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BY FEDERAL EXPRESS AND E-MAIL

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Re: Petition for Reconsideration of *Promulgation of Air Quality Implementation Plans; State of Texas; Regional Haze and Interstate Visibility Transport Federal Implementation Plan* (Oct. 17, 2017); EPA–R06–OAR–2016–0611; FRL–9969–07–Region 6

Pursuant to Section 307(d)(7)(B) of the Clean Air Act ("CAA" or "the Act"), 42 U.S.C. § 7607(d)(7)(B), National Parks Conservation Association ("NPCA"), Sierra Club, and Environmental Defense Fund (collectively, "Petitioners") respectfully petition the Administrator of the Environmental Protection Agency ("the Administrator" or "EPA") to reconsider certain aspects of the rule captioned as "Promulgation of Air Quality Implementation Plans; State of Texas; Regional Haze and Interstate Visibility Transport Federal Implementation Plan," which was published at 82 Fed. Reg. 48,324 (Oct. 17, 2017) (hereinafter, the "Trading Rule"). As explained below, the Trading Rule is unlawful, arbitrary, and capricious because (1) the Trading Rule was adopted without following notice and comment requirements; (2) EPA provided no rational basis for abandoning its January 2017 best available retrofit technology ("BART") proposal in favor of the Trading Rule; (3) the Trading Rule fails to satisfy the requirement that a BART alternative achieve greater reasonable progress than the installation and operation of BART; (4) EPA's finding that the Trading Rule satisfies Texas' section 110(a)(2)(D)(i)(II) visibility transport plan requirements is unlawful, arbitrary, and capricious; (5) EPA cannot lawfully adopt the Trading Rule's intrastate trading scheme because it is too late to do so; (6) the Rule includes provisions that would unlawfully suspend the intrastate trading scheme by the mere submission of a state implementation plan; (7) the Rule's treatment of retired electric generating units is arbitrary and capricious; (8) the supplemental allowance pool provision is

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arbitrary; and (9) EPA failed to recognize that this rule is based on a determination of nationwide scope and effect.

The grounds for the objections raised in this petition arose after the period for public comment and are of central relevance to the outcome of the rule. The Administrator must therefore "convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed." 42 U.S.C. § 7607(d)(7)(B).[1]

BACKGROUND

A. *Haze Pollution from Texas Power Plants*

Because many Texas power plants lack the pollution controls widely used in other states,[2] Texas sources emit more sulfur dioxide ("SO_2") than sources in any other state, by far.[3] Sulfur dioxide, or SO_2, contributes to both hazy skies and health problems downwind. Sulfur dioxide reacts with other compounds in the air to form fine particles that penetrate sensitive parts of the lungs and can aggravate respiratory and heart diseases. Airborne fine particles are linked to increased hospital admissions, missed work and school, and premature death.[4]

SO_2 emissions from Texas cause visible air pollution in at least 15 national parks, monuments, and wilderness areas across seven states.[5] Among these are Big Bend National Park

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[1] Because judicial review of the Trading Rule is available by the filing of a petition for review within sixty days of the publication date—that is, by December 16, 2017—the grounds for the objections arose "within the time specified for judicial review." 42 U.S.C. § 7607(d)(7)(B).

Note: as explained in detail in Section II below, Petitioners maintain that the Trading Rule is not a final agency action and that the U.S. District Court for the District of Columbia has jurisdiction and authority to remedy EPA's failure to take final agency action required by the applicable consent decree. Petitioners are therefore filing this reconsideration petition out of an abundance of caution, and because, if the district court denies Petitioners' pending motion to enforce the consent decree, EPA would still be obligated to correct the legal violations discussed below.

[2] *See* EPA, FIP Cost TSD at 1, Docket ID No. EPA-R06-OAR-2014-0754-0008, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2014-0754-0008.

[3] *See generally* EPA, Air Markets Program Data, *available at* https://ampd.epa.gov/ampd/.

[4] *See* EPA, Sulfur Dioxide Basics, *available at* https://www.epa.gov/so2-pollution/sulfur-dioxide-basics; EPA, Health and Environmental Effects of Particulate Matter (PM), *available at* https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.

[5] EPA, BART Screening TSD at 40, Docket ID No. EPA-R06-OAR-2016-0611-0005, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0005; *see also* EPA, BART Modeling TSD at App. E, Docket ID No. EPA-R06-OAR-2016-0611-0006, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0006. In its screening and modeling analysis, EPA evaluated the impacts of the BART-eligible electric generating units in Texas at 15 different Class I areas, including: Breton Wilderness Area in Louisiana; Big Bend and Guadalupe Mountains National Parks in Texas; Wichita Mountains National Wildlife Refuge in Oklahoma; Caney Creek and Upper Buffalo Wilderness Areas in Arkansas; Bandelier National Monument, Salt Creek, Wheeler Park, White Mountains, and Pecos Wilderness Areas, and Carlsbad Caverns National Park in New Mexico; Hercules-Glades Wilderness Area and Mingo National Wildlife Refuge in Missouri; and

and Guadalupe Mountains National Park in west Texas, which contain spectacular scenic views that draw visitors from around the world. The National Park Service has noted that "[t]he scenic beauty of Big Bend National Park is often spoiled by haze that obscures its many vistas."[6] This haze is primarily caused by emissions of SO_2 and other pollutants from power plants and other anthropogenic sources.[7]

Texas' air pollution does not stop at its borders. For example, Texas sources cause significant visibility impairment at the Wichita Mountains Wilderness Area in Oklahoma that are "several times greater than the impact from Oklahoma's own point sources." 79 Fed. Reg. 74,818, 74,822 (Dec. 16, 2014).

B. *The Clean Air Act's Regional Haze Program*

Recognizing the "intrinsic beauty and historical and archaeological treasures" of the national parks and wilderness areas,[8] Congress established "as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 42 U.S.C. § 7491(a)(1). In 1990, after finding that the EPA and the states had not made adequate progress toward reducing visibility impairment in the nation's Class I areas,[9] Congress amended the Clean Air Act to curb emissions that may reasonably be anticipated to cause or contribute to visibility impairment at national parks and wilderness areas. *Id.* § 7492.

In order to achieve the goal of natural visibility in Class I areas, Congress instructed states to submit "implementation plan[s]" containing "emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward the national goal." 42 U.S.C. § 7491(b)(2). As a critical, minimum element of any regional haze plan, the state (or EPA, where the state fails to do so) must require BART controls at fossil fuel-fired power plants and other major stationary sources that "may reasonably be anticipated to cause or contribute to any impairment of visibility in any mandatory Class I Federal area," and were in existence in

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Great Sand Dunes National Park in Colorado. *See* BART Screening TSD at 73-74; BART Modeling TSD at 85-90. In its 2015 regional haze rulemaking for Texas and Oklahoma, EPA also noted pollution impacts from several of the same generating units at San Pedro National Park, Bosque del Apache Wilderness Area, and Gila Wilderness Area in New Mexico, and Rocky Mountain National Park in Colorado. *See* "TX116-007-33 Vis modeling summary" spreadsheet, Docket ID No. EPA-R06-OAR-2014-0754-0007, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2014-0754-0007, relevant portions (attached as Ex. A).

[6] NPS, *Understanding Haze in Big Bend National Park, available at* http://www.nps.gov/bibe/learn/nature/upload/Bravo_Fact_Sheet.pdf.

[7] *See, e.g.*, Technical Support Document for the Oklahoma and Texas Regional Haze Federal Implementation Plans at A-17 (Nov. 2014), Docket ID No. EPA-R06-OAR-2016-0611-0052, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0052 (hereinafter, "Reasonable Progress FIP TSD").

[8] H.R. Rep. No. 95-294, at 203-04 (1977), *reprinted in* 1977 U.S.C.C.A.N 1077, 1282.

[9] Areas designated as mandatory Class I Federal areas (or Class I for short) consist of national parks exceeding 6,000 acres, national wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. *See* 42 U.S.C. § 7472(a).

1977, but were not in operation before 1962. 42 U.S.C. § 7491(b)(2)(A); 40 C.F.R. § 51.308(e).

BART is defined as "*an emission limitation* based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility." 40 C.F.R. § 51.301 (emphasis added). When determining BART, the states and EPA must analyze "the best system of continuous emission control technology available" by taking into consideration five factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) existing pollution controls at the source, (4) the remaining useful life of the source, and (5) the degree of visibility improvement from pollution controls. *Id.* § 51.308(e)(1)(ii)(A). BART compels these older, disproportionately-polluting sources to install up-to-date and cost-effective pollution controls.

Under the statute and EPA's implementing regulations, the default approach to meeting the BART requirements is for a state to consider the five statutory factors on a case-by-case basis "for each major stationary source." 42 U.S.C. § 7491(b)(2)(A); 40 C.F.R. § 51.308(e)(1)(ii)(A). EPA's regulations allow states to adopt "an emissions trading program or other alternative measure" rather than set BART limits on a case-by-case basis if the applicable standards for using an alternative are met. 40 C.F.R. § 51.308(e)(2).

An alternative to BART "must achieve greater reasonable progress than would be achieved through the installation and operation of BART." *Id.* A state may demonstrate that an alternative program makes greater reasonable progress than BART by proving that under the alternative program, the clear weight of evidence shows that the alternative would achieve greater reasonable progress than BART, *id.* § 51.308(e)(2)(i)(E), or that (1) visibility does not decline in any Class I area and (2) there is an overall improvement in visibility compared to BART at all affected Class I areas. *Id.* § 51.308(e)(3)(i)-(ii).

C. *Procedural Background*

Despite the enormous amounts of haze pollution produced by Texas sources, both Texas and EPA have delayed for decades in developing and implementing a clean-up plan. It has been 40 years since Congress first announced the requirement that states were to develop plans to install the BART at large, aging pollution sources contributing significantly to impaired scenic views, 42 U.S.C. § 7491(b)(2); ten years since the deadline for states to submit such plans, 40 C.F.R. § 51.308(b); and over five years since the original deadline set forth in the governing consent decree for EPA to take final action on a Texas haze plan.[10]

1. Texas' inadequate state implementation plan

Texas failed to submit a haze plan to EPA by the 2007 deadline set by Congress. In 2009, EPA published an official finding to that effect. 74 Fed. Reg. 2392 (Jan. 15, 2009). In

[10] Consent Decree at 3-5, *Nat'l Parks Conservation Ass'n v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. Mar. 30, 2012) (ECF Doc. 21).

response, Texas submitted a proposed haze plan to EPA in 2009, two years after the original deadline.[11]

Despite Texas' enormous impact on the visibility of its Class I areas and those in other states, Texas submitted a Regional Haze plan that did not require a single source to install controls or reduce emissions to protect visibility in Class I areas. 81 Fed. Reg. 296, 300 (Jan. 5, 2016). Instead, Texas relied on the emission trading program in EPA's Clean Air Interstate Rule ("CAIR") as an alternative to making BART determinations for all eligible sources, including those at issue in this rule.[12] The D.C. Circuit Court of Appeals had invalidated CAIR in 2008—nearly a year *before* Texas submitted its state implementation plan ("SIP") proposal to EPA for review in March 2009. *See North Carolina* v. *EPA,* 531 F.3d 896 (D.C. Cir.), *modified,* 550 F.3d 1176 (D.C. Cir. 2008). In response to the D.C. Circuit's ruling invalidating CAIR, in 2012, EPA disapproved the haze plans of 14 states, including Texas, which had relied on CAIR to satisfy the BART requirements. 77 Fed. Reg. 33,642, 33,653 (June 7, 2012).

2. EPA's Better-than-BART Rule

In 2011, in response to the D.C. Circuit's decision invalidating CAIR, EPA promulgated the Cross-State Air Pollution Rule ("CSAPR"), which required 28 states in the eastern U.S., including Texas, to curb power plant emissions of SO_2 and nitrogen oxides ("NO_x") that cross state lines and significantly contribute to violations of ozone and fine-particle standards in other states. 76 Fed. Reg. 48,208 (Aug. 8, 2011). Promulgated under the Clean Air Act's "good neighbor" provision, 42 U.S.C. § 7410(a)(2)(D)(I), CSAPR allowed sources to trade emission allowances with other sources in the same or different states. *Id.* at 48,348. For each state regulated under CSAPR, EPA contemporaneously promulgated a federal implementation plan ("FIP") allocating that State's emission budget among its in-state electric generating units ("EGUs" or "generating units"). *Id.* at 48,271, 48,284-87.

In 2012, EPA published a rule, 77 Fed. Reg. 33,642 (the "Better-than-BART" Rule), which exempted EGUs covered by the CSAPR trading program from meeting source-specific BART requirements under the Regional Haze Rule. EPA justified the Better-than-BART Rule with computer modeling purporting to show that CSAPR satisfied both criteria of the agency's test for a valid BART alternative, namely, that when compared to EPA's "presumptive" BART emission limits, implementation of CSAPR (1) does not cause visibility to decline in any Class I area, and (2) there is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas, *see* 40 C.F.R. § 51.308(e)(3). As part of that modeling analysis, EPA also conducted a "Sensitivity Analysis,"

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[11] *See* Texas Commission on Environmental Quality, Revisions to the State Implementation Plan (SIP) Concerning Regional Haze, Project No. 2007-016-SIP-NR (Feb. 25, 2009), *available at* https://www.tceq.texas.gov/airquality/sip/bart/haze_sip.html.

[12] EPA issued CAIR in 2005. That rule required 28 states, including Texas, to reduce emissions of SO_2 and NO_X that significantly contribute to, or interfere with maintenance of, the 1997 National Ambient Air Quality Standard ("NAAQS") for ozone and $PM_{2.5}$. 70 Fed. Reg. 25,162 (May 12, 2005). EPA subsequently determined that those states could also rely on CAIR's cap-and-trade emissions trading program to meet their obligations under the Regional Haze Rule to address BART for EGUs. 70 Fed. Reg. 39,104 (July 6, 2005).

which purported to demonstrate that CSAPR remained a valid "better-than-BART" alternative despite subsequent increases in the emission budgets for Texas and Georgia.[13] In that Sensitivity Analysis, EPA concluded that CSAPR would remain a valid alternative to BART so long as SO_2 emissions from Texas plants remained below 317,000 tons per year.[14]

3. EPA's obligation to address Texas' regional haze requirements

The Clean Air Act required EPA formally to approve or disapprove Texas' regional haze plan within 18 months of submittal. 42 U.S.C. § 7410(k). By 2011, EPA still had not taken final action on Texas's 2009 submittal. In August 2011, Petitioners sued EPA, and on March 30, 2012, the District Court entered a consent decree requiring EPA to take final action on the Texas regional haze plan by a date certain. *See* Consent Decree, *NPCA v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. entered Mar. 30, 2012) (ECF Doc. 21) (hereinafter "Consent Decree").

In December 2015, EPA issued a final rule approving in part and disapproving in part Texas' regional haze plan, as well as portions of Oklahoma's "interconnected" plan. *See* 81 Fed. Reg. at 296, 346 (hereinafter, the "Reasonable Progress Rule"). As required by the Clean Air Act, 42 U.S.C. § 7410(c)(1), EPA issued a partial federal plan to correct the deficiencies in Texas' SIP relating to the so-called reasonable progress elements of the Regional Haze Rule. 81 Fed. Reg. at 297. EPA explicitly declined, however, to take final action concerning Texas' BART determinations for EGUs. *See, e.g.*, 81 Fed. Reg. at 346. Instead, EPA determined that as a result of the D.C. Circuit's decision remanding the Texas CSAPR budgets, *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118 (D.C. Cir. 2015) (hereinafter, "*Homer City II*"), neither EPA nor Texas could not rely on CSAPR as an alternative to BART for Texas EGUs. 81 Fed. Reg. at 302.[15]

In July 2016, the Fifth Circuit stayed EPA's disapproval and promulgation of a FIP addressing the reasonable progress portions of Texas's regional haze plan. *See Texas* v. *EPA*, 829 F.3d 405 (5th Cir. 2016). The Fifth Circuit subsequently granted EPA's motion requesting voluntary remand of the rule so that the agency could reconsider its reasonable progress determinations, which are distinct from the BART requirements at issue here.

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[13] EPA, Memorandum, Sensitivity Analysis Accounting for Increases in Texas and Georgia Transport Rule State Emissions Budgets (May 29, 2012), Docket ID No. EPA-HQ-OAR-2011-0729-0323 (hereinafter, "CSAPR BART Sensitivity Memo").

[14] 82 Fed. Reg. at 48,353.

[15] EPA formally issued its proposal to withdraw its federal plan to include Texas in the CSAPR emissions trading program in November 2016, and finalized the withdrawal in September 2017. 81 Fed. Reg. 78,954 (Nov. 10, 2016); 82 Fed. Reg. 45,481 (Sept. 29, 2017). Petitioners NPCA and Sierra Club have petitioned for reconsideration and judicial review of a separate aspect of that rulemaking, which determined that CSAPR remains better than BART for the states remaining in the program, despite the withdrawal of Texas. *See Petition for Partial Reconsideration of Interstate Transport of Fine Particulate Matter: Revision of Federal Implementation Plan Requirements for Texas; Final Rule; 82 Fed. Reg. 45,481 (Sept. 29, 2017); EPA-HQ-OAR-2016-0598; FRL-9968-46-OAR* (filed Nov. 28, 2017); Petition for Review, *Nat'l Parks Conservation Ass'n v. EPA*, No. 17-1253 (D.C. Cir. Nov. 28, 2017).

4. The January 2017 BART Proposal

In January 2017, EPA published its BART proposal for Texas electric generating units. *See* 82 Fed. Reg. 912 (Jan. 4, 2017) (hereinafter, the "proposed rule" or "BART proposal"). EPA's proposal carefully and methodically reviewed BART-eligible units for cost-effective controls and analyzed each of the five statutory BART factors consistent with prior EPA regulations and guidance. *See id.* at 921-47 (citing numerous Technical Support Documents such as the BART Screening TSD, BART FIP TSD, Cost TSD, BART Modeling TSD).

In addition to the voluminous technical analyses performed by EPA, the agency solicited public comments for four months, 82 Fed. Reg. 11,516 (Feb. 24, 2017), and held a public hearing in Austin, Texas on the proposed rule, 82 Fed. Reg. at 912. During the comment period, over 3,600 people from Texas, Oklahoma, New Mexico, and Arkansas submitted comments to EPA seeking a final Texas BART Rule as strong as the proposal.[16] Petitioners also submitted detailed comments covering numerous technical and legal issues.[17] Because EPA had not proposed any trading program whatsoever for Texas, nor given any indication that it was considering one in the proposal, Petitioners could not and did not comment on specific defects of the trading program EPA has now purported to finalize.

EPA estimated that its proposed FIP would reduce harmful SO_2 emissions by approximately 194,000 tons per year,[18] which would produce cleaner air in national parks, wilderness areas, and other areas throughout Texas and surrounding states. Twelve of the units proposed for source-specific BART limits have operated for decades without installing any post-combustion controls for SO_2.[19] EPA's analysis in the proposed rule indicated that new scrubbers would dramatically improve visibility at a reasonable cost and meet the other BART factors. 82 Fed. Reg. at 926-38. EPA's analysis also showed that the scrubber upgrades would significantly

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[16] As of December 15, 2017, EPA has not yet posted all of these comments to the docket.

[17] *See generally* Comments of NPCA and Sierra Club (May 5, 2017), Docket ID No. EPA-HQ-OAR-2016-0611-0083, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0083 ("NPCA/SC Comments"); Comments of Environmental Defense Fund (May 5, 2017), *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0081.

[18] EPA, Technical Support Document for the Texas Regional Haze BART Federal Implementation Plan at 2 (Dec. 2016), Docket ID No. EPA-R06-OAR-2016-0611-0004 (hereinafter, "BART FIP TSD"). Note, EPA explains in its BART FIP TSD (page 2, footnote 7) that this figure is the "[s]um of estimated reductions due to all proposed controls calculated from a baseline of the 2011-2015 five-year average of the SO_2 annual emissions, excluding the maximum and minimum values." Consequently, we recognize that in comparing it to the 2016 SO_2 emission figure of 218,291 tons that EPA cites in its Trading Rule that we are not making an exact apples-to-apples comparison due to differing emission years and differences in the units covered by the BART proposal and the Trading Rule.

[19] Fayette units 1 and 2 recently installed wet scrubbers. Of the 14 units for which EPA proposed to set BART limits based on the use of new scrubbers, only the two Fayette units have already installed scrubbers.

improve visibility for approximately $1000 per ton or less, which is a fraction of the cost of most SO_2 BART controls.[20]

The proposed BART limits would have resulted in visibility, public health, and economic benefits for the entire region. Dr. George Thurston, a leading public health expert, submitted evidence that the proposed rule would prevent tens of thousands of asthma attacks, 678 premature deaths, more than 100,000 lost or limited work days every year, and would save more than $6.7 billion in public health and lost productivity costs annually.[21] These figures were "conservatively estimate[d]."[22] In Oklahoma alone, these benefits total over $771 million *each year,* including the benefits of preventing over 2,100 asthma attacks, 78 deaths, and more than 9,400 missed work days every year.[23] The annual benefits to Oklahoma City are valued at more than $185 million, and to Tulsa, at more than $156 million.[24] In Dallas, the pollution reductions are predicted to save 62 lives per year. The total public health-related benefits for Dallas are valued at over $623 million.[25] In Houston, the pollution reductions are predicted to save 60 lives per year, with the total health-related benefits valued at over $606 million.[26]

5. The Trading Rule

After the change in Administration, and three weeks before the consent decree deadline to issue a final BART rule for Texas, EPA sought a 16-month extension to allow Texas time to develop a state implementation plan that would create a "flexible" sulfur dioxide pollution intrastate trading program, rather than place any emission limits on the plants identified as subject-to-BART in the proposal. EPA further represented that it had entered into a Memorandum of Agreement with Texas under which Texas would develop a state plan incorporating the trading scheme, which EPA would then approve.[27] Agreeing with Petitioners, the district court rejected EPA's request for more time, noting that "Texas has had ample time to develop, submit, and negotiate a compliant state implementation plan if that was its actual preference."[28] Thus, EPA was required to issue a final, federal BART action by the consent

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[20] *See* NPCA/SC Comments at 34-38.

[21] Report of George D. Thurston Regarding the Public Health Benefits of EPA's Proposed Rulemaking at 17-18 (May 4, 2017), Docket ID No. EPA-R06-OAR-2016-0611-0072, https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0072 (hereinafter "Thurston Report").

[22] *Id.* at 17.

[23] *Id.* at 19; Thurston BART BenMap Appendix at Table 2, Docket ID No. Docket ID No. EPA-R06-OAR-2016-0611-0072, https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0072 (hereinafter, "Appendix to Thurston Report").

[24] Thurston Report at 20; Appendix to Thurston Report at Table 3.

[25] Thurston Report at 20.

[26] *Id.*; Appendix to Thurston Report at Table 3.

[27] 82 Fed. Reg. at 48,327.

[28] Order at 7, *Nat'l Parks Conservation Ass'n v. EPA*, No. 1:11-cv-01548 (ABJ) (D.D.C. Aug. 31, 2017) (ECF Doc. 96).

decree's September 2017 deadline (later extended from September 9 to September 30 to accommodate Hurricane Harvey response activities).

The Trading Rule bears no resemblance to the proposed rule. *See generally* 82 Fed. Reg. 48,324. Instead of setting source-specific, technology-based pollution limits for BART sources, EPA created an entirely new trading program that applies only to Texas sources. Having abandoned the source-specific BART proposal in favor of this trading scheme, EPA concluded it was "not necessary to respond" to comments on the proposed source-specific rule. *Id.* at 48,332, 48,333. The emissions trading scheme adopted in the Trading Rule is so complicated that it occupies 17 pages of single-spaced text in the Federal Register, *id.* at 48,364-80, yet not a single sentence of the rule appeared in the proposed rule. This newly invented trading scheme would not result in any emission reductions because the total SO_2 credits available would exceed the total SO_2 emissions that the covered generating units emitted in 2016. *See id.* at 48,358, 48,359, 48,360.

EPA MUST CONVENE A RECONSIDERATION PROCEEDING AS TO THE TRADING RULE

I. Petitioners are entitled to reconsideration of the Trading Rule.

Under the Clean Air Act, the Administrator "shall convene a proceeding for reconsideration of the rule" if a petitioner demonstrates: 1) that it was impracticable to raise the objection during the public comment period or the grounds for the objection arose after the close of the public comment period; and 2) that the objection is of central relevance to the outcome of the rule. 42 U.S.C. § 7607(d)(7)(B). The objections presented in this petition plainly satisfy both requirements. First, the grounds for Petitioners' objections "arose after the period for public comment," *id.*, which closed on May 5, 2017.[29] The full grounds for these objections did not arise until, in the Trading Rule published on October 17, 2017, EPA abandoned the BART determinations made in its proposed rule, *see* 82 Fed. Reg. 912, and adopted a new intrastate emissions trading scheme. Additionally, the intrastate trading scheme was not mentioned at all in the January 2017 proposed rule (nor in the December 2014 proposal), and EPA did not even suggest that it was considering such a scheme. Given that Petitioners had no prior notice of the intrastate trading scheme adopted in the Trading Rule, it would have been impracticable for Petitioners to raise these objections during the public comment period.[30]

Second, as explained in detail in Sections II-X below, each of Petitioners' objections is "of central relevance to the outcome of the rule," 42 U.S.C. § 7607(d)(7)(B), in that they demonstrate that the Trading Rule is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Id.* § 7607(d)(9)(A). For example, Petitioners contend that if EPA had properly applied 40 C.F.R. § 51.308(e)(2), it would have concluded that its intrastate trading

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[29] *See* 82 Fed. Reg. 11,516 (extending comment period to May 5).

[30] As explained *infra* in Sections IV.B and VI, there are several issues discussed in this petition that were raised with reasonable specificity during the public comment period, such that Petitioners may seek judicial review on those issues under 42 U.S.C. § 7607(d)(7)(B). Petitioners nonetheless discuss those issues in this petition for two reasons: first, to make clear that this intrastate trading scheme, which EPA never proposed, fails numerous regulatory requirements; and second to underscore how thoroughly unlawful the Trading Rule is.

scheme could not be promulgated, because it will achieve less progress toward natural visibility than the installation and operation of BART at these Texas generating units. The same holds true for other deficiencies discussed below—the objections all go to the validity of the approach EPA ultimately adopted without opportunity for comment.

Because both of the Clean Air Act's prerequisites for reconsideration are met, 42 U.S.C. § 7607(d)(7)(B), EPA "lack[s] discretion not to address the claimed errors." *North Carolina v. EPA*, 531 F.3d 896, 927 (D.C. Cir. 2008).

II. The Trading Rule is unlawful because it was promulgated without following notice and comment requirements.

In the Trading Rule, EPA adopted a FIP that consists of an intrastate pollution trading program for certain electric generating units in Texas. This Rule violates the Clean Air Act because it was issued without following the Act's requirements for promulgating a FIP. Under the Act, a FIP can be promulgated only by following the public notice and comment procedures set forth in 42 U.S.C. § 7607(d). *See* 42 U.S.C. § 7607(d)(1)(B), (d)(2)-(6). EPA, however, bypassed these requirements in promulgating the Trading Rule: the agency adopted an entirely new plan, one that never went through the notice and comment process. Because EPA's adoption of the Trading Rule violates the Clean Air Act, on reconsideration EPA should discard its unlawfully adopted trading scheme and, instead, take final action on the BART proposal published in the proposed rule.

As a threshold matter, Petitioners note that EPA's failure to follow the Clean Air Act's notice and comment requirements is the subject of a pending motion in the U.S. District Court for the District of Columbia. *See* Pls.' Mot. to Enforce Decree, *Nat'l Parks Conservation Ass'n v. EPA*, Civil Action No. 1:11-cv-01548 (ABJ), ECF No. 103 (filed Oct. 13, 2017). This motion seeks to enforce a consent decree provision that required EPA to sign a "notice of final rulemaking promulgating a FIP for Texas to meet the BART requirements for EGUs that were due by December 17, 2007 under EPA's regional haze regulations."[31] In their motion, Petitioners explained that because an agency action taken in flagrant violation of notice and comment requirements is not a lawful final action, EPA's Trading Rule violates the CAA and the consent decree. To remedy EPA's violations, and to enforce the consent decree, Petitioners requested that the district court direct EPA to promptly promulgate a final rule that complies with notice and comment procedures. EPA opposed this motion, and has argued that the district court lacks jurisdiction to adjudicate it.

Although Petitioners maintain that the Trading Rule is not a final action under the CAA, and that the district court has jurisdiction and authority to order a remedy for EPA's failure to take final agency action, Petitioners present this objection to EPA out of an abundance of caution. If the district court denies Petitioners' motion on jurisdictional grounds, EPA would still be obligated to correct its CAA violation. This violation is described further below.

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[31] Consent Decree ¶ 4.a.ii(a). The text of this consent decree is contained in ECF documents numbers 21, 86, and 91 in *National Parks Conservation Association v. EPA*, Civil Action No. 1:11-cv-01548 (ABJ) (D.D.C.).

A. The Clean Air Act's notice and comment requirements

Under the Clean Air Act, a federal implementation plan cannot be adopted without following the public notice and comment procedures set forth in 42 U.S.C. § 7607(d). *See* 42 U.S.C. § 7607(d)(1)(B), (d)(2)-(6). Among other things, EPA must first publish a proposed rule in the Federal Register that is accompanied by a statement of basis and purpose and specifies a comment period. *Id.* § 7607(d)(3). The statement of basis and purpose must include a summary of the factual data on which the proposed rule is based, the methodology used in obtaining and analyzing the data, and the major legal interpretations and policy considerations underlying the proposed rule. *Id.* EPA must allow any person to submit comments, and in addition, shall give interested persons an opportunity for the oral presentation of data, views, or arguments. *Id.* § 7607(d)(5). These and other public participation requirements in § 7607(d) build on those in the Administrative Procedure Act, and are even more protective of notice and comments rights.

B. The Trading Rule circumvents the CAA's notice and comment procedures.

EPA did not follow the Clean Air Act's notice and comment requirements with respect to the central component of its Trading Rule – the newly invented intrastate trading program. Because EPA never proposed or provided for public comment on this trading scheme, the Trading Rule was not lawfully promulgated under the Clean Air Act.

In the January 2017 proposed rule, EPA established source-specific SO_2 emission limits, that would require the installation and operation of modern SO_2 controls, for Texas generating units that are subject to the Act's mandate for BART. *See generally* 82 Fed. Reg. 912. The BART proposal's SO_2 emission limits would have cut haze-causing pollution from Texas power plants by approximately 194,000 tons compared to recent emission levels.[32]

But in the Trading Rule, EPA abandoned its proposal to require source-specific SO_2 limits, and instead adopted an entirely new intrastate emissions trading program that did not appear in the proposal at all. In contrast to the proposed rule, the Trading Rule would not result in any reduction in haze-causing pollution. In fact, the Trading Rule would allow a potential increase of 74,813 tons above 2016 levels.[33] By adopting a trading program that was never proposed, EPA plainly failed to follow the rulemaking procedures required by the Clean Air Act.

Moreover, any suggestion that the Trading Rule is a "logical outgrowth" of the BART proposal would be meritless. The logical outgrowth doctrine has no application here. Instead, that doctrine applies where a rule merely clarifies its proposal, or where the agency put commenters on notice that it was considering approaches different from the proposal. *See, e.g.*, *Daimler Trucks N. Am. v. EPA*, 737 F.3d 95 (D.C. Cir. 2013) (no logical outgrowth where proposal offered no indication agency was considering change that was ultimately adopted, and

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[32] BART FIP TSD at 2.

[33] Under the trading program, the maximum annual allowances are 293,104 tons, and actual emissions in 2016 were 218,291 tons. *See* 82 Fed. Reg. at 48,358, 48,360. EPA states that in 2016, the sources covered by the trading program emitted 218,291 tons of sulfur dioxide. *Id.* at 48,358. EPA states that the trading program limits annual emissions from covered sources to between 248,393 and 293,104 tons. *Id.* at 48,359. Therefore, the trading program authorizes covered sources to emit more than they actually emitted in 2016.

where change went beyond mere clarification). Here, the logical outgrowth doctrine does not apply because (i) the intrastate trading scheme is an entirely new program that bears no resemblance to the BART proposal, and (ii) EPA provided no notice that it was considering an intrastate trading program instead of source-specific SO_2 emission limits.

EPA cannot credibly claim that its trading program is just a clarification of the January 2017 proposed rule. The central thrust of the BART proposal was to require source-specific pollution limits based on the best available retrofit technology for each source. In order to adopt its wholly different trading program, EPA had to add dozens of pages of regulatory and explanatory text that appeared nowhere in the BART proposal. *See, e.g.*, 82 Fed. Reg. at 48,353-61, 48,363-80. And the Trading Rule is dramatically different in substance from the BART proposal, so much so, in fact, that EPA said it was "not necessary to respond" to comments on the proposed source-specific rule. *Id.* at 48,333.34 Moreover, instead of requiring limits for each of the relevant plants reflective of the BART controls, which EPA anticipated would reduce sulfur dioxide emissions by approximately 194,000 tons per year below recent levels, EPA is instituting a trading program in which the emissions cap is above the plants' 2016 emissions.[35]

The record also demonstrates that EPA provided no notice of its intrastate trading program. The proposed rule contained no mention whatsoever of this trading program, much less a summary of the factual data and new legal interpretations on which EPA ultimately relied to justify that program. Nor was there even the slightest suggestion in the proposed rule that EPA might consider adopting an intrastate trading program for Texas in lieu of the source-specific retrofit controls that the proposal set out in detail with extensive justification. *See* 82 Fed. Reg. 912. Indeed, the word "trading" appears nowhere in the BART proposal at all.

Accordingly, the Trading Rule's adoption of an entirely new program that was not even suggested in the proposal plainly does not qualify as a logical outgrowth. *Envtl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) (logical outgrowth doctrine did not apply where rule was "surprisingly distant" from proposal, as the court has "refused to allow agencies to use the rulemaking process to pull a surprise switcheroo on regulated entities"); *Int'l Union v. Mine Safety and Health Admin.*, 407 F.3d 1250, 1259-60 (D.C. Cir. 2005) ("The 'logical outgrowth'

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[34] The Response to Comments document EPA prepared for the Trading Rule indicates the extent to which the action is a completely new rule, never before proposed. For many of the comments submitted on the proposal, EPA responds that the comment is no longer relevant, because the Trading Rule adopts a scheme that does not implicate the issues the commenter raised. *See, e.g.*, Modeling Response to Comments at 19, Docket ID No. EPA-R06-OAR-2016-0611-0088, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0088 (noting that because EPA is not finalizing the source-specific rule it had proposed, "[t]herefore, comments concerning the emissions utilized in our subject to BART modeling for the sources participating in the SO2 trading program are no longer relevant"); *id.* at 28 (comment raised by company regarding the BART proposal "is no longer relevant" given the trading plan EPA adopted).

[35] Note: the projected reduction of 194,000 tons of SO_2 emissions in the BART proposal is relative to a 2011-15 baseline. *See* BART FIP TSD at 2 n.7. Because the 74,813-ton figure mentioned on the preceding page is a comparison between the Trading Rule's allowance emissions and 2016 emissions, that figure cannot be directly compared to the 194,000-ton figure.

doctrine does not extend to a final rule that is a brand new rule . . . nor does it apply where interested parties would have had to divine the Agency's unspoken thoughts.").

Nor can EPA claim that the Trading Rule is a logical outgrowth of the December 2014 proposed rule, 79 Fed. Reg. 74,818. That proposal, which predated *Homer City II*, said nothing about an intrastate trading program – it was neither proposed nor an issue that EPA invited comment upon. Consequently, any logical outgrowth argument based on that proposal would be baseless.[36]

Any attempt to characterize the Trading Rule as a logical outgrowth of the December 2014 proposed rule would also fail because that rulemaking had been completed before the instant rulemaking even commenced. The BART provisions in the December 2014 proposed rule were abandoned due to *Homer City II*, and EPA otherwise took final action on that proposed rule in December 2015. *See* 81 Fed. Reg. at 298-307 (summary of final actions). Notably, when EPA opened up a public comment period following its promulgation of the January 2017 BART proposal, the agency did not invite comments on the since-abandoned December 2014 proposal. Instead, EPA sought comments on the proposal it had just released – i.e., the January 2017 proposed rule.[37]

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[36] In the Trading Rule, EPA implies that its adoption of the trading program was justified because two Texas state agencies and two power companies filed comments advocating such an approach. 82 Fed. Reg. at 48,327. To be clear, these comments, and EPA's rationale for its adoption of the Trading Rule, have no bearing on whether this rule is a logical outgrowth of the BART proposal. The fact that commenters advocated for a wholly different approach than proposed did not provide any notice to the public that the agency itself was proposing or even considering such an approach. Indeed, the D.C. Circuit has "made clear that the fact that some commenters actually submitted comments addressing the final rule is of little significance. The agency must *itself* provide notice of a regulatory proposal." *Ass'n of Private Sector Colleges v. Duncan*, 681 F.3d 427, 462 (D.C. Cir. 2012) (citation omitted) (internal quotation marks omitted).

Nor is EPA's complete disregard of the required notice and comment procedures cured by Petitioner Sierra Club and NPCA's comments against "relying on a BART alternative such as the C[ross] S[tate] A[ir] P[ollution] R[ule] trading program." NPCA/SC Comments at 17. While EPA certainly should have considered these comments and responded to them in the context of the Trading Rule, these Petitioners still lacked an opportunity to comment on information that only became apparent in the Trading Rule – such as the specifics of EPA's intrastate trading scheme or the absence of any coherent rationale for adopting that scheme. NPCA and Sierra Club submitted comments on BART alternatives solely in response to industry comments at the January 10, 2017 public hearing, and to industry comments on the proposal to withdraw Texas from CSAPR. *See, e.g.*, Transcript of January 10, 2017 Public Hearing on EPA's Clean Air Plan Proposal for Texas Regional Haze at 22, Docket ID No. EPA-R06-OAR-2016-0611-0057, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0057. The comments were not based on, or responding to, any actual or implied proposal by EPA itself to adopt such an alternative.

[37] That the December 2014 proposal was part of a different rulemaking process is further confirmed by the fact that EPA did not include that proposal or any of the supporting technical analysis *in this docket* "on the date of the publication of the proposed rule," as required by the Clean Air Act. 42 U.S.C. § 7607(d)(3); *see also id.* § 7607(d)(4)(B)(ii) (all drafts of the proposed rule "shall be placed in the docket no later than the date of proposal of the rule"). Thus, if the Trading Rule had been a logical outgrowth of this earlier proposal (which it wasn't), the Rule would necessarily violate these CAA provisions.

By circumventing the Clean Air Act's notice and comment procedures, EPA's adoption of the Trading Rule also violated the Act's requirement that a rule "be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period." *Id.* § 7607(d)(6)(B). EPA violated this requirement by failing to respond to Petitioners' comments, such as Petitioners' discussion explaining that CSAPR is not better than BART. The agency had a clear duty to respond to such comments. This is especially so given the Trading Rule's implicit reliance on CSAPR in purporting to justify the trading scheme.[38] But EPA failed to respond to Petitioners' comments, asserting that such comments were beyond the scope of this rulemaking.[39] EPA's disregard of this statutory requirement represents an independent violation of the CAA.

By failing to follow the Clean Air Act's notice and comment requirements, EPA committed multiple violations of the Act. To the extent these violations could be characterized as procedural,[40] they amply meet the criteria set forth in 42 U.S.C. § 7607(d)(9)(D) for reversal based on procedural violations. First, EPA's violations were arbitrary and capricious. *See* 42 U.S.C. § 7607(d)(9)(D)(i). In the Trading Rule, EPA adopted an entirely new trading program

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[38] *See, e.g.*, 82 Fed. Reg. at 48,330 ("The BART alternative is designed to achieve SO_2 emission levels from Texas sources similar to the SO_2 emission levels that would have been achieved under CSAPR."); *id.* ("Accordingly, by the measure of CSAPR better than BART, the SO_2 BART FIP for Texas' BART-eligible EGUs participating in the trading program will achieve greater reasonable progress than BART with respect to SO_2.").

[39] *See, e.g.*, 82 Fed. Reg. at 48,338 ("This comment in its discussion of the 2016 sensitivity analysis and other particulars raises issues that are addressed in the record for that separately finalized action. This comment falls outside of the scope of our action here."); *id.* at 48,335; Legal Response to Comments (Sept. 2017) ("Legal RTC") at 6, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0087 ("The legal and technical determinations of the CSAPR-Better-than-BART rule are subject to judicial review under existing challenges and a separate administrative record, as indicated by the comment. Any challenges raised with regard to the present rulemaking and outside that litigation may be time-barred or directed to the wrong forum. As such, we do not believe that the incorporation of arguments from a brief filed with the D.C. Circuit concerning a separate regulatory determination warrants responses here, in this rulemaking, and that to offer responses here would suggest some basis for collateral, time-barred arguments that are out of the scope of this action."); Legal RTC at 8 ("With regard to the application of CSAPR SO_2 budgets in the finalized BART alternative, we note that the alternative does not 'set a higher (more lenient) SO_2 budget for Texas' and it does not authorize sources 'to emit more SO_2 than they were authorized to emit under the original CSAPR rule.' Thus, the assumptions that the comment suggests would be no longer valid remain valid. Because our allocations conform to the original CSAPR Rule, we decline to reanalyze whether CSAPR makes greater reasonable progress than BART with our SO_2 BART alternative.").

In failing to respond to Petitioners' comments, EPA also reneged on its commitment to "provide written responses to all significant oral and written comments received on our [BART] proposal." 82 Fed. Reg. at 912.

[40] EPA's failure to follow the Clean Air Act's rulemaking procedures is not only a procedural violation; it is also substantive, because EPA has unlawfully adopted an intrastate trading scheme that would eviscerate the strong BART emission limits of the proposed rule. Because the Trading Rule is not a lawful action, and is not even a final agency action, Petitioners need not make a showing under 42 U.S.C. § 7607(d)(9)(D). Petitioners make this showing as purely as a protective matter.

that was never proposed, and of which Petitioners had no notice. This blatant disregard of the Act's notice and comment procedures is unlawful, arbitrary, and capricious. Second, in filing the present petition, Petitioners have satisfied § 7607(d)(9)(D)(ii). Third, EPA's violations "were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made." *See id.* § 7607(d)(8) (cited in *id.* § 7607(d)(9)(D)(iii)). If EPA had obeyed the law by following notice and comment procedures, it would have learned of the serious substantive objections detailed below – objections demonstrating that the Trading Rule contravenes CAA requirements (including 42 U.S.C. § 7491 and the Regional Haze Rule), and is otherwise arbitrary and capricious. There is thus a substantial likelihood that the rule would have been significantly different if EPA had not made the errors identified by Petitioners. Petitioners therefore satisfy the requirements of 42 U.S.C. § 7607(d)(9)(D).

III. EPA provided no rational basis for abandoning the BART proposal in favor of the Trading Rule.

One of the key requirements of the Clean Air Act is that, in promulgating a rule, EPA must provide "an explanation of the reasons for any major changes in the promulgated rule from the proposed rule." 42 U.S.C. § 7607(d)(6)(A)(ii). The Trading Rule violates this requirement because EPA failed to adequately explain its decision to scrap the BART proposal's strong, source-specific SO_2 emission limits in favor of an intrastate emissions trading scheme.

In the proposed rule, EPA proposed source-by-source BART determinations for generating units in Texas subject to BART. Those determinations apply the five-factor BART analysis to those generating units.[41] Consequently, the BART proposal is supported by, *inter alia*, detailed, source-specific analyses of the cost of SO_2 controls, the level of control achievable by different technologies, estimated emissions reductions, and projected visibility improvement from operation of such controls. *See generally* BART FIP TSD; *see also* 82 Fed. Reg. at 921-45.

In the Trading Rule, EPA does not question the validity and rigor of any of these source-specific analyses. Nor does EPA claim that any aspect of its BART proposal was flawed. EPA identified no errors in the BART proposal, and did not even respond to most of the comments submitted on the proposal.[42] And EPA does not even attempt to demonstrate that the intrastate trading program would achieve greater reasonable progress than the source-specific BART

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[41] BART is defined as "an emission limitation based on the degree of reduction achievable through the application of the *best* system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility." 40 C.F.R. § 51.301 (emphasis added). When determining BART, the states and EPA must analyze "the best system of continuous emission control technology available" by taking into consideration five factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) existing pollution controls at the source, (4) the remaining useful life of the source, and (5) the degree of visibility improvement from pollution controls. *Id.* § 51.308(e)(1)(ii)(A).

[42] *See, e.g.*, 82 Fed. Reg. at 48,352 ("We are not finalizing our evaluation of whether individual sources are subject to BART. As a consequence, we believe that it is not necessary to respond to the merits of comments concerning source-specific visibility benefits of controls on these units, because we are not finalizing requirements based on those controls.").

required under the proposed rule. The Trading Rule assiduously avoids making comparisons between the BART proposal and the intrastate trading scheme.[43]

EPA's only rationale for concocting this intrastate trading program is that it was suggested by some commenters, including the State of Texas, and EPA gave "particular weight" to the State's views. *See, e.g.*, 82 Fed. Reg. at 48,333 ("Due to the comments we received requesting a BART alternative in lieu of source-specific BART determinations, we are finalizing an intrastate SO_2 trading program as an alternative to source-by-source BART and to meet the interstate visibility transport requirements."); *id.* at 48,327. This rationale does not satisfy the CAA's mandate that a rule must include "an explanation of the reasons for any major changes in the promulgated rule from the proposed rule." 42 U.S.C. § 7607(d)(6)(A)(ii). By failing to provide *any* explanation for why this trading program is purportedly better than the proposed rule's source-specific BART determinations, EPA has violated the Act.

EPA also never explained why it was appropriate to give greater weight to some comments than to others—i.e., why the agency followed the State's and Luminant's suggestion while rejecting other commenters' recommendation to finalize the January 2017 BART proposal. *See, e.g.*, NPCA/SC Comments at 26-40 (explaining why EPA should finalize its source-specific determinations for SO_2 BART). EPA received comments from all sides of this issue, so it had a duty to explain why it acted on some comments and rejected others.

EPA's suggestion, that the State's request for a trading program justifies abandonment of the proposed rule's source-specific BART determinations, is particularly misplaced. The Clean Air Act does establish a cooperative state-federal framework, but the fact that states have responsibilities under the Act does not empower EPA to jettison CAA requirements simply because a state expressed its "views," 82 Fed. Reg. at 48,327. *See, e.g.*, 81 Fed. Reg. at 308 ("[O]ur review of SIPs is not limited to a ministerial review and approval of a state's decisions . . . . [T]he CAA directs us to act if a state fails to submit a SIP, submits an incomplete SIP, or submits a SIP that does not meet the statutory requirements. Thus, the CAA provides us with a critical oversight role in ensuring that SIPs meet the CAA's requirements."); *Oklahoma v. EPA*, 723 F.3d 1201, 1223 (10th Cir. 2013) ("Once the EPA issued findings that Oklahoma failed to submit the required SIP under the Regional Haze Rule, the EPA had an obligation to promulgate a FIP. The statute itself makes clear that the mere *filing* of a SIP by Oklahoma does not relieve the EPA of its duty."). The State of Texas is free to submit a proposed SIP for EPA's review, and such SIP could ultimately be adopted if it meets CAA requirements. (Indeed, the BART proposal made clear that EPA would "work with the State . . . if it chooses to develop a SIP to meet these overdue Regional Haze requirements and replace or avoid a finalized FIP." 82 Fed.

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[43] EPA tries to downplay the significance of its BART proposal, stating its disagreement with the notion "that merely proposed determinations of BART in the context of a possible FIP set a stringency threshold for a demonstration set forth in a hypothetical SIP," and arguing that "[p]roposed determinations are only proposals." 82 Fed. Reg. at 48,336. In doing so, however, the agency ignores the fact that the BART proposal's technical analyses were not questioned at all in the Trading Rule. EPA cannot simply sweep away the exhaustive findings it made in the proposed rule. *See, e.g.*, *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 650 (D.C. Cir. 2016) (holding that "[b]ecause its justifications for the final rule contradict earlier findings, the EPA must provide some reasoning to explain why its final decision runs counter to the evidence before the agency") (citations omitted).

Reg. at 915.) But, to date, Texas has not done so, and the possibility of a future SIP does not affect EPA's *present* obligation to take final action on the BART proposal.[44]

IV. The Trading Rule fails to satisfy the requirement that a BART alternative achieve greater reasonable progress than BART.

The Trading Rule is unlawful, arbitrary, and capricious because it fails the regulatory requirement that a BART alternative "achieve greater reasonable progress than would be achieved through the installation and operation of BART." 40 C.F.R. § 51.308(e)(2). EPA has conducted multiple analyses demonstrating that BART would reduce SO_2 emissions from Texas generating units far more than would CSAPR, and the Trading Rule is even more lenient than CSAPR. This is true regardless of whether presumptive BART, or the more stringent source-specific BART in the proposed rule, is used as the benchmark for comparing the Trading Rule. Because the Trading Rule would not achieve greater reasonable progress than BART, the trading scheme violates 40 C.F.R. § 51.308(e)(2), and must be withdrawn and replaced with a lawful rule.

A. The clear weight of evidence demonstrates that the trading program will not make greater reasonable progress than BART.

The clear weight of evidence demonstrates that the Trading Rule would not achieve greater reasonable progress than would be achieved through BART, 40 C.F.R. § 51.308(e)(2). EPA claims that "this BART alternative will result in SO_2 emissions from Texas EGUs that will be similar to emissions anticipated under CSAPR." 82 Fed. Reg. at 48,327. But EPA has already determined that CSAPR would not achieve anywhere near the emissions reductions that source-specific BART would achieve in Texas. Indeed, the agency has done so in three separate rulemakings.

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[44] The violations described in this Section are substantive, both because 42 U.S.C. § 7607(d)(6)(A)(ii) only applies when a promulgated rule has "major changes" from the proposed rule, and because EPA's failure to provide "an explanation of the reasons for any major changes" means that the Trading Rule itself is incomplete and legally deficient. Petitioners therefore need not make a showing under § 7606(d)(9)(D).

But, to the extent the violations described in this Section could be characterized as procedural, they easily satisfy the criteria set forth in 42 U.S.C. § 7607(d)(9)(D) for reversal based on procedural violations. First, EPA's violations were arbitrary and capricious. *See id.* § 7607(d)(9)(D)(i). In the Trading Rule, EPA utterly failed to meet the requirements of 42 U.S.C. § 7607(d)(6)(A)(ii). This blatant disregard of a CAA requirement is unlawful, arbitrary, and capricious. Second, in filing the instant petition, Petitioners have satisfied § 7607(d)(9)(D)(ii). Third, EPA's violations "were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made." *See id.* § 7607(d)(8) (cited in *id.* § 7607(d)(9)(D)(iii)). If EPA had complied with § 7607(d)(6)(A)(ii), the agency would have been forced to grapple with the legal shortcomings of the Trading Rule, including the Rule's promulgation without following notice and comment procedures, and the fact that EPA's intrastate trading scheme would achieve less reasonable progress than the installation and operation of BART. There is thus a substantial likelihood that the Trading Rule would have been significantly different if EPA had not made the errors identified by Petitioners. Petitioners therefore satisfy the requirements of 42 U.S.C. § 7607(d)(9)(D).

First, in the January 2017 BART proposal, EPA determined that source-specific BART would reduce SO_2 emissions by approximately 194,000 tons per year, "a larger reduction than projected under CAIR or CSAPR." BART FIP TSD at 2. According to EPA, the source-specific BART proposal "achieves reductions at large sources of SO_2 emissions (e.g., Monticello, Martin Lake and Big Brown), that have significant impacts on Class I areas in nearby states." *Id*.

The BART proposal was the culmination of years of technical work by EPA staff. EPA sent two rounds of information requests to the facilities subject to BART in order to gather source-specific data. *Id.* at 12-21. Using the responses to EPA's information requests, as well as other data reported to EPA and other agencies, EPA considered each of the five statutory BART factors for each source. *See, e.g., id.* at 25-78. EPA's detailed analyses span hundreds of pages, in several technical support documents and other documents. And after completing those analyses, EPA ultimately concluded that CSAPR would achieve *less* reasonable progress than the installation and operation of BART. *Id.* at 2. Given that EPA expects SO_2 emissions under the Trading Rule to be similar to emissions under CSAPR, 82 Fed. Reg. at 48,327, EPA's analysis shows that the Trading Rule, like CSAPR, would improve visibility less than would BART. For this reason alone, the Trading Rule violates 40 C.F.R. § 51.308(e)(2).[45]

Second, in the original Better-than-BART rulemaking, EPA found that CSAPR would result in higher SO_2 emissions than presumptive BART for Texas sources. Specifically, EPA concluded that Texas sources would emit 139,300 tons of SO_2 if presumptive BART limits were required, but would emit nearly double that amount, 266,600 tons, under CSAPR.[46] EPA later increased Texas' SO_2 budget by 50,517 tons. 81 Fed. Reg. at 78,963 n.58. As a result, Texas' allowed emissions under CSAPR were 316,517 tons, over double the emissions under EPA's 2011 analysis of presumptive BART.

By allowing higher SO_2 emissions, CSAPR would result in less visibility improvement than under BART. When EPA increased Texas' SO_2 budget by 50,517 tons, the agency conducted sensitivity analyses of its visibility modeling for the Better-than-BART Rule to account for significant changes to CSAPR.[47] However, it did not present detailed information on the visibility impacts from Texas emission sources on the Class I areas impacted by Texas' emissions. Using EPA's own methodology, we have done just that, which we summarize in

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[45] It is important to note that EPA has not revised, or even questioned, any aspect of the technical analysis of source-specific BART that EPA conducted for the January 2017 BART proposal. And EPA cannot simply ignore its own technical analyses, because the agency failed to identify any errors in those technical analyses.

[46] *See* EPA, Technical Support Document for Demonstration of the Transport Rule as a BART Alternative at 10, Table 2-4 (Dec. 2011), Docket ID No. EPA-HQ-OAR-2011-0729-0014, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2011-0729-0014.

[47] *See* CSAPR BART Sensitivity Memo at Table 2.

Table 1 below.[48] This update of EPA's analysis indicates that BART achieves greater overall visibility improvement[49] than CSAPR.

In particular, Table 1 shows that even before EPA increased Texas' SO_2 budget by 50,157 tons, presumptive BART would have achieved greater aggregate visibility improvement than CSAPR on the 20% best days. And after EPA increased Texas' SO_2 budget, the results indicate that presumptive BART would have achieved more visibility improvement in the aggregate than CSAPR on the 20% worst days as well.

Table 1: Updated Version of EPA's Comparison of Visibility Improvement Under CSAPR vs. BART at Texas Sources[50]

		20 % Best Days Visibility Improvement (dv)				20 % Worst Days Visibility Improvement (dv)			
Class I Area Name	State	CSAPR + BART-elsewhere	CSAPR + BART-elsewhere after EPA Adjustment	BART - 2014 Base Case	Better Visibility under BART before or after EPA Adjustment?	CSAPR + BART-elsewhere	CSAPR + BART-elsewhere after EPA Adjustment	BART - 2014 Base Case	Better Visibility under BART before or after EPA Adjustment?
Big Bend NP	TX	0.2	0.15	0.2	Y – After	1.1	0.80	1.0	Y – After
Caney Creek Wilderness	AR	0.4	0.29	0.6	Y – Before	3.2	2.34	2.2	N
Carlsbad Caverns NP	TX	0.1	0.07	0.1	Y – After	0.9	0.66	0.8	Y – After
Guadalupe Mountains NP	TX	0.1	0.07	0.1	Y – After	0.9	0.66	0.8	Y – After
Hercules-Glades Wilderness	MO	0.6	0.44	0.8	Y – Before	2.5	1.83	1.7	N

[48] The visibility information in Table 1 is taken from EPA's CSAPR better-than-BART demonstration, which EPA relies on to justify the Trading Rule. *See, e.g.*, 82 Fed. Reg. at 48,330, 48,342.

[49] We refer here to an overall improvement in visibility, or aggregate visibility improvement, to follow the same methodology that EPA used in the Better-than-BART Rule (as well as updates to that Rule). In purporting to demonstrate that CSAPR achieves greater reasonable progress than BART, EPA relies on 40 C.F.R. § 51.308(e)(3)(ii), which requires that "[t]here is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas."

[50] Table 1 is an updated version of the analysis contained in EPA's CSAPR BART Sensitivity Memo. To generate the table, we used EPA's methodology to correct the "CSAPR +BART Elsewhere" columns to reflect the additional 50,157 tons per year SO_2 added to Texas' CSAPR budget. We did this by applying the 0.73 proportionality constant EPA calculated in the CSAPR BART Sensitivity Memo to the 20% best and worst days. This analysis is presented in the spreadsheet attached as Exhibit B.

Salt Creek	NM	0.1	0.07	0.2	Y – Before	0.7	0.51	0.7	Y – After
Upper Buffalo Wilderness	AR	0.5	0.37	0.6	Y – Before	2.5	1.83	1.4	N
White Mountain Wilderness	NM	0.1	0.07	0.2	Y – Before	0.6	0.44	0.5	Y – After
Wichita Mountains	OK	0.2	0.15	0.2	Y – After	1.6	1.17	1.2	Y – After
Totals		**2.3**	**1.7**	**3.0**		**14.0**	**10.2**	**10.3**	

The "CSAPR + BART Elsewhere" columns represent the change in deciviews ("dv") due to the effects of CSAPR within the transport region and source-by-source BART outside that region (elsewhere). The next columns use EPA's methodology to correct the "CSAPR + BART Elsewhere" columns for the additional 50,157 tons per year SO_2 added to Texas' budget. This is done by applying the 0.73 proportionality constant EPA calculated in the CSAPR BART Sensitivity Memo to the 20% best and worst days. The next columns represent the BART base case modeling. The last columns indicate whether better visibility resulted from BART or CSAPR before or after the application of the 0.73 proportionality constant.[51] The "Totals" row indicates that the overall visibility improvement from BART on the 20% best days (3 dv) exceeds that from CSAPR (1.7 dv), and similarly the improvement from BART on the 20% worst days (10.3 dv) exceeds that from CSAPR (10.2 dv).

Third, during the rulemaking to remove Texas from CSAPR's SO_2 trading program – published on the same day that the Trading Rule was signed – EPA yet again confirmed that SO_2 emissions under BART would be dramatically lower than under CSAPR. Specifically, EPA found that requiring Texas sources to install BART would reduce SO_2 emissions by between 127,300 and 177,800 tons relative to emissions under CSAPR. 81 Fed. Reg. at 78,963. EPA concluded that removing Texas sources from CSAPR and requiring them to install BART controls would "improv[e] projected air quality in this scenario relative to projected air quality in both the Nationwide BART scenario and the base case scenario (in which the projected SO_2 emissions from Texas EGUs would not change)." *Id.*

In short, in three separate rulemakings—the January 2017 BART proposal, the Better-than-BART rulemaking, and the withdrawal of Texas from CSAPR rulemaking—EPA has found that CSAPR results in higher SO_2 emissions from Texas generating units than does BART. This remains true regardless of whether CSAPR is compared to presumptive BART or source-specific BART.[52] As shown in Table 1 above, these significantly higher emissions translate into greater

[51] Prior to correcting for the additional 50,157 tons per year of SO_2, some of the Class I Areas experienced better visibility improvement for the 20% best days under source-by-source BART than under CSAPR. These are represented as "Y-before." By contrast, after correcting for the additional 50,157 tons per year of SO_2, some of the Class I Areas experienced better visibility improvement for the 20% worst days under source-by-source BART than under CSAPR. These are represented as "Y-after."

[52] While we have mentioned EPA's original and updated Better than BART analyses, and updated such analyses in Table 1, Petitioners do not agree that presumptive BART is the appropriate benchmark to use in an analysis of whether an alternative makes greater reasonable progress than BART. We refer to EPA's use of presumptive BART in the Better than BART analyses only to point out that even

visibility impairment in the region's Class I areas. EPA's own analyses therefore refute the agency's claim that the Trading Rule, which allows "SO_2 emissions from Texas EGUs . . . similar to emissions anticipated under CSAPR," 82 Fed. Reg. at 48,327, would achieve greater reasonable progress than BART. Contrary to EPA's claims, *see* 82 Fed. Reg. at 48,327, 48,336, the "clear weight of evidence" demonstrates that the intrastate trading program will achieve *less* reasonable progress than BART. The Trading Rule therefore violates 40 C.F.R. § 51.308(e)(2)(i)(E).[53]

B. EPA unlawfully failed to compare the intrastate trading program to BART, and instead compared the trading program to CSAPR.[54]

A BART alternative cannot be approved unless there is a demonstration that the alternative would achieve greater reasonable progress than BART. 40 C.F.R. § 51.308(e)(2). This demonstration "must be based on," among other things, "[a]n analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each source within the State subject to BART and covered by the alternative program." *Id.* § 51.308(e)(2)(i)(C). The Trading Rule fails to include an analysis of BART at each source that is subject to BART and covered by the trading scheme, as required by 40 C.F.R. § 51.308(e)(2)(i)(C).

The Regional Haze Rule specifies how BART must be analyzed for the purpose of determining whether an alternative makes greater reasonable progress than BART. BART "must" be analyzed "as provided for in paragraph (e)(1) of this section," which describes the five

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presumptive BART achieves greater reasonable progress than CSAPR—and, by extension, the even more permissive Trading Rule—in Texas. For the Trading Rule, EPA should have compared visibility improvement under the Trading Rule versus source-specific BART limits. In addition, while in Table 1 we update EPA's approach to assessing visibility impacts, we do not support that approach. To accurately compare visibility impacts from the Trading Rule and BART, EPA must conduct new modeling.

[53] Finally, EPA failed to follow its own regulations for determining whether the clear weight of evidence demonstrates that an alternative achieves greater reasonable progress than BART. In revising the regulations governing BART alternatives, EPA specified a three-step process for making a weight of the evidence determination: (1) Use information and data that can inform the decision; (2) Recognize the relative strengths and weaknesses of the information; and (3) Carefully consider all the information to reach a conclusion. 71 Fed. Reg. 60,612, 60,622 (Oct. 13, 2006); *see also* 81 Fed. Reg. 43,894, 43,896 (July 5, 2016). The Trading Rule does not even mention, much less follow, this three-step process, and therefore EPA has unlawfully failed to follow its own regulations for how to make a clear weight of evidence determination under 40 C.F.R. § 51.308(e)(2).

[54] In comments on the proposed rule, Petitioners NPCA and Sierra Club argued that if EPA were to consider any BART alternative, EPA would have to compare the visibility improvement from the alternative program to the improvement from source-specific BART. *See* NPCA/SC Comments at 25-26. EPA responded that it does not agree that the BART Proposal is the benchmark for judging an alternative program. 82 Fed. Reg. at 48,336. Having raised this objection with reasonable specificity during the public comment period, Petitioners may seek judicial review on this issue under 42 U.S.C. § 7607(d)(7)(B). Nonetheless, in seeking reconsideration of the Trading Rule, Petitioners discuss this issue here to clarify that *this* intrastate trading scheme does not satisfy 40 C.F.R. § 51.308(e)(2)-(3), and to highlight yet another fatal flaw in the Trading Rule.

factors that must be considered for each source, "unless the emissions trading program or other alternative measure has been designed to meet a requirement other than BART (such as the core requirement to have a long-term strategy to achieve the reasonable progress goals established by States)." 40 C.F.R. § 51.308(e)(2)(i)(C). If that exception applies, the state can determine BART "for similar types of sources within a source category based on both source-specific and category-wide information, as appropriate." *Id.*

EPA claims that because its trading program has been "designed to meet multiple requirements other than BART," 82 Fed. Reg. at 48,356—namely, the interstate transport requirements and the long-term strategy provisions—the agency does not have to analyze BART. EPA is wrong on both counts: the trading program was not designed to meet requirements other than BART; and even if it were, that would merely allow the agency to analyze BART on a category-wide basis, and would not relieve EPA of the obligation to analyze BART altogether.

1. The trading scheme is not designed to meet requirements other than BART.

EPA's claim that the Trading Rule was designed to meet requirements other than BART has no merit. First, EPA cannot credibly claim that the trading program was "designed to" meet the Clean Air Act's visibility transport requirements, because EPA has not made any determination of the trading program's visibility impacts on other states. To support the notion that the Trading Rule was designed to meet interstate visibility transport requirements, *see* 82 Fed. Reg. at 48,332, EPA cites a 2013 guidance document[55] stating that states can meet such requirements by pointing "to measures that limit visibility-impairing pollutants and ensure that the resulting reductions conform with any mutually agreed emission reductions under the relevant regional haze regional planning organization (RPO) process." *Id.*

Here, the regional planning process for Texas and surrounding states was conducted more than a decade ago, and assumed that states would implement CAIR. EPA argues that because the Trading Rule would reduce more emissions than CAIR, the Rule achieves the emission reductions that other states and Texas agreed Texas would achieve, and therefore the Rule is designed to satisfy the interstate visibility transport requirements. 82 Fed. Reg. at 48,332. This argument has no merit. EPA cannot use CAIR as the benchmark for whether the interstate visibility transport requirements are met, given that CAIR was invalidated years ago by the D.C. Circuit, *North Carolina v. EPA*, 531 F.3d 896, 903 (D.C. Cir. 2008), and has been replaced by CSAPR, 76 Fed. Reg. 48,208. Moreover, EPA disapproved Texas' regional haze plan precisely because it relied on CAIR. 77 Fed. Reg. 33,642. It is arbitrary and capricious for EPA to now turn around and claim that interstate visibility transport requirements are satisfied because the emissions reductions in CAIR will be achieved. Further, as noted above, EPA provides no support for its claim that the emission levels assumed in the CENRAP modeling are sufficient to assure that Texas' emissions do not interfere with other states' visibility plans.

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[55] EPA, "Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and (2)" (Sept. 2013), Docket ID No. EPA-R06-OAR-2016-0611-0104, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0104.

Nor can EPA bypass the source-specific analyses required by 51.308(e)(2)(i)(C) by simply asserting that its trading scheme was "designed to be part of the long-term strategy [] to meet [] reasonable progress requirements." 82 Fed Reg. at 48,356. The "long-term strategy must include enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals established by States having mandatory Class I Federal areas." 40 C.F.R. § 51.308(d)(3). Given that the long-term strategy consists of all the measures in a regional haze plan, EPA's assertion that BART requirements are designed to meet the long-term strategy requirements would mean that the exception would swallow the rule in 40 C.F.R. § 51.308(e)(2)(i)(C). EPA's claim that the BART Rule is somehow designed to meet the reasonable progress requirements is also contradicted by EPA's statement elsewhere in the Rule that it is not taking action on the reasonable progress elements that the Fifth Circuit remanded to the agency. 82 Fed. Reg. at 48,332 ("However, the EPA is not determining at this time that this final action fully resolves the EPA's outstanding obligations with respect to reasonable progress that resulted from the Fifth Circuit's remand of our reasonable progress FIP. We intend to take future action to address the Fifth Circuit's remand.").

2. Even if the trading program were designed to meet requirements other than BART, EPA has unlawfully failed to analyze BART for sources subject to BART and covered by the trading program.

Even if the Trading Rule were designed to meet requirements other than BART—which it is not—EPA would still have violated 40 C.F.R. § 51.308(e)(2)(i)(C) by failing to analyze BART for the sources subject to BART and covered by the trading program. If a state seeks to adopt an alternative to BART, "[f]or all such emission trading programs or other alternative measures," the state "must" submit "[a]n analysis of the best system of continuous emission control technology available and associated emission reductions achievable for each source within the State subject to BART and covered by the alternative program." 40 C.F.R. § 51.308(e)(2)(i)(C). There is no exception to this requirement.

Instead, the Regional Haze Rule provides an exception to the default rule for *how* BART must be analyzed. The default rule is that BART must be analyzed "as provided for in paragraph (e)(1)," *id.*, meaning that each of the five statutory BART factors must be analyzed for each BART source. But if "the emissions trading program or other alternative measure has been designed to meet a requirement other than BART . . . the State may determine the best system of continuous emission control technology and associated emission reductions for similar types of sources within a source category based on both source-specific and category-wide information, as appropriate." *Id.*

Here, assuming that the trading program is designed to meet a requirement other than BART, that merely authorizes EPA to analyze BART based on "category-wide information" in addition to source-specific information. It does not relieve EPA of the obligation to analyze BART at all. EPA made this clear in the preamble to the rule adding this provision to the Regional Haze Rule, in which EPA explained that its goal was to allow states to use simplifying assumptions to calculate BART for comparison purposes, not to eliminate altogether the obligation to analyze BART:

> States should have the ability to develop a BART benchmark based on simplifying assumptions as to what the most-stringent BART is likely to achieve. The regulations finalized today therefore provide that where an emissions trading program has been designed to meet a requirement other than BART, including the reasonable progress requirement, the State may establish a BART benchmark based on an analysis that includes simplifying assumptions about BART control levels for sources within a source category.

71 Fed. Reg. at 60,618. EPA's complete failure to analyze BART for the sources covered by the trading program therefore violates 40 C.F.R. § 51.308(e)(2)(i)(C).

This is not a minor, technical error. EPA deliberately avoided comparing the trading program to either presumptive BART or source-specific BART because the agency knows that the Trading Rule would not achieve greater visibility improvement than BART. EPA has concluded that source-specific BART or presumptive BART would reduce SO_2 emissions by approximately 194,000 or 120,000 tons per year,[56] respectively, whereas the Trading Rule would not decrease emissions at all relative to 2016 emissions. EPA flouted its own regulations mandating a comparison between the trading program and BART because the agency's own, prior analyses demonstrate that the trading program cannot possibly satisfy the regulatory standard of achieving greater reasonable progress than BART.

C. The Trading Rule's reliance on the CSAPR Better than BART analysis is arbitrary and capricious.

EPA's reliance on the CSAPR Better than BART analysis is fundamentally flawed, for several reasons. The agency relies on the Better than BART analysis to purportedly demonstrate that the Trading Rule achieves greater reasonable progress than BART. *See, e.g.*, 82 Fed. Reg. at 48,329, 48,330, 48,336, 48,342. EPA's basic argument is that CSAPR would achieve greater reasonable progress than BART, and the Trading Rule will achieve the same or greater emission reductions than CSAPR, therefore the Trading Rule will make greater reasonable progress than BART. This argument ignores critical factual and legal differences between CSAPR and the Trading Rule, as explained below.

1. EPA cannot rely on an analysis of CSAPR because Texas is no longer in CSAPR for SO_2.

The Regional Haze Rule purports to give only those states that are in CSAPR the option of relying on CSAPR to satisfy BART. *See* 40 C.F.R. § 51.308(e)(4). EPA cannot rely on the CSAPR Better than BART analysis because Texas is not in CSAPR for SO_2, and the intrastate trading program applies to only Texas.

In the original and subsequent EPA analyses purporting to show that CSAPR makes greater reasonable progress than BART, EPA claimed to satisfy the two-part test in 40 C.F.R. § 51.308(e)(3): "(i) [v]isibility does not decline in any Class I area, and (ii) [t]here is an overall improvement in visibility, determined by comparing the average differences between BART and

[56] BART FIP TSD at 2.

the alternative over all affected Class I areas." *See* 77 Fed. Reg. at 33,644. To satisfy the second part of this test, EPA compared CSAPR and BART by examining the expected visibility improvement averaged across all affected Class I areas. In the original Better than BART Rule, updates to that rule, and in every subsequent regional haze plan in which EPA or a state has relied on the Better-than-BART Rule, EPA has maintained that the agency is not required to demonstrate that CSAPR achieves greater reasonable progress than BART in any particular state. *See, e.g., id.* at 33,650; 82 Fed. Reg. at 45,494.

But that is precisely what EPA must demonstrate here, because the Trading Rule applies to only a single state: Texas. There is no logical or legal basis for using the CSAPR Better than BART analysis, which looked at the average visibility improvement across Class I areas in the eastern part of the country, when evaluating the Trading Rule, which applies to Texas alone.

Having withdrawn Texas from CSAPR for SO_2, 82 Fed. Reg. at 45,481, EPA cannot rely on the reasonable progress achieved by CSAPR in states other than Texas to demonstrate that a Texas-specific trading scheme would achieve greater reasonable progress than BART. In particular, under both of the provisions governing the demonstration for a BART alternative, an alternative covering only Texas sources cannot rely on visibility improvement at Class I areas that results from emission reductions at non-Texas sources. Under 40 C.F.R. § 51.308(e)(2)(i)(E), EPA must compare a BART alternative to "the installation and operation of BART *at the covered sources*." (emphasis added). Here, by relying on the Better than BART analysis, EPA improperly compares the Trading Rule to a BART substitute required at sources in other states. Those sources are not "covered sources" because those non-Texas sources are not covered by the Trading Rule.

Under section 51.308(e)(3), EPA must compare a BART alternative to BART "over all affected Class I areas." Here, the Class I areas "affected" by the Trading Rule are not the same Class I areas affected by CSAPR, given that any pollution reductions achieved by the Trading Rule would be from Texas alone, whereas CSAPR can take credit for emission reductions across numerous states.

Additionally, the Regional Haze Rule allows a state to rely on an alternative to BART only if the state demonstrates that the alternative in question—not some other program—would achieve greater reasonable progress than BART. *See* 40 C.F.R. § 51.308(e)(2)(i) (requiring that "*the* emissions trading program" achieve greater reasonable progress than BART), (e)(3) ("If the distribution of emissions is not substantially different than under BART, and *the alternative measure* results in greater emission reductions, then the alternative measure may be deemed to achieve greater reasonable progress."), *id.* (where the emissions distribution is different, EPA must conduct dispersion modeling showing "overall improvement in visibility, determined by comparing the average differences between BART *and the alternative* over all affected Class I areas.") (emphasis added for each provision). The Regional Haze Rule's repeated reference to "the" trading program, along with the requirement that EPA evaluate BART against "the" BART alternative suggests that the demonstration must focus on the alternative that is actually adopted in lieu of BART—not some other program. Here, the Trading Rule does not adopt CSAPR as an alternative measure for satisfying SO_2 BART, and therefore the regulations do not allow EPA to rely on the purported visibility benefits from CSAPR in evaluating whether the Trading Rule achieves greater reasonable progress than BART.

2. EPA has repeatedly found that BART would reduce emissions far more than CSAPR at Texas sources.

EPA's primary rationale for the Trading Rule—that CSAPR would achieve greater reasonable progress than BART for Texas sources—is flatly contradicted by EPA's own analyses. EPA claims that the Trading Rule is a lawful alternative to BART because the Rule will result in emissions "no greater than" the emissions projected under CSAPR. 82 Fed. Reg. at 48,336. But EPA has concluded that when Texas sources are examined separately, SO_2 emissions would be dramatically higher under CSAPR than under BART. As a result, regardless of whether one uses the "clear weight of evidence" test in 40 C.F.R. § 51.308(e)(2)(i)(E), or the two-part test in 40 C.F.R. § 51.308(e)(3), the Trading Program is not a lawful alternative to BART.

In the BART proposal, EPA determined that CSAPR would result in higher SO_2 emissions from Texas sources than source-specific BART would achieve. Specifically, EPA concluded that source-specific BART would reduce SO_2 emissions by 194,000 tons per year, "a larger reduction than projected under CAIR or CSAPR." BART FIP TSD at 2.

As mentioned *supra* in Section IV.A, Texas' allowed SO_2 emissions under CSAPR were 316,517 tons, well over double the BART emissions under EPA's 2011 analysis.[57] Table 1, *supra* in Sec. IV.A, shows that under Texas' updated CSAPR budget, overall visibility would be worse under CSAPR than it would be under BART at affected Class I areas.

In responding to the remand of CSAPR, EPA reiterated that SO_2 emissions under BART would be dramatically lower than under CSAPR. Specifically, EPA found that requiring Texas sources to install BART would reduce SO_2 emissions by between 127,300 and 177,800 tons relative to emissions under CSAPR. 81 Fed. Reg. at 78,963. EPA concluded that removing Texas sources from CSAPR and requiring them to install BART controls would "improv[e] projected air quality in this scenario relative to projected air quality in both the Nationwide BART scenario and the base case scenario (in which the projected SO_2 emissions from Texas EGUs would not change)." *Id.*

In sum, every EPA analysis has reached the same conclusion: when Texas is examined separately, CSAPR would achieve less reasonable progress than BART. Given EPA's premise that the Trading Rule will achieve similar emission reductions and visibility gains as CSAPR, EPA's prior analyses demonstrate that the Trading Rule, like CSAPR, would achieve less reasonable progress than BART for the Class I areas affected by Texas sources.

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[57] *See* EPA, Technical Support Document for Demonstration of the Transport Rule as a BART Alternative at 10, Table 2-4 (Dec. 2011), Docket ID No. EPA-HQ-OAR-2011-0729-0014; 81 Fed. Reg. at 78,963 n.58.

3. The Trading Rule authorizes SO_2 emissions above Texas' CSAPR budget for SO_2, so it is arbitrary and capricious to rely on the CSAPR Better than BART analysis.

Even if CSAPR would achieve greater reasonable progress than BART for Texas sources, which it would not, the Trading Rule would allow Texas sources to emit more SO_2 than under CSAPR. This is an additional reason why EPA's reliance on the CSAPR Better than BART analysis to justify the Trading Rule is arbitrary and capricious.

In the most recent update to the Better-than-BART Rule, EPA rejected the suggestion that the agency could increase Texas' CSAPR budget for SO_2 and still rely on the CSAPR Better-than-BART Rule to satisfy BART. *See* 82 Fed. Reg. at 45,487 ("[B]ecause of the increased SO2 budget, such a SIP would not 'meet[] the requirements of . . . § 52.39' and therefore would not allow the state to rely on its EGUs' participation in the CSAPR SIP trading program as an alternative to source-specific BART for SO2."). *Id.* EPA explained that:

> To the extent the commenters are suggesting that the D.C. Circuit's holdings in *EME Homer City II* require the Agency to find that a SIP with a revised, higher SO2 budget would somehow satisfy the CSAPR-better-than-BART rule despite its plain language, the Agency disagrees. . . . the CSAPR-better-than-BART rule rests on an evaluation of the projected visibility impacts from CSAPR implementation assuming the final CSAPR Phase 2 budget stringencies (including the 2012 CSAPR budget revisions, which were accounted for in the analysis for the final CSAPR-better-than-BART rule). Given this, continuing to enforce the CSAPR-better-than-BART rule's requirement that a state's participation in CSAPR through a SIP must "meet[] the requirements of . . . § 52.39"—including the requirement for a state budget no less stringent than was analyzed for purposes of promulgating the rule—is entirely reasonable.

Id. n.47.

Texas' revised CSAPR budget for SO_2 was 317,100 tons per year. 81 Fed. Reg. at 78,963 n.58. However, the Trading Rule does not limit Texas' SO_2 emission to 317,100 tons or less per year.

Starting in 2019, the Trading Rule makes 238,393 tons of allowances available, plus a supplemental allowance pool that can grow as high as 54,711 tons per year, for total allowances of 293,104 tons per year. *See* 82 Fed. Reg. at 48,358-60 (to be codified at 40 C.F.R. §§ 97.910, 97.912). However, several Texas sources that were included in CSAPR are not subject to the Trading Rule, and these sources emit approximately 27,446 tons per year. *Id*. at 48,358. In total, the Trading Rule authorizes Texas sources to emit up to 320,550 tons of SO_2 per year—higher than the 317,100 tons per year that EPA assumed Texas sources would emit under CSAPR.

In sum, the Trading Rule authorizes Texas sources to emit more than the 317,100 tons per year below which EPA's Better than BART analysis purports to show that CSAPR improves visibility more than BART. Given that the Trading Rule authorizes SO_2 emissions that exceed the level above which EPA claims CSAPR no longer achieves greater reasonable progress than

BART, it was arbitrary and capricious for EPA to conclude that the Trading Rule is a lawful BART alternative based on EPA's prior CSAPR findings. In addition, as explained above, EPA has found on three separate occasions that BART would reduce emissions more than CSAPR at Texas sources. As a result, it was arbitrary and capricious for EPA to rely on the Better than BART analysis to conclude that the Trading Rule would achieve greater reasonable progress than BART.

4. EPA violated the Regional Haze Rule by failing to determine which units are subject to BART.

The Trading Rule fails to satisfy the requirement that an alternative achieve greater reasonable progress than BART, 40 C.F.R. § 51.308(e)(2)(i)(E), (e)(3), because EPA has not even determined which sources are subject to BART in the first place. EPA states that "we do not deem it necessary to finalize subject-to-BART findings for these EGUs for these pollutants." 82 Fed. Reg. at 48,328. In particular, EPA declined to determine whether Coleto Creek is subject to BART and declined to respond to comments concerning its subject-to-BART modeling. *Id.* at 48,351-52. Without deciding which sources are subject to BART, EPA cannot possibly demonstrate that the Trading Rule achieves greater reasonable progress than BART, as required by 40 C.F.R. § 51.308(e)(2)(i)(E), (e)(3). Furthermore, EPA's failure to determine which sources are subject to BART is yet another reason EPA violated the requirement to determine BART for purposes of comparing the Trading Rule to BART, *see* 40 C.F.R. § 51.308(e)(2)(i)(C) (requiring an analysis of BART "for each source within the State subject to BART and covered by the alternative program").

5. EPA arbitrarily failed to assess the impact of Texas' withdrawal from CSAPR.

EPA's reliance on the CSAPR Better than BART analysis is also arbitrary and capricious because the agency failed to consider the low prices of SO_2 allowances in the CSAPR program. Consequently, there is no reasonable basis to conclude that CSAPR will result in meaningful emissions reductions, because electric generating unit owners will simply purchase allowances instead of installing SO_2 controls. In its rule removing Texas from CSAPR for SO_2, EPA concedes that the price of SO_2 allowances for the CSAPR program is currently lower than when CSAPR was originally promulgated, and thus emissions reductions would be lower than originally expected. *See* 82 Fed. Reg. at 45,493.

Despite recognizing that the change in allowance prices may affect emissions, EPA performed no meaningful analysis in its Trading Rule—or anywhere else—of the impact of Texas' removal from CSAPR on the price of the CSAPR allowances. This is an especially glaring omission, considering EPA's acknowledgement that Texas' exit from the SO_2 CSAPR program will result in an additional 22,300 allowances remaining in the Group 2 SO_2 CSAPR market, which will result in a decrease in the price of SO_2 allowances. *Id.* The price of SO_2 allowances impacts the distribution of SO_2 emissions. Because EPA relied on modeling and allowance cost thresholds to set the SO_2 CSAPR budgets, but did not consider the impact of allowance pricing on CSAPR, the CSAPR Better than BART demonstration is flawed. And because the Trading Rule relies on that Better than BART demonstration, the Trading Rule, in turn, is equally flawed.

On reconsideration, if EPA were to continue to rely on the CSAPR better than BART analysis—which it should not, for all the reasons explained in this petition—EPA must consider how the pricing and availability of SO_2 allowances affects the integrity of the CSAPR emissions trading program. And the agency should perform additional technical analysis regarding the adequacy of EPA's emissions shifting analysis, including an analysis on the expected price of SO_2 allowance pricing with Texas no longer participating in CSAPR.

V. EPA's finding that the Trading Rule satisfies Texas' CAA Section 110(a)(2)(D)(i)(II) visibility transport plan requirements is unlawful, arbitrary, and capricious.

EPA also violated several Clean Air Act requirements when it concluded that the Trading Rule satisfies the CAA section 110(a)(2)(D)(i)(II) visibility transport plan requirements for Texas. EPA's finding, 82 Fed. Reg. at 48,332, violates the Act's notice and comment requirements, as well as the specific requirement that the agency provide "an explanation of the reasons for any major changes in the promulgated rule from the proposed rule." 42 U.S.C. § 7607(d)(6)(A)(ii). The Trading Rule violates these requirements because EPA failed to propose that its intrastate trading scheme would satisfy section 110(a)(2)(D)(i)(II), and because the agency failed to explain the reversal of its prior finding that section 110(a)(2)(D)(i)(II) requirements would be met through source-specific BART.

In the January 2017 proposed rule, EPA found that its source-specific BART proposal, together with Texas' participation in CSAPR for NOx, would satisfy these requirements. *See* 82 Fed. Reg. at 917. EPA's rationale was that this combination would produce greater emission reductions and visibility benefits than assumed under CAIR or CSAPR alone, and that the source-specific BART requirements would cut the most significant emissions from large sources. *Id.* ("We are proposing this action based on the reasoning that our BART FIP will achieve more emission reductions than projected under CAIR or CSAPR and the reductions are occurring at sources that have particularly large impacts on Class I areas outside of Texas.").

In the Trading Rule, however, EPA adopted a totally different position that was never proposed. First, the agency relied on its newly invented intrastate trading program, not source-specific BART, to meet the visibility transport obligation. Second, EPA based that reliance on a totally new rationale, namely, that the SO_2 reductions it predicted from the trading program would be consistent with emissions reductions modeled by the now-defunct CENRAP under a regional haze planning organization process. *Id.* at 48,332. The public never had a chance to comment on this totally new rationale, which is baseless on its face. That CENRAP used emission assumptions in its modeling does not show that those assumptions were in fact sufficient to assure non-interference by Texas' emissions with measures required to protect visibility in other states. Moreover, the states whose visibility is impacted by Texas include states that were not members of CENRAP, such as New Mexico and Colorado.[58] If EPA had proposed this approach, Petitioners would have submitted detailed comments showing why the CENRAP emissions assumptions are not adequate to meet the visibility transport requirements. Because the Trading Rule purports to satisfy Texas' section 110(a)(2)(D)(i)(II) obligations

[58] *See, e.g.*, EPA, BART Modeling TSD at App. E, Docket ID No. EPA-R06-OAR-2016-0611-0006 at 85-102, *available at* https://www.regulations.gov/document?D=EPA-R06-OAR-2016-0611-0006.

through a never-proposed approach, the Rule violates the CAA's notice and comment requirements. By failing to explain the Trading Rule's radical departure from the rationale set forth in the proposed rule, EPA violated 42 U.S.C. § 7607(d)(6)(A)(ii) as well.

EPA's reliance on the Trading Rule to satisfy the section 110(a)(2)(D)(i)(II) is also arbitrary and capricious. EPA claims that the Trading Rule reduces emissions as much as CAIR would have, and the central states agreed that their respective interstate visibility transport obligations would be met through implementation of CAIR. *See* 82 Fed. Reg. at 48,332. But as explained above, *supra* Sec. IV.B.1, EPA cannot use CAIR—which has been invalidated by the D.C. Circuit and replaced by EPA—as the benchmark for whether the Trading Rule meets the interstate visibility transport requirements. And there is no rational basis for EPA's new rationale of relying on the emission levels assumed in CENRAP modeling as a basis for finding that Texas' emissions will not interfere with other states' visibility plans. Moreover, as noted above, some states whose visibility is impacted by Texas were not members of CENRAP, and thus the CENRAP process could not have determined what emissions limits were necessary to satisfy Texas' obligations regarding New Mexico and Colorado.

In addition, for all of the reasons explained elsewhere in this petition, the Trading Rule suffers from multiple procedural and substantive flaws. Given that the Trading Rule is unlawful, it cannot satisfy Texas' interstate visibility transport obligations.

To the extent the above violations could be characterized as procedural,[59] they amply meet the criteria set forth in 42 U.S.C. § 7607(d)(9)(D) for reversal based on procedural violations. First, EPA's violations were arbitrary and capricious. *See* 42 U.S.C. § 7607(d)(9)(D)(i). As explained above, in the Trading Rule, EPA adopted an entirely new approach to the section 110(a)(2)(D)(i)(II) requirements—one that was never proposed, and of which Petitioners had no notice. This blatant disregard of the Act's notice and comment procedures is unlawful, arbitrary, and capricious. EPA's complete failure to meet the requirements of 42 U.S.C. § 7607(d)(6)(A)(ii) was likewise unlawful, arbitrary, and capricious. Second, in filing the present petition, Petitioners have satisfied § 7607(d)(9)(D)(ii). Third, EPA's violations "were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made." *See id.* § 7607(d)(8) (cited in *id.* § 7607(d)(9)(D)(iii)). If EPA had proposed relying on the CENRAP assumptions in the proposed rule, it would have learned that those assumptions cannot meet the visibility transport requirements, and are otherwise arbitrary and capricious.[60] And if EPA had complied with § 7607(d)(6)(A)(ii), the agency would have

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[59] EPA's failure to follow the Clean Air Act's rulemaking procedures, and its disregard of 42 U.S.C. § 7607(d)(6)(A)(ii), are not only procedural violations; they are also substantive, because EPA abandoned the strong emission limits it previously proposed to satisfy section 110(a)(2)(D)(i)(II), and because, by failing to provide "an explanation of the reasons for [] major changes" from the BART proposal, EPA's Trading Rule is incomplete and legally deficient. Because the Trading Rule is not lawful action, and is not even a final agency action, Petitioners need not make a showing under § 7606(d)(9)(D). Petitioners make this showing purely as a protective matter.

[60] For example, Petitioners would have submitted adverse comments explaining that it would be arbitrary to rely on CENRAP's modeling, which was based on CAIR (a defunct and judicially-invalidated program), and that EPA's reliance cannot satisfy the visibility transport requirements.

been forced to confront the radical differences between the proposed rule's approach to section 110(a)(2)(D)(i)(II) and the Trading Rule's arbitrary approach. Accordingly, there is a substantial likelihood that the Trading Rule would have been significantly different if EPA had not made the errors identified by Petitioners. Petitioners therefore satisfy the requirements of 42 U.S.C. § 7607(d)(9)(D).

VI. EPA cannot lawfully adopt the Trading Rule's intrastate trading scheme because it is too late to do so.

The Trading Rule is also unlawful because even *if* the intrastate trading scheme would reduce SO_2 emissions—it would not, as explained above—those emission reductions would occur too late. Under the Regional Haze Rule, any BART alternative must include a "requirement that all necessary emission reductions take place during the period of the first long-term strategy for regional haze." *See* 40 C.F.R. § 51.308(e)(2)(iii). Because the first planning period ends in 2018,[61] any BART alternative would need to achieve "all necessary emission reductions" by next year. *See, e.g.*, 77 Fed. Reg. 36,044, 36,053 (June 15, 2012) ("Section 308(e)(2) requires that all emission reductions for the alternative program take place by 2018 . . . ."); 77 Fed. Reg. 28,825, 28,832 (May 16, 2012) ("Under 40 CFR 51.308(e)(2)(iii)–(iv), all emission reductions for the alternative program must take place by 2018 . . .".); 77 Fed. Reg. 18,052, 18,075 (Mar. 26, 2012).[62] The Trading Rule fails this requirement, because the intrastate trading program does not even *begin* until January 1, 2019. 82 Fed Reg. at 48,330, 48,368. Thus, because EPA cannot ensure that the necessary SO_2 reductions would take place by the end of the first planning period in 2018, the Trading Rule is unlawful.[63]

EPA's claim, that "the end of the first planning period of the first long-term strategy for Texas is 2021," 82 Fed. Reg. at 48,330; Legal RTC at 7, is meritless and contrary to EPA's consistent statements identifying 2018 as the close of the first planning period. *See, e.g.*, 77 Fed. Reg. at 36,053; 77 Fed. Reg. at 28,832; 77 Fed. Reg. at 18,075. Indeed, the authority that EPA relies upon for this claim makes clear that the opposite is true. In its January 2017 revisions to the Regional Haze Rule, EPA stated unequivocally that the changes it made—including

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[61] *See, e.g.*, *Yazzie v. EPA*, 851 F.3d 960, 970 n.8 (9th Cir. 2017) (noting dispute among parties as to the exact date on which first planning period ends, the latter of which is Dec. 31, 2018); 77 Fed. Reg. at 33,647 (noting that 2018 is "the end of the first regional haze planning period"); 64 Fed. Reg. 35,714, 35,760 (July 1, 1999) (referencing 2018 as "the end of the first long-term progress period").

[62] The same is not true of source-specific BART itself. Thus, *compliance* alternatives with *source-specific BART* are permitted to extend past the first planning period.

[63] In comments on the proposed rule, Petitioners NPCA and Sierra Club noted that any BART alternative would be too late because emissions reductions would need to occur by 2018. *See* NPCA/SC Comments at 23-24. As discussed in the text, EPA responded to this comment in its Legal RTC. Because Petitioners raised this objection with reasonable specificity during the public comment period, they are entitled to seek judicial review on this issue. 42 U.S.C. § 7607(d)(7)(B). Petitioners are nonetheless discussing this issue in this reconsideration petition for two reasons: first, to make clear that *this* intrastate trading scheme, which EPA never proposed, fails the timing requirement of 40 C.F.R. § 51.308(e)(2)(iii); and second, by highlighting yet another fatal flaw in the Trading Rule, to underscore how thoroughly unlawful this Rule is.

postponing the beginning of the second planning period to 2021—were not intended to change requirements for the first planning period:

> All of these changes apply to periodic comprehensive state implementation plans developed for the second and subsequent implementation periods and to progress reports submitted subsequent to those plans. These changes do not affect the development and review of state plans for the first implementation period or the first progress reports due under the 1999 Regional Haze Rule.

82 Fed. Reg. 3078, 3080 (Jan. 10, 2017). Because any BART alternative would need to achieve all necessary emission reductions by 2018, and because the Trading Rule fails to do so, that rule is unlawful, arbitrary, and capricious. 42 U.S.C. § 7607(d)(9)(A).

VII. The Trading Rule is unlawful because Texas' mere submittal of a SIP would suspend key provisions of the trading program.

The Trading Rule is also unlawful because it allows EPA to suspend key provisions of the intrastate trading program if Texas merely submits a SIP revision (*i.e.*, in situations where the SIP revision has been submitted for review, but not approved by EPA). This feature of the Trading Rule is a blatant violation of the Clean Air Act, and it further demonstrates the unlawfulness of the Rule.

The Clean Air Act prescribes a specific process for the review and approval of a SIP (or SIP revision). If a state submits a SIP, EPA must determine within six months whether the submission is complete. 42 U.S.C. § 7410(k)(1)(A). If the plan is complete, EPA then has one year to determine whether the plan comports with legal requirements and to either approve or disapprove the plan, in whole or in part. *Id.* EPA may not approve a plan "if the revision would interfere with any. . . applicable requirement" of the Clean Air Act. *Id.* § 7410(l). And the promulgation of a SIP is subject to the Act's rulemaking requirements, *id.* § 7607(d)(1)(B), including notice and an opportunity for public comment, *id.* § 7607(d)(2)-(6).

And the process is no different in situations where a SIP has been proposed to replace a previously enacted FIP; under § 7407(d)(1)(B), EPA must go through the CAA's rulemaking procedures. Simply put, no provision of the Act allows the mere submission of a SIP to suspend operation of a FIP. Yet, that is precisely what the Trading Rule allows. Section 97.921 provides:

> (a) By November 1, 2018, the Administrator will record in each Texas SO_2 Trading Program source's compliance account the Texas SO_2 Trading Program allowances allocated to the Texas SO_2 Trading Program units at the source in accordance with § 97.911(a) for the control periods in 2019, 2020, 2021, and 2022. *The Administrator may delay recordation of Texas SO_2 Trading Program allowances for the specified control periods if the State of Texas submits a SIP revision before the recordation deadline.*

> (b) By July 1, 2019 and July 1 of each year thereafter, the Administrator will record in each Texas SO_2 Trading Program source's compliance account the Texas SO_2 Trading Program allowances allocated to the Texas SO_2 Trading Program units at the source in accordance with § 97.911(a) for the control period in the fourth year after the year of the applicable recordation deadline under this paragraph. *The Administrator may delay recordation of the Texas SO_2 Trading Program allowances for the applicable control periods if the State of Texas submits a SIP revision by May 1 of the year of the applicable recordation deadline under this paragraph.*

40 C.F.R. § 97.921(a), (b) (emphases added). Under § 97.921(a), allowances are assigned to all of the sources that participate in the program via § 97.911(a) for the years 2019, 2020, 2021, and 2022. Under § 97.911(b), the allowance assignment deadline is moved for assigning allowances thereafter. If these allowances are not assigned due to the submission of an unspecified Texas SIP, the trading program cannot function.

These provisions are unlawful, arbitrary, and capricious for at least three reasons. First, by permitting the mere submittal of a SIP to suspend the central component of the Trading Rule, these provisions flout the Act's rulemaking requirements. Second, assuming, *arguendo*, that the trading program were a permissible BART alternative—it plainly is not, for the many reasons identified in this petition—suspension of the program would mean that there is no functioning BART alternative in place. This would be a clear violation of 42 U.S.C. § 7491(b)(2)(A) and 40 C.F.R. § 51.308(e), both of which require a plan implementing SO_2 BART.[64] Third, the Trading Rule does not include any provision that would resume the intrastate trading program if the State's proposed SIP were found to be deficient. In other words, these provisions would allow the trading program to be suspended indefinitely simply because the State submitted a proposed SIP. This violates the Clean Air Act and is arbitrary and capricious.

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[64] The Act makes clear that EPA's FIP responsibilities, *see* 42 U.S.C. § 7410(c)(1)(A)-(B), are not discharged simply because a state submitted a SIP. As the Tenth Circuit explained in a case involving Oklahoma's regional haze plan:

> Once the EPA issued findings that Oklahoma failed to submit the required SIP under the Regional Haze Rule, the EPA had an obligation to promulgate a FIP. The statute itself makes clear that the mere *filing* of a SIP by Oklahoma does not relieve the EPA of its duty. And the petitioners do not point to any language that requires the EPA to delay its promulgation of a FIP until it rules on a proposed SIP. As the EPA points out, such a rule would essentially nullify any time limits the EPA placed on states. States could forestall the promulgation of a FIP by submitting one inadequate SIP after another.

Oklahoma v. EPA, 723 F.3d 1201, 1223 (10th Cir. 2013) (emphasis in the original).

VIII. The Trading Rule's treatment of retired generating units is arbitrary and capricious.

The Trading Rule is also arbitrary and capricious because, through its treatment of retired generating units that are subject to BART, the trading program arbitrarily increases the emission allowances under the program. There are two respects in which this feature of the Trading Rule is arbitrary: first, by including an already retired unit, Welsh 2, in the trading program; and second, through its treatment of retired units more generally.

Welsh unit 2, which was subject to BART, retired in April 2016.[65] In the proposed rule, EPA appropriately acknowledged this fact and, logically, did not propose SO_2 BART controls for this unit. *See* 82 Fed. Reg. at 921 ("Welsh Unit 2 retired in April, 2016."). But in the Trading Rule, EPA ignores this fact, and includes Welsh 2 in the intrastate trading program. EPA does not even acknowledge, much less explain, its change in position as to how the retirement of Welsh 2 should be treated. This unit—which retired 17 months before EPA's adoption of the Trading Rule—has been assigned an allowance of 7,050 tons of SO_2. *Id.* at 48,357 (Tbl. 8). EPA's decision to increase the trading program's allowable SO_2 emissions in defiance of facts it previously admitted is plainly arbitrary. This also directly undercuts the visibility goals that BART is intended to promote. Moreover, by flooding the trading program with SO_2 allowances that are not tied to an operating unit, EPA's decision will decrease the price of allowances, creating a further disincentive to install meaningful SO_2 controls.

Even aside from Welsh unit 2, the Trading Rule's treatment of retired units is arbitrary and capricious. In particular, a retired unit's allowances are permitted to survive for an arbitrarily long time following that unit's retirement. This again contravenes the Clean Air Act's reasonable progress goals, and would further flood the market with unnecessary allowances.

Under the intrastate trading program, a retired generating unit's allowances are not immediately retired. Instead, a retired unit does not lose its allowances until five years after the year in which it ceases operations:

> Notwithstanding paragraph (a)(1) of this section, if a unit provided an allocation pursuant to the table in paragraph (a)(1) of this section does not operate, starting after 2018, during the control period in two consecutive years, such unit will not be allocated the Texas SO_2 Trading Program allowances provided in paragraph (a)(1) of this section for the unit for the control periods in the fifth year after the first such year and in each year after that fifth year. All Texas SO_2 Trading Program allowances that would otherwise have been allocated to such unit will be allocated under the Texas Supplemental Allowance Pool under 40 CFR 97.912.

[65] *See* SWEPCO, *Welsh Power Plant Retrofit of Units 1 and 3*, available at https://www.swepco.com/global/utilities/lib/docs/info/projects/Welsh/WelshPlant.pdf (last visited Dec. 14, 2017) (attached as Ex. C).

40 C.F.R. § 97.911(a)(2). Because it allows the owners of retired units to hold allowances until long after the unit would even arguably need them, the Trading Rule is arbitrary and capricious.[66]

The Trading Rule's treatment of allowances for retired units is especially arbitrary given the large number of generating units that are projected to retire before the trading program even begins. By including the phrase "starting after 2018," § 97.911(a)(2) grandfathers into the trading program any unit that retires before the January 1, 2019 start date. And Luminant has announced its intention to retire a number of such units: Monticello, Big Brown, and Sandow units are slated to retire in early 2018.[67] Likewise, CPS Energy announced several years ago that it would retire JT Deely units 1 and 2 by the end of 2018.[68] Given that EPA was aware of announced plans to retire some generating units before the trading program even began,[69] the Trading Rule should have included a provision removing these units' allowances upon confirmation that they ceased operation. EPA's failure to include such a provision, together with its disregard for the fact that Welsh 2 has already retired, will flood the trading program with up to 74,313 tons of unnecessary allowances. In addition, the Trading Rule does not assess the potential impact this large surplus of allowances would have on the value of allowances, which is a fundamental driving force of any allowance trading program.

The arbitrariness of § 97.911(a)(2) can be illustrated by considering the trading rule's treatment of allowances for the seven Luminant units retiring in January 2017. Under that provision, it appears that Luminant will not lose those allowances until minimally 2023, and potentially 2024, depending on how the "fifth year after the first such year" is interpreted:

Year	Action
2018	Retirement of seven Luminant units (Not counted because § 97.911(a)(2) "start[s] after 2018")
2019	First full year of not operating under § 97.911(a)(2)
2020	Second full year of not operating under § 97.911(a)(2)
2021	
2022	
2023	"fifth year after the first such year," counting the first year
2024	"fifth year after the first such year," not counting the first year

[66] This is compounded by the fact that, if a unit operates for as little as one hour during the first two years after the announced retirement, that unit retains all of its allowances. 40 C.F.R. § 97.911(a)(2). This provision amplifies the problem of excess allowances within the trading program.

[67] *Luminant Announces Decision to Retire Its Monticello Power Plant* (Oct. 6, 2017), available at https://hub.vistraenergy.com/luminant-announces-decision-to-retire-its-monticello-power-plant/; *Luminant Closes Two Texas Power Plants* (Oct. 13, 2017), available at https://hub.vistraenergy.com/luminant-closes-two-texas-power-plants/ (attached as Ex. C).

[68] *Grid operator notified: Deely coal plant operations to be indefinitely suspended in 2018* (Oct. 28 2013), available at https://newsroom.cpsenergy.com/coal-plant-operations-suspended-2018/ (attached as Ex. C).

[69] EPA was plainly aware of the announced plans to retire JT Deely by the end of 2015, as it was mentioned in the Reasonable Progress Rule. 81 Fed. Reg. at 332.

As the table above demonstrates, Luminant will continue to receive allowances for these seven retired units for years after the units actually retire. Such allowances will presumably be available for the company to use on other units, trade, or bank.[70]

IX. The Trading Rule's supplemental allowance pool provision is arbitrary.

40 C.F.R. § 97.912 is unlawful, arbitrary, and capricious because, far from reducing SO_2 emissions to improve visibility at the Class I Areas impacted by these Texas generating units, this provision would allow SO_2 emissions to increase over time. Section 97.912 regulates how compliance assistance will be provided to any unit that finds itself in the position of not holding enough allowances to cover its year-end SO_2 emissions.

This provision's treatment of Coleto Creek is unreasonably permissive because § 97.912(a)(3)(i) allows Coleto Creek to increase its emissions to an unspecified level without incurring any penalty. 82 Fed. Reg. at 48,370. Section 97.912(a)(3)(i) states:

> For Coleto Creek (ORIS 6178), if the source is identified under paragraph (a)(1) of this section, the Administrator will allocate and record in the source's compliance account an amount of allowances from the Supplemental Allowance Pool equal to the lesser of the amount calculated for the source under paragraph (a)(2) of this section or the total number of allowances in the Supplemental Allowance Pool available for allocation under paragraph (b) of this section.

Paragraph (a)(2) simply determines how much Coleto Creek's SO_2 emissions exceed its allowances. Thus, under § 97.912(a)(3)(i), if Coleto Creek requires more allowances to be in compliance, those allowances will be provided up to the amount held in the supplemental allowance pool. Because that pool's *starting* balance is 10,000 tons, and given that Coleto Creek's 2016 SO_2 emissions totaled 8,231 tons,[71] § 97.912(a)(3)(i) would allow this unit to more than double its 2016 SO_2 emissions. And nothing in the Trading Rule would prevent Coleto Creek from increasing its SO_2 emissions to even higher levels, if and when the special allowance pool has accumulated allowances in excess of 10,000 tons.

Even apart from its treatment of Coleto Creek, § 97.912 is arbitrary and capricious because it facilitates increases in SO_2 emissions. Once Coleto Creek has availed itself of any needed allowances, § 97.912(a)(3)(ii) provides that any other power plants that also need compliance assistance can divide up the remaining allowances. If the needed allowances exceed what remains in the supplemental allowance pool, then the remaining allowances are distributed proportionally. These provisions underscore that, far from reducing SO_2 emissions, the Trading Rule is designed to allow current SO_2 emissions to increase.

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[70] When Luminant finally loses its allowances from these retirements, it appears they will be moved to the Supplemental Allowance Pool (up to its maximum of 54,711 tons) which will then be used to ensure that other generating units remain compliant with the trading program's already-permissive SO2 budgets.

[71] *See* EPA, Clean Air Markets Data, *available at* https://ampd.epa.gov/ampd/.

X. The Trading Rule is based on a determination of nationwide scope and effect.

For the reasons explained above, EPA should withdraw the Trading Rule and replace it with a BART FIP that complies with CAA requirements. And because it is too late to implement a BART alternative, *see* 40 § 51.308(e)(2)(iii), the agency should take final action on the source-specific BART determinations it made in the January 2017 proposed rule. Nevertheless, if EPA ignores CAA requirements and insists on retaining its intrastate trading scheme, on reconsideration the agency must publish a finding that the Trading Rule "is based on a determination of nationwide scope or effect." 42 U.S.C. § 7607(b)(1). Such a finding is necessary because the Trading Rule is plainly based on such a determination, and thus should be reviewed in the United States Court of Appeals for the District of Columbia.[72]

The Clean Air Act establishes that petitions for review of nationally applicable actions, as well as any action based on a determination of nationwide scope or effect, are to be filed in the D.C. Circuit. *Id.* As explained below, the Trading Rule is based on at least two determinations of nationwide scope and effect. EPA therefore had an obligation to find that the Trading Rule is based on such determinations, and the agency should have published in the Federal Register its finding, together with a statement that challenges to the Rule should be filed in the D.C. Circuit.[73]

First, the Trading Rule is based on a determination of nationwide scope or effect because the Rule purports to be "designed to achieve SO_2 emission levels from Texas sources similar to the SO_2 emission levels that would have been achieved under CSAPR." 82 Fed. Reg. at 48,330. The Trading Rule's emission budget for Texas is purportedly based on the emissions budget for Texas under CSAPR,[74] and the Trading Rule's regulatory provisions are modeled after CSAPR. This is demonstrated by a side-by-side comparison of the regulatory provisions governing the states subject to the CSAPR SO_2 trading program, 40 C.F.R. §§ 97.701-735, and those for the new Trading Rule, 40 C.F.R. §§ 97.901-935.[75] Because the Trading Rule's provisions are

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[72] The public was given no opportunity to comment on the proper venue for judicial review of the Trading Rule. The January 2017 proposed rule did not include any suggestion that EPA was considering the adoption of an intrastate trading program. It was not until the Trading Rule's promulgation that EPA announced a trading alternative for Texas sources that is purportedly "designed to achieve SO_2 emission levels from Texas sources similar to the SO_2 emission levels that would have been achieved under CSAPR." 82 Fed. Reg. at 48,330. The public thus did not have an opportunity to comment on the venue implications of EPA's new trading scheme. Because the grounds for Petitioners' objection arose after the public comment, and because it would have been impracticable to raise an objection within the time allowed for public comment, this objection is appropriate for reconsideration. 42 U.S.C. § 7607(d)(7)(B).

[73] If EPA fails to publish such a finding on reconsideration (and fails to withdraw this unlawful Trading Rule), subsequent legal challenges to the Trading Rule would still be properly venued in the D.C. Circuit pursuant to 42 U.S.C. § 7607(b)(1). Nonetheless, EPA should make an explicit finding of nationwide scope and effect to avoid the delay and expense of potential venue disputes.

[74] As noted above, however, under the Trading Rule Texas generating units could be permitted to emit more SO_2 than had been allowed under CSAPR.

[75] *Compare, e.g.*, 40 C.F.R. §§ 97.701-735 (CSPAR program enumerating definitions for affected sources, establishing procedures for determining applicability, retired unit exemptions, general provisions,

modeled on CSAPR's regulations, the Trading Rule is, on its face, based on a determination of nationwide scope and effect.

Second, the Trading Rule is also "based on a determination of nationwide scope or effect" because, in support of its claim that the Trading Rule achieves greater reasonable progress than source-specific BART, EPA relies upon the 2012 nationwide determination that CSAPR provides greater reasonable progress than BART, as well as EPA's subsequent updates to that analysis. 82 Fed. Reg. at 48,353, 48,357, 48,359-60. As discussed above, to rely on the implementation of an emissions trading program in lieu of source-specific BART, EPA must demonstrate that the alternative achieves greater reasonable progress than BART. 40 C.F.R. § 51.308(e)(2). In the Trading Rule, EPA declined to conduct the modeling required by § 51.308(e)(3), and instead relied on the agency's 2012 CSAPR Better than BART determination. 82 Fed. Reg. at 48,357 (acknowledging that the 2012 demonstration purportedly showing that "CSAPR as finalized and amended in 2011 and 2012 meets the Regional Haze Rule's criteria for a demonstration of greater reasonable progress than BART . . . . *is the primary evidence that the Texas trading program achieves greater reasonable progress than BART*") (emphasis added). EPA has previously admitted that the CSAPR Better than BART Rule is a nationally applicable rule. *See, e.g.*, 82 Fed. Reg. at 45,495-96 (finding that the rule withdrawing Texas from CSAPR and updating the Better than BART Rule is nationally applicable and publishing a finding that the rule is based on a determination of nationwide scope and effect). Indeed, challenges to that 2012 analytic demonstration remain pending in the D.C. Circuit Court of Appeals. Because the Trading Rule is explicitly based upon that nationwide 2012 modeling demonstration—*i.e.*, an analytic determination of nationwide scope and effect—EPA must make a "nationwide scope and effect finding" if it fails to withdraw the Trading Rule.

Such a finding would also be necessary to ensure consistency with EPA's separate, recent rulemaking withdrawing Texas from CSAPR—a rule EPA found was national in scope. *Id.* at 45,495. In withdrawing Texas from the CSAPR program, EPA recognized that, although the rule directly impacted only Texas and Florida, it had implications for multiple states. For that reason, EPA determined that "retaining review in the D.C. Circuit is appropriate and avoids the potential" for inconsistent judicial determinations relating to the CSAPR program or the underlying 2012 "Better than BART" determination. *Id.* Additionally, EPA determined that its findings regarding Texas' interstate transport obligations with respect to a NAAQS was "based on a common core of factual findings and analyses concerning the transport of pollutants between the different states subject to CSAPR, which is a nationally applicable program." *Id.* Here, the Trading Rule is similarly based on findings concerning the transport of pollutants between the different states subject to CSAPR emission budgets. Indeed, the Trading Rule cites to the 2012 Better than BART demonstration, as well as EPA's September 29, 2017 rule determining that CSAPR remains better than BART despite the withdrawal of Texas. *See, e,g.*, 82 Fed. Reg. at 48,326, 48,353. EPA previously concluded that each of those rules were national in scope and effect. Because the Trading Rule is based on those nationwide rules, review of the Rule's trading program must likewise be in the D.C. Circuit.

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administrative appeal procedures, allowance allocations, a supplemental allowance pool, designated representatives, compliance accounts, recordation procedures, transfer procedures, banking procedures and limits, and establishing general monitoring, recordkeeping, and reporting requirements), *with* 40 C.F.R. §§ 97.901-935.

Refusing to include a "nationwide scope and effect" finding in the Trading Rule – and thus increasing the possibility that the D.C. Circuit does not review challenges to the Rule – also creates a significant risk of inconsistent judicial determinations relating to key aspects of the Trading Rule. As noted, the Trading Rule relies on both the 2012 Better than BART determination, as well as EPA's September 29, 2017 update to that determination. Both of those rules are already under review in the D.C. Circuit. If the Trading Rule were not likewise reviewed by that court, there would be a greater risk of inconsistent judicial decisions regarding national aspects of the Trading Rule. By contrast, a finding that venue for review of the Trading Rule lies in the D.C. Circuit would be consistent with the purpose of the Clean Air Act venue provision to "centralize review of 'national' SIP issues in the D.C. Circuit." *Texas v. EPA*, 2011 WL 710598, at *4 (citations omitted).

For the reasons explained throughout this petition, EPA must reconsider the Trading Rule, and should withdraw the Rule and finalize the source-specific BART determinations required by the Regional Haze Rule. Nevertheless, if the agency refuses to withdraw the Trading Rule, the agency must, consistent with 42 U.S.C. § 7607(b)(1), publish a finding that this Rule is based on a determination of nationwide scope or effect.

CONCLUSION

For all the foregoing reasons, EPA must reconsider the Trading Rule, and the Rule should be withdrawn and replaced with a BART FIP that complies with the Clean Air Act and Regional Haze Rule.

Sincerely,

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Exhibit A

Note: changing selections in pulldown menus will change the data in summary spreadsheets

dv summary -	Estimated deciview improvement from actual emissions (3-yr average annual emissions 2009-2013 eliminating min and max year baseline) dv improvement from average natural conditions "clean" and 2018 modeled conditions "dirty" summarizes data in DSI_low, DSI_high, SDA, WFGD, and WFGD_upgrade spreadsheets with baseline emission set at "3yr average 2009-2013 (eliminate max and min)"
ext. summary -	Estimated change in extinction from baseline emissions to controlled emissions (Using baseline of actual emissions and baseline of 2018 projected emissions (w/ CAIR)) summarizes data in DSI_low, DSI_high, SDA, WFGD, and WFGD_upgrade spreadsheets with baseline set at "3yr average 2009-2013 (eliminate max and min)" and baseline set at "2018"
summary table -	summarized dv improvement from each level of control
proposal total vis 2018 -	Calculated delta-dv improvement (2018 "dirty" background conditions) from all proposed controls beyond the 2018 CENRAP projected visibility conditions including CAIR reductions
proposal total vis actual -	Calculated delta-dv improvement from all proposed controls based on reducing actual emissions data presented for both "dirty" and "clean" background
2018 RPG calcs -	Calculation of adjusted RPG and time to reach natural conditions (NC II) with implementation of proposed upgrades and retrofits
$ and controls -	summary of estimated control costs and controlled emission levels (See FIP Cost TSD for additional information)
DSI_low, DSI_high, SDA, WFGD, WFGD_upgrade -	Using calculated slope from "control effectiveness factor" spreadsheet, calculates the change in extinction estimated from reduction in emission from chosen baseline and controlled emission level (controlled emission level from "$ and controls" worksheet) Calculate delta dv from change in extinction for a variety of background conditions including "clean" avg. natural background and "dirty" 2018 modeled background selectable baseline emissions include "3yr average 2009-2013 (eliminate max and min)," "2018," "max 2009-2013," and "Average 2009-2013"
no_control -	Using calculated slope from "control effectiveness factor" worksheet, calculates the extinction estimated from chosen baseline emission level Calculate delta dv from change in extinction for a variety of background conditions including "clean" avg. natural background and "dirty" 2018 modeled background selectable baseline emissions include "3yr average 2009-2013 (eliminate max and min)," "2018," "max 2009-2013," and "Average 2009-2013"

control effectiveness factor -	Change in extinction per change in ton emissions. Calculated slope from linear fit of data for each facility and Class I area, taken from "sorted PSAT results" worksheet
background -	natural background conditions and projected 2018 visibility conditions for each Class I area. used to estimate delta-dv for "clean" and "dirty" background
baseline emissions data -	calculated baseline emissions "3yr average 2009-2013 (eliminate max and min)," "2018," "max 2009-2013," and "Average 2009-2013" based on CEM data available in worksheet
PSAT results -	Environ modeling results for 2018 basecase, low control and high control runs modeled extinction at each Class I area for each tagged unit (high/low runs) or facility (2018 run)
sorted PSAT results -	Modeling results from "PSAT results" worksheet, sorted by facility slope, correlation, and intercept for a linear fit to the data are calculated for each facility and Class I area Calculated slope is the "control effectiveness factor" relating change in extinction to change in ton of emissions
visibility -	Using calculated slope from "control effectiveness factor" spreadsheet, calculates the change in extinction estimated from reduction in emission from chosen baseline and inputted % reduction emission level Calculate delta dv from change in extinction for a variety of background conditions including "clean" avg. natural background and "dirty" 2018 modeled background selectable baseline emissions include "3yr average 2009-2013 (eliminate max and min)," "2018," "max 2009-2013," and "Average 2009-2013"

Estimated deciview improvement from actual emissions (3-yr average annual emissions 2009-2013 eliminating min and max year)

Wichita Mountains

	Visibility modeling results:			dv improvement 2018 background (environ)						dv improvement (avg. natural conditions)				
	Unit #	Facility		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade
1	1	Big Brown	Big Brown 1	0.045	0.081	0.085	0.088	#N/A		0.225	0.401	0.423	0.436	#N/A
2	2	Big Brown	Big Brown 2	0.045	0.081	0.086	0.088	#N/A		0.226	0.403	0.425	0.438	#N/A
3	1	Coleto Creek	Coleto Creek 1	0.021	0.038	0.039	0.040	#N/A		0.105	0.189	0.196	0.200	#N/A
4	lim 1	Limestone	Limestone lim 1	#N/A	#N/A	#N/A	#N/A	0.027		#N/A	#N/A	#N/A	#N/A	0.135
5	lim 2	Limestone	Limestone lim 2	#N/A	#N/A	#N/A	#N/A	0.030		#N/A	#N/A	#N/A	#N/A	0.149
6	1	Martin Lake	Martin Lake 1	#N/A	#N/A	#N/A	#N/A	0.047		#N/A	#N/A	#N/A	#N/A	0.234
7	2	Martin Lake	Martin Lake 2	#N/A	#N/A	#N/A	#N/A	0.040		#N/A	#N/A	#N/A	#N/A	0.202
8	3	Martin Lake	Martin Lake 3	#N/A	#N/A	#N/A	#N/A	0.037		#N/A	#N/A	#N/A	#N/A	0.185
9	1	Monticello	Monticello 1	0.026	0.047	0.050	0.051	#N/A		0.132	0.236	0.249	0.254	#N/A
10	2	Monticello	Monticello 2	0.024	0.043	0.046	0.047	#N/A		0.121	0.217	0.229	0.233	#N/A
11	3	Monticello	Monticello 3	#N/A	#N/A	#N/A	#N/A	0.036		#N/A	#N/A	#N/A	#N/A	0.181
12	4	Sandow	Sandow 4	#N/A	#N/A	#N/A	#N/A	0.062		#N/A	#N/A	#N/A	#N/A	0.312
13	171b	Tolk	Tolk 171b	0.004	0.006	0.006	0.007	#N/A		0.018	0.032	0.033	0.034	#N/A
14	172b	Tolk	Tolk 172b	0.004	0.007	0.007	0.007	#N/A		0.020	0.035	0.036	0.037	#N/A
15	5	WA Parish	WA Parish 5	0.012	0.022	0.023	0.023	#N/A		0.062	0.111	0.114	0.117	#N/A
16	6	WA Parish	WA Parish 6	0.013	0.024	0.025	0.025	#N/A		0.067	0.120	0.124	0.127	#N/A
17	7	WA Parish	WA Parish 7	0.011	0.019	0.020	0.020	#N/A		0.054	0.097	0.099	0.102	#N/A
18	8	WA Parish	WA Parish 8	#N/A	#N/A	#N/A	#N/A	0.003		#N/A	#N/A	#N/A	#N/A	0.015
19	1	Welsh	Welsh 1	0.012	0.019	0.021	0.022	#N/A		0.059	0.094	0.105	0.109	#N/A
20	2	Welsh	Welsh 2	0.012	0.019	0.021	0.022	#N/A		0.060	0.096	0.106	0.111	#N/A
21	3	Welsh	Welsh 3	0.012	0.020	0.022	0.023	#N/A		0.063	0.101	0.111	0.116	#N/A

Big Bend

	Visibility modeling results:			dv improvement 2018 background (environ)						dv improvement (avg. natural conditions)				
	Unit #	Facility		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade
1	1	Big Brown	Big Brown 1	0.012	0.021	0.022	0.023	#N/A		0.046	0.082	0.086	0.089	#N/A
2	2	Big Brown	Big Brown 2	0.012	0.021	0.022	0.023	#N/A		0.046	0.082	0.087	0.089	#N/A
3	1	Coleto Creek	Coleto Creek 1	0.018	0.033	0.034	0.035	#N/A		0.071	0.128	0.133	0.136	#N/A
4	lim 1	Limestone	Limestone lim 1	#N/A	#N/A	#N/A	#N/A	0.008		#N/A	#N/A	#N/A	#N/A	0.033
5	lim 2	Limestone	Limestone lim 2	#N/A	#N/A	#N/A	#N/A	0.009		#N/A	#N/A	#N/A	#N/A	0.036
6	1	Martin Lake	Martin Lake 1	#N/A	#N/A	#N/A	#N/A	0.008		#N/A	#N/A	#N/A	#N/A	0.030
7	2	Martin Lake	Martin Lake 2	#N/A	#N/A	#N/A	#N/A	0.007		#N/A	#N/A	#N/A	#N/A	0.026
8	3	Martin Lake	Martin Lake 3	#N/A	#N/A	#N/A	#N/A	0.006		#N/A	#N/A	#N/A	#N/A	0.023
9	1	Monticello	Monticello 1	0.003	0.005	0.005	0.006	#N/A		0.011	0.020	0.021	0.022	#N/A
10	2	Monticello	Monticello 2	0.003	0.005	0.005	0.005	#N/A		0.010	0.018	0.019	0.020	#N/A
11	3	Monticello	Monticello 3	#N/A	#N/A	#N/A	#N/A	0.004		#N/A	#N/A	#N/A	#N/A	0.015
12	4	Sandow	Sandow 4	#N/A	#N/A	#N/A	#N/A	0.026		#N/A	#N/A	#N/A	#N/A	0.102
13	171b	Tolk	Tolk 171b	0.002	0.003	0.003	0.003	#N/A		0.007	0.012	0.013	0.013	#N/A
14	172b	Tolk	Tolk 172b	0.002	0.003	0.003	0.004	#N/A		0.008	0.014	0.014	0.014	#N/A
15	5	WA Parish	WA Parish 5	0.007	0.013	0.013	0.014	#N/A		0.028	0.051	0.052	0.054	#N/A
16	6	WA Parish	WA Parish 6	0.008	0.014	0.015	0.015	#N/A		0.031	0.055	0.057	0.058	#N/A
17	7	WA Parish	WA Parish 7	0.006	0.011	0.012	0.012	#N/A		0.025	0.044	0.046	0.047	#N/A
18	8	WA Parish	WA Parish 8	#N/A	#N/A	#N/A	#N/A	0.002		#N/A	#N/A	#N/A	#N/A	0.007
19	1	Welsh	Welsh 1	0.001	0.002	0.002	0.002	#N/A		0.005	0.008	0.008	0.009	#N/A
20	2	Welsh	Welsh 2	0.001	0.002	0.002	0.002	#N/A		0.005	0.008	0.009	0.009	#N/A
21	3	Welsh	Welsh 3	0.001	0.002	0.002	0.002	#N/A		0.005	0.008	0.009	0.009	#N/A

Guadalupe Mountains

	Visibility modeling results:			dv improvement 2018 background (environ)					dv improvement (avg. natural conditions)				
	Unit #	Facility		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade	DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade
1	1	Big Brown	Big Brown 1	0.014	0.024	0.026	0.027	#N/A	0.054	0.096	0.101	0.105	#N/A
2	2	Big Brown	Big Brown 2	0.014	0.025	0.026	0.027	#N/A	0.054	0.097	0.102	0.105	#N/A
3	1	Coleto Creek	Coleto Creek 1	0.006	0.010	0.011	0.011	#N/A	0.023	0.041	0.043	0.044	#N/A
4	lim 1	Limestone	Limestone lim 1	#N/A	#N/A	#N/A	#N/A	0.009	#N/A	#N/A	#N/A	#N/A	0.037
5	lim 2	Limestone	Limestone lim 2	#N/A	#N/A	#N/A	#N/A	0.010	#N/A	#N/A	#N/A	#N/A	0.041
6	1	Martin Lake	Martin Lake 1	#N/A	#N/A	#N/A	#N/A	0.010	#N/A	#N/A	#N/A	#N/A	0.041
7	2	Martin Lake	Martin Lake 2	#N/A	#N/A	#N/A	#N/A	0.009	#N/A	#N/A	#N/A	#N/A	0.036
8	3	Martin Lake	Martin Lake 3	#N/A	#N/A	#N/A	#N/A	0.008	#N/A	#N/A	#N/A	#N/A	0.033
9	1	Monticello	Monticello 1	0.004	0.006	0.007	0.007	#N/A	0.014	0.025	0.027	0.027	#N/A
10	2	Monticello	Monticello 2	0.003	0.006	0.006	0.006	#N/A	0.013	0.023	0.024	0.025	#N/A
11	3	Monticello	Monticello 3	#N/A	#N/A	#N/A	#N/A	0.005	#N/A	#N/A	#N/A	#N/A	0.019
12	4	Sandow	Sandow 4	#N/A	#N/A	#N/A	#N/A	0.017	#N/A	#N/A	#N/A	#N/A	0.069
13	171b	Tolk	Tolk 171b	0.012	0.022	0.022	0.023	#N/A	0.048	0.085	0.087	0.090	#N/A
14	172b	Tolk	Tolk 172b	0.013	0.024	0.024	0.025	#N/A	0.052	0.094	0.095	0.098	#N/A
15	5	WA Parish	WA Parish 5	0.003	0.006	0.006	0.006	#N/A	0.013	0.023	0.024	0.024	#N/A
16	6	WA Parish	WA Parish 6	0.004	0.006	0.007	0.007	#N/A	0.014	0.025	0.026	0.027	#N/A
17	7	WA Parish	WA Parish 7	0.003	0.005	0.005	0.005	#N/A	0.011	0.020	0.021	0.021	#N/A
18	8	WA Parish	WA Parish 8	#N/A	#N/A	#N/A	#N/A	0.001	#N/A	#N/A	#N/A	#N/A	0.003
19	1	Welsh	Welsh 1	0.002	0.003	0.003	0.003	#N/A	0.007	0.011	0.012	0.012	#N/A
20	2	Welsh	Welsh 2	0.002	0.003	0.003	0.003	#N/A	0.007	0.011	0.012	0.012	#N/A
21	3	Welsh	Welsh 3	0.002	0.003	0.003	0.003	#N/A	0.007	0.011	0.012	0.013	#N/A

All other Class I areas modeled (BAND, BOAP, BRET, CACR, CAVE, GICL, GRSA, HEGL, MING, PECO, ROMO, SACR, SAPE, UPBU, WHIT, WHPE)

	Visibility modeling results:			dv improvement 2018 background (environ)					dv improvement (avg. natural conditions)				
	Unit #	Facility		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade	DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade
1	1	Big Brown	Big Brown 1	0.073	0.131	0.138	0.143	#N/A	0.308	0.553	0.584	0.602	#N/A
2	2	Big Brown	Big Brown 2	0.073	0.132	0.139	0.143	#N/A	0.309	0.556	0.586	0.604	#N/A
3	1	Coleto Creek	Coleto Creek 1	0.026	0.047	0.049	0.050	#N/A	0.092	0.165	0.171	0.175	#N/A
4	lim 1	Limestone	Limestone lim 1	#N/A	#N/A	#N/A	#N/A	0.046	#N/A	#N/A	#N/A	#N/A	0.197
5	lim 2	Limestone	Limestone lim 2	#N/A	#N/A	#N/A	#N/A	0.051	#N/A	#N/A	#N/A	#N/A	0.218
6	1	Martin Lake	Martin Lake 1	#N/A	#N/A	#N/A	#N/A	0.173	#N/A	#N/A	#N/A	#N/A	0.800
7	2	Martin Lake	Martin Lake 2	#N/A	#N/A	#N/A	#N/A	0.149	#N/A	#N/A	#N/A	#N/A	0.691
8	3	Martin Lake	Martin Lake 3	#N/A	#N/A	#N/A	#N/A	0.137	#N/A	#N/A	#N/A	#N/A	0.632
9	1	Monticello	Monticello 1	0.063	0.114	0.120	0.123	#N/A	0.290	0.520	0.549	0.561	#N/A
10	2	Monticello	Monticello 2	0.058	0.105	0.111	0.113	#N/A	0.267	0.479	0.505	0.515	#N/A
11	3	Monticello	Monticello 3	#N/A	#N/A	#N/A	#N/A	0.087	#N/A	#N/A	#N/A	#N/A	0.398
12	4	Sandow	Sandow 4	#N/A	#N/A	#N/A	#N/A	0.074	#N/A	#N/A	#N/A	#N/A	0.277
13	171b	Tolk	Tolk 171b	0.066	0.119	0.121	0.125	#N/A	0.214	0.385	0.392	0.404	#N/A
14	172b	Tolk	Tolk 172b	0.073	0.131	0.132	0.137	#N/A	0.236	0.424	0.427	0.442	#N/A
15	5	WA Parish	WA Parish 5	0.024	0.044	0.045	0.046	#N/A	0.098	0.176	0.181	0.186	#N/A
16	6	WA Parish	WA Parish 6	0.026	0.047	0.049	0.050	#N/A	0.106	0.191	0.197	0.202	#N/A
17	7	WA Parish	WA Parish 7	0.021	0.038	0.039	0.040	#N/A	0.085	0.154	0.158	0.162	#N/A
18	8	WA Parish	WA Parish 8	#N/A	#N/A	#N/A	#N/A	0.006	#N/A	#N/A	#N/A	#N/A	0.024
19	1	Welsh	Welsh 1	0.032	0.051	0.056	0.058	#N/A	0.146	0.233	0.258	0.269	#N/A
20	2	Welsh	Welsh 2	0.032	0.052	0.057	0.059	#N/A	0.149	0.238	0.263	0.274	#N/A
21	3	Welsh	Welsh 3	0.034	0.054	0.060	0.062	#N/A	0.155	0.248	0.275	0.287	#N/A

Control cost ($/ton)

Unit #	Facility		DSI_low	DSI_high	SDA	WFGD	WFGD_upgrade*
1	Big Brown	Big Brown 1	$ 2,223	$ 2,996	$ 1,377	$ 1,255	#N/A
2	Big Brown	Big Brown 2	$ 2,201	$ 2,944	$ 1,373	$ 1,257	#N/A
1	Coleto Creek	Coleto Creek 1	$ 2,792	$ 3,460	$ 2,356	$ 2,278	#N/A

lim 1	Limestone	Limestone lim 1	#N/A	#N/A	#N/A	#N/A	$ 500
lim 2	Limestone	Limestone lim 2	#N/A	#N/A	#N/A	#N/A	$ 500
1	Martin Lake	Martin Lake 1	#N/A	#N/A	#N/A	#N/A	$ 500
2	Martin Lake	Martin Lake 2	#N/A	#N/A	#N/A	#N/A	$ 500
3	Martin Lake	Martin Lake 3	#N/A	#N/A	#N/A	#N/A	$ 500
1	Monticello	Monticello 1	$ 2,728	$ 3,420	$ 2,012	$ 1,937	#N/A
2	Monticello	Monticello 2	$ 3,086	$ 3,845	$ 2,254	$ 2,170	#N/A
3	Monticello	Monticello 3	#N/A	#N/A	#N/A	#N/A	$ 500
4	Sandow	Sandow 4	#N/A	#N/A	#N/A	#N/A	$ 500
171b	Tolk	Tolk 171b	$ 3,084	$ 3,592	$ 3,178	$ 3,204	#N/A
172b	Tolk	Tolk 172b	$ 2,828	$ 3,221	$ 2,998	$ 3,019	#N/A
5	WA Parish	WA Parish 5	$ 2,559	$ 2,995	$ 2,441	$ 2,389	#N/A
6	WA Parish	WA Parish 6	$ 2,699	$ 3,229	$ 2,401	$ 2,334	#N/A
7	WA Parish	WA Parish 7	$ 2,805	$ 3,296	$ 2,559	$ 2,542	#N/A
8	WA Parish	WA Parish 8	#N/A	#N/A	#N/A	#N/A	$ 500
1	Welsh	Welsh 1	$ 3,718	$ 4,019	$ 3,489	$ 3,508	#N/A
2	Welsh	Welsh 2	$ 3,611	$ 3,879	$ 3,438	$ 3,454	#N/A
3	Welsh	Welsh 3	$ 3,690	$ 3,998	$ 3,368	$ 3,379	#N/A

* approximate cost/ placeholder actual cost based on CBI data

SDA
Baseline **3yr average 2009-2013 (elimi** *<----- Choose baseline*
index 2

Change in extinction (Mm-1)

No.	Unit #	Facility		Baseline emissions	controlled emissions	tons reduced	BAND	BIBE	BOAP	BRET	CACR	CAVE	GICL
							4	5	6	7	8	9	10
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0035	0.1363	0.0107	0.0494	0.3943	0.1510	0.0065
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0035	0.1370	0.0108	0.0496	0.3962	0.1517	0.0066
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0032	0.2133	0.0168	0.0082	0.0127	0.0646	0.0137
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0015	0.0631	0.0052	0.0102	0.1932	0.0672	0.0034
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0017	0.0691	0.0057	0.0111	0.2115	0.0735	0.0037
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0017	0.0524	0.0050	0.0771	1.1378	0.0688	0.0035
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0015	0.0462	0.0044	0.0679	1.0024	0.0606	0.0031
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0014	0.0426	0.0041	0.0628	0.9262	0.0560	0.0029
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0018	0.0334	0.0033	0.0550	0.5905	0.0393	0.0019
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0017	0.0307	0.0030	0.0506	0.5430	0.0362	0.0017
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0014	0.0259	0.0025	0.0427	0.4580	0.0305	0.0015
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0051	0.1931	0.0192	0.0190	0.1088	0.1225	0.0119
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0418	0.0205	0.0237	0.0102	0.0112	0.1340	0.0129
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0460	0.0226	0.0261	0.0112	0.0123	0.1474	0.0142
15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0016	0.0848	0.0115	0.0103	0.1280	0.0363	0.0077
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0017	0.0917	0.0124	0.0111	0.1384	0.0392	0.0083
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0014	0.0739	0.0100	0.0090	0.1116	0.0316	0.0067
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0003	0.0155	0.0021	0.0019	0.0234	0.0066	0.0014
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0009	0.0141	0.0017	0.0252	0.3199	0.0185	0.0008
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0009	0.0144	0.0017	0.0258	0.3267	0.0189	0.0008
21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0010	0.0150	0.0018	0.0269	0.3407	0.0197	0.0009
						327253.2933	0.12351264	1.395513	0.181889	0.635129	7.386705	1.374042	0.114188

change in dv at 2018 environ (PSAT run) background

No.	Unit #	Facility		Baseline emissions	controlled emiss	tons reduced	BAND	BIBE	BOAP	BRET	CACR	CAVE	GICL
							4	5	6	7	8	9	10
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0010	0.0233	0.0025	0.0060	0.0363	0.0271	0.0016
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0010	0.0234	0.0025	0.0060	0.0365	0.0272	0.0016
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0009	0.0365	0.0039	0.0010	0.0012	0.0116	0.0032
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0004	0.0108	0.0012	0.0012	0.0178	0.0120	0.0008
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0005	0.0118	0.0013	0.0014	0.0195	0.0132	0.0009
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0005	0.0089	0.0012	0.0094	0.1052	0.0123	0.0008
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0004	0.0079	0.0010	0.0083	0.0927	0.0109	0.0007
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0004	0.0073	0.0010	0.0076	0.0856	0.0100	0.0007
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0005	0.0057	0.0008	0.0067	0.0545	0.0071	0.0005
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0005	0.0052	0.0007	0.0062	0.0501	0.0065	0.0004
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0004	0.0044	0.0006	0.0052	0.0422	0.0055	0.0003
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0015	0.0330	0.0045	0.0023	0.0100	0.0220	0.0028
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0122	0.0035	0.0056	0.0012	0.0010	0.0240	0.0031
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0134	0.0039	0.0061	0.0014	0.0011	0.0265	0.0034
15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0005	0.0145	0.0027	0.0013	0.0118	0.0065	0.0018
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0005	0.0157	0.0029	0.0014	0.0127	0.0070	0.0020
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0004	0.0126	0.0023	0.0011	0.0103	0.0057	0.0016
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0001	0.0026	0.0005	0.0002	0.0022	0.0012	0.0003
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0003	0.0024	0.0004	0.0031	0.0295	0.0033	0.0002
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0003	0.0025	0.0004	0.0031	0.0301	0.0034	0.0002

11	12	13	14	15	16	17	18	19	20	21	22	
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**
0.0012	0.1510	0.2191	0.0284	0.0033	0.0019	0.0848	0.0047	0.1470	0.0530	0.0033	0.7557	1.1621
0.0012	0.1517	0.2202	0.0285	0.0033	0.0019	0.0852	0.0047	0.1477	0.0533	0.0033	0.7593	1.1677
0.0014	0.0646	0.0136	0.0058	0.0052	0.0011	0.0596	0.0061	0.0335	0.0357	0.0052	0.3517	0.2865
0.0006	0.0672	0.0603	0.0105	0.0010	0.0007	0.0345	0.0018	0.0653	0.0212	0.0010	0.2917	0.4775
0.0006	0.0735	0.0660	0.0115	0.0011	0.0008	0.0378	0.0020	0.0715	0.0232	0.0011	0.3194	0.5227
0.0005	0.0688	0.2854	0.0347	0.0017	0.0008	0.0357	0.0023	0.2908	0.0268	0.0017	0.4631	1.9743
0.0005	0.0606	0.2514	0.0305	0.0015	0.0007	0.0315	0.0020	0.2562	0.0236	0.0015	0.4080	1.7394
0.0004	0.0560	0.2323	0.0282	0.0014	0.0007	0.0291	0.0019	0.2367	0.0218	0.0014	0.3770	1.6072
0.0005	0.0393	0.2649	0.0250	0.0015	0.0010	0.0407	0.0015	0.1380	0.0251	0.0015	0.4408	1.1915
0.0004	0.0362	0.2436	0.0230	0.0014	0.0009	0.0374	0.0014	0.1269	0.0231	0.0014	0.4054	1.0958
0.0004	0.0305	0.2054	0.0194	0.0012	0.0008	0.0315	0.0012	0.1070	0.0195	0.0012	0.3419	0.9242
0.0006	0.1225	0.0281	0.0069	0.0058	0.0025	0.0784	0.0083	0.0975	0.0658	0.0058	0.6638	0.5862
0.0227	0.1340	0.0158	0.0026	0.0192	0.0119	0.1829	0.0197	0.0038	0.0939	0.0192	0.0594	0.6256
0.0249	0.1474	0.0174	0.0029	0.0211	0.0131	0.2012	0.0217	0.0042	0.1033	0.0211	0.0653	0.6881
0.0007	0.0363	0.0217	0.0154	0.0023	0.0000	0.0270	0.0028	0.0719	0.0229	0.0023	0.2056	0.3624
0.0007	0.0392	0.0235	0.0166	0.0025	0.0000	0.0292	0.0030	0.0777	0.0248	0.0025	0.2223	0.3918
0.0006	0.0316	0.0189	0.0134	0.0020	0.0000	0.0235	0.0024	0.0626	0.0200	0.0020	0.1792	0.3157
0.0001	0.0066	0.0040	0.0028	0.0004	0.0000	0.0049	0.0005	0.0131	0.0042	0.0004	0.0376	0.0662
0.0001	0.0185	0.1129	0.0100	0.0007	0.0006	0.0192	0.0007	0.0774	0.0113	0.0007	0.1972	0.6004
0.0001	0.0189	0.1153	0.0102	0.0007	0.0006	0.0196	0.0007	0.0791	0.0115	0.0007	0.2014	0.6132
0.0002	0.0197	0.1202	0.0106	0.0007	0.0006	0.0204	0.0007	0.0825	0.0120	0.0007	0.2100	0.6394
0.058664	1.374042	2.539913	0.336514	0.077968	0.04064	1.113967	0.090046	2.190423	0.696079	0.077968	6.955742	

11	12	13	14	15	16	17	18	19	20	21	22						
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**	**largest**			second largest	
0.0003	0.0271	0.0205	0.0033	0.0011	0.0004	0.0156	0.0016	0.0147	0.0126	0.0011	0.0898	0.1457	0.0898	WIMO	0.036347	CACR	0.036347 CACR
0.0003	0.0272	0.0206	0.0033	0.0011	0.0004	0.0156	0.0016	0.0148	0.0127	0.0011	0.0902	0.1464	0.0902	WIMO	0.036522	CACR	0.036522 CACR
0.0003	0.0116	0.0013	0.0007	0.0017	0.0002	0.0109	0.0021	0.0034	0.0085	0.0017	0.0417	0.0527	0.0417	WIMO	0.03645	BIBE	0.011588 CAVE
0.0001	0.0120	0.0056	0.0012	0.0003	0.0002	0.0063	0.0006	0.0065	0.0051	0.0003	0.0346	0.0599	0.0346	WIMO	0.017794	CACR	0.017794 CACR
0.0001	0.0132	0.0062	0.0013	0.0003	0.0002	0.0069	0.0007	0.0071	0.0055	0.0003	0.0378	0.0655	0.0378	WIMO	0.019481	CACR	0.019481 CACR
0.0001	0.0123	0.0268	0.0040	0.0006	0.0002	0.0066	0.0008	0.0291	0.0064	0.0006	0.0549	0.2045	0.1052	CACR	0.054922	WIMO	0.105237 CACR
0.0001	0.0109	0.0236	0.0035	0.0005	0.0002	0.0058	0.0007	0.0256	0.0056	0.0005	0.0484	0.1801	0.0927	CACR	0.048371	WIMO	0.092657 CACR
0.0001	0.0100	0.0218	0.0033	0.0005	0.0001	0.0053	0.0006	0.0237	0.0052	0.0005	0.0447	0.1663	0.0856	CACR	0.044686	WIMO	0.085584 CACR
0.0001	0.0071	0.0248	0.0029	0.0005	0.0002	0.0075	0.0005	0.0138	0.0060	0.0005	0.0523	0.1268	0.0545	CACR	0.052279	WIMO	0.054475 CACR
0.0001	0.0065	0.0228	0.0027	0.0005	0.0002	0.0069	0.0005	0.0127	0.0055	0.0005	0.0481	0.1166	0.0501	CACR	0.048068	WIMO	0.050087 CACR
0.0001	0.0055	0.0193	0.0022	0.0004	0.0002	0.0058	0.0004	0.0107	0.0046	0.0004	0.0405	0.0983	0.0422	CACR	0.040526	WIMO	0.042227 CACR
0.0001	0.0220	0.0026	0.0008	0.0019	0.0005	0.0144	0.0029	0.0097	0.0157	0.0019	0.0788	0.0936	0.0788	WIMO	0.033005	BIBE	0.021984 CAVE
0.0053	0.0240	0.0015	0.0003	0.0062	0.0026	0.0336	0.0068	0.0004	0.0224	0.0062	0.0070	0.1324	0.0336	SACR	0.024048	CAVE	0.033626 SACR
0.0059	0.0265	0.0016	0.0003	0.0068	0.0028	0.0370	0.0075	0.0004	0.0247	0.0068	0.0077	0.1456	0.0370	SACR	0.026454	CAVE	0.036992 SACR
0.0002	0.0065	0.0020	0.0018	0.0007	0.0000	0.0050	0.0010	0.0072	0.0055	0.0007	0.0244	0.0486	0.0244	WIMO	0.014482	BIBE	0.011787 CACR
0.0002	0.0070	0.0022	0.0019	0.0008	0.0000	0.0054	0.0010	0.0078	0.0059	0.0008	0.0263	0.0525	0.0263	WIMO	0.015659	BIBE	0.012745 CACR
0.0001	0.0057	0.0018	0.0015	0.0006	0.0000	0.0043	0.0008	0.0063	0.0048	0.0006	0.0212	0.0423	0.0212	WIMO	0.012617	BIBE	0.010269 CACR
0.0000	0.0012	0.0004	0.0003	0.0001	0.0000	0.0009	0.0002	0.0013	0.0010	0.0001	0.0044	0.0089	0.0044	WIMO	0.002644	BIBE	0.002152 CACR
0.0000	0.0033	0.0106	0.0011	0.0002	0.0001	0.0035	0.0002	0.0077	0.0027	0.0002	0.0233	0.0632	0.0295	CACR	0.023347	WIMO	0.029477 CACR
0.0000	0.0034	0.0108	0.0012	0.0002	0.0001	0.0036	0.0002	0.0079	0.0028	0.0002	0.0238	0.0645	0.0301	CACR	0.023844	WIMO	0.030103 CACR

21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0003	0.0026	0.0004	0.0033	0.0314	0.0035	0.0002
						327253.2933	0.03591583	0.238324	0.042611	0.077305	0.681688	0.246567	0.02704

change in dv at annual average Natural Conditions background

							4	5	6	7	8	9	10
No.	**Unit #**	**Facility**		**Baseline emissions**	**controlled emiss**	**tons reduced**	**BAND**	**BIBE**	**BOAP**	**BRET**	**CACR**	**CAVE**	**GICL**
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0025	0.0908	0.0071	0.0216	0.1824	0.1068	0.0048
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0025	0.0913	0.0071	0.0217	0.1833	0.1073	0.0049
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0023	0.1417	0.0111	0.0036	0.0059	0.0458	0.0101
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0011	0.0421	0.0035	0.0044	0.0898	0.0476	0.0025
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0012	0.0461	0.0038	0.0049	0.0982	0.0521	0.0027
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0012	0.0350	0.0033	0.0337	0.5175	0.0488	0.0026
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0011	0.0308	0.0029	0.0297	0.4573	0.0430	0.0023
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0010	0.0285	0.0027	0.0274	0.4232	0.0397	0.0021
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0013	0.0223	0.0022	0.0240	0.2719	0.0279	0.0014
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0012	0.0205	0.0020	0.0221	0.2503	0.0257	0.0013
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0010	0.0173	0.0017	0.0186	0.2115	0.0217	0.0011
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0036	0.1284	0.0127	0.0083	0.0507	0.0867	0.0088
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0298	0.0137	0.0156	0.0045	0.0052	0.0948	0.0095
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0328	0.0151	0.0172	0.0049	0.0057	0.1042	0.0105
15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0012	0.0566	0.0076	0.0045	0.0596	0.0257	0.0057
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0012	0.0612	0.0082	0.0049	0.0644	0.0278	0.0061
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0010	0.0493	0.0066	0.0039	0.0519	0.0224	0.0049
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0002	0.0104	0.0014	0.0008	0.0109	0.0047	0.0010
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0006	0.0094	0.0011	0.0110	0.1482	0.0131	0.0006
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0007	0.0096	0.0011	0.0113	0.1513	0.0134	0.0006
21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0007	0.0101	0.0012	0.0117	0.1578	0.0140	0.0006
						327253.2933	0.08810501	0.93048	0.1199	0.277353	3.397002	0.973432	0.084247

change in dv at 20%W NC

							4	5	6	7	8	9	10
No.	**Unit #**	**Facility**		**Baseline emissions**	**controlled emiss**	**tons reduced**	**BAND**	**BIBE**	**BOAP**	**BRET**	**CACR**	**CAVE**	**GICL**
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0018	0.0664	0.0055	0.0150	0.1231	0.0773	0.0034
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0019	0.0667	0.0055	0.0150	0.1237	0.0777	0.0034
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0017	0.1037	0.0086	0.0025	0.0040	0.0332	0.0070
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0008	0.0308	0.0027	0.0031	0.0605	0.0345	0.0017
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0009	0.0337	0.0029	0.0034	0.0662	0.0377	0.0019
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0009	0.0256	0.0026	0.0234	0.3512	0.0353	0.0018
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0008	0.0225	0.0023	0.0206	0.3100	0.0311	0.0016
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0007	0.0208	0.0021	0.0190	0.2868	0.0288	0.0015
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0010	0.0163	0.0017	0.0167	0.1838	0.0202	0.0010
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0009	0.0150	0.0015	0.0153	0.1691	0.0186	0.0009
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0008	0.0126	0.0013	0.0129	0.1428	0.0157	0.0008
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0027	0.0940	0.0098	0.0058	0.0341	0.0628	0.0061
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0223	0.0100	0.0121	0.0031	0.0035	0.0686	0.0066
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0246	0.0110	0.0133	0.0034	0.0039	0.0755	0.0073

0.0000	0.0035	0.0113	0.0012	0.0002	0.0001	0.0037	0.0002	0.0082	0.0029	0.0002	0.0249	0.0673	0.0314	CACR	0.024865	WIMO	0.031394 CACR
0.013835	0.246567	0.23807	0.038854	0.025144	0.008713	0.204622	0.031081	0.218953	0.166012	0.025144	0.824923						

11	12	13	14	15	16	17	18	19	20	21	22						
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**	**largest**		second largest		
0.0009	0.1068	0.1022	0.0129	0.0026	0.0014	0.0558	0.0037	0.0690	0.0380	0.0026	0.4446	0.6142	0.4446	WIMO	0.182383	CACR	0.182383 CACR
0.0009	0.1073	0.1027	0.0129	0.0026	0.0014	0.0561	0.0038	0.0693	0.0382	0.0026	0.4467	0.6171	0.4467	WIMO	0.183251	CACR	0.183251 CACR
0.0010	0.0458	0.0064	0.0026	0.0041	0.0008	0.0393	0.0049	0.0158	0.0256	0.0041	0.2094	0.1834	0.2094	WIMO	0.141732	BIBE	0.045817 CAVE
0.0004	0.0476	0.0282	0.0048	0.0008	0.0005	0.0227	0.0014	0.0307	0.0152	0.0008	0.1740	0.2544	0.1740	WIMO	0.089783	CACR	0.089783 CACR
0.0004	0.0521	0.0309	0.0052	0.0008	0.0006	0.0249	0.0016	0.0336	0.0167	0.0008	0.1903	0.2785	0.1903	WIMO	0.098247	CACR	0.098247 CACR
0.0004	0.0488	0.1330	0.0157	0.0014	0.0006	0.0235	0.0018	0.1360	0.0192	0.0014	0.2748	0.9399	0.5175	CACR	0.274772	WIMO	0.517451 CACR
0.0003	0.0430	0.1172	0.0139	0.0012	0.0005	0.0207	0.0016	0.1199	0.0169	0.0012	0.2425	0.8297	0.4573	CACR	0.242472	WIMO	0.457267 CACR
0.0003	0.0397	0.1084	0.0128	0.0011	0.0005	0.0192	0.0015	0.1108	0.0156	0.0011	0.2242	0.7675	0.4232	CACR	0.224246	WIMO	0.423234 CACR
0.0003	0.0279	0.1235	0.0113	0.0012	0.0007	0.0268	0.0012	0.0647	0.0180	0.0012	0.2618	0.5778	0.2719	CACR	0.261755	WIMO	0.271874 CACR
0.0003	0.0257	0.1136	0.0104	0.0011	0.0007	0.0247	0.0011	0.0596	0.0166	0.0011	0.2410	0.5317	0.2503	CACR	0.240974	WIMO	0.2503 CACR
0.0003	0.0217	0.0959	0.0088	0.0009	0.0006	0.0208	0.0009	0.0503	0.0140	0.0009	0.2036	0.4490	0.2115	CACR	0.20362	WIMO	0.211516 CACR
0.0004	0.0867	0.0132	0.0031	0.0046	0.0018	0.0516	0.0066	0.0458	0.0472	0.0046	0.3915	0.3496	0.3915	WIMO	0.128444	BIBE	0.086696 CAVE
0.0160	0.0948	0.0074	0.0012	0.0152	0.0086	0.1200	0.0158	0.0018	0.0672	0.0152	0.0357	0.4278	0.1200	SACR	0.094791	CAVE	0.120002 SACR
0.0176	0.1042	0.0081	0.0013	0.0167	0.0094	0.1319	0.0174	0.0020	0.0739	0.0167	0.0392	0.4704	0.1319	SACR	0.104212	CAVE	0.131913 SACR
0.0005	0.0257	0.0102	0.0070	0.0018	0.0000	0.0178	0.0023	0.0338	0.0164	0.0018	0.1230	0.1958	0.1230	WIMO	0.059584	CACR	0.059584 CACR
0.0005	0.0278	0.0110	0.0076	0.0020	0.0000	0.0192	0.0024	0.0365	0.0178	0.0020	0.1329	0.2117	0.1329	WIMO	0.064406	CACR	0.064406 CACR
0.0004	0.0224	0.0089	0.0061	0.0016	0.0000	0.0155	0.0020	0.0294	0.0143	0.0016	0.1072	0.1706	0.1072	WIMO	0.051934	CACR	0.051934 CACR
0.0001	0.0047	0.0019	0.0013	0.0003	0.0000	0.0033	0.0004	0.0062	0.0030	0.0003	0.0226	0.0358	0.0226	WIMO	0.01091	CACR	0.01091 CACR
0.0001	0.0131	0.0528	0.0045	0.0005	0.0004	0.0126	0.0005	0.0364	0.0081	0.0005	0.1179	0.2913	0.1482	CACR	0.117915	WIMO	0.148213 CACR
0.0001	0.0134	0.0539	0.0046	0.0005	0.0004	0.0129	0.0005	0.0372	0.0083	0.0005	0.1204	0.2974	0.1513	CACR	0.120403	WIMO	0.151335 CACR
0.0001	0.0140	0.0562	0.0048	0.0006	0.0004	0.0135	0.0006	0.0388	0.0086	0.0006	0.1255	0.3101	0.1578	CACR	0.125524	WIMO	0.157761 CACR
0.041454	0.973432	1.185484	0.152733	0.061692	0.02926	0.732783	0.072138	1.027336	0.499039	0.061692	4.128668						

11	12	13	14	15	16	17	18	19	20	21	22	
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**
0.0006	0.0773	0.0705	0.0082	0.0018	0.0009	0.0428	0.0026	0.0461	0.0268	0.0018	0.3496	0.4283
0.0006	0.0777	0.0709	0.0082	0.0018	0.0009	0.0430	0.0026	0.0463	0.0270	0.0018	0.3513	0.4304
0.0007	0.0332	0.0044	0.0017	0.0028	0.0005	0.0301	0.0035	0.0105	0.0181	0.0028	0.1642	0.1321
0.0003	0.0345	0.0195	0.0030	0.0005	0.0003	0.0174	0.0010	0.0205	0.0107	0.0005	0.1364	0.1772
0.0003	0.0377	0.0213	0.0033	0.0006	0.0004	0.0191	0.0011	0.0224	0.0117	0.0006	0.1492	0.1939
0.0003	0.0353	0.0918	0.0100	0.0009	0.0004	0.0181	0.0013	0.0910	0.0135	0.0009	0.2157	0.6433
0.0002	0.0311	0.0809	0.0088	0.0008	0.0004	0.0159	0.0011	0.0802	0.0119	0.0008	0.1903	0.5675
0.0002	0.0288	0.0748	0.0082	0.0008	0.0003	0.0147	0.0011	0.0741	0.0110	0.0008	0.1759	0.5247
0.0002	0.0202	0.0852	0.0072	0.0008	0.0005	0.0206	0.0008	0.0433	0.0127	0.0008	0.2054	0.3965
0.0002	0.0186	0.0784	0.0066	0.0008	0.0005	0.0189	0.0008	0.0398	0.0117	0.0008	0.1891	0.3648
0.0002	0.0157	0.0661	0.0056	0.0006	0.0004	0.0160	0.0007	0.0336	0.0099	0.0006	0.1597	0.3079
0.0003	0.0628	0.0091	0.0020	0.0031	0.0012	0.0396	0.0047	0.0306	0.0333	0.0031	0.3077	0.2483
0.0116	0.0686	0.0051	0.0007	0.0104	0.0058	0.0921	0.0111	0.0012	0.0475	0.0104	0.0279	0.3124
0.0128	0.0755	0.0056	0.0008	0.0115	0.0064	0.1013	0.0123	0.0013	0.0522	0.0115	0.0307	0.3436

15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0009	0.0414	0.0059	0.0031	0.0401	0.0186	0.0039
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0009	0.0447	0.0063	0.0034	0.0434	0.0201	0.0043
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0008	0.0361	0.0051	0.0027	0.0350	0.0162	0.0034
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0002	0.0076	0.0011	0.0006	0.0073	0.0034	0.0007
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0005	0.0069	0.0009	0.0076	0.1000	0.0095	0.0004
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0005	0.0070	0.0009	0.0078	0.1021	0.0097	0.0004
21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0005	0.0073	0.0009	0.0081	0.1064	0.0101	0.0004
						327253.2933	0.06600778	0.680185	0.092767	0.192529	2.297176	0.704573	0.05863

change in dv at 2018 Environ projected

							4	5	6	7	8	9	10
No.	**Unit #**	**Facility**		**Baseline emissions**	**controlled emiss**	**tons reduced**	**BAND**	**BIBE**	**BOAP**	**BRET**	**CACR**	**CAVE**	**GICL**
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0010	0.0254	0.0028	#NUM!	0.0394	0.0295	0.0018
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0010	0.0256	0.0028	#NUM!	0.0396	0.0296	0.0018
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0010	0.0398	0.0043	#NUM!	0.0013	0.0126	0.0038
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0004	0.0118	0.0014	#NUM!	0.0193	0.0131	0.0009
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0005	0.0129	0.0015	#NUM!	0.0211	0.0143	0.0010
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0005	0.0098	0.0013	#NUM!	0.1142	0.0134	0.0010
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0004	0.0086	0.0011	#NUM!	0.1005	0.0118	0.0009
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0004	0.0080	0.0011	#NUM!	0.0928	0.0109	0.0008
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0005	0.0062	0.0008	#NUM!	0.0591	0.0077	0.0005
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0005	0.0057	0.0008	#NUM!	0.0543	0.0070	0.0005
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0004	0.0048	0.0007	#NUM!	0.0458	0.0059	0.0004
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0015	0.0361	0.0050	#NUM!	0.0109	0.0239	0.0033
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0124	0.0038	0.0061	#NUM!	0.0011	0.0261	0.0036
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0136	0.0042	0.0067	#NUM!	0.0012	0.0287	0.0039
15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0005	0.0158	0.0030	#NUM!	0.0128	0.0071	0.0021
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0005	0.0171	0.0032	#NUM!	0.0138	0.0076	0.0023
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0004	0.0138	0.0026	#NUM!	0.0111	0.0062	0.0018
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0001	0.0029	0.0005	#NUM!	0.0023	0.0013	0.0004
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0003	0.0026	0.0004	#NUM!	0.0320	0.0036	0.0002
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0003	0.0027	0.0004	#NUM!	0.0326	0.0037	0.0002
21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0003	0.0028	0.0005	#NUM!	0.0340	0.0038	0.0002
						327253.2933	0.03648191	0.260368	0.046927	#NUM!	0.739286	0.267861	0.031531

change in dv at 20%B NC

							4	5	6	7	8	9	10
No.	**Unit #**	**Facility**		**Baseline emissions**	**controlled emiss**	**tons reduced**	**BAND**	**BIBE**	**BOAP**	**BRET**	**CACR**	**CAVE**	**GICL**
1	1	Big Brown	Big Brown 1	30667.22033	0	30667.22033	0.0030	0.1153	0.0086	0.0289	0.2551	0.1358	0.0062
2	2	Big Brown	Big Brown 2	30814.37367	0	30814.37367	0.0030	0.1158	0.0087	0.0291	0.2563	0.1365	0.0062
3	1	Coleto Creek	Coleto Creek 1	16059.31067	0	16059.31067	0.0029	0.1797	0.0135	0.0048	0.0083	0.0583	0.0130
4	lim 1	Limestone	Limestone lim 1	10912.50933	0	10912.50933	0.0013	0.0535	0.0042	0.0060	0.1258	0.0606	0.0032
5	lim 2	Limestone	Limestone lim 2	11946.36067	0	11946.36067	0.0015	0.0585	0.0046	0.0065	0.1376	0.0664	0.0035
6	1	Martin Lake	Martin Lake 1	24494.92533	0	24494.92533	0.0015	0.0444	0.0040	0.0451	0.7189	0.0621	0.0033
7	2	Martin Lake	Martin Lake 2	21580.41733	0	21580.41733	0.0013	0.0392	0.0036	0.0398	0.6361	0.0547	0.0029
8	3	Martin Lake	Martin Lake 3	19940.02	0	19940.02	0.0012	0.0362	0.0033	0.0368	0.5891	0.0506	0.0027
9	1	Monticello	Monticello 1	17864.781	0	17864.781	0.0016	0.0283	0.0026	0.0322	0.3795	0.0356	0.0018
10	2	Monticello	Monticello 2	16429.34767	0	16429.34767	0.0015	0.0260	0.0024	0.0296	0.3496	0.0327	0.0017
11	3	Monticello	Monticello 3	13856.60833	0	13856.60833	0.0012	0.0220	0.0020	0.0250	0.2956	0.0276	0.0014
12	4	Sandow	Sandow 4	22289.21167	0	22289.21167	0.0045	0.1629	0.0155	0.0111	0.0710	0.1103	0.0113
13	171b	Tolk	Tolk 171b	10031.389	0	10031.389	0.0367	0.0174	0.0191	0.0060	0.0073	0.1206	0.0123
14	172b	Tolk	Tolk 172b	11033.65033	0	11033.65033	0.0404	0.0192	0.0210	0.0066	0.0081	0.1326	0.0135

0.0004	0.0186	0.0070	0.0045	0.0013	0.0000	0.0136	0.0016	0.0226	0.0116	0.0013	0.0964	0.1363
0.0004	0.0201	0.0076	0.0048	0.0014	0.0000	0.0148	0.0017	0.0244	0.0125	0.0014	0.1041	0.1473
0.0003	0.0162	0.0061	0.0039	0.0011	0.0000	0.0119	0.0014	0.0197	0.0101	0.0011	0.0840	0.1188
0.0001	0.0034	0.0013	0.0008	0.0002	0.0000	0.0025	0.0003	0.0041	0.0021	0.0002	0.0177	0.0249
0.0001	0.0095	0.0364	0.0029	0.0004	0.0003	0.0097	0.0004	0.0243	0.0057	0.0004	0.0924	0.1993
0.0001	0.0097	0.0372	0.0029	0.0004	0.0003	0.0099	0.0004	0.0248	0.0058	0.0004	0.0944	0.2035
0.0001	0.0101	0.0387	0.0031	0.0004	0.0003	0.0103	0.0004	0.0259	0.0061	0.0004	0.0984	0.2122
0.030119	0.704573	0.817619	0.09735	0.042433	0.019871	0.562298	0.050825	0.686683	0.352026	0.042433	3.240455	

11	12	13	14	15	16	17	18	19	20	21	22	
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**
0.0004	0.0295	0.0210	#NUM!	0.0012	0.0005	0.0153	0.0017	0.0152	0.0141	0.0012	0.0874	#NUM!
0.0004	0.0296	0.0211	#NUM!	0.0012	0.0005	0.0154	0.0017	0.0152	0.0142	0.0012	0.0879	#NUM!
0.0004	0.0126	0.0013	#NUM!	0.0019	0.0003	0.0108	0.0022	0.0035	0.0095	0.0019	0.0406	#NUM!
0.0002	0.0131	0.0058	#NUM!	0.0003	0.0002	0.0062	0.0006	0.0067	0.0056	0.0003	0.0337	#NUM!
0.0002	0.0143	0.0063	#NUM!	0.0004	0.0002	0.0068	0.0007	0.0074	0.0062	0.0004	0.0369	#NUM!
0.0002	0.0134	0.0273	#NUM!	0.0006	0.0002	0.0065	0.0008	0.0300	0.0071	0.0006	0.0535	#NUM!
0.0001	0.0118	0.0241	#NUM!	0.0005	0.0002	0.0057	0.0007	0.0264	0.0063	0.0005	0.0471	#NUM!
0.0001	0.0109	0.0222	#NUM!	0.0005	0.0002	0.0053	0.0007	0.0244	0.0058	0.0005	0.0435	#NUM!
0.0001	0.0077	0.0253	#NUM!	0.0005	0.0003	0.0074	0.0005	0.0142	0.0067	0.0005	0.0509	#NUM!
0.0001	0.0070	0.0233	#NUM!	0.0005	0.0003	0.0068	0.0005	0.0131	0.0062	0.0005	0.0468	#NUM!
0.0001	0.0059	0.0197	#NUM!	0.0004	0.0002	0.0057	0.0004	0.0110	0.0052	0.0004	0.0395	#NUM!
0.0002	0.0239	0.0027	#NUM!	0.0021	0.0007	0.0142	0.0030	0.0101	0.0175	0.0021	0.0768	#NUM!
0.0065	0.0261	0.0015	#NUM!	0.0068	0.0032	0.0331	0.0071	0.0004	0.0250	0.0068	0.0068	#NUM!
0.0071	0.0287	0.0017	#NUM!	0.0075	0.0035	0.0364	0.0078	0.0004	0.0275	0.0075	0.0075	#NUM!
0.0002	0.0071	0.0021	#NUM!	0.0008	0.0000	0.0049	0.0010	0.0074	0.0061	0.0008	0.0237	#NUM!
0.0002	0.0076	0.0022	#NUM!	0.0009	0.0000	0.0053	0.0011	0.0080	0.0066	0.0009	0.0256	#NUM!
0.0002	0.0062	0.0018	#NUM!	0.0007	0.0000	0.0042	0.0009	0.0065	0.0053	0.0007	0.0207	#NUM!
0.0000	0.0013	0.0004	#NUM!	0.0001	0.0000	0.0009	0.0002	0.0014	0.0011	0.0001	0.0043	#NUM!
0.0000	0.0036	0.0108	#NUM!	0.0002	0.0001	0.0035	0.0002	0.0080	0.0030	0.0002	0.0227	#NUM!
0.0000	0.0037	0.0110	#NUM!	0.0002	0.0002	0.0035	0.0002	0.0082	0.0031	0.0002	0.0232	#NUM!
0.0000	0.0038	0.0115	#NUM!	0.0003	0.0002	0.0037	0.0003	0.0085	0.0032	0.0003	0.0242	#NUM!
0.016695	0.267861	0.242951	#NUM!	0.027702	0.010869	0.201459	0.032509	0.226032	0.185336	0.027702	0.803472	

11	12	13	14	15	16	17	18	19	20	21	22	
GRSA	**GUMO**	**HEGL**	**MING**	**PECO**	**ROMO**	**SACR**	**SAPE**	**UPBU**	**WHIT**	**WHPE**	**WIMO**	**all but WIMO and TX**
0.0011	0.1358	0.1362	0.0181	0.0035	0.0018	0.0683	0.0050	0.0963	0.0495	0.0035	0.5436	0.8211
0.0011	0.1365	0.1368	0.0182	0.0035	0.0019	0.0686	0.0050	0.0968	0.0498	0.0035	0.5461	0.8250
0.0013	0.0583	0.0085	0.0037	0.0055	0.0010	0.0481	0.0066	0.0221	0.0334	0.0055	0.2567	0.2364
0.0005	0.0606	0.0377	0.0067	0.0010	0.0007	0.0279	0.0019	0.0429	0.0198	0.0010	0.2134	0.3413
0.0006	0.0664	0.0412	0.0073	0.0011	0.0008	0.0305	0.0021	0.0470	0.0217	0.0011	0.2334	0.3735
0.0005	0.0621	0.1770	0.0221	0.0018	0.0008	0.0288	0.0025	0.1897	0.0250	0.0018	0.3366	1.2851
0.0004	0.0547	0.1561	0.0195	0.0016	0.0007	0.0254	0.0022	0.1673	0.0220	0.0016	0.2971	1.1352
0.0004	0.0506	0.1443	0.0180	0.0015	0.0007	0.0235	0.0020	0.1547	0.0204	0.0015	0.2749	1.0505
0.0004	0.0356	0.1644	0.0159	0.0016	0.0010	0.0328	0.0016	0.0904	0.0235	0.0016	0.3207	0.7867
0.0004	0.0327	0.1513	0.0146	0.0015	0.0009	0.0302	0.0015	0.0832	0.0216	0.0015	0.2953	0.7242
0.0003	0.0276	0.1277	0.0124	0.0013	0.0008	0.0255	0.0013	0.0702	0.0182	0.0013	0.2496	0.6118
0.0005	0.1103	0.0175	0.0044	0.0061	0.0024	0.0632	0.0089	0.0640	0.0614	0.0061	0.4790	0.4584
0.0200	0.1206	0.0099	0.0017	0.0203	0.0116	0.1468	0.0212	0.0025	0.0876	0.0203	0.0438	0.5438
0.0220	0.1326	0.0109	0.0018	0.0223	0.0127	0.1614	0.0233	0.0028	0.0963	0.0223	0.0482	0.5978

15	5	WA Parish	WA Parish 5	14157.28967	0	14157.28967	0.0014	0.0719	0.0093	0.0060	0.0835	0.0328	0.0073
16	6	WA Parish	WA Parish 6	15306.79967	0	15306.79967	0.0015	0.0777	0.0100	0.0065	0.0903	0.0354	0.0079
17	7	WA Parish	WA Parish 7	12334.96967	0	12334.96967	0.0012	0.0626	0.0081	0.0053	0.0728	0.0286	0.0063
18	8	WA Parish	WA Parish 8	2585.883333	0	2585.883333	0.0003	0.0132	0.0017	0.0011	0.0153	0.0060	0.0013
19	1	Welsh	Welsh 1	8083.911	0	8083.911	0.0008	0.0120	0.0014	0.0148	0.2074	0.0167	0.0008
20	2	Welsh	Welsh 2	8255.512667	0	8255.512667	0.0008	0.0122	0.0014	0.0151	0.2118	0.0171	0.0008
21	3	Welsh	Welsh 3	8608.802	0	8608.802	0.0008	0.0128	0.0014	0.0157	0.2207	0.0178	0.0008
						327253.2933	0.10844764	1.18073	0.146528	0.372105	4.74018	1.238836	0.108404

baseline Average 2009-2013	1
3yr average 2009-2013 (eliminate max and min)	2
Max 2009-2013	3
2018	4

0.0006	0.0328	0.0136	0.0098	0.0024	0.0000	0.0218	0.0030	0.0472	0.0214	0.0024	0.1509	0.2627
0.0007	0.0354	0.0147	0.0106	0.0026	0.0000	0.0236	0.0033	0.0510	0.0232	0.0026	0.1630	0.2840
0.0005	0.0286	0.0118	0.0086	0.0021	0.0000	0.0190	0.0026	0.0412	0.0187	0.0021	0.1316	0.2289
0.0001	0.0060	0.0025	0.0018	0.0004	0.0000	0.0040	0.0006	0.0086	0.0039	0.0004	0.0277	0.0481
0.0001	0.0167	0.0704	0.0064	0.0007	0.0005	0.0155	0.0007	0.0509	0.0106	0.0007	0.1447	0.3983
0.0001	0.0171	0.0719	0.0065	0.0007	0.0006	0.0158	0.0007	0.0519	0.0108	0.0007	0.1478	0.4067
0.0001	0.0178	0.0749	0.0068	0.0008	0.0006	0.0165	0.0008	0.0542	0.0113	0.0008	0.1540	0.4240
0.051805	1.238836	1.579346	0.214721	0.08246	0.039511	0.897105	0.096763	1.434864	0.650066	0.08246	5.05821	

Exhibit B

Read Me

This spreadsheet reproduces the Texas portion of the calculations from the CSPAR BART sensitivity memo from Brian Timin to Docket ID No. EPA-HQ-OAR-2011-0729: Regional Haze: Revisions to Provisions Governing Alternatives to Source-Specific Best Available Retrofit Technology (BART) Determinations, Limited SIP Disapprovals, and Federal Implementation Plans, dated 5/29/12. It applies the corrections from the above referenced memo to the projected visibility improvement results for the 2nd prong test summarized in Table 3-5 of the Document, "Technical Support Document for Demonstration of the Transport Rule as a BART Alternative," December 2011. It demonstrates that for Texas Class I areas and some of the Class I Areas in adjacent states, implementation of BART wold have resulted in more visibility improvement than CSAPR.

The table below replicates Table 2 from the 5/29/12 CSPAR BART sensitivity memo from Brian Timin, with the addition of the calculation of the adjustment factors for Texas and Georgia discussed on the top of page 5 of that document. Note that EPA calculates a factor of 0.48 for Gerogia, which is a conservative rounding up of the factor calculated here.

State	2014 Base Case SO2 Emissions [tons]	2014 TR + BART-elsewhere SO2 Emissions (estimate from IPM used in air quality modeling) [tons]	SO2 Emissions Decrease from TR (as modeled) [tons]	2014 Budget Increase [tons]	SO2 Emissions Decrease from TR with Increased Budget [tons]	EPA's Resulting Emission Factor
Texas	453,332	266,627	-186,705	50,157	-136,548	0.731
Georgia	170,300	93,600	-76,700	40,334	-36,366	0.474
Total	623,632	360,227	-263,405	90,491	-172,914	

The table below is reproduced from Table 3 of the 5/29/12 CSPAR BART sensitivity memo from Brian Timin. It includes the Class I areas most affected by Texas emissions and the modeled visibility improvement from the Transport Rule + BART-elsewhere case (in deciviews). The 0.73 proportionality factor was calculated in the Brian Timin memo to correct for the increase of 50,157 tpy SO2 that was

Class I Area Name	State	TR + BART-elsewhere 20% Best Days (change in dv)	TR + BART-elsewhere 20% Best Days Proportionally Reduced by 0.73 (change in dv)	TR + BART-elsewhere 20% Worst Days (change in dv)	TR + BART-elsewhere 20% Worst Days Proportionally Reduced by 0.73 (change in dv)
Big Bend NP	TX	-0.2	-0.15	-1.1	-0.80
Caney Creek Wilderness	AR	-0.4	-0.29	-3.2	-2.34
Carlsbad Caverns NP	TX	-0.1	-0.07	-0.9	-0.66
Guadalupe Mountains NP	TX	-0.1	-0.07	-0.9	-0.66
Hercules-Glades Wilderness	MO	-0.6	-0.44	-2.5	-1.83
Salt Creek	NM	-0.1	-0.07	-0.7	-0.51

Upper Buffalo Wilderness	AR	-0.5	-0.37	-2.5	-1.83
White Mountain Wilderness	NM	-0.1	-0.07	-0.6	-0.44
Wichita Mountains	OK	-0.2	-0.15	-1.6	-1.17

In the above and below, improvements in visibility are represented by negative numbers, as this was used in the original analysis. Note that the reduction in TX emissions of 27% due to the increase in TX's SO2 budget of 50,157 tpy does not affect the "no degredation" test because all the modified visibility changes are still negative (some improvement).

Class I Areas (IMPROVE Site)	State	2014 Base Case Visibility 20% Best Days (dv)	2014 Base Case Visibility 20% Worst Days (dv)	TR + BART-elsewhere 20% Best Days (change in dv)	TR + BART-elsewhere 20% Best days Proportionally Reduced by 0.73 (change in dv)	TR + BART-elsewhere 20% Worst Days (change in dv)	TR + BART-elsewhere 20% Worst days Proportionally Reduced by 0.73 (change in dv)	BART - 2014 Base Case 20% Best Days (change in dv)	BART - 2014 Base Case 20% Worst Days (change in dv)
Acadia NP	ME	8.0	20.1	0.0		-1.1		0.0	-0.8
Badlands NP	SD	6.3	16.0	-0.1		-0.6		-0.1	-0.7
Bandelier NM	NM	4.2	11.1	-0.1		-0.3		-0.1	-0.4
Big Bend NP	TX	5.4	16.3	-0.2	-0.15	-1.1	-0.80	-0.2	-1.0
Black Canyon of the Gunnison	CO	2.3	9.5	-0.1		-0.1		-0.1	-0.1
Bosque del Apache	NM	5.6	13.0	-0.1		-0.6		-0.1	-0.6
Boundary Waters Canoe Area	MN	5.8	18.8	-0.1		-1.2		-0.1	-1.0
Brigantine	NJ	13.2	25.4	-0.4		-2.5		-0.2	-1.6
Caney Creek Wilderness	AR	11.3	24.4	-0.4	-0.29	-3.2	-2.34	-0.6	-2.2
Carlsbad Caverns NP	TX	5.2	15.5	-0.1	-0.07	-0.9	-0.66	-0.1	-0.8
Cohutta Wilderness	GA	12.9	26.6	-0.8		-3.8		-0.5	-2.3
Dolly Sods Wilderness	WV	10.3	27.1	-1.1		-5.7		-0.8	-3.2
Eagles Nest Wilderness	CO	0.4	8.3	0.0		-0.1		0.0	-0.1
Everglades NP	FL	11.5	20.4	-0.3		-1.0		-0.3	-0.7
Flat Tops Wilderness	CO	0.4	8.3	0.0		-0.1		0.0	-0.1
Great Gulf Wilderness	NH	6.7	19.2	-0.1		-1.8		-0.1	-1.3
Great Sand Dunes NM	CO	3.5	11.3	-0.1		-0.2		-0.1	-0.2
Great Smoky Mountains NP	TN	12.2	27.0	-0.8		-3.7		-0.7	-2.0
Guadalupe Mountains NP	TX	5.2	15.5	-0.1	-0.07	-0.9	-0.66	-0.1	-0.8
Hercules-Glades Wilderness	MO	12.2	25.2	-0.6	-0.44	-2.5	-1.83	-0.8	-1.7
Isle Royale NP	MI	6.4	19.9	-0.1		-1.0		-0.2	-0.9
James River Face Wilderness	VA	12.9	25.8	-0.9		-4.2		-0.5	-2.1
Joyce-Kilmer-Slickrock Wildern	TN	12.2	27.0	-0.8		-3.7		-0.7	-2.0

La Garita Wilderness	CO	2.3	9.5	-0.1		-0.1		-0.1	-0.1
Linville Gorge Wilderness	NC	10.3	26.0	-0.7		-4.3		-0.5	-2.3
Lostwood	ND	7.9	18.8	-0.1		-0.5		-0.1	-0.5
Lye Brook Wilderness	VT	5.5	20.7	-0.1		-2.6		-0.1	-1.7
Maroon Bells-Snowmass Wilde	CO	0.4	8.3	0.0		-0.1		0.0	-0.1
Mammoth Cave NP	KY	15.3	29.5	-1.2		-5.1		-0.9	-2.8
Medicine Lake	MT	6.5	17.7	0.0		-0.3		0.0	-0.3
Mesa Verde NP	CO	3.2	11.4	-0.1		-0.3		-0.1	-0.3
Moosehorn	ME	8.4	19.0	0.0		-1.0		0.0	-0.8
Mount Zirkel Wilderness	CO	1.0	9.2	0.0		-0.1		0.0	-0.1
North Absaroka Wilderness	WY	1.5	11.1	0.0		0.0		0.0	0.0
Okefenokee	GA	13.9	24.1	-0.9		-2.5		-0.7	-1.7
Otter Creek Wilderness	WV	10.3	27.1	-1.1		-5.7		-0.8	-3.2
Pecos Wilderness	NM	1.0	9.0	-0.1		-0.2		-0.1	-0.2
Presidential Range-Dry River W	NH	6.7	19.2	-0.1		-1.8		-0.1	-1.3
Rawah Wilderness	CO	1.0	9.2	0.0		-0.1		0.0	-0.1
Roosevelt Campobello Internat	ME	8.4	19.0	0.0		-1.0		0.0	-0.8
Cape Romain	SC	13.6	24.0	-0.7		-2.9		-0.4	-1.9
Rocky Mountain NP	CO	2.0	12.2	0.0		-0.1		0.0	-0.1
Salt Creek	NM	7.3	17.1	-0.1	-0.07	-0.7	-0.51	-0.2	-0.7
San Pedro Parks Wilderness	NM	1.2	9.9	-0.2		-0.3		-0.2	-0.4
Seney	MI	6.9	23.3	-0.1		-1.6		0.0	-1.5
Shenandoah NP	VA	9.0	26.2	-0.8		-5.0		-0.6	-3.0
Shining Rock Wilderness	NC	6.3	24.8	-0.7		-3.8		-0.5	-2.1
Sipsey Wilderness	AL	14.5	26.5	-0.9		-3.7		-0.9	-2.1
Theodore Roosevelt NP	ND	6.8	17.0	0.0		-0.3		0.0	-0.4
UL Bend	MT	4.2	15.2	0.0		-0.1		0.0	-0.1
Upper Buffalo Wilderness	AR	11.3	24.7	-0.5	-0.37	-2.5	-1.83	-0.6	-1.4
Voyageurs NP	MN	6.6	18.4	-0.1		-1.0		-0.1	-0.8
Washakie Wilderness	WY	1.5	11.1	0.0		0.0		0.0	0.0
West Elk Wilderness	CO	0.4	8.3	0.0		-0.1		0.0	-0.1
Weminuche Wilderness	CO	2.3	9.5	-0.1		-0.1		-0.1	-0.1
White Mountain Wilderness	NM	3.1	12.3	-0.1	-0.07	-0.6	-0.44	-0.2	-0.5
Wheeler Peak Wilderness	NM	1.0	9.0	-0.1		-0.2		-0.1	-0.2
Wind Cave NP	SD	4.6	15.1	0.0		-0.3		-0.1	-0.4
Wichita Mountains	OK	9.1	21.7	-0.2	-0.15	-1.6	-1.17	-0.2	-1.2
Wolf Island	GA	13.9	24.1	-0.9		-2.5		-0.7	-1.7
Eastern Class I Areas Average (60 Areas)				-0.3		-1.6		-0.2	-1.0

The above information is taken from Table 3-5 of the Document, "Technical Support Document for Demonstration of the Transport Rule as a BART Alternative," December 2011. As can be seen from a comparison to the first table, it also includes BART base case modeling results. In above, only Class I Areas in TX or those in surrounding states EPA identified in the Brian Timin memo as being impacted by TX's SO2 emissions were examined.

		20 % Best Days Visibility Improvement (dv)				20 % Worst Days Visibility Improvement (dv)			
Class I Area Name	State	TR + BART-elsewhere	TR + BART-elsewhere after TX Adjustment	BART - 2014 Base Case	Better Visibility under BART before or after TX Adjustment?	TR + BART-elsewhere	TR + BART-elsewhere after TX Adjustment	BART - 2014 Base Case	Better Visibility under BART before or after TX Adjustment?
Big Bend NP	TX	0.2	0.15	0.2	Y - After	1.1	0.80	1.0	Y - After
Caney Creek Wilderness	AR	0.4	0.29	0.6	Y - Before	3.2	2.34	2.2	N
Carlsbad Caverns NP	TX	0.1	0.07	0.1	Y - After	0.9	0.66	0.8	Y - After
Guadalupe Mountains NP	TX	0.1	0.07	0.1	Y - After	0.9	0.66	0.8	Y - After
Hercules-Glades Wilderness	MO	0.6	0.44	0.8	Y - Before	2.5	1.83	1.7	N
Salt Creek	NM	0.1	0.07	0.2	Y - Before	0.7	0.51	0.7	Y - After
Upper Buffalo Wilderness	AR	0.5	0.37	0.6	Y - Before	2.5	1.83	1.4	N
White Mountain Wilderness	NM	0.1	0.07	0.2	Y - Before	0.6	0.44	0.5	Y - After
Wichita Mountains	OK	0.2	0.15	0.2	Y - After	1.6	1.17	1.2	Y - After
Totals		2.3	1.7	3.0		14.0	10.2	10.3	

The above table summarizes the analysis for the Class I Areas most affected by Texas emissions. For the sake of clarity, changes in visibility from baselines which were previously represented as negative numbers, have been changed to positive numbers to more intuitively represent visibility improvement. As can be seen, in every Texas Class I Area and in every adjacent Class I Area EPA identified was impacted by Texas emissions, better visibility improvement resulted in the 20% best days and/or the 20% worst days from source-by-source BART than through CSAPR.

Exhibit C

Welsh Power Plant
Retrofit of Units 1 and 3

AEP SOUTHWESTERN ELECTRIC POWER COMPANY
A unit of American Electric Power

Quick Facts: About Welsh Power Plant

- **Location: Cason, Texas**
- **Stack height: 325 feet**
- **Average annual coal use: 6.5 million tons**
- **Coal yard storage capacity: 1.3 million tons**
- **Average daily coal use: 17,500 tons**
- **Annual payroll: $9 million**
- **Certified Tree Farm (first one for AEP in Texas)**

How We Generate Electricity

Coal arrives by rail and is stored in the plant's coal yard. Conveyor belts carry the coal from the yard into the plant where pulverizers grind the coal into a fine, talcum powder-like consistency. The powdered coal is injected into the boilers where it burns at high temperatures, turning water that circulates in the boilers into steam.

The steam is then directed into the turbines, where it turns blades (much like wind turning a windmill). The spinning turbine drives a generator that produces electricity.

Because electricity cannot be stored, it is generated the instant a customer needs it. The generators produce electricity at 18,000 volts. Transformers outside the plant step up the voltage to 345,000 volts so that it can be transmitted efficiently to customers' homes and businesses.

Welsh Plant's three generating units provide total capacity of 1,584 megawatts (MW). Units 1, 2 and 3 became operational in 1977, 1980 and 1982 respectively, each with capacity of 528 MW.

Welsh Plant is a base load, coal-fueled, power plant located southeast of Mt. Pleasant in Titus County, Texas. The three units use sub-bituminous coal mined from the Powder River Basin in Wyoming and shipped to East Texas via rail.

The Welsh plant is 28 percent of SWEPCO's capacity, with a net value of $247 million for all three units. SWEPCO made a commitment in 2011 to retire Unit 2 by April 2016.

SWEPCO has begun a retrofit of Units 1 and 3 at a total investment cost of $411 million to meet the environmental compliance deadline of April 2015 (extended to April, 2016). The unit retrofits are the highest value for SWEPCO's customers.

Retrofit Decision and Local Community Impact

- 133 SWEPCO employees affected
- Additional employment effect to local contractors
- $4.126 million in local taxes, including $2.6 million for Daingerfield-Lone Star ISD and $235,000 to Northeast Texas Community College
- $278,000 in Texas state taxes

Southwestern Electric Power Company and American Electric Power

Southwestern Electric Power Company (SWEPCO), is an operating unit of American Electric Power. SWEPCO serves 524,000 customers in Louisiana, Texas and Arkansas. SWEPCO's headquarters are in Shreveport, La. American Electric Power is one of the largest electric utilities in the United States, delivering electricity to more than 5 million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 36,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765-kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's headquarters are in Columbus, Ohio.

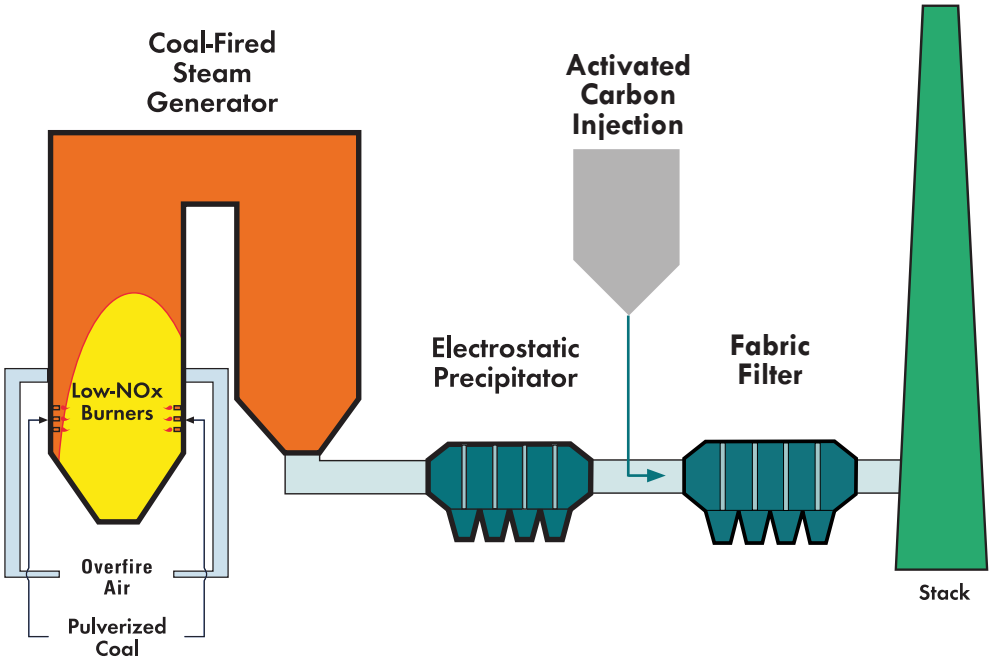
Protecting the Environment

AEP operates Welsh Plant under its Environmental Leadership Principles, which state in part: "We will actively seek to prevent pollution by minimizing our emissions to the environment. We will pay particular attention to the protection of the surrounding environment at existing facilities, company-owned land and when planning new facilities." Welsh Plant meets or exceeds the environmental standards set by state and federal regulations.

Welsh Plant employees take great pride in providing electricity while protecting air and water quality, recycling materials and maintaining an exemplary record of public and work safety.

- Low-NOx burners along with an overfire air system reduce nitrogen oxide (NOx) emissions by up to 60 percent. Low NOx burners control the way coal is burned to reduce the formation of NOx, a precursor to ozone, and an overfire air design injects air above the burning zone to enhance combustion. This infusion of air limits the formation of nitrogen dioxide, thereby reducing the formation of NOx.
- Electrostatic precipitators (ESP) remove more than 99 percent of all fly ash particles produced by coal combustion. In precipitators, fly ash from burning coal passes through electrically-charged plates, which pull the ash particles out of the exhaust gas stream. The ash can be marketed for use in land reclamation, in concrete and lightweight aggregate and in the production of paints, plastics and other products to reduce the amount of product that is landfilled.
- Powdered Activated Carbon Injection (ACI) is utilized downstream of the ESP to reduce mercury emissions below newly enacted environmental standards. ACI works by adsorbing the mercury from the gas produced during coal combustion.
- A new Fabric Filter will be installed to capture the powdered activated carbon and the mercury it has removed from the process. The Fabric Filter, which contains thousands of fabric bags, works like an air filter on an automobile by allowing gases to pass through while capturing particulate matter such as powdered activated carbon and fly ash. The bags are periodically pulsed with compressed air to remove the captured material into hoppers below. The material is then transported to the plant landfill for disposal.
- Welsh Plant uses an automated continuous emission monitoring system (CEMS) to monitor stack gas emissions. This highly accurate system helps ensure compliance with clean air requirements for sulfur dioxide, NOx and carbon dioxide emissions and opacity.

Welsh Power Plant Emission Control Equipment



EXC0002

Grid operator notified: Deely coal plant operations to be indefinitely suspended in 2018

By CPS Energy on October 28, 2013

As part of its long range planning, CPS Energy on Friday notified the Electric Reliability Council of Texas (ERCOT) of its intent to suspend operations indefinitely at JT Deely Units 1 and 2, effective Dec. 31, 2018.

The company's Board of Trustees is expected to approve a resolution that formally confirms the decision at its Nov. 18 meeting.

The Deely units have supplied the Greater San Antonio community with 871 megawatts of reliable, affordable electricity since 1977. The written notification is the definitive step toward closing the plant that sits on Calaveras Lake in southeast Bexar County.

In 2011, CEO Doyle Beneby proposed retiring the Deely units 15 years ahead of schedule in order to avoid spending upwards of $550 million in environmental retrofits that would have upgraded the units in advance of new regulatory emissions requirements.

In 2012, CPS Energy purchased the 800-MW Rio Nogales combined cycle natural gas plant to replace the energy supply of the older coal units. This measure, along with renewable resources, efficiency programs and conservation will reduce pollutants in the Greater San Antonio area at a level equivalent to removing 1.5 million cars from the road by 2020.

EXC0003

"The retirement of the Deely coal plants will mean cleaner air to breathe and fewer people with asthma," said Karen Hadden, executive director of the SEED Coalition, who worked with CPS Energy more than a decade ago to bring cleaner air to San Antonio. The closure "will especially improve the health of children, the elderly and those with breathing impairments."

"We're currently considering ways to repurpose the plant for other, less carbon-intense power production," said Cris Eugster, executive vice president and chief generation and strategy officer. "We haven't determined what that next-generation supply will be, and we won't need it until 2020. But these are long-term plans and big decisions that take time."

"We are glad CPS has taken this step to lock in their decision to retire Deely," said Tom "Smitty" Smith, state director of Public Citizen, which advocates for affordable, clean and sustainable energy. "It's another way CPS has shown its leadership among utilities in Texas."

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CPS Energy leading on greenhouse gas reductions

Ozone is rising in Bexar County, even as CPS Energy reduces emissions

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EXC0004

NEWS RELEASE

Luminant Announces Decision to Retire Its Monticello Power Plant

3 Units in Northeast Texas Affected

IRVING, Texas — Oct. 6, 2017 — Luminant, a subsidiary of Vistra Energy (NYSE: VST), today announced plans to retire its Monticello Power Plant in Titus County, Texas. In total, approximately 1,800 MW of power will be taken offline in January of 2018.

Curt Morgan, Vistra Energy's president and chief executive officer, said, “For more than 40 years, Monticello employees have generated reliable power for Texans, and we honor and recognize their service. But the market’s unprecedented low power price environment has profoundly impacted its operating revenues and no longer supports continued investment.”

Luminant estimates that approximately 200 employees will be impacted by Monticello’s retirement. Eligible and affected employees will be offered severance benefits and outplacement assistance. The company will also assist employees who are interested in pursuing open positions within our fleet.

Mr. Morgan continued, “This was a difficult decision made after a year of careful analysis. We are sensitive to the consequences of our decision on employees and members of the local community, with whom we have worked closely for decades. Luminant will be coordinating with civic leadership to prepare for the impacts of the transition.”

As part of the retirement process, today Luminant filed a notice with the Electric Reliability Council of Texas (“ERCOT”), which will trigger a reliability review. If ERCOT determines the units are not needed for reliability following this 60-day review, Luminant expects to stop plant operations on Jan. 4, 2018.

Luminant will take the necessary steps to responsibly decommission the facility in accordance with all federal and state regulations. In addition, we will continue the ongoing reclamation work at the plant’s mines, which ceased active operations in the spring of 2016.

Vistra estimates it will record one-time charges of approximately $20-25 million in the third quarter of 2017 related to the retirement, including employee-related severance costs and non-cash charges for materials inventory and the acceleration of Luminant’s mining reclamation obligations.

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About Vistra Energy
Vistra Energy is a premier Texas-based energy company focused on the competitive energy and power generation markets through operation as the largest retailer and generator of electricity in the growing Texas market. Our integrated portfolio of competitive businesses consists primarily of TXU Energy and Luminant. TXU Energy sells retail electricity and value-added services (primarily through our market-leading TXU Energy™ brand) to approximately 1.7 million residential and business customers in Texas. Luminant generates and sells electricity and related products from our diverse fleet of generation facilities totaling approximately 18,000 MW of generation in Texas, including 2,300 MW fueled by nuclear power, 8,000 MW fueled by coal, and 7,500 MW fueled by natural gas, and is a large purchaser of renewable power including wind and solar-generated electricity. The company is currently developing one of the largest solar facilities in Texas by capacity.

Cautionary Note Regarding Forward-Looking Statements
This press release includes forward-looking statements, which are subject to risks and uncertainties. All statements, other than statements of historical facts, are forward-looking statements. These statements are often, but not always, made through the use of words or phrases such as “may,” “should,” “could,” “predict,” “potential,” “believe,” “will likely result,” “expect,” “continue,” “will,” “anticipate,” “seek,” “estimate,” “intend,” “plan,” “project,” “forecast,” “goal,” “target,” “would” and “outlook,” or the negative variations of those words or other comparable words of a future or forward-looking nature. Readers are cautioned not to place undue reliance on forward-looking statements. Any such forward-looking statement involves uncertainties and is qualified in its entirety by reference to the discussion of risk factors under “Risk Factors” and the discussion under “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the Form 10-Ks and Form 10-Qs filed by Vistra Energy Corp. and other important factors that could cause actual results to differ materially from those implied by such forward-looking statements.

Any forward-looking statement speaks only at the date on which it is made, and except as may be required by law, Vistra Energy undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which it is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible to predict all of them; nor can Vistra Energy assess the impact of each such factor or the extent to which any factor, or combination of factors, may cause results to differ materially from those contained in any forward-looking statement.

VISTRA ENERGY

NEWS RELEASE

Luminant to Close Two Texas Power Plants

Decision a Result of Challenging Plant and Market Economics

IRVING, Texas — Oct. 13, 2017 — Luminant, a subsidiary of Vistra Energy (NYSE: VST), today announced that it will close two coal-fueled power plants in Central Texas: its two-unit Sandow Power Plant in Milam County and its two-unit Big Brown Power Plant in Freestone County. In total, approximately 2,300 MW of nameplate power will be taken offline in early 2018.

These two plants are economically challenged in the competitive ERCOT market. Sustained low wholesale power prices, an oversupplied renewable generation market, and low natural gas prices, along with other factors, have contributed to this decision.

Curt Morgan, Vistra Energy's president and chief executive officer, said, "This announcement is a difficult one to make. It is never easy to announce an action that has a significant impact on our people. Though the long-term economic viability of these plants has been in question for some time, our year-long analysis indicates this announcement is now necessary. These employees have kept both plants reliably powering Texas for decades, and we greatly appreciate their service."

Sandow Site

Earlier this week, the company and Alcoa entered into a contract termination agreement pursuant to which the parties agreed to an early settlement of a long-standing power and mining agreement. In consideration for the early termination, Alcoa made a one-time payment to Luminant. The settlement follows a decrease in wholesale power prices in ERCOT and the prior closure of Alcoa's smelter operation next to Sandow. The contract has helped shield Sandow from significant exposure to the downturn in the wholesale power market; however, the standalone economics of the Sandow complex no longer support continued investment in the site in this low wholesale power price environment.

Also closing will be Three Oaks Mine, located primarily in Bastrop County, which supports this plant.

Luminant estimates that approximately 450 employees will be impacted by the Sandow plant and Three Oaks mine closure. Eligible and affected employees will be offered severance benefits and outplacement assistance.

As part of the closure process, today Luminant filed a 90-day notice of suspension of operations with ERCOT, which will trigger a 60-day reliability review. If ERCOT determines the Sandow units are not needed for reliability following this 60-day review, Luminant expects to cease plant operations on Jan. 11, 2018.

Luminant will take the necessary steps to responsibly decommission the facility in accordance with all federal and state regulations. In addition, ongoing reclamation work will continue at Three Oaks Mine.

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Big Brown Site

Over the last few years, the Big Brown team has made tremendous operational adjustments to remain viable given the challenging market conditions. However, despite these best efforts, the economics of operating Big Brown do not make it a sustainable option for our fleet. The company will explore a sales process for the site during the ERCOT notification period.

Turlington Mine, which supplies Big Brown, was already scheduled to wind down operations by the end of 2017. Reclamation work will continue there.

Luminant estimates that about 200 employees will be impacted by the Big Brown closure. Eligible and affected employees will be offered severance benefits and outplacement assistance.

As part of the closure process, today Luminant filed a 120-day notice of suspension of operations with ERCOT, which will trigger a 60-day reliability review. Luminant is extending the 90-day notice to 120 days to permit a more complete sales process and give ERCOT additional time to conduct their reliability analysis. If ERCOT determines the Big Brown units are not needed for reliability following the 60-day review, and if the site has not been sold, Luminant expects to cease operations on Feb. 12, 2018.

Financial Impact

Vistra expects to record one-time charges of approximately $70 to 90 million in the fourth quarter of 2017 related to the expected retirements, including employee-related severance costs and non-cash charges for writing off materials inventory and a contract intangible asset associated with Sandow 4. We expect to record additional one-time charges in the fourth quarter of 2017 related to changes in the timing and amounts of asset retirement obligations for mining and plant-related reclamation obligations at these facilities.

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About Vistra Energy

Vistra Energy is a premier Texas-based energy company focused on the competitive energy and power generation markets through operation as the largest retailer and generator of electricity in the growing Texas market. Our integrated portfolio of competitive businesses consists primarily of TXU Energy and Luminant. TXU Energy sells retail electricity and value-added services (primarily through our market-leading TXU Energy™ brand) to approximately 1.7 million residential and business customers in Texas. Luminant generates and sells electricity and related products from our diverse fleet of generation facilities totaling approximately 18,000 MW of generation in Texas, including 2,300 MW fueled by nuclear power, 8,000 MW fueled by coal, and 7,500 MW fueled by natural gas, and is a large purchaser of renewable power including wind and solar-generated electricity. The company is currently developing one of the largest solar facilities in Texas by capacity.

Cautionary Note Regarding Forward-Looking Statements

This press release includes forward-looking statements, which are subject to risks and uncertainties. All statements, other than statements of historical facts, are forward-looking statements. These statements are often, but not always, made through the use of words or phrases such as “may,” “should,” “could,” “predict,” “potential,” “believe,” “will likely result,” “expect,” “continue,” “will,” “anticipate,” “seek,” “estimate,” “intend,” “plan,” “project,” “forecast,” “goal,” “target,” “would” and “outlook,” or the negative variations of those words or other comparable words of a future or forward-looking nature. Readers are cautioned not to place undue reliance on forward-looking statements. Any such forward-looking statement involves uncertainties and is qualified in its entirety by reference to the discussion of risk factors under “Risk Factors” and the discussion under “Management’s Discussion and Analysis of

Financial Condition and Results of Operations" in the Form 10-Ks and Form 10-Qs filed by Vistra Energy Corp. and other important factors that could cause actual results to differ materially from those implied by such forward-looking statements.

Any forward-looking statement speaks only at the date on which it is made, and except as may be required by law, Vistra Energy undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which it is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible to predict all of them; nor can Vistra Energy assess the impact of each such factor or the extent to which any factor, or combination of factors, may cause results to differ materially from those contained in any forward-looking statement.

CERTIFICATE OF SERVICE

I hereby certify that on December 15, 2017, I filed National Parks Conservation Association, Sierra Club, and Environmental Defense Fund's *Petition for Reconsideration of Promulgation of Air Quality Implementation Plans; State of Texas; Regional Haze and Interstate Visibility Transport Federal Implementation Plan (Oct. 17, 2017); EPA–R06–OAR–2016–0611; FRL–9969–07–Region 6*, via email and Federal Express, to:

Administrator Scott Pruitt
Office of the Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Building – Mail Code 1101A
1200 Pennsylvania Ave., NW
Washington, DC 20460
Pruitt.Scott@epa.gov

Further, I certify that on December 15, 2017, I served a courtesy copy of the foregoing, via email, to:

Kevin Minoli
Acting General Counsel
Office of General Counsel
U.S. Environmental Protection Agency
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1200 Pennsylvania Ave., NW
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Minoli.Kevin@epa.gov

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Air & Radiation Docket
A-and-R-Docket@epa.gov

December 15, 2017

/s/ Gabrielle Winick
Gabrielle Winick