credits have repeatedly developed where trading programs are implemented as the means of achieving emission reductions, including under AB 32, RGGI, and the Clean Air Act programs designed to address acid rain and interstate transport of criteria pollutants.

13. Certain Petitioners and their declarants have nonetheless asserted that, as a result of the Clean Power Plan's tremendous flexibility, there is no guarantee

[6] *See* Order on Proposed Tariff Revisions – California Independent System Operator Corporation, 141 FERC ¶ 61,237 (2012) (approving proposed tariff revisions to incorporate as a variable cost of generation in the calculation of resource commitment costs the greenhouse gas allowances anticipated to be required under AB 32).
[7] *See* Oklahoma Mot. at 12.

emissions trading will be available under any particular state plan and that, even if adopted, the price of allowances or emission rate credits will be "exorbitantly expensive."[8] *See also* Utility Mot., Attach. L McInnes Decl. ¶ 10 ("there is no guarantee that the states in which Tri-State has generation will opt into the market-based programs. Even if they do, the cost of credits or allowances may be unreasonably priced."); *id.* Attach. N, Johnson Decl. ¶ 31 ("Seminole will need to make decisions and commit to significant expenditures starting in 2016 . . . It does not have the luxury of waiting to see if Florida adopts a trading program or if that program will provide sufficient credits or allowances, at economic prices, to allow the continued operation . . . "); *id.* Attach. P, Campbell Decl. ¶ 22 ("EKPC cannot wait for . . . any CO_2 trading market to be developed, before expending substantial sums on compliance.").[9]

14. Calpine's extensive experience operating under existing emission trading programs demonstrates that these fears are unfounded. Calpine anticipates continued compliance with California's Cap-and-Trade Program and RGGI to meet its reduction obligations under the Clean Power Plan. Given the demonstrated success of these programs at reducing CO_2 emissions, the suitability of CO_2 to market mechanisms (in light of the global nature of its harms), and the electricity sector's familiarity with emissions trading programs, Calpine expects that emissions markets

[8] *See* Oklahoma Mot. at 12; NorthWestern Mot., Hines & Cashell Decl. ¶ 44; Utility Mot., Attach. L McInnes Decl. ¶ 18.
[9] *See also* Utility Mot., Attach. S. Jura ¶ 24.

will develop throughout the rest of the country and that trading will be available as a means for compliance.

15. Beyond emissions trading, owners of affected generating units can undertake direct measures to reduce emissions within their respective fleets. Calpine continues to undertake investments in clean generation technology that reduce emissions across its portfolio, resulting in a fleet that includes some of the newest and cleanest energy centers in the nation. Calpine has maintained a low fleet-wide emissions rate in part through its ownership and operation of fourteen geothermal power plants at The Geysers, California, which together possess a net generating capacity of approximately 725 MW and provide a steady, baseload supply of renewable power 24 hours a day, seven days a week.

16. The market shift towards gas-fired and renewable generation reflected by the BSER was set in motion by a variety of factors, all of which predate the Clean Power Plan. Chief among them are an abundant supply of comparatively inexpensive natural gas and the increasing competitiveness of renewable generation, coupled with the ability of gas-fired and renewable sources to produce electricity with significantly fewer emissions relative to coal-fired generation, or zero emissions entirely.

17. Existing regulatory requirements have also played a role in accelerating this shift. Implementation of federal and state air pollution standards, CSAPR, California's suite of climate initiatives, including Senate Bill 1368,[10] and RGGI have all

[10] *See* Cal. Pub. Util. Code §§ 8340-8341 (prohibiting any load-serving entity or public utility from entering into any long-term financial commitment unless any baseload generation supplied under the commitment complies with the emissions performance

independently driven emissions reductions across the electricity sector and, as a consequence, reductions in coal-fired generation. These existing regulatory drivers, along with independent economic trends within the power sector, are causing coal-fired generation to no longer be competitive.

18. Utilities and generators throughout the electric sector have actively sought to eliminate coal-fired generation from their fleets and portfolios and to replace it with more economical, lower-emitting sources. *See*, *e.g.*, Decl. of James Baggs ¶ 6 (C3) (describing Seattle City Light's divestment of a coal plant in 2000). While co-firing and fuel-switching were not included as one of the building blocks upon which the Clean Power Plan's goals are based, the owners of affected units can also reduce emission from coal-fired power plants by co-firing with natural gas or switching entirely to gas combustion at existing steam units. Calpine, for instance, required as a precondition of its acquisition of Conectiv Energy's assets in 2010 that the coal-fired Edge Moor and Deepwater facilities in Delaware and New Jersey, respectively, discontinue burning coal and be transitioned to natural gas. While Calpine was an early adopter of such an emissions reduction strategy, its experience in this regard is by no means unique.[11]

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standard established by the California Public Utilities Commission and California Energy Commission, currently set at 1,100 lb/MWh CO_2).

[11] *See* Letter from Tomás Carbonell and Megan Ceronsky, Environmental Defense Fund (Dec. 1, 2014), EPA-HQ-OAR-2013-0602-23140, Attach. C, "Natural Gas Conversion and Cofiring for Coal-Fired Utility Boilers", Andover Technology Partners (Nov. 30, 2014) at Table E.1. (providing summary of several planned and completed natural gas conversion case studies, including Calpine's Edge Moor and Deepwater facilities).

19. Nothing in the Clean Power Plan requires retirement of a coal-fired unit in the next several years, despite the claims of certain industry Petitioners. *See*, *e.g.*, Nat'l Mining Assoc. Mot., Exh. 3, Marshall Decl. ¶ 14 ("the rule will trigger a wave of early retirements of coal-fueled electric generating stations well before the 2022 compliance date…"). What exactly will be required of any particular generating unit when the emission reduction obligations first go into effect more than six years from now in 2022 has yet to be determined and will depend in significant part on the final plans developed by states, which are not due until late 2018. Further, because the Clean Power Plan phases in emission reduction obligations in three multi-year "interim step" compliance periods between January 1, 2022 and December 31, 2029, affected units will not necessarily even need to begin achieving reductions immediately on January 1, 2022, when the first interim step period (running through December 31, 2024) commences.

20. Because of the tremendous flexibility and generous lead times afforded by the Clean Power Plan, no action need be taken during the pendency of this litigation by any owner of affected units. Any near-term decision to retire a particular coal-fired generating unit, procure replacement generation by contract, or begin development of new units during that time would be the owner's economic choice, attributable to the poor position and downward trajectory of coal-fired generation in the electricity market, and *not* to the emission reduction obligations that will ultimately go into effect pursuant to the Clean Power Plan, long after this litigation is complete.

21. Certain industry Petitioners have relied on EPA's Integrated Planning Model ("IPM") to support the proposition that the Clean Power Plan *requires*

retirements during the pendency of this litigation in order to achieve future compliance. They have suggested that, because IPM predicts that owners with perfect foresight and knowledge of what the future will bring would choose to retire generating units in 2016-2017—years before any regulatory obligation imposed by the Clean Power Plan goes into effect—those projections must serve as the basis for determining what individual companies will, in fact, do during the pendency of this litigation. *See* Utility Mot., Attach. E Greene at ¶ 15 ("EPA's results can be used to assess what individual companies would have to do in order to comply with the Clean Power Plan now.").

22. No prudent owner of an affected coal unit would base its decision to retire a unit on IPM's projections. It is well known throughout the sector that, while IPM makes sound long-term aggregate predictions for the power sector, its specific near-term projections for individual generating units are not accurate predictors of actual behavior.[12] Importantly, IPM does not and cannot account for real world uncertainty, and thus does not capture the "option value" of deferring early retirement decisions until those uncertainties are resolved.[13] If an affected unit were actually to be retired during the course of this litigation, that decision would be based on the owner's economic evaluation of (1) the likelihood that the Clean Power Plan will or will not be in effect more than six years from now in 2022 and (2) a comparison of the projected costs to maintain existing units, relative to sinking those costs

[12] *See* Decl. of Dallas Burtraw and Joshua Linn (to be filed in support of Environmental and Public Health Intervenors' Response) ¶¶ 20-24.
[13] *See id.* at ¶ 22.

immediately into more efficient units. Any near term retirement would therefore be a discretionary, forward-looking business decision—and not a closure that is mandated by the Clean Power Plan.

23. At an even more basic level, it is not even apparent that units not already scheduled for closure will actually be retired during the course of this litigation. Despite suggestions of imminent retirement by some of Petitioners' declarants, no declarant actually states that they will be retiring units not already scheduled for retirement in the near-term. In fact, some of Petitioners' declarants note that, if owners actually intended to take specific units out of service by the beginning of next year, they would have already announced their intent to do so. *See* Nat'l Mining Assoc. Mot., Exh. 1, Schwartz Decl. ¶ 21 (explaining that "any unit intending to retire by the end of 2015 or even in 2016 would long since have announced that fact.").

24. Similarly, claims that the uncertainty created by the Clean Power Plan is preventing certain utilities from moving forward with major contracts,[14] or causing them to make bad deals at this time,[15] are unfounded. As suggested previously, Calpine regularly addresses uncertainty regarding future carbon regulations in the

[14] *See*, *e.g.*, Utility Mot., Attach. J. Rasmussen Decl. ¶¶ 11-15 (suggesting that, in the absence of a stay, Deseret Power cannot extend power sales contracts that expire in the 2020-2025 timeframe because of the risk that its primary generating resource will not be available to provide baseload power after 2022).

[15] *See*, *e.g.*, NorthWestern Mot., Hines & Cashell Decl. ¶ 46 ("Because the Final Rule creates uncertainty… NorthWestern now must incorporate into the contract negotiations the additional risks posed by the potential premature closing of the Colstrip Plant. Incorporation of these risks will increase the overall costs associated with the contract, lessening or eliminating the benefits the contract otherwise would have provided…"); Utility Mot., Attach. L, McInnes Decl. ¶ 8 ("The uncertainty surrounding the Rule may force Tri-State to make sub-optimal financing decisions.").

terms of its power purchase agreements. This is done through negotiation of contract terms that specify how existing and future emissions costs will be borne as between the purchaser and seller of power. This is the normal and prudent means of addressing regulatory risk within the power sector and a routine cost of business that actors within this sector absorb in recognition of the ever-present prospect of regulatory change and increasingly stringent environmental requirements. Industry Petitioners' suggestions that they should be afforded an environment within which to make business decisions free of any regulatory risk associated with carbon emissions[16] are both naïve and unrealistic. Even if a stay were granted, it would be unreasonable and imprudent for a utility *not* to address the risk of future carbon regulations, including under the Clean Power Plan, in its contracts for purchase and sale of power and its transactions to secure long-term future fuel supplies.

25. In this same vein, certain representatives of Industry Petitioners have claimed that they need to act now to ensure favorable contract prices for new turbines and heat recovery steam generators, before the Clean Power Plan drives those prices upward.[17] That a utility owner would make such major commitments now—while, at the same time, actively seeking to have the Clean Power Plan struck down—strains credibility to its breaking point. Regardless, any decision to proceed with a

[16] *See supra* notes 11 and 12. *See also* Utility Mot., Attach. G, Brummett Decl. ¶ 38-39 (suggesting that San Miguel Electrical Cooperative might forgo opening a new area of a lignite mine unless the Clean Power Plan is stayed, which could cause it to continue mining lignite from areas of the mine that are more expensive to mine).

[17] *See* Basin Electric Mot., Attach. 2 McCollam ¶ 21 ("In order to ensure adequate supply for the massive gas and wind build out in our system, at the most reasonable cost possible, Basin Electric will attempt to enter into equipment supply contracts much earlier than normally necessary for a typical project schedule.").

commitment to "lock-in" potentially more favorable pricing today[18] would be a purely economic decision and not due to any imminently applicable regulatory mandate imposed by the Clean Power Plan.

26. Even if an existing coal-fired unit should be retired, it is not necessarily the case that each megawatt of its capacity needs to be replaced with a megawatt of capacity from a new NGCC unit. Indeed, building block 2 of the BSER is premised upon the fact that the nation's existing fleet of NGCC facilities is currently operated at annual utilization rates substantially below 75% of net summertime capacity. Calpine's experience confirms that NGCC units can be operated at even greater annual utilization rates. Thus, the nation's existing NGCC fleet has available capacity, which can be utilized to avoid the need to replace every single megawatt of retiring coal-fired capacity with a megawatt of new NGCC capacity.

27. Utility owners have ample time to wait until the completion of this litigation to seek permits and financing necessary to build any new capacity that might ultimately be needed, once state plans are completed and specific compliance obligations are known. Development of new NGCC capacity can be completed in as little as four years, from the outset of the planning process to completion of construction and power delivery. For example, Calpine is currently building a new 760-MW dual-fueled combined-cycle facility at its existing York Energy Center in Peach Bottom Township Pennsylvania. The new facility, known as "York 2 Energy

[18] *See id.* at note 2 ("Given this potential substantial increase, locking in pricing during the next 2 years before market distortions created by the Final Rule occur is a reasonable and prudent measure.").

Center", is expected to begin commercial operation in the summer of 2017. Calpine did not award the contract to General Electric ("GE") for York 2's combustion turbines until December 10, 2014.[19] Calpine applied for the required air permit on June 9, 2014 and the Pennsylvania Department of Environmental Protection issued the permit on June 14, 2015.[20] In total, Calpine anticipates that the development cycle for York 2 will be less than 36 months, from submission of initial permit applications to commercial operation. Echoing Calpine's experience, other industry Petitioner Declarants suggest a similar or even shorter time frame, depending upon the particular state in which the NGCC unit will be built.[21] Calpine's experience building York 2 also illustrates the opportunity owners of affected units have to shorten the development timeframe by taking advantage of existing transmission and other infrastructure through co-location of new generation capacity on the site of an existing power generation facility. Thus, even assuming that new NGCC capacity needed to be online at the very beginning of the interim compliance period on January

[19] *See* GE, "Calpine Corporation Selects GE Highly Efficient, Flexible Gas Turbines to Power York 2 Energy Center in Pennsylvania" (Dec. 10, 2014); *available at*: http://www.genewsroom.com/press-releases/calpine-corporation-selects-ge-highly-efficient-flexible-gas-turbines-power-york-2.

[20] *See* 45 Pennsylvania Bulletin 225, "Intent to Issue Plan Approvals and Intent to Issue or Amend Operating Permits under the Air Pollution Control Act (35 P. S. §§ 4001-4015) and 25 Pa. Code Chapter 127, Subchapter B" (May 9, 2015).

[21] S*ee* Utility Mot., Attach. C Heidell & Repsher Decl., attached Report, at 10 (noting that "the average time frame for developing a gas-fired combined cycle plant is roughly five years."); *id.* at 9, note 5 (construction of NGCC "in deregulated states such as Texas can generally be completed within 3 years…"); Nat'l Mining Assoc. Mot., Exh. 1, Schwartz Decl., attached Report, at 34 ("The total time for the planning, permitting, and construction of these three large projects has been 58-62 months, or about 5 years.").

1, 2022 in order to meet the requirements of a particular state plan (an assumption that may not be accurate), the five years available following a decision from the Court in this case would provide ample time to bring that capacity online.[22]

28. Financing for such new capacity need not and most likely could not be arranged immediately. In Calpine's experience, construction financing for new generation capacity is generally arranged late in the development cycle, after planning is complete, all permits and approvals have been obtained, and those permits and approvals have completed their respective appeals processes. Even if some utility owners or operators should elect to begin initial planning and permitting during the litigation, costs associated with this phase are typically an insignificant fraction of overall development costs, and in any event substantially lower than claimed by certain Petitioners.

29. To the extent utilities should choose to undertake significant investments now—when the Clean Power Plan does not require any actual reductions from the affected units until 2022 at the earliest—those decisions and expenditures are inherently voluntary business decisions and not the result of any immediate regulatory mandate imposed by the Clean Power Plan. This is especially true with respect to investments to reduce demand or procure qualifying renewable generation

[22] According to the trade associations representing the solar and wind generating industry, new wind and solar generation capacity can be built in ample time to be available in 2022, assuming it should be needed by then and the transmission infrastructure exists to deliver electricity from such resources to the load. *See* Resp. to Mot. for Stay of Advanced Energy, American Wind Energy Association, and Solar Energy Industries Association (Dec. 8, 2015) (to be filed concurrently with the Court in this case) at 3.

through the Clean Power Plan's Clean Energy Incentive Program ("CEIP").[23] It is worth reemphasizing that the CEIP is a purely *optional* program; by design, states are afforded the *opportunity* to award allowances and credits for early reductions achieved in 2020 and 2021, and receive matching allowances or credits in return from EPA. An optional choice to take advantage of these early incentives cannot possibly be construed as an imminent harm the Clean Power Plan mandates be undertaken now. This is even more apparent in light of the fact that the availability of this program in any particular state remains unknown at this time and will not be known until state plans are developed and submitted in September 2018.

I declare under penalty of perjury pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct. Executed on December 7, 2015.

J.D. Furstenwerth

[23] *See* Utility Mot. Attach. C Heidell & Repsher Decl. ¶ 13 ("To receive [the] additional revenue stream [available under the CEIP], irreversible decisions to obtain financing for and to construct these renewable resources will need to be made in the 2015-2018 period.").

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

State of West Virginia, et al. Petitioners, v. United States Environmental Protection Agency and Regina A. McCarthy, Administrator, United States Environmental Protection Agency Respondents.	)	Case No. 15-1363 (and consolidated cases)

DECLARATION OF JON WELLINGHOFF

I, Jon Wellinghoff, declare as follows:

1. I am a Partner at the law firm of Stoel Rives, LLP, located at 3 Embarcadero Center, Suite 1120, San Francisco, CA 94111. From August 2006 until November 2013, I served as Commissioner of the Federal Energy Regulatory Commission ("FERC" or "Commission"). I served as Chairman of the Commission for four and a half years, from January 2009 until November 2013. As Chairman, I oversaw regulatory and enforcement activities to carry out the Commission's core responsibilities under the Federal Power Act. Among other things, I championed policies such as Orders 1000, 745, and

the Mercury and Air Toxics Standards does not allow for emissions trading or averaging for toxic air pollutants such as mercury.[9]

27. The Mercury and Air Toxics Standards required these actions within a much shorter compliance timeframe than the Clean Power Plan: approximately three years, with case-by-case extensions of up to two additional years.[10]

28. Despite this more restrictive compliance framework, and significant public debate and industry outcry over the reliability implications of the Mercury and Air Toxics Standards,[11] the nation's electric sector has taken steps to come into compliance with those standards without any major reliability incidents and without any significant impact on the nation's electricity rates. Moreover, power companies are achieving the required toxic emissions reductions under the standard at a fraction of the costs predicted.[12]

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[9] *See id.* at 9,385–86.
[10] *See id.* at 9,407–11.
[11] For example, FERC held a technical conference in November 2011 that featured testimony by EPA on the forthcoming air toxics standards, as well as extensive panel discussion by grid operators and power company representatives on the reliability impacts of those standards. *See* Notice of Amended Reliability Technical Conference Agenda, 76 Fed. Reg. 73,608 (Nov. 29, 2011).
[12] *See* Declaration of James E. Staudt ¶ 5, accompanying Motion of Industry Respondent Intervenors to Govern Future Proceedings, Case No. 12-1100 et al. (D.C. Cir. Sept. 24, 2015) (estimating that the final cost of the Mercury and Air Toxics Standards is approximately one-quarter of what EPA originally estimated).

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

White Stallion Energy Center, LLC, et al., Petitioners, v. United States Environmental Protection Agency, Respondent.	No. 12-1100 (and consolidated cases)

DECLARATION OF JANET G. MCCABE

I. Background

1. I, Janet G. McCabe, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge or on information contained in the records of the United States Environmental Protection Agency (EPA) or on information supplied to me by employees under my supervision and employees in other EPA offices.

2. I am the Acting Assistant Administrator for the Office of Air and Radiation (OAR) at the EPA, a position I have held since July 19, 2013. I previously served as the Principal Deputy to the Assistant Administrator for this office from November 2009 to July 18, 2013. OAR is the headquarters-based EPA office that

such as lead and selenium also have potentially serious noncancer health effects. Children are more sensitive to the effects of lead than adults and no safe blood level has been determined for children. Fetuses exposed to lead in the womb may be born prematurely or have lower weights at birth; exposure in the womb, in infancy, or in early childhood may also slow mental development and cause lower intelligence later in childhood. Exposure to selenium can cause severe respiratory effects. *Id.* at 25,005.

14. Acid gas hazardous air pollutants such as hydrogen chloride, hydrogen fluoride, and hydrogen cyanide add to already high atmospheric levels of other chronic respiratory toxicants and to environmental degradation due to acidification. *Id.* at 25,016; *see also* 77 Fed. Reg. at 9362. Many sensitive ecosystems are already experiencing acidification, and recent evidence indicates that hydrogen chloride can be transported long distances and aggravate acidification in locations distant from emissions sources. 77 Fed. Reg. at 9362.

15. In conjunction with the final Rule, the EPA conducted a Regulatory Impact Analysis (RIA) pursuant to Executive Orders 12,866 and 13,563. Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, December 2011, Docket No. EPA-HQ-OAR-2009-0234-20131, Att. A. The EPA estimated that the annual monetized benefits of the Rule in 2007 dollars would range between $37 to $90 billion, using a 3 percent discount rate, and $33 billion to $81 billion using a 7 percent discount rate. Att. A at 3 (ES-1). The cost of the Rule, which accounted for

IN THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION, *et al.* Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Respondent.	No. _____

DECLARATION OF DERRICK BRUMMETT OF SAN MIGUEL ELECTRIC COOPERATIVE, INC. IN SUPPORT OF MOTION TO STAY

I, Derrick Brummett, declare:

1. My name is Derrick Brummett. I am the Interim General Manager for San Miguel Electric Cooperative, Inc. ("San Miguel" or the Cooperative"). Except where specifically noted below, I have personal knowledge of the facts contained in this declaration, and to the best of my knowledge, they are true and correct.

2. In my capacity as Interim General Manager for San Miguel, I am responsible for general oversight of the Cooperative to ensure fulfillment of San Miguel's mission statement "to maintain a dependable power supply at the lowest possible and competitive cost to our customers through integrity, hard work, and safety." This encompasses the overall day-to-day maintenance of the economic

Texas. All of BEPC's 16 electric cooperative members are also members of San Miguel. Established in 1941, BEPC is based in Waco, Texas and is the state's oldest and largest G&T cooperative.

13. The Boards of Directors for San Miguel, BEPC, and STEC have all approved an agreement between the three cooperatives to the effect that, on January 1, 2016, STEC will assume all of BEPC's rights and obligations under its Wholesale Power Contract with San Miguel, leaving only STEC and its distribution cooperatives as members of San Miguel. The RUS has been apprised of this agreement, and its approval of the transaction is pending. At the effective date, STEC and its members will be the sole parties affected by any impacts associated with the 111(d) Rule (defined in paragraph 16 below).

San Miguel has 22 years of remaining operational life and no plans to retire.

14. The engineered life of San Miguel's power plant, on which the Wholesale Power Contracts with BEPC and STEC are based, has recently been re-confirmed as 2037, 22 years from now. Despite repeated misconceptions by EPA in its modeling, San Miguel will not retire as result of market conditions, the Cross-State Air Pollution Rule (CSAPR), or the Mercury and Air Toxics Standards (MATS). As discussed below, San Miguel has heavily invested in environmental controls to ensure that the unit can comply with these and other pending rules and

17. Under any measure or timeframe evaluated, San Miguel's average CO_2 emission rate is significantly higher than the 1,305 pounds per net megawatt hour set by the final 111(d) Rule for existing coal-fired power plants like San Miguel. For the period 2010 through 2012, for example, San Miguel's average CO_2 emission rate was 2,451.5 pounds per net megawatt hour. The only way I could envision San Miguel meeting the 111(d) emission rate would be to run less, buy credits, or some combination of both – factors that lead to my conclusion described below that the unit will not survive 111(d) Rule implementation.

18. Although it is far from clear whether, and to what extent, a rate-based or mass-based market regime will be imposed in Texas and on San Miguel, the foundation of any market will be the above-referenced categorical standard of 1,305 pounds per net megawatt hour set by the final 111(d) Rule for existing coal-fired power plants. As a result, because San Miguel's emissions are so far above the categorical standard set by EPA, San Miguel's unit will be dramatically disadvantaged in the marketplace and it will not be able to be dispatched anywhere near its historic capacity factor. "Capacity factor" is the ratio of a power plant's actual output over time divided by its potential output if it were able to operate at full capacity all the time. If the plant is run less, the capacity factor is decreased. If the capacity factor decreases, the fixed costs of operating the power plant will be distributed over fewer megawatts of electricity generated. The plant will become

more and more uneconomical to operate and ultimately enter into a "death spiral," the outcome of which is the closure of both the plant and the mine.

19. Additionally, STEC presently has no power contracts in place or other resources to make up the power lost if San Miguel were to close. Furthermore, as discussed in more detail below, the revenue from operating San Miguel is the only substantial source of revenue available to pay San Miguel's outstanding obligations (consisting of debt, decommissioning costs and mine closure costs) which are projected to be approximately $489 million at December 31, 2015. Assuming the above-referenced agreement between BEPC and STEC is ultimately consented to by RUS and becomes effective, STEC will pay-down these obligations by $127.5 million out of funds provided in conjunction with the agreement with BEPC. Therefore, the remainder of this declaration will reference a range of outstanding obligations between $362 and $489 million to reflect this possibility.

Reduced utilization or closure of San Miguel's plant would adversely affect socio-economically disadvantaged consumers

20. By creating conditions that will force under-utilization and, ultimately, the premature retirement of San Miguel's power plant, EPA's 111(d) Rule will cause irreparable harm, as I understand the meaning of that term, to San Miguel, its members, and their customers, many of whom live at or near the poverty level and cannot afford even modest increases in their electric bills. As

AMERICAN COALITION FOR CLEAN COAL ELECTRICITY

A Survey of Near-Term Damages Associated with the EPA's Clean Power Plan

October 16, 2015

EPA predicts that nearly 68 GW will retire by 2020 in the absence of the rule, of which all but 6.4 GW are expected to retire by 2016.[17] This estimate is far greater than what is projected by other analyses, including the EIA's Annual Energy Outlook, which expects only 26 GW of coal-fired EGUs will retire between 2015 and 2020 in the absence of the CPP.[18] The estimate is also **twice as high as the number of announced retirements** tracked by either PA or by SNL Financial.[19] Given the long lead time involved, it is very unlikely that there are significant numbers of coal retirements scheduled for 2016 that have not yet been announced. A unit-level review in the 10 focus states reveals that several of the units projected to retire have cleared in RTO capacity markets for future delivery, meaning they cannot retire. EPA's base case retirements, particularly in the near-term, are therefore substantially overstated.

Furthermore, EPA's base case under the *final* rule projects an additional 20 GW of coal retirements compared to the *proposed* rule's base case. Changes to market fundamentals since June 2014, when the proposed rule was released, have not been substantial enough to suggest such a shift. EIA's near-term coal price projections made in 2015 are more than 20 percent lower than 2014's projections, which is nearly twice the decline in projected natural gas prices.[20] This would suggest, all else equal, a relative shift *toward* coal generation.

We also recognize that EPA appears to already be backing away from its own estimates of retirements due to the CPP:

> While the separate modeling based on the final rule shows 11 gigawatts of coal-fired generation shutting down in 2016, that modeling is intended merely to illustrate possible effects of the Rule and is not intended to be predictive.[21]

It is not clear what is the value of EPA's estimates of retirements attributable to the CPP are if they are not meant to be predictive.

Furthermore, there is reason to believe that EPA's CPP retirements may actually be understated. This is because the modeling assumptions for meeting emission targets by means other than a shift from coal to gas may be too aggressive. These assumptions include:

- a presumed 2 percent reduction in overall electricity demand by 2022 – and nearly 8 percent by 2030 due to energy efficiency gains (formerly Block 4); and
- renewable generation build-out rates.[22]

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[17] PA Consulting Group analysis of the EPA's IPM v.5.15 run files under the base case, retrieved at http://www2.epa.gov/airmarkets/analysis-clean-power-plan.

[18] EIA Annual Energy Outlook 2015, Table: Electric Generating Capacity.

[19] *See* "Scheduled and completed coal capacity retirements through 2020, in MW, by NERC region", retrieved at https://www.snl.com/InteractiveX/article.aspx?id=33957588&KPLT=2. Data is through September 10, 2015.

[20] EIA Annual Energy Outlook 2014 and 2015.

[21] No. 15-1277 & No. 15-1284 In RE: West Virginia ET AL. In RE Peabody Energy Corporate. On Petition of Extraordinary Writ of Stay EPA's Corrected Response in Opposition, August 31, 2015 p 29.

[22] For example, PJM, the operator of the world's largest competitive wholesale electricity market, cautioned that "historical transmission build-out rates are not likely aggressive enough to meet the EPA's wind penetration rate

DECLARATION OF SETH SCHWARTZ

I, Seth Schwartz, declare as follows:

INTRODUCTION

1. My name is Seth Schwartz, and I am the President of Energy Ventures Analysis, Inc. ("EVA"). Previously, I filed a declaration in support of the National Mining Association ("NMA") Motion for Stay of the Clean Power Plan ("CPP") to describe the irreparable harm which the coal industry, coal miners, and states and communities dependent on coal production will suffer if the Court does not grant NMA's motion. I have now been retained by the NMA to provide a declaration in reply to the assertions made by the U.S. Environmental Protection Agency ("EPA") in its Opposition to Motions to Stay the Final Rule, in particular to the declarations of Mr. Reid P. Harvey ("Harvey") and Mr. Kevin P. Culligan, both of EPA ("Culligan").
2. I will address two subjects: (a) the assertions by Mr. Culligan that the CPP merely continues what he believes is an underlying "market trend" that will lead to increased retirements of coal plants even without the CPP and (b) the assertions by Mr. Harvey that the IPM model predictions that the CPP will cause specific units to retire as early as 2016 are not reliable.

Harvey's reasons for denigrating the predictive power of the model are unpersuasive; and (c) EPA has already relied on IPM's prediction that the CPP would cause specific 2016 unit retirements to design a recently proposed new regulation.

A. EPA Used the Model to Design the CPP.

20. EPA obviously has high confidence in the model as a forecasting tool as it has used the model in numerous rulemakings and has repeatedly declared the model to be reliable. For instance, in its Regulatory Impact Assessment for the CPP (pp. 3-1 – 3-2), EPA states that

> The Integrated Planning Model (IPM), developed by ICF Consulting, is a state-of-the-art, peer-reviewed, dynamic linear programming model that can be used to project power sector behavior under future business-as-usual conditions and examine prospective air pollution control policies throughout the contiguous United States for the entire electric power system.
>
> ***
>
> EPA has used IPM for over two decades to better understand power sector behavior under future business-as-usual conditions and to evaluate the economic and emission impacts of prospective environmental policies. The model is designed to reflect electricity markets as accurately as possible. EPA uses the best available information from utilities, industry experts, gas and coal market experts, financial institutions, and government statistics as the basis for the detailed power sector modeling in IPM.

21. EPA, moreover, used IPM not just to predict the impacts of the CPP, but to craft the rule itself. As Harvey noted, EPA used the model to design the BSER itself, specifically building blocks 2 and 3. *See* Harvey at ¶16, n.3. For block 2, EPA

used the model to determine that it is feasible to run natural gas units at a 75% capacity factor and therefore that coal plants could feasibly shift generation to natural gas units up to that amount.[48] For block 3, as EPA said, "The IPM scenarios support building block 3 generation levels in two ways - by apportioning the national-level generation totals calculated from national-level deployment, and validating the building block 3 generation levels as technically feasible and cost-effective." That is, in addition to evaluating the cost of new renewable generation, EPA used IPM to project the level of renewable energy growth, including both the capacity added *before 2022*, and then to "apportion" the amount of additional renewable energy added from 2022 to 2030 based on the "geographic patterns" of renewable energy development identified through IPM.[49]

22. Furthermore, EPA used the model to satisfy the statutory requirement to evaluate the "cost" and "energy effects" of the rule.[50] Similarly, EPA used the IPM to ensure that the BSER measures it adopted would provide for adequate resources to supply electric demand and to operate the grid reliably.[51]

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[48] EPA's Mitigation Measures Technical Support Document, at 3-20.
[49] EPA's Mitigation Measures Technical Support Document, at 4-6, http://www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-technical-documents.
[50] See EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule (August 2015), http://www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-technical-documents.
[51] *See* EPA, "Technical Support Document: Resource Adequacy and Reliability Analysis" (August 2015), http://www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-technical-documents.

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, *et al.*,	)	
	)	
Petitioners,	)	
	)	
v.	)	Case No. 15-1363
	)	(and consolidated cases)
U.S. ENVIRONMENTAL PROTECTION AGENCY *et al.*,	)	
	)	
Respondents.	)	

DECLARATION OF DAVID RAATZ IN SUPPORT OF PETITIONER BASIN ELECTRIC POWER COOPERATIVE'S MOTION FOR STAY OF FINAL RULE

I, David Raatz, hereby declare and state that the following is true and correct to the best of my knowledge, based on my personal knowledge and information provided by Basin Electric Power Cooperative ("Basin Electric") personnel:

1. My name is David Raatz, and I am the Vice President for Cooperative Planning for Basin Electric. My business address is 1717 East Interstate Avenue, Bismarck, North Dakota. I am over the age of 18 years and am competent to testify concerning the matters in this declaration. I have over 35 years of experience in electricity generation. I have been employed at Basin Electric since 1980 and have a Bachelor of Science degree in Electrical Engineering from North Dakota State University, Fargo. As Vice President for Cooperative Planning, I am responsible for developing Basin Electric's long-term electrical generation

methodologies used in the base case, but also assessed what additional changes would be needed to meet the 2022 emission rate requirements.

16. As an initial matter we made certain assumptions about what we would need to comply with under the Final Rule, and what actions could be used to demonstrate compliance. First, we assumed our affected coal-fired generating units would need to comply with the state emission performance rate goals that the EPA calculated for the first interim step period (1,671 lbs/MWhnet for North Dakota, 1,662 lbs/MWhnet for Wyoming, and1,638 lbs/MWhnet for Iowa) . While it is possible the states Basin Electric operates within could adopt mass based performance requirements, because the rule does not provide how states must allocate mass based allowances, it is not clear what requirements Basin Electric will be required to comply with under a mass based system until completion of state plans in 2016 or 2018. Alternatively, states could adopt the sub-category performance rate goals set forth in 40 CFR Part 60, Subpart UUUU Table 1; but because the state performance goals in the states where Basin Electric's coal-fired generating assets are located are so close to the sub-category performance rate for coal-fired steam generating units, the difference between the two scenarios is inconsequential. Second, we assumed Basin Electric would need to rely on its own actions to comply rather than using ERCs generated by non-Basin Electric entities. As noted above, while a market for ERCs could potentially

develop, no such market currently exists. Further, the Final Rule does not mandate such a market, leaving it up to the various state plans, and there are potentially significant regulatory impediments to the development of a robust market. Finally, even if there were a market mechanism, there is absolutely no guarantee other entities will generate excess ERCs by over-complying with the stringent requirements of the rule, particularly during the first few years of the Final Rule, or that they will not bank these excess ERCs to ensure they have sufficient credits to comply in later years. Accordingly, given the potentially significant penalties associated with exceeding emission limits, prudence dictates Basin Electric assume it will need to comply through its own actions.

17. While Basin Electric assumes it cannot rely on ERCs obtained on the open market, it also assumes that it can freely allocate ERCs generated in one state to show compliance at a unit located in another state. Because interstate trading of ERCs is only allowed when provided for under individual state plans, this assumption may not necessarily be true. If Basin Electric must show compliance based solely on ERCs generated within the state where an affected facility is located, it will need to build even more wind generation than projected in the analysis to-date.

18. Our analysis did not attempt to quantify reductions that could be accomplished through either heat rate improvements at existing steam generating

IN THE SUPREME COURT OF THE UNITED STATES OF AMERICA

STATE OF WEST VIRGINIA, ET AL. Applicants, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL. Federal Respondents.	)	No. 15A773 (and consolidated cases)

SUPPLEMENTAL DECLARATION OF REID P. HARVEY

Introduction

1. I, Reid P. Harvey, declare under penalty of perjury under the laws of the United States of America that the following statements are true and correct to the best of my knowledge and belief and that they are based upon my personal knowledge, or on information contained in the records of the United States Environmental Protection Agency (EPA), or on information supplied to me by EPA employees.

2. I am the Director of the Clean Air Markets Division in the Office of Atmospheric Programs within the Office of Air and Radiation at EPA. I am familiar with the records and files in the Division's possession relating to the modeling for the Clean Power Plan. The remainder of my qualifications, education, and experience are set out in my declaration filed with EPA's Opposition to Motions to Stay Final Rule,

before the D.C. Circuit Court of Appeals, No. 15-1363 (filed Dec. 3, 2015).

3. My declaration to the D.C. Circuit Court of Appeals explained the modeling the Agency conducted for the Clean Power Plan (the Rule or CPP) and responded to a number of mischaracterizations of the modeling in the Movants' motions and attached declarations. The purpose of this declaration is to provide a brief response to the Stay Applicants' continued assertions before this Court that the modeling for the Rule somehow demonstrates that irreparable harm will occur, particularly in the form of power plant retirements during the pendency of litigation. First, I will explain the results of a high-level review we conducted regarding the units identified by an industry consultant as retiring in 2016; we could not locate any information suggesting planned closures of the vast majority of these units, and none that were attributed to the Rule. Second, I will summarize the comments just submitted by many of the Utility Applicants on the Cross-State Air Pollution Rule (CSAPR) Update proposed rule published on Dec. 3, 2015[1]; contrary to their representations in this litigation, the utilities specifically identify units they allege our modeling shows as retiring, which they now make clear they have no intention of actually retiring.

Review of Alleged Retirements in EVA Report Exhibit 29

4. Applicants cite to the Schwartz Declaration and a report by Energy Ventures Analysis, Inc., Evaluation of the Immediate Impact of the Clean Power Plan Rule on

[1] U.S. EPA, Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, Proposed Rule (EPA-HQ-OAR-2015-0500), 80 Fed. Reg. 75706 (Dec. 3, 2015).

the Coal Industry (October 2015) ("EVA Report"). *See* Utility Stay Appl. at 3. In the EVA Report, Mr. Schwartz claims to have identified specific plants that EPA's model, the Integrated Planning Model (IPM), predicts will shut down as a result of the Clean Power Plan in 2016. EVA Report, at 62 (Exhibit 29). Schwartz uses these units in a section of the EVA Report titled "…Specific and Immediate Harm to Coal Companies" and presents them as evidence of real world immediate harm implications. My staff have conducted a thorough review of public information, regarding these plants and determined that, while there is a continuing trend of some aging unit retirements due to market conditions and non-CPP related factors, the vast majority of these units will continue to be available to generate power and have not retired nor have announced plans to retire. First, we looked at the latest EIA 923 monthly data available on February 2, 2016 and determined that many of these units continued to report generation post-Clean Power Plan signature date of August 3, 2015.[2] Next, EPA reviewed its latest National Electricity Energy Dataset (NEEDS) which reflects research by EPA and ICF, as well as recent public comments and feedback. This included feedback on the Notice of Data Availability (NODA) of EPA's inventory of available units used in our interstate ozone transport modeling.[3] This NODA provided an inventory of units that EPA anticipated to be available for

[2] U.S. Energy Information Administration (EIA), http://www.eia.gov/electricity/data/eia923/ (last visited Feb. 2, 2016).
[3] Comments available at www.regulations.gov under docket EPA-HQ-OAR-2015-0500.

load service in 2016.[4] Stakeholders had the opportunity to comment on the operating status (including whether retired) of each unit. Next, EPA contacted SNL Financial, an energy company research service that provides energy information by integrating news, data, and analytics in real time on a web-based platform.[5] EPA used SNL data sources to research the operating status (e.g., retired, operating, etc.) of each unit listed in Exhibit 29. In an effort to identify any real-time or breaking announcements, EPA also conducted internet searches on each plant listed and the word "retirement" and reviewed press articles containing those two keywords. Upon completion of this initial review, we had other staff complete an independent review of these and other possible sources of information for purposes of preparing this declaration, in order to ensure the highest accuracy possible (recognizing the inherent difficulty of proving a negative).

5. This examination of four different data and news sources and other public information, through two separate reviews, leads me to believe that most of these units have neither retired nor announced any plans to retire. Moreover, EPA's review of available information suggests that not one of the units that the EVA Report lists in Exhibit 29 has actually retired or announced a retirement due to the Rule. Only a very small number of plants appear to have publicly announced a closure in 2016, and

[4] U.S. EPA, Notice of Data Availability of the Environmental Protection Agency's Updated Ozone Transport Modeling Data for the 2008 Ozone National Ambient Air Quality Standard (NAAQS), 80 Fed. Reg. 46,271 (Aug. 4, 2015).
[5] SNL, www.snl.com (last visited Feb. 2, 2016).

in each of those cases, the cause was not the Clean Power Plan. The only unit on the list that has announced a retirement post-Rule promulgation is the Martin Drake unit, slated for retirement in 2018 under an Electric Integrated Resource Plan for Colorado Springs initiated in 2014.[6] Another closure, the Plant Barry retirement and coal-to-gas switch was announced well in advance of the Rule, and company representatives cited non-Rule related motivating factors including legal actions dating back to 1999.[7] EPA also found that units at Alabama Power's Greene County Steam Plant announced intentions to shift to natural gas in 2014, well before the final Rule.[8] Based on our review, and because changes in a power plant's status are often announced well in advance of actual closure or modifications, it appears that few, if any plants, listed in Exhibit 29 will actually retire in the near future, and for those that may, the reasons are not attributable to the Rule.

Summary of Utility Comments Submitted on the CSAPR Update Rule

6. To make its case that the Rule will cause imminent coal plant shutdowns, the Utilities' Application further relies on declarations filed by certain specific companies in the court below. For example, the Application cites to declarations filed by the

[6] Colorado Springs Utilities, Electric Integrated Resource Plan, https://www.csu.org/Pages/eirp-r.aspx (last visited Feb. 2, 2016).
[7] Dennis Pillion, AL.com, *Alabama Power agrees to shutter 3 coal-fired units, convert 4 others to natural gas in EPA deal* (June 25, 2015), http://www.al.com/news/index.ssf/2015/06/epa_alabama_power_agree_to_set.html (last visited Feb. 2, 2016).
[8] Justin Averette, Demopolis Times, *Greene County Steam Plant to switch to Natural Gas, Cut Staff in Half* (Aug. 1, 2014), http://www.demopolistimes.com/2014/08/01/greene-county-steam-plant-to-switch-to-natural-gas-reduce-staff-size-in-half/ (last visited Feb. 2, 2016).

Southern Company and its subsidiaries, Georgia Power, Alabama Power, Gulf Power, and Mississippi Power, to make the case that the Rule could cause "the immediate closure of 20% of the Southern Company's existing coal-fired fleet." Utility Stay Appl. at 16. This assertion appears to be predicated on an incorrect interpretation of near-term Model projections and not the requirements under the Rule. My declaration to the D.C. Circuit explains why the Model results cannot be used in that fashion. The latest information available to the agency (as summarized in the paragraphs to follow) further shows that this prediction has not been borne out in the real world.

7. I will highlight comments EPA just received on the proposed CSAPR Update rule published December 3, 2015, in which a number of Utility Applicants specifically identify plants that they say they have no intention of retiring, but which they claimed in this litigation will be forced to shut down by the Rule. These comments were submitted in response to our discussion in the CSPAR Update proposed rule of whether to include the CPP in the CSAPR modeling in light of the uncertainties regarding near-term modeling projections for the CPP.[9] EPA received comments on

[9] These comments belie a misstatement in the Second Schwartz Declaration, cited in Utility Stay Appl. at 19, that the agency is not taking comment and that the CPP "will" be included in EPA's modeling for a separate rulemakings, the Cross-State Air Pollution Rule (CSAPR) Update. Utility Applicants assert that EPA is "relying" on CPP modeling to set more stringent emission budgets in the CSAPR Update. *See id.* (citing Schwartz Second Decl. ¶¶ 28-31). In fact, Mr. Schwartz was quoting a pre-final version of the regulatory text without citation. The text published in the Federal Register actually says that EPA "may include updated or different assumptions about the inclusion of the CPP." 80 Fed. Reg. 75706, 75722 (Dec. 3, 2015). As I stated in my declaration, Harvey Decl. ¶ 29 n. 5, ¶ 38 n. 6, the agency *is* taking comment on this issue, and is seriously weighing whether to include the CPP in the CSAPR modeling.

this issue from numerous utilities who are Applicants in this litigation, who identified results derived from a disaggregation analysis of the near term IPM modeling outputs that they believe do not accurately reflect their units' status in the near-term period of 2016-2019.[10]

8. In general, virtually all utilities or their representative trade groups, requested the agency not to include the Clean Power Plan in the base case modeling for the CSAPR Update final rule due to the inherent uncertainties in CPP implementation, and they identified unit-specific modeled retirements occurring in 2016 or 2018 included in the modeling for the CSAPR Update proposed rule that are not currently expected to occur. In the Arkansas Electric Cooperative's view, "any effects from the CPP prior to 2020 are essentially nonexistent." Ark. Elec. Coop. CSAPR Comments (EPA-HQ-OAR-2015-0500-0260), at 5-6.[11]

9. The Utility Air Regulatory Group (UARG) requested that the CPP not be included in the base case modeling for the CSAPR Update final rule because the CPP modeling assumes the retirement of an amount of coal-fired generation by 2018 "that in fact will *not* be retired by that time." UARG CSAPR Update Comments (EPA-HQ-OAR-2015-0500-0253), at 38 (emphasis in original). UARG's comments also included

[10] As explained in my first declaration, detailed plant-level modeling results do not impinge the overall reasonableness and usefulness of the model in providing EPA and the public a broader assessment of the potential impacts of its regulatory actions. It is perfectly consistent to use the model to provide illustrative scenarios of the Rule's effects in the 2020-2030 timeframe, while recognizing unit operators may make different choices than the model simulates for model plants. *See* Harvey Decl. ¶¶36-38.

[11] All comments discussed in this section were received by the Agency on February 1, 2016.

an expert report (as an Appendix to Attachment 2) which canvassed UARG's utility membership regarding which units identified as retiring in EPA's modeling would, in fact, be either operating as a coal unit or converting to natural gas in the 2016-2018 time frame. My staff compared the units identified in the UARG expert report with the list of the fifty-six units identified by Mr. Schwartz in his Exhibit 29. Of those fifty-six units, the UARG Appendix contained information on thirty-eight. Of those thirty-eight, all but one were listed as expecting to continue operating as coal units in 2016 and 2018. In other words, UARG's own submission to EPA demonstrates that of the units on which it has information that form the basis for the Utility Applicant's theory of irreparable harm due to a modeled retirement in 2016, 97% will in fact continue to be operating as coal units at least until 2018. *See* UARG CSAPR Update Comments, Attachment 2, Appendix.

10. In addition, specific utilities submitted comments on the CSAPR Update proposal regarding the status of their units that are not consistent with their characterization of the imminent consequences of the Rule set forth in their declarations in this litigation. The Southern Company, for example, identified several plants in its comments on the proposed CSAPR Update rule that they say they are not planning on retiring by 2018, such as Bowen Units 1-4 and Hammond Units 1-4. Southern Company CSAPR Comments (EPA-HQ-OAR-2015-0500-0290), at 39. These same units were listed in Southern subsidiary Georgia Power's declaration in this litigation as retiring in 2016 under the Rule. *See* Pemberton Decl. ¶ 13. But

according to its comments on the proposed CSAPR Update, Southern Company has no intention of actually retiring these or a number of other units it identifies, belying their declarants' expectations of the irreparable harm that will befall them imminently due to the Rule.

11. Similarly, Luminant's comments on the CSAPR Update proposed rule request not including CPP in the final CSAPR modeling due to the uncertainties relative to the CPP in implementation, which are magnified "by the fact that [state] implementation plans have not been proposed." Luminant CSAPR Comments (EPA-HQ-OAR-2015-0500-0262), at 14. In particular Luminant points out the model used in the CSAPR Update proposal "assumes too many coal-fired retirements in 2016, including assuming that Luminant's Monticello units are retired, *when they are not*. EPA's base case must factor in real-world retirements instead of incorrect assumptions …." *Id.* (emphasis added). However, in Luminant's representative's declaration in this litigation, the alleged retirement of the Monticello units is portrayed as an irreparable harm caused by the Rule. *See* Frenzel Decl. ¶ 40.

12. Utilities owning a number of units included in the industry consultant's Exhibit 29 list (see above), also submitted comments on the CSAPR Update proposal identifying units that they say will not be retiring in 2016. *See, e.g.,* OGE CSAPR Comment (EPA-HQ-OAR-2015-0500-0265), at 4 ("Muskogee Units 4 and 5 will be capable of firing coal in 2017 and 2018 and available … for dispatch."); TVA CSAPR Comment (EPA-HQ-OAR-2015-0500-0261), at 7 ("[T]he following units . . . are

indicated as retired in 2016 which will in fact be operational in 2017: Shawnee units 1-9, Johnsonville units 1-4, Allen units 1-3, and Gallatin units 1-4."); Entergy CSAPR Comment (EPA-HQ-OAR-2015-0500-0252), at 14 ("The [modeling] results predict several [Entergy-owned] EGU retirements by 2018 . . . . However, . . . *none of these plants have any plans to retire coal by 2018*.") (emphasis added).

13. Further, a number of other utilities commenting on the CSAPR Update proposed rule took the position that it was inappropriate to factor in modeled unit closures from CPP since "compliance with the CPP is not required until 5 years after the 2017 compliance date for the update to CSAPR." Wisconsin Electric Power Company and Wisc. Public Service Corp. CSAPR comment (EPA-HQ-OAR-2015-0500-0297), at 9. Further, the American Public Power Association (APPA) notes that it "has surveyed several of its members potentially impacted by the Proposed Rule; none have reported plans to retire affected EGUs in the 2016 and 2017 time frame." APPA CSAPR Comment (EPA-HQ-OAR-2015-0500-0259), at 5.[12]

[12] *See also* The American Electric Power (AEP) Company (EPA-HQ-OAR-2015-0500-0256), at 4-5; DTE Energy (EPA-HQ-OAR-2015-0500-0272), at 2; Talen (EPA-HQ-OAR-2015-0500-0257), at 8; Louisville Gas & Electric/Kentucky Utilities (EPA-HQ-OAR-2015-0500-0271), at 2; Duke Energy (EPA-HQ-OAR-2015-0500-0274), at 5-8; Consumers Energy (EPA-HQ-OAR-2015-0500-0276), at 1-2; Alliant Energy (EPA-HQ-OAR-2015-0500-0244), at 2-3; Dynegy (EPA-HQ-OAR-2015-0500-0275), at 2; Dominion (EPA-HQ-OAR-2015-0500-0258), at 8-9; Ohio Utilities (including AEP, Buckeye Power, Dayton Power & Light, FirstEnergy, Duke Energy, Dynegy and the Ohio Valley Electric Corporation) (EPA-HQ-OAR-2015-0500-0255), at 2; and Class of '85 Regulatory Response Group (representing numerous utilities) (EPA-HQ-OAR-2015-0500-0264), at 14-16.

Consistency of the Rule with Industry Trends

14. Stay Applicant Utilities state, "EPA estimates that, as a result of the rule, coal-fired generation will fall nearly 50% from current levels," and they cite to EPA's Regulatory Impact Analysis (RIA) for the Rule, at 2-3, 3-24 (Aug. 2015).[13] *See* Utility Stay Appl. at 7. The assertion that the Rule will cause coal-fired generation to fall nearly 50% from current levels is incorrect and not derivable from the RIA or the cited sources. On the contrary, the analysis conducted by EPA indicates that the Rule is in line with current trends in the industry. For example, coal fired generation has fallen from 50% of total generation in 2005 to as low as 37% in 2012.[14] In fact, 2015 will likely produce the lowest levels of coal generation since 2001. In the first eleven months of 2015 (for which EIA has reported data publicly as of January 30, 2016), coal fired generation accounted for 34% of the total, not very different from EPA's projections. This coincides with historically low natural gas prices in 2015, the lowest prices seen domestically since 1999.[15]

15. Similarly, renewable energy is projected to be built at approximately the same rate with or without the CPP. RIA Tables 3-12 and 3-14. The trend towards more renewable energy was reinforced by Congress at the end of last year, when it extended

[13] U.S. EPA, CPP RIA, available at www.epa.gov/cleanpowerplan/clean-power-plan-final-rule-regulatory-impact-analysis (last visited Feb. 2, 2016).
[14] U.S. EIA, Electricity Data, http://www.eia.gov/electricity/data.cfm (last visited Feb. 2, 2016).
[15] U.S. EIA, Today in Energy (Jan. 5, 2016), http://www.eia.gov/electricity/data.cfm (last visited Feb. 2, 2016).

the tax credits for wind and solar electricity generation. The tax credits, valued at about $25 billion over five years, are expected to drive $38 billion of investment in solar and $35 billion in wind through 2021 irrespective of the CPP, according to Bloomberg New Energy Finance (BNEF). "'This is massive,' said Ethan Zindler, head of U.S. policy analysis at BNEF. In the short term, the deal will speed up the shift from fossil fuels more than the global climate deal struck this month in Paris and more than Barack Obama's Clean Power Plan that regulates coal plants, Zindler said."[16]

16. EPA projects that with the Rule, in 2030 coal-fired generation will represent 27.4% of total generation—only 5.4% less than projected without the Rule, *see* RIA 3-27, Table 3-11. Further, this anticipated decrease is less than the decrease in annual coal-fired generation that has been observed in the power sector over the last 10 years.

February 3, 2016

Reid P. Harvey

[16] Tom Randall, BloombergBusiness, *What Just Happened in Solar is a Bigger Deal than Oil Exports* (Dec. 17, 2015), http://www.bloomberg.com/news/articles/2015-12-17/what-just-happened-to-solar-and-wind-is-a-really-big-deal (last visited Feb. 2, 2016).