

**Response to Comments for the Federal Register Notice for Approval and Promulgation of
Air Quality Implementation Plans; Utah; Regional Haze State and Federal Implementation
Plans**

Docket No. EPA-R08-OAR-2015-0463

October 7, 2020

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Notes: This Response-to-Comment (RTC) document contains the EPA's responses to comments received by the close of the public comment period for this action, March 23, 2020. Below is the index of the comments that we received within the comment period. The page numbers referenced for each comment refer to the original page number in the comment documents (these are presented in either pdf or document page formatting). In most cases, the text of the comments is presented verbatim from the original comment document (including typographical errors, figure numbering, etc.). In some cases, the EPA has paraphrased the comments. The comment footnotes are not included unless the footnote is substantive, in which case it is included in the text of the comment after [fn]. To view the footnotes, please see the comment letters in the docket.

1. List of Public Comments

Docket ID Number EPA-R08-OAR- 2015-0463-xxxx	Commenter Name/Affiliation
-0251	Anonymous commenter in opposition
-0252	Anonymous commenter from Carbon County in support
-0253 to -0270	National Parks Conservation Association (NPCA) members and supporters in opposition
-0271	Anonymous comment in opposition
-0272	NPCA members and supporters in opposition
-0273	Citizen comment in opposition
-0274 to -0279	NPCA members and supporters in opposition
-0280	Citizen comment in opposition
-0281 to -0290	NPCA members and supporters in opposition
-0291	Anonymous comment
-0292	Anonymous comment in support
-0293	Conservation Organizations public comment period extension request
-0294 to -0300	NPCA members and supporters in opposition
-0301	Citizen comment in opposition
-0302 to -0303	NPCA members and supporters in opposition
-0304	Citizen comment in opposition
-0305 to -0312	NPCA members and supporters in opposition
-0313	Citizen comment in opposition
-0314 to -0320	NPCA members and supporters in opposition
-0321	Anonymous comment in support
-0322 to -0337	NPCA members and supporters in opposition
-0338	Anonymous comment in support
-0339 to -0356	NPCA members and supporters in opposition
-0357	Citizen comment in opposition
-0358 to -0372	NPCA members and supporters in opposition
-0373	Citizen comment in opposition
-0374 to -0411	NPCA members and supporters in opposition
-0412	Citizen comment in opposition

-0413 to -0426	NPCA members and supporters in opposition
-0427	Citizen comment in opposition
-0428 to -0508	NPCA members and supporters in opposition
-0509	Citizen comment in opposition
-0510 to -0517	NPCA members and supporters in opposition
-0522	Public hearing testimony materials portfolio
-0523	Public hearing written comment from Wolverine Fuels employee
-0524	EPA public hearing transcript
-0525	EPA public hearing transcript (full)
-0526	Request for Extension
-0530 to -1123	NPCA members and supporters in opposition
-1124	Anonymous comment in opposition
-1125	Citizen comment in opposition
-1126	Anonymous comment in support
-1127	Anonymous comment in opposition
-1128	Edison Electric Institute in support with attachments
-1129	Citizen comment in opposition
-1130	HEAL Utah, National Parks Conservation Association, Sierra Club, Utah Physicians for a Healthy Environment, and Natural Resources Defense Council (collectively the “Conservation Organizations”) in opposition, with attachments
-1131	Citizen comment on unrelated matters
-1132	Sierra Club form letter and individual comments in opposition
-1133	NPCA members and supporters in opposition
-1134	Salt Lake City’s Capital Hill Gang (CHAG) in opposition, with attachment
-1135	Ute Mountain Ute Tribe, with attachment
-1136	Citizen comment in opposition
-1137	PacifiCorp in support with attachment
-1138	NPCA members and supporters in opposition
-1139	Citizen comment in opposition
-1140	Sierra Club form letter and individual comments in opposition
-1141	Public hearing testimony materials portfolio

2. Legal Issues

a. Carbon Power Plant and Hunter Unit 3

Comment: [Cons Orgs, p. 2] To meet its obligations under the Clean Air Act’s regional haze program, EPA previously identified best available retrofit technology (“BART”) for Hunter Units 1 and 2 and Huntington Units 1 and 2 that would achieve substantial [nitrogen oxides (NO_x)] emissions reductions, improving visibility in Utah’s beloved national parks and numerous parks and wilderness areas beyond the State’s borders. EPA’s about-face proposal to approve Utah’s “alternative” to BART controls would do nothing to reduce current NO_x emissions from Units 1 and 2 at the Hunter and Huntington plants. Instead, EPA proposes to

allow Utah to take credit for emission reductions that were needed to comply with separate Clean Air Act programmatic requirements that are entirely historical reductions of NO_x and sulfur dioxide (“SO₂”) at other non-BART coal plant units to justify its refusal to meet BART requirements that would achieve necessary NO_x emission reductions at Hunter and Huntington Units 1 and 2.

Response: The EPA disagrees that Utah’s NO_x BART Alternative does not satisfy the BART requirements. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how Utah’s NO_x BART Alternative satisfies the requirements of the Clean Air Act (CAA) and the Regional Haze Rule. Likewise, we explain in the preamble to the final rule why reductions from the Carbon plant shutdown and Hunter Unit 3 controls may be credited to Utah’s NO_x BART Alternative.

Comment: [Cons Orgs, p. 10] PacifiCorp’s CAMx modeling cannot be used to justify Utah’s greater reasonable progress demonstration first because its underlying emissions assumptions fail to reasonably represent the baseline, BART Alternative, and EPA [Federal Implementation Plan (FIP)] scenarios.

Response: This comment does not provide sufficient detail for us to provide a response. We respond elsewhere in this RTC document and in the preamble to the final rule to specific comments regarding the CAMx modeling’s assumptions.

Comment: [Cons Orgs, p. 11] *The CAMx Modeling Uses Flawed Emissions Assumptions for Non-BART Units.*

The modeling assumptions also used flawed emissions assumptions for the non-BART units in the BART FIP scenario, which overstate the future emissions for the non-BART units. First, the modeling does not assume that Hunter Unit 3’s low NO_x burners/overfire air combustion controls that were installed in 2007 will continue to reduce NO_x under the BART FIP. In reality, the low NO_x burners/overfire air at Hunter Unit 3 will be reducing NO_x from 2001-2003 baseline emissions regardless of whether Utah sources comply with the BART FIP or not, because those combustion controls cannot be turned off and on or bypassed.

Second, the modeling illogically assumes Carbon Units 1 and 2 would continue to operate illegally by failing to account for compliance with EPA’s MATS rule under the BART FIP. If the Carbon units had not shut down in 2015 and instead continued operating, as assumed in the FIP scenario, the units would have had to comply with the MATS rule by April 15, 2015. In addition to imposing limits on mercury, filterable particulate matter (PM), and non-mercury metal hazardous air pollutants, the MATS rule imposes limitations on acid gas emissions, either measured as hydrogen chloride (HCl) or SO₂. Pollution controls to comply with either of those acid gas standards would have resulted in a significant reduction of greater than 50 percent in SO₂ emissions at Carbon Units 1 and 2. [fn omitted] PacifiCorp’s failure to model in the BART FIP scenario the SO₂ reductions necessary to comply with MATS at Carbon and the Hunter Unit 3 NO_x combustion controls installed in 2007 is a significant deficiency that understates the visibility benefits that would occur under the BART FIP. [fn omitted]

Response: The EPA responds to this comment in the preamble to the final rule.

The commenters identified a formatting error in Table 2 of EPA’s proposed rule found at 85 FR at 3566 (in which the column headings were shifted to the right). A corrected version of the table is presented below.

Table 2. Estimated Emissions in 2025 under the Baseline Scenario, BART Benchmark (BART Benchmark), and the BART Alternative¹

Units	NO _x (tpy)			SO ₂ (tpy)			PM (tpy)			Combined		
	Baseline	BART Bench mark	BART Alt.	Baseline	BART Bench mark	BART Alt.	Baseline	BART Bench mark	BART Alt.	Baseline	BART Bench mark	BART Alt.
Carbon 1	1,312	1,312	0	2,286	2,286	0	120	120	0	3,718	3,718	0
Carbon 2	1,977	1,977	0	3,528	3,528	0	183	183	0	5,688	5,688	0
Hunter 1	6,380	796	3,166	2,535	1,153	1,153	733	733	733	9,648	2,682	5,052
Hunter 2	6,092	798	3,028	2,531	1,408	1,408	717	717	717	9,340	2,923	5,153
Hunter 3	6,530	6,530	4,490	1,204	1,230	1,230	531	531	531	8,265	8,291	6,251
Huntington 1	5,944	793	3,147	2,380	1,254	1,254	517	517	517	8,841	2,564	4,918
Huntington 2	5,816	753	3,366	12,308	1,201	1,201	1,033	1,033	1,033	19,157	2,987	5,600
Total	34,051	12,959	17,197	26,772	12,060	6,246	3,834	3,834	3,531	64,657	28,853	26,974

Comment: [Cons Orgs, pp. 13-15] *The CAMx Modeling Improperly Assumes Carbon’s SO₂ Emissions Reductions in the BART Alternative Scenario that are Already Counted Under the Section 309 Program.*

In addition to the flaws discussed above [in the comment letter], PacifiCorp’s CAMx modeling improperly includes SO₂ emissions reductions from the Carbon Plant that have already been credited to the separate SO₂ BART Alternative under 40 C.F.R. § 51.309. Crediting these SO₂ emissions reductions from the Carbon Plant to Utah’s NO_x BART Alternative would violate the regulations governing the 309 Program and Utah’s own SIP, and would undermine EPA’s approval of that program that was explicitly based on SO₂ emissions reductions from non-BART sources, such as Carbon.

More specifically, in 2012, EPA approved Utah’s participation in the Western Backstop Trading Program under 40 C.F.R. § 51.309 (Section 309) as an alternative to source-specific SO₂ BART compliance. Final Rule, 77 Fed. Reg. 74355 (Dec. 14, 2012). In concluding that the program was approvable in lieu of requiring Utah sources to comply with SO₂ BART, EPA explicitly relied on SO₂ emissions reductions from “smaller non-BART sources,” which include the Carbon Plant. *Id.* at 74,360. Thus, since at least 2012, Utah has monitored and counted SO₂ emissions from the Carbon Plant (and other Utah sources) toward the regional SO₂ emissions inventory, which is

¹ Utah Regional Haze State Implementation Plan, Staff Review of Recommended Alternative to BART for NO_x, May 28, 2019, Table 2, p. 13. Values rounded to the nearest ton.

used to demonstrate compliance with the Section 309 SO₂ Western Backstop Trading Program emissions milestone.

Now, having used SO₂ emissions reductions from Carbon to secure approval of its SO₂ BART alternative, Utah's SIP relies on those same SO₂ emission reductions to support a BART alternative for NO_x. However, because SO₂ emissions from the Carbon Plant (and statewide) are already counted as a necessary component of Utah's participation in the Section 309 SO₂ Western Backstop Trading Program, Utah's reliance on SO₂ emission reductions associated with the closure of that plant under Utah's NO_x BART Alternative is illegal double-counting of those emission reductions.

Utah's solution to this double-counting dilemma is nonsensical and unlawful. Utah amended its SO₂ Regional Haze SIP by extracting the previously relied upon Carbon SO₂ reductions and applying these reductions to its NO_x BART Alternative. As part of its 2019 SIP amendment, Utah amended State Rule R307-150 so that the Carbon Plant will continue to report 8,005 tons of SO₂ emissions each year as part of the SO₂ Milestone report, even though the Carbon Plant's SO₂ emissions have been zero ever since the plant permanently closed on April 15, 2015.

There are at least three legal flaws with this approach. First, Utah's SIP amendment violates the regional haze regulations requiring SIPs under Section 309 to "include provisions requiring the monitoring, recordkeeping, and annual reporting of *actual* stationary source SO₂ emissions within the State." 40 C.F.R. § 51.309(d)(4)(iii) (emphasis added); see also Utah SIP, § XX(E)(1)(c)(1)(requiring reporting of "*actual* sulfur dioxide emissions during the previous calendar year for all sources subject to the Sulfur Dioxide Milestone Inventory requirements")(emphasis added). Utah's NO_x BART Alternative would violate this requirement by reporting 8,005 tons of SO₂ emissions under the Section 309 Program when the *actual* annual emissions are zero. [fn The National Park Service emphasized this point when EPA previously considered this proposal, noting that "[t]ransfer of SO₂ emissions reductions from Section 51.309 to Section 51.308 is unprecedented and contrary to the applicable regulations" for the reasons stated. See Nat'l Park Serv., Comments to EPA, Cover Letter, at 3 (March 14, 2016), in the docket at EPA-R08-OAR-2015-0463-0154.]

Utah's SIP also ignores that there are two other states participating in and relying on Utah's reductions as part of the SO₂ Western Backstop Trading Program, namely Wyoming and New Mexico. Section 309 requires that, ". . . all States in the program [must] use the same methodology." 40 C.F.R. § 51.309(d)(4)(i). Because Wyoming and New Mexico have not revised their SO₂ SIPs in the same manner as Utah's SIP amendment, EPA may not approve of Utah's SIP amendment because it violates this requirement of Section 309.

Further, Utah's SIP conflicts with EPA's legal justification for approving the Section 309 Western Backstop Trading Program. EPA's approval of the Section 309 Program in lieu of source-specific BART required a finding that the program would "achieve greater reasonable progress." However, EPA projected that SO₂ emissions under the Section 309 Program would be equal to predicted BART-based emissions. In its proposal to find that the Section 309 Program nonetheless satisfied the "greater reasonable progress" requirement, EPA explained:

The backstop trading program includes all stationary sources with emissions greater than 100 tpy of SO₂, and thus, encompasses 63 non-subject-to-BART sources. . . . BART applied on a source-specific basis would not affect these sources, and there would be no limitation on their future operations under their existing permit conditions, or allowable emissions. The milestones will cap these sources at 2002 actual emissions, which are less than current allowable emissions.

Proposed Rule, 77 Fed. Reg. 28825, 28,837 (May 16, 2012). In other words, the inclusion of “smaller, non-BART sources,” such as Carbon, provided an essential legal underpinning for EPA’s approval. Final Rule, 77 Fed. Reg. at 74360. Utah’s retroactive removal of the Carbon Plant from the Section 309 Western Backstop Trading Program would undermine and potentially nullify EPA’s Section 309 approval.

As noted above [in the comment letter], EPA must disapprove of Utah’s illegal reliance on SO₂ emission reductions from the Carbon Plant to support its NO_x BART Alternative.

Response: The EPA responds to this comment in the preamble to the final rule.

Comment: [CHAG, p. 1-2] DAQ argues that using less stringent controls will yield more pollution reduction. But the Utah NO_x BART Alternative would reportedly increase NO_x emissions by an estimated 4,238 tons per year. Under the currently proposed SIP, sulfur dioxide and particulate pollutants that could be removed would not be, and would continue to poison the atmosphere and contribute to regional haze.

Response: We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how Utah’s NO_x BART Alternative satisfies the requirements of the CAA and the Regional Haze Rule.

Comment: [PacifiCorp, pp. 9-10] *The Proposed Rule Should be Finalized Because Utah’s BART Alternative Properly Includes Emissions Reductions from Additional Controls at Hunter Unit 3 and the Closure of the Carbon Power Plant as “Surplus Emissions”*.

Under EPA’s regional haze program, *alternatives* to BART can include emissions reductions from other Clean Air Act programs that occur after the baseline date. *See* 40 C.F.R. §51.308(e)(2)(iv). EPA has approved this approach numerous times. *See, e.g.,* Arizona, 82 Fed. Reg. 19333, 19343 (“As noted by ADEQ, all of the emission reductions required by the Coronado BART Alternative are surplus to reductions resulting from measures applicable to Coronado as of 2002. Therefore, we propose to find that the Coronado BART Alternative complies with 40 CFR 51.308(e)(2)(iv)”); Connecticut, 79 Fed. Reg. 39322, 39325 (approving Connecticut’s demonstration that programs already developed by the State would provide greater reasonable progress in visibility than source by source BART); Idaho, 79 Fed. Reg. 23273, 23276 (allowing the shutdown of certain non-BART equipment to be credited in a BART Alternative); Indiana, 77 Fed. Reg. 34218, 34219 (taking credit for reductions from a non-BART source to replace BART requirements at two BART sources as part of a BART Alternative); Massachusetts, 78 Fed. Reg. 57487, 57490-91 (allowing existing state programs to act as a BART Alternative); Washington, 79 Fed. Reg. 33438, 33441-42 (taking credit for reductions due to

PSD requirements as “surplus emissions” for a BART Alternative) (“the EPA has determined and confirmed with modeling that the reductions resulting from the now federally enforceable requirement to operate the FGD system result in greater reasonable progress towards meeting natural visibility conditions than the NO_x controls that the EPA determined to be BART.”); Wyoming, 83 Fed. Reg. 51403, 51412 (approving the Basin Electric BART NO_x settlement based on additional SO₂ reductions as part of the BART Alternative in lieu of EPA’s FIP).

Here, the Proposed Rule approves a BART Alternative that properly includes reductions from the installation of emissions controls at the non-BART Hunter Unit 3 as well as making enforceable the closure of the Carbon plant. Some commenters object that the Carbon plant closure was caused by the MATS rule. However, the MATS rule was judicially challenged and the Supreme Court found that the EPA erred by not considering cost in its determination that regulation under section 112 of the Clean Air Act of hazardous air pollutant emissions from coal-fired electric utility steam generating units is appropriate and necessary. *See Michigan v. EPA*, 135 S.Ct. 2699 (2015). The EPA is still working on aspects of the MATS rule. In any event, PacifiCorp made the commitment to close the Carbon plant as part of the BART Alternative, regardless of the outcome of the MATS rule litigation.

Further, *even if* PacifiCorp closed the plant due to the MATS rule, the emissions reductions *are still available for credit* in a BART Alternative. Because the emissions reductions occurred after the baseline date (here 2002), and were due to a Clean Air Act program (whether MATS or regional haze), then the “surplus emissions” from the Carbon closure are legitimate reductions to count as part of the BART Alternative. EPA has previously approved the use of emissions reductions from the closure of the Carbon plant towards the BART Alternative proposal. *See* EPA Docket No. EPA-R08-OAR-2015-0463, Response to Comments, p.59, (June 1, 2016). Likewise, emissions reductions from Hunter Unit 3 are also surplus emissions.

Source-specific BART determinations, like that in the FIP, are focused analyses that examine only the emissions reductions that can be obtained from the specific unit under analysis. *See generally* 40 CFR Part 51, Appendix Y, and 40 CFR §51.308. Any suggestion that the emissions reductions resulting from the Carbon plant, a non-BART source, should also be credited towards EPA’s FIP which covers only source-specific BART determinations is wrong as a matter of law and policy. Here, the units analyzed under EPA’s BART analysis are Hunter Units 1 and 2 and Huntington Units 1 and 2. Therefore, only the reductions that occur from the installation of the SCRs on those EGUs can be analyzed to determine the benefits of EPA’s FIP. The regional haze program is not a program designed to force all possible emissions reductions from any given source or company; rather it is a program designed to require emissions reductions that over time that will result in reaching natural visibility conditions by 2064.

Response: The EPA has explained in the preamble to the final rule that the EPA reasonably compared the BART Benchmark (2016 FIP) to the BART Alternative, using Utah’s modeling of the emissions reductions of each from the 2001-2003 baseline period, consistent with the Regional Haze Rule, its regulatory history, EPA guidance, and case law.

Comment: [CHAG, p. 2] Furthermore, we object to the DAQ-PacifiCorp attempt to use the 2015 closure of the Carbon 1 and 2 EGUs as justification for allowing additional continued coal-

source pollution from the Hunter and Huntington EGUs. The PacifiCorp-DAQ case is based on smoke-and-mirrors calculations that include data from EGUs that no longer exist. The Carbon 1 and 2 power units were retired in 2015. But when, under the PacifiCorp-DAQ formula, the Carbon facilities' emissions are virtually resurrected, aggregated with Hunter and Huntington emissions, tallied and then removed, the pollution spread out over all the EGUs—including the ghost Carbon units—nets an overall reduction that meets EPA's 2016 standard. This sleight of hand results in letting Hunter and Huntington pollute more than would be the case if BART implementation was enforced.

While we applaud PacifiCorp's move to retire the Carbon units, we do not appreciate the creative data manipulation that would allow Hunter and Huntington to avoid greater emissions reduction. CHAG members firmly believe that the Hunter and Huntington EGUs should still be fitted with BART equipment to reduce haze-causing and all categories of pollution. The plan proposed under EPA-R08-OAR-2015-0463-0225 is a corporate subsidy to PacifiCorp.

Response: We explain elsewhere in the preamble to the final rule that the EPA reasonably compared the BART Benchmark (2016 FIP) to the BART Alternative, using Utah's modeling of the emissions reductions and visibility benefits of each from the 2001-2003 baseline period, consistent with the Regional Haze Rule, its regulatory history, EPA Guidance, and case law. The EPA has further explained elsewhere in this RTC document and in the preambles to the proposed and final rules how Utah's BART Alternative satisfies the requirements of the CAA and the Regional Haze Rule.

Comment: [Gebhart Report, pp. 5-6] *Carbon Plant Emissions.*

Another issue with the CAMx emissions inventory is that the EPA FIP emissions assigned for the Carbon Plant are in error. In the Utah SIP modeling, Carbon was modeled at the baseline (2001-2003) emissions for the EPA FIP case. The EPA FIP represents a projection of the Carbon Plant emissions in 2025, had PacifiCorp elected to keep the Carbon Plant operations open. However, if Carbon were to remain open going forward to 2025, the plant would have had to comply with the EPA Mercury and Air Toxics (MATS) rule. Installation of controls to meet the MATS requirements would have resulted in SO₂ emissions reductions of approximately 80% at each unit to meet the applicable MATS limit (0.20 lb/MMBTU for SO₂). The SO₂ benefits of installing MATS controls are discussed in comments previously provided to EPA in 2016 as part of the EPA's review of the Utah Regional Haze SIP (Reference 2 [omitted]).

Table 3 summarizes the resulting SO₂ emissions at Carbon Unit #1 and Unit #2 as taken from Reference 2 [omitted]. Table 3 applies the post-MATS emissions listed in Reference 2 [omitted] (tons per day) multiplied by 365 days. Since compliance with MATS would have been required to keep PacifiCorp's Carbon Plant in operation after April 15, 2015, the MATS reductions should have been included under the emission estimates for the EPA FIP alternative. As presented in the current modeling, the 2025 EPA FIP emissions scenario in the Utah CAMx modeling assumes Carbon Plant emissions which would have otherwise exceeded the maximum allowable limit under other applicable regulations. This is not permissible under the Clean Air Act and has the effect of overstating the creditable Carbon Plant SO₂ emission reduction benefits of the proposed Utah SIP amendments. Any credit for SO₂ emission reductions at the Carbon

Plant is limited to emissions which are “surplus”, or the emissions credit available after meeting otherwise applicable emission limits. In applying the term “surplus”, this report considers all applicable regulatory requirements which would have applied at Carbon if operations continued until 2025.

For example, the Carbon Plant emission reductions must be surplus to those required as of the baseline date of the Utah Regional Haze SIP, i.e., 2003, which is the approach used by Utah in its CAMx modeling. However, there is an even more stringent emissions requirement at Carbon, i.e., SO₂ emission reductions to meet the MATS standard. Any allowable SO₂ emissions credit at Carbon for the purpose of the Regional Haze SIP is capped and cannot include any emissions reduction necessary which would have been otherwise necessary for compliance with the MATS. The result of this error is that the alleged visibility benefit due to the closure of the Carbon Plant is overstated for the proposed Utah SIP amendments compared to the EPA FIP. This error needs to be corrected by using the post-MATS SO₂ emissions in the CAMx modeling for the EPA FIP case.

Table 3
Estimated Carbon Plant SO₂ Emissions after MATS Controls (from Reference 2)

	Estimated Post-MATS SO ₂ Emissions	Incorrect EPA FIP SO ₂ Emissions in Utah CAMx Modeling
Carbon Unit #1	1,022 tpy	2,286 tpy
Carbon Unit #2	1,423 tpy	3,528 tpy

Response: We disagree with this comment. We explain elsewhere in the preamble to the final rule that the EPA reasonably compared the BART Benchmark to the BART Alternative, using Utah’s modeling of the emissions reductions of each from the 2001-2003 baseline period, consistent with the Regional Haze Rule, its regulatory history, EPA guidance, and case law. As explained in the preamble to the final rule, reductions in emissions that may be due to another CAA requirement are not thereby disallowed from use as a BART alternative.

b. Compliance Deadline

Comment: [Cons Orgs, p. 2] Although Congress mandated pollution reductions “as expeditiously as practicable” at some of the oldest and largest pollution sources, such as Hunter and Huntington, 42 U.S.C. § 7491(b)(2), Utah’s BART Alternative disregards these provisions allowing Hunter and Huntington to continue polluting at current levels indefinitely.

Response: The EPA disagrees with this comment. The Regional Haze Rule governs the timing of BART alternatives, and provides that emissions reductions from BART alternatives must “take place during the period of the first long-term strategy for regional haze.”² As we explained in the proposal, the NO_x controls on which the BART Alternative relies were installed at Hunter and Huntington over a period of years starting in 2006 and finishing in 2014. We explain in the

² 40 CFR 51.308(e)(2)(iii).

preambles to the proposed and final rules why the emissions reductions associated with these controls may be credited to the BART Alternative. The associated emission limits were effective upon installation of the NO_x controls. Carbon shut down in 2015 and its Approval Order from the State, which had allowed it to operate, has been revoked. Utah's SIP makes these enforceable through revisions to R307-11-17 and Section IX, Control Measures for Area and Point Sources, Part H, Emissions Limits, and includes compliance dates, operation and maintenance requirements, and monitoring, recordkeeping, and reporting requirements. Thus, we find that the timing of the BART Alternative complies with 40 CFR 51.308(e)(2)(iii). Moreover, to the extent the commenters are suggesting that the BART Alternative achieves no emission reductions, that assertion is not true. When compared to the 2001-2003 baseline, NO_x emissions under the BART Alternative are projected to decrease by 16,854 tpy and SO₂ emissions under the BART Alternative are projected to decrease by 20,526 tpy.³

Comment: [PacifiCorp, p. 12] *The Proposed Rule Approves a BART Alternative that Took Place During the First Planning Period.*

Pursuant to 40 C.F.R. 51.308(e)(2)(iii), emissions controls under a BART Alternative must take place during the first planning period. The Proposed Rule correctly determines that this requirement has been met, noting that the BART Alternative was fully implemented prior to 2018. 85 Fed. Reg. at 3573. In fact, in the “Weight of Evidence” section below (specifically Section 8.2) [in the comment letter], PacifiCorp explains the benefits of the “early and ongoing” emissions reductions related to the BART Alternative.

Response: As explained elsewhere in this RTC document, the EPA agrees that the BART Alternative complies with 40 CFR 51.308(e)(2)(iii).

c. Consideration of Five Statutory BART Factors

Comment: [Edison Electric Institute, pp. 9-11] *EPA Appropriately Proposes to Approve Utah's BART Alternative.*

Just as EPA's rejection of Utah's SIP in 2016 was based on an impermissible interpretation of the Agency's longstanding Regional Haze Rule, EPA's current proposal to approve Utah's BART alternative and withdraw the Agency's FIP is sound. It is an appropriate interpretation of the Regional Haze Rule, which requires that EPA approve a State's “BART alternative” if that alternative achieves “greater *reasonable* progress” toward the statute's natural visibility goal than some other system that might constitute BART.

By insisting at that time that the *only* approvable BART alternative is the one that achieves the greatest visibility improvement from BART-affected sources, EPA impermissibly read the critical word “reasonable” out of its own longstanding regulation. It thereby impermissibly excluded from consideration State-proposed systems that either achieve the *same* level of emission reduction as the one EPA prefers, but at a lower cost or with fewer energy impacts; or systems that achieve *less* near-term emission reduction than the one EPA prefers, but at

³ See 85 FR 3566 (Jan. 22, 2020) (Table 2, as corrected above in this RTC document) (subtract the BART Alternative's 2025 emissions from the Baseline 2025 emissions).

considerably lower cost while still achieving reasonable progress toward the long-term natural visibility goal. However, EPA appropriately rectifies that mistake in this proposed action by proposing to approve Utah's submission as achieving greater reasonable progress for regional haze at considerably lower cost and with equivalent or greater emission reductions than EPA's previously proffered BART. *See* 85 *Fed. Reg.* at 3573. The proposed approval correctly adopts the holistic view of both the statute and the Rule—as discussed *supra*—and the determination that Utah's BART alternative would result in greater reasonable progress than BART alone is well supported both legally and factually.

EPA's analysis that Utah's BART alternative satisfies the test for achieving greater reasonable progress is straightforward and well-reasoned. In support of that determination, the Agency engages in a multi-part analysis demonstrating that new modeling submitted by the State in support of its BART alternative would show no decline in visibility for Class I areas from the original BART benchmark. Indeed, Utah's modeling shows that the State's BART alternative results in greater average visibility improvements across all Class I areas. *Id.* at 3,573. The Agency further notes that the State's BART alternative would result in overall NO_x, SO₂ and particulate matter *decreases* relative to the baseline BART benchmark. *See id.* The State's submission also notes to EPA that its alternative—which has already been fully implemented by affected units and would not require the installation of new control technology—is significantly more cost-effective than focusing only on controls at BART-affected sources as EPA did in its proposed-to-be-withdrawn FIP. *See id.* at 3,565. EPA thus rightly concludes that it should approve the State's SIP that relies on the BART alternative, and that it should withdraw its FIP because the State's submission constitutes reasonable further progress given its modeled visibility improvements, increased emissions reductions and lower costs as compared to the BART benchmark. *See id.* at 3,573, 3,575.

Based on the case law and a plain reading of the statute, EPA must assess whether the State's proposed BART alternative achieves “greater *reasonable* progress”—that is, whether it achieves greater progress than EPA's preferred BART based upon a consideration of *all* the statutory BART factors. EPA's proposed approval of Utah's BART alternative results from an analysis correctly focused on all of the statutory factors. EPA should finalize the proposed approval expeditiously to provide Rocky Mountain Power with regulatory certainty for units that have satisfied the State's more environmentally protective BART alternative.

Response: We appreciate Edison Electric Institute's support for our final rule but we disagree with this comment. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules why the BART Alternative achieves greater reasonable progress, i.e., greater visibility improvement, under 40 CFR 51.308(e)(2) and (e)(3). We disagree that, where a state has chosen to implement BART requirements via a BART alternative under these provisions, the EPA is required to perform an analysis of the five statutory factors relevant to BART determinations for purposes of evaluating whether the BART alternative achieves greater reasonable progress. First, Utah has chosen to conduct the “greater reasonable progress” analysis under 51.308(e)(3), which lays out a dispersion modeling-based test, the goal of which is “to determine differences in visibility between BART and the [alternative] program.”⁴ Thus, our BART alternative regulations clearly provide that the sole basis of comparison between the

⁴ 40 CFR 51.308(e)(3).

BART benchmark and a BART alternative is visibility benefits.⁵ Any challenge to these regulations is time-barred because it is effectively an argument against the regulations for BART alternatives that EPA promulgated in 1999 and amended in 2006.⁶

However, to explain our reasoning again here (without reopening these nationally applicable regulations): The five factors listed in CAA section 169A(g)(2) are explicitly applicable only to determining BART. In the Regional Haze Rule, the EPA provided states the option of choosing a BART alternative as long as the alternative achieves greater reasonable progress towards the national visibility goal than the installation of BART. To determine whether a BART alternative achieves greater reasonable progress, the EPA's analysis is governed by 40 CFR 51.308(e)(2)(i) and/or (e)(3).⁷ Subsections (e)(2)(i) and (e)(3) set out three different tests that may be used to determine whether a BART alternative makes greater reasonable progress than BART: (1) section 51.308(e)(3) contains a "greater emissions reduction" test under which states can show that an alternative achieves greater emissions reductions of all visibility impairing pollutants and the distribution of emissions is not substantially different than it would be under BART; (2) section 51.308(e)(3) also contains a "two prong visibility modeling test" for circumstances in which the emissions distribution is substantially different under the two scenarios—in that case, states can show that the BART alternative is better if (a) visibility does not decline in any Class I area, and (b) there is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas; and finally (3) any other demonstration of greater reasonable progress based on the clear-weight-of-evidence, under section 51.308(e)(2)(i)(E).

All of these tests focus on the visibility impacts of BART versus the BART alternative. None requires an analysis of the five statutory BART factors as to the BART alternative (and indeed the test under 51.308(e)(3) leaves no space for such an analysis). This is because those factors already will have been assessed in determining a BART benchmark for comparison of the alternative under 51.308(e)(2)(i)(C). Thus, these factors, including factors related to cost, are taken into account in determining the visibility improvement achieved by BART for the relevant sources. A BART alternative is simply some other method that a state may choose of controlling visibility impairing pollutants that can be shown to improve visibility to some degree better than

⁵ See also 64 FR 35714, 35742 (July 1, 1999) ("Once the State has arrived at an estimate of the emissions that would result from application of source-specific BART, it should then compare the degree of visibility improvement expected to be achieved in Class I areas through the application of BART to the degree of visibility improvement projected to be achieved by the alternative measures proposed by the State. It is not necessary to go through an additional analysis of the BART factors in considering the effects of alternative measures."); 71 FR 60612, 60614 (Oct. 13, 2006) ("States have the flexibility to design programs to reduce emissions from stationary sources in a more cost-effective manner so long as they can demonstrate that the alternative approach will achieve greater reasonable progress towards improving visibility than would have been achieved by implementation of the BART requirements").

⁶ See *UARG v. EPA*, 885 F.3d 714, 719 (D.C. Cir. 2018) (rejecting as time-barred under CAA section 307(b) petitioners' challenge to the methodology for BART alternatives authorized by the Regional Haze Rule).

⁷ See *WildEarth Guardians v. EPA*, 770 F.3d 919, 934 (10th Cir. 2014); *Yazzie v. EPA*, 851 F.3d 960, 972 (9th Cir. 2017).

BART.⁸ Thus, EPA's regulations do not require the application of the statutory BART factors in selecting an alternative.

This explanation is provided for informational purposes because this comment raises an issue that is effectively a time-barred challenge to the BART alternative regulations and is thus not properly within scope of this action, which does no more than apply those regulations to Utah's BART alternative SIP submittal.

Comment: [PacifiCorp, p. 14] *The Substantial Cost Advantage of the BART Alternative Must be Properly Considered.*

In addition to analyzing visibility modeling metrics under the “weight of evidence” test, EPA should look at the costs of compliance for the BART Alternative and BART, as required by both the statutory reasonable progress factors and the BART Guidelines. 42 U.S.C. § 7491(g)(2); 40 C.F.R. 51, App'x Y, § IV.D.4.i. Here, the costs of EPA's NO_x FIP are \$500 to 700 million (depending on which estimates are used). This is dramatically more than the costs of Utah's BART Alternative for NO_x, and results in less improvement in visibility. Cost is a statutory factor that must be considered under both “BART” and “Reasonable Progress” analyses, and should also be considered as part of a “weight of evidence” analysis. EPA has considered, as part of its review of many other regional haze plans, the costs of compliance. For example, when analyzing a BART determination in Arkansas, EPA approved the state's reasonable progress determination that no additional controls were necessary due to the significant capital costs that would produce little visibility benefit. *See* 83 Fed. Reg. 62204, 62232-33 (November 30, 2018). In the context of BART Alternatives, EPA has also looked to comparative costs between BART controls and BART Alternatives. For example, in finalizing a BART alternative for the Navajo Generating Station, EPA stated that the BART alternative would achieve greater emissions reductions “at a lower cost than BART”. *See* 79 Fed. Reg. 46514 (August 8, 2014); *see also* 82 Fed. Reg. 48324, 48346 (October 17, 2017) (EPA finalized a BART alternative trading program that it found cost-effective). The large disparity in costs and the substantial cost advantage of the Utah BART Alternative support approval of the BART Alternative and should be considered as a key factor in this analysis.

Response: The EPA disagrees with this comment. First, the EPA is not approving Utah's NO_x BART Alternative based on a “weight of evidence” analysis under 40 CFR 51.308(e)(2)(i)(E). Instead, the EPA is approving the NO_x BART Alternative under 40 CFR 51.308(e)(3). Second, the EPA has previously described the role of cost in a “weight of evidence” analysis.⁹ That description also applies to the analysis under 40 CFR 51.308(e)(3). Specifically, neither the statute nor the Regional Haze Rule requires the consideration of cost effectiveness for purposes of comparing a BART alternative to a BART benchmark.¹⁰ Rather, the purpose of the comparison is to determine if a state-submitted BART alternative achieves greater reasonable

⁸ *See CEED v. EPA*, 398 F.3d 653, 659-60 (D.C. Cir. 2005) (upholding BART alternatives as a method for achieving the underlying statutory purpose of making progress in improving visibility); *Central Arizona Water Conservation District v. EPA*, 990 F.2d 1531, 1542-43 (9th Cir. 1993) (upholding EPA's choice to adopt emissions limitations that “would produce greater visibility improvement at a lower cost” than BART).

⁹ *See*, e.g., 81 FR 43894, 43901 (July 5, 2016).

¹⁰ 40 CFR 51.308(e)(2), (e)(3).

progress, measured in deciviews (dv), towards achieving natural visibility conditions.¹¹ Whether a state determines a preference for an alternative as compared to BART based on some consideration of cost is largely at the discretion of the state; presumably an alternative will have advantages such as lower costs or else a state would not adopt it.¹² In evaluating a state's BART alternative SIP, cost is properly considered in the context of selecting controls for the BART benchmark, but the Regional Haze Rule does not mandate that states give further consideration of cost in comparing the two scenarios.¹³

Comment: [PacifiCorp, p. 14] *The Energy and Environmental Impacts of the BART Alternative are superior to BART.*

In addition to the haze reductions of the BART Alternative, the environmental benefits of shutting down the Carbon Power Plant include reductions in greenhouse gases, water use, coal combustion residuals, fugitive dust, fuel use and wastewater discharges. The installation of BART, on the other hand, offers none of these environmental benefits, and poses an energy penalty due to the energy requirements of SCR. Specifically, the total energy penalty resulting from all four FIP SCRs is approximately 16.8 megawatts. This electricity would otherwise be delivered by PacifiCorp to approximately 13,438 customers. Additionally, the FIP requirements would result in more coal burned to produce the same amount of electricity as the BART Alternative, resulting in more greenhouse gases, coal combustion waste, etc. from the EPA's FIP as compared to the BART Alternative. The environmental benefits of the BART Alternative and the energy penalty associated with the installation of SCR also support the BART Alternative in a "weight of evidence" analysis and should not be disregarded as inconsequential.

Response: The EPA disagrees that the considerations raised in this comment are relevant to its evaluation of the state's selected BART alternative. The EPA is approving the BART Alternative under 40 CFR 51.308(e)(3). Subsection 51.308(e)(3) does not require a consideration of the environmental benefits of the BART Alternative, other than the visibility benefits calculated under the tests for greater reasonable progress provided in the subsection. Nor does subsection 51.308(e)(3) require a consideration of energy requirements.

d. Clean Air Act Section 110(l), Anti-Backsliding

Comment: [Cons Orgs, p. 2] In addition to violating the Clean Air Act and Regional Haze Rule, a decision to approve Utah's BART Alternative would violate the Clean Air Act's prohibition against "backsliding," which is designed to ensure that air-quality improvements are not reversed through regulatory actions to weaken pollution limits. Because that is exactly the result that

¹¹ 40 CFR 51.308(e)(2)(i)(E).

¹² In this respect, we note that in this action we are addressing EPA's action on a SIP. The CAA affords states considerable discretion in how they choose to meet CAA requirements, and EPA must approve SIPs so long as they meet those requirements. *See* 42 U.S.C. 7410(k). The example of Navajo Generating Station cited by commenter involved a FIP for a source in Indian country and is thus inapposite. How the EPA would evaluate the appropriateness of a BART alternative as compared to BART were it in the position of promulgating a FIP and establishing an appropriate control strategy to meet BART requirements in the first instance is not a question the Agency needs to address in this action.

¹³ *See* 40 CFR 51.308(e)(2), (e)(3) (no mention of cost).

would be achieved through Utah's BART Alternative, the Conservation Organizations request that EPA abandon its attempt to replace its Utah FIP. [Footnote responded to separately in Legal section.]

[Cons Orgs., p. 26-27] EPA may not approve Utah's SIP for the additional reason that it would allow increased emissions limits and visibility impairment in violation of the Clean Air Act's "anti-backsliding" requirement. 42 U.S.C. § 7410(l) ("Section 110(l)"); *see also El Comite Para El Bienestar de Earlimart v. EPA*, 786 F.3d 688, 692 (9th Cir. 2015). Section 110(l) prohibits states from revising an implementation plan if the revision would "interfere with any applicable requirement concerning attainment and reasonable further progress ... or any other applicable requirement of this chapter." 42 U.S.C. § 7410(l). This anti-backsliding provision applies to existing BART determinations, as the Act's "applicable requirement[s]" include the regional haze program's BART requirements. *See Oklahoma v. EPA*, 723 F.3d 1201, 1204, 1207 (10th Cir. 2013).

Courts have routinely upheld EPA interpretations of Section 110(l) as preventing implementation plan revisions that would increase overall air pollution limits or worsen air quality. *See WildEarth Guardians v. EPA*, 759 F.3d 1064, 1074 (9th Cir. 2014) (a haze plan that "weakens or removes any pollution controls" would violate section 110(l)); *see also Indiana v. EPA*, 796 F.3d 803, 812 (7th Cir. 2015) (noting that EPA allows "emissions-increasing SIP revisions" if a state "identif[ies] substitute emissions reductions such that net emissions are not increasing."); *Ala. Envtl. Council v. EPA*, 711 F.3d 1277, 1293 (11th Cir. 2013) (Section 110(l) "permit[s] approval of [a] SIP revision 'unless the agency finds it will make air quality worse'" or increase emissions) (quotation and citation omitted); *Kentucky Resources Council v. EPA*, 467 F.3d 986, 995 (6th Cir. 2006) (Section 110(l) allows the agency to approve a plan revision that weakened some existing control measures while strengthening others, but only "[a]s long as actual emissions in the air are not increased" and "air quality [is not] worse[ned]").

Response: The EPA responds to this comment in the preamble to the final rule.

Comment: [Cons Orgs, pp. 26-28] *Utah's BART Alternative Would Violate the Clean Air Act's Anti-Backsliding Provisions*

EPA's replacement of its FIP with Utah's SIP would violate Section 110(l) by allowing increased air pollution for two distinct reasons. First, while EPA's FIP imposes emissions limits that would reduce NO_x pollution from Hunter Units 1 and 2 and Huntington Units 1 and 2, Utah's SIP would increase emissions limits and resulting NO_x pollution. As discussed above [in the comment letter], *supra* sec. I.D.2, Utah's SIP would result in an additional 4,783 tons per year emissions of SO₂ and NO_x combined compared to the EPA's FIP. EPA itself notes this, plainly stating that "the Utah Regional Haze SIP, as revised by this action, will allow for greater NO_x emissions at the four subject-to-BART units as compared to the 2016 FIP." 85 Fed. Reg. at 3574. This is underscored by Dr. Gray's modeling results, *supra* sec. I.D.3, Utah's SIP would also result in increased visibility impairment at every Class I area as compared to the BART FIP. Utah's SIP fails to offset these increased emissions limits and visibility impairment anywhere in the proposed SIP.[fn Even if EPA were to accept Utah's position that it is appropriate to satisfy the Clean Air Act's BART requirement with a BART Alternative involving wholly past

emissions reductions—and for the reasons discussed, it should not—this position is inapplicable to the Clean Air Act’s anti-backsliding provision, which is inherently *forward* looking.] EPA, therefore, cannot approve Utah’s proposed BART Alternative without violating the anti-backsliding requirement because it results in increased emissions limits and visibility impairment as compared to the FIP.

The Agency attempts to find that these increased emissions nonetheless satisfy section 110(*l*) and are “not anticipated to interfere with any applicable requirements” because the location of the BART units is not part of a nonattainment area for any NAAQS. *Id.* The Agency further attempts to justify its finding that the Utah SIP’s revisions satisfy section 110(*l*) because nearby nonattainment areas do not rely on the requirement to install SCR (found in the 2016 FIP) in order to achieve attainment. *Id.* These assertions are woefully insufficient to support compliance with section 110(*l*), and without actual analysis showing that increased emissions will not interfere with any of the requirements of the Act, EPA’s statements here are irrelevant to the 110(*l*) inquiry.

Even EPA itself has noted in other Regional Haze SIPs that the 110(*l*) analysis requires more, where “[t]he fact that actual emissions will increase means that the EPA’s analysis must include an evaluation of how that emissions increase affects attainment and RFP and other applicable requirements of the CAA.” [fn omitted] EPA’s 110(*l*) analysis provides no such evaluation. The mere fact that the units at issue are neither geographically within a nonattainment area, nor do other SIPs rely on reductions from the installation of SCR technology at these units simply do not speak to the question of whether or not the emissions increases that EPA itself admits would result from the proposed SIP would interfere with applicable requirements, as the statute mandates. As EPA well knows, sources do not have to be inside of a nonattainment area to interfere with attainment in that area. Similarly, the fact that plans to clean up air pollution in those areas do not include all possible installation of pollution controls at facilities outside of their jurisdiction does not ensure whether *these* increased emissions would interfere with the work being done in those areas.

Second, Utah’s proposed changes to the 309 Program also violate the anti-backsliding requirement because these changes increase overall emissions limits. As discussed above [in the comment letter], *supra* sec. I.A.4, Utah’s SIP improperly takes credit for SO₂ emissions reductions from the Carbon Plant that have already been credited to the separate SO₂ BART Alternative under 40 C.F.R. § 51.309. To avoid “double counting” these SO₂ emissions reductions, Utah amended “the applicability provisions of State Rule R307–150, Emission Inventories” to remove the Carbon Plant from the 309 Program. [fn omitted] In other words, Utah eliminated the “applicable requirement” under the 309 Program that the Carbon Plant reduce its SO₂ emissions. In the context of the anti-backsliding requirement, Utah’s removal of SO₂ emissions limitations applicable to the Carbon Plant under the 309 Program results in an increase in overall allowed emissions, violating the anti-backsliding requirement. For this reason, too, EPA may not approve Utah’s SIP in lieu of emission limits currently imposed by the 309 Program and EPA’s FIP.

Response: The EPA responds to this comment in the preamble to the final rule.

Comment: [PacifiCorp, pp. 11-12] *The Proposed Rule Complies with Clean Air Act Section 110(l) and the Anti-Backsliding Requirement.*

In the Proposed Rule, EPA correctly addresses the requirement of Clean Air Act (“CAA”) Section 110(l). *See* 85 Fed. Reg. at 3574. As EPA has explained, the BART Alternative in the Proposed Rule does not “interfere with any applicable requirements under the CAA.” *Id.* Further, the geographic area where the BART Alternative units are located is not designated as “nonattainment,” and no NAAQS SIP relies on the installation of the SCRs. EPA has explained in previous rulemakings that “[t]he critical question under section 110(l) is not whether the SIP revision will cause an increase in actual emissions, it is whether that increase in actual emissions will interfere with attainment of the NAAQS or RFP, or if the SIP revision interferes with any other applicable requirement of the CAA. The fact that actual emissions will increase means that the EPA’s analysis must include an evaluation of how that emissions increase affects attainment and RFP and other applicable requirements of the CAA.” *See* 82 Fed. Reg. 15139-012017 (Arizona regional haze SIP modification regarding the Cholla power plant) (March 27, 2017).

Mere speculation about Section 110(l) compliance is irrelevant. EPA has stated that the “statute prohibits approval of a revision that ‘would interfere’ with an applicable requirement. Petitioner’s reading of the phrase would substitute ‘could’ for ‘would.’ On this point it seems fairly clear that Congress did not intend that the EPA reject each and every SIP revision that presents some remote possibility for interference.” *Id.*

EPA’s Proposed Rule provides Utah the same regulatory flexibility that EPA has provided to other states. In the *Kentucky Resources Council* decision, the Sixth Circuit Court of Appeals found that it was appropriate for EPA to allow Kentucky flexibility, holding that

EPA does service to a fundamental premise underlying the Clean Air Act scheme, which is that the states have the primary responsibility for ensuring that the NAAQS are met. The Supreme Court has observed that “Congress, consistent with its declaration that ‘[e]ach State shall have the primary responsibility for assuring air quality’ within its boundaries, § 107(a), left to the States considerable latitude in determining specifically how the standards would be met.” *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 86–87, 95 S.Ct. 1470, 43 L.Ed.2d 731 (1975). The Court found that such latitude “includes the continuing authority to revise choices about the mix of emissions limitations.” *Id.*

467 F.3d 986, 996 (6th Cir. 2006). Other cases provide similar guidance. In *Galveston-Houston Assoc. for Smog Prevention v. EPA*, 289 Fed. Appx. 745, 754 (5th Cir. 2008), the Fifth Circuit found that the relaxation of certain air quality requirements did not violate Section 110(l) where modeling demonstrated that the SIP change would not negatively affect air quality.

The Proposed Rule is also consistent with EPA’s recent analysis of Section 110(l) in Arkansas. In EPA’s approval of changes to Arkansas’ regional haze rule, and EPA’s withdrawal of its FIP, EPA stated that the “SIP revision will not interfere with the ‘applicable requirements’ of the regional haze program” because the “State followed the prescribed process for determining the levels of control that are required for BART and reasonable progress.” *See* 84 Fed. Reg. at

51046. Likewise, EPA here has followed the “prescribed processes” to determine that the BART Alternative will not interfere with any applicable requirements of the regional haze program. Ultimately, regarding the Arkansas SIP, EPA stated that

While the FIP provisions might have produced better air quality than the provisions we are approving into the SIP, CAA section 110(l) does not require that each SIP revision include greater emissions reductions than the plan being revised or replaced. Instead, section 110(l) requires a showing that approval of the SIP revision will not interfere with attainment and reasonable further progress or any other applicable CAA provision. . . . Thus, there is no evidence to suggest that areas will not continue to attain the NAAQS following our approval of the SIP and concurrent withdrawal of the FIP. . . .

Id. at 51,047. Here, there is no evidence that NAAQS will be violated because of the Proposed Rule. No NAAQS-related SIPs relied on the NO_x reductions in the previous SIP, and no NO_x or ozone NAAQS will be violated as a result of the Proposed Rule. The Proposed Rule does not implicate the anti-backsliding provisions of CAA Section 110(l).

Response: The prohibition in CAA section 110(l) applies to all requirements of the CAA and all areas of the country regardless of attainment status. We explain in the preamble to the final rule the rationale for our conclusion that the EPA’s final action complies with CAA section 110(l).¹⁴

e. Incorporation of Prior Comments on 2016 Final Rule

Comment: [Cons Orgs, p. 2, footnote] The Conservation Organizations have participated in the Utah regional haze process for nearly a decade. As such, the Conservation Organizations incorporate herein by reference its previous comment letters opposing Utah’s previous attempts to adopt a “do nothing” regional haze SIP. *See* Conservation Organizations’ Letter to EPA of March 14, 2016, at EPA-R08-OAR-2015-0463-0167, and prior comments attached to the March 14, 2016 letter as Exhibits 1-5). The Conservation Organizations incorporate by reference their prior technical reports, included in the docket at EPA-R08-OAR-2015-0463-0157 (Stamper Technical Report), and EPA-R08-OAR- 2015-0463-0158 (Gray Modeling Report). In addition, the National Park Service (NPS) previously submitted a series of comment letters to Utah on its regional haze SIP, which are incorporated herein by reference. They appear in the docket as Exhibits 6-8 to the Conservation Organizations’ March 14, 2016 letter, and in the docket at EPA-R08-OAR-2015-0463-0154

Response: In their March 20, 2020 comment letter relevant to this action, the Conservation Organizations incorporate by reference their comments on prior Utah regional haze actions, technical reports submitted in support of those prior comments, and comments by the National Park Service (NPS) related to prior Utah regional haze actions. The NPS comments include a 6-page cover letter, a 41-page technical comment document, and 14 Microsoft Excel spreadsheet attachments. The Stamper Technical Report is 70 pages and includes 68 exhibits. The Gray Modeling Report is 60 pages. To the extent the Conservation Organizations’ 2020 comment letter specifically discusses this “incorporated by reference” material, the EPA has attempted to understand the comment and has responded herein. Beyond that, the EPA will not respond to the

¹⁴ 42 U.S.C. 7410(l).

full text of the “incorporated by reference” material because that material is beyond the scope of this action and the agency is not able to discern its relevance to the Conservation Organizations’ 2020 comments. The CAA requires that “an objection to a rule or procedure . . . [be] raised with reasonable specificity”¹⁵ On judicial review, this provision is strictly enforced “to ensure that the EPA has an opportunity to respond to every challenge and so that the court enjoys the benefit of the agency’s expertise and possibly avoids addressing some of the challenges unnecessarily.”¹⁶ Generally worded “incorporations by reference” of comments on other actions and other materials, without any explanation of how they relate to the proposed action, do not meet the “reasonable specificity” requirement.

3. BART Alternative

a. General

Comment: [PacifiCorp] *The Revised BART Alternative for NO_x*.

After the 10th Circuit’s stay, Utah and PacifiCorp desired to resolve their legal differences with EPA, and engaged EPA in settlement discussions. Utah and PacifiCorp agreed to review the BART Alternative for NO_x under a different section of the Regional Haze Rule that is more straightforward, and to do additional, updated computerized modeling to validate the merits of the BART Alternative for NO_x control. To demonstrate that the SIP had greater visibility benefits than the FIP, and in consultation with EPA, PacifiCorp retained a consultant to perform additional dispersion modeling of Utah’s SIP and EPA’s FIP using the Comprehensive Air Quality Model with extensions (CAMx). CAMx is a photochemical grid model with the capabilities to estimate the concentrations of pollutants that contribute to regional haze. CAMx has a technical formulation that is considered more realistic than that of CALPUFF, and CAMx more accurately predicts changes in light extinction as a result of changes in emissions from PacifiCorp power plants. Given the disagreements over the previous CALPUFF modeling results for EPA’s FIP and the BART Alternative, it made sense to perform additional CAMx modeling to provide additional visibility impact information.

Response: We agree that photochemical grid models, such as CAMx, though not mandatory, are particularly well-suited in the application of the two-prong test applied in this final rule, which requires that visibility be assessed on the best and worst 20% of days. As described in the 2017 revisions to 40 CFR Part 51, Appendix W,¹⁷ the EPA believes that photochemical grid models are generally appropriate for addressing ozone and secondary PM_{2.5} because they provide a spatially and temporally dynamic realistic chemical and physical environment for plume growth and chemical transformation. Photochemical grid models such as CAMx treat emissions, chemical transformation, transport, and deposition using time and space variant meteorology. These modeling systems include primarily emitted species and secondarily formed pollutants such as ozone and PM_{2.5}. In addition, these models have been used extensively to support ozone and PM_{2.5} SIPs and to explore relationships between inputs and air quality impacts in the United

¹⁵ 42 U.S.C. 7607(d)(7)(B); see also *WildEarth Guardians*, 770 F.3d at 933.

¹⁶ *Am. Fuel & Petrochemical Manufacturers v. EPA*, 937 F.3d 559, 588 (D.C. Cir. 2019) (citations and quotations omitted).

¹⁷ 82 FR 5182, 5194 (Jan. 17, 2017).

States and elsewhere. The EPA has used, or approved this approach by states, in support of other BART alternatives that rely on the two-prong test to demonstrate greater reasonable progress.¹⁸ We take no position on the remainder of this comment.

b. BART Alternative Requirements

Comment: [Cons Orgs, p. 5] States can propose an alternative to BART only if such alternative “achieve[s] greater reasonable progress than would be achieved through the installation and operation of BART.” 40 C.F.R. § 51.308(e)(2). EPA regional haze regulations at 40 C.F.R. § 51.308(e)(3) provide:

A State which opts under 40 CFR 51.308(e)(2) to implement an emissions trading program or other alternative measure rather than to require sources subject to BART to install, operate, and maintain BART may satisfy the final step of the demonstration required by that section as follows: 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. If the distribution of emissions is significantly different, the State must conduct dispersion modeling to determine differences in visibility between BART and the trading program for each impacted Class I area, for the worst and best 20 percent of days. The modeling would demonstrate “greater reasonable progress” if both of the following two criteria are met:

- (i) Visibility does not decline in any Class I area, and
- (ii) There is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas.

If a demonstration of greater reasonable progress cannot be made based on the emissions reductions or visibility modeling tests in 40 C.F.R. § 51.308(e)(3), a BART alternative can only be justified “based on the *clear weight of evidence* that the trading program or other alternative measure achieves *greater reasonable progress* than would be achieved through the installation and operation of *BART at the covered sources*.”

40 C.F.R. § 51.308(e)(3)(i)(E) (emphasis added).

Because EPA’s proposed rule would result in a significantly different distribution of emissions from BART, it fails to show “greater reasonable progress” than EPA’s previously issued FIP. As discussed more fully below [in the comment letter], when the technical deficiencies including those in the CAMx dispersion modeling are corrected, EPA is unable to prove “greater reasonable progress” because visibility will decline in one or more Class I areas and there is not an overall improvement in visibility over all affected Class I areas.

Response: The EPA responds to this comment in the preamble to the final rule.

¹⁸ Previous actions that relied on CAMx modeling include the Cross-State Air Pollution Rule (CSAPR) (76 FR 48208 (July 6, 2011)); the FIP revision for Laramie River Station in Wyoming (84 FR 22711 (May 20, 2019)); and the SIP revision for Coronado Generating Station in Arizona (82 FR 46903 (Oct. 10, 2017)).

4. BART Alternative Greater Reasonable Progress Determination

a. General

Comment: [Cons Orgs, pp. 9-10] Utah’s BART Alternative Would Violate the Clean Air Act’s Regional Haze Provisions. EPA must reject Utah’s BART Alternative because it fails to achieve greater reasonable progress than proper implementation of BART, as reflected in EPA’s 2016 FIP. At the outset, PacifiCorp’s visibility modeling that formed the basis for Utah’s “better than BART” demonstration relies on assumptions that are legally and technically flawed, as discussed below [in the comment letter] and in the attached expert report by Howard Gebhart. [fn omitted] In particular, the modeling employs unlawful and unreasonable emissions assumptions, including by double-counting SO₂ emissions reductions on which EPA already has relied for its approval of Utah’s 309 Program SIP. Additionally, Utah’s SIP attempts to demonstrate greater reasonable progress based on an unlawful visibility metric and an underprediction of nitrate formation—both of which artificially inflated the benefits of the BART Alternative as compared with BART. At the same time as EPA’s proposal relies on Utah’s flawed technical analysis, it overlooks other evidence demonstrating the superiority of EPA’s BART FIP. If EPA approves Utah’s BART Alternative, it will not achieve any of the visibility improvement mandated by the Clean Air Act. As such, Utah’s SIP cannot be considered as a serious, let alone approvable, alternative to EPA’s federal implementation plan that would significantly improve visibility at Utah’s national parks.

Response: We disagree with this comment. The EPA has responded to each of the claims made by the commenters elsewhere in this RTC document and in the preamble to the final rule.

b. BART Benchmark

Comment: [Cons Orgs, p. 4] [Cons Orgs, p. 4] *Requirements for BART and BART Alternative Programs.*

BART emission limits are required for major stationary sources that were in existence on August 7, 1977 and began operating after August 7, 1962, and that emit air pollutants that may reasonably be anticipated to cause or contribute to any impairment of visibility in a Class I area. 42 U.S.C. § 7491(b)(2)(A). The term “major stationary source” is defined as a source that has the potential to emit 250 tons or more of any pollutant and falls within one of 26 categories of industrial sources defined by the Act. 42 U.S.C. § 7491(g)(7). A BART-eligible source is one that meets the above criteria and is responsible for an impact on visibility in a Class I area of 0.5 deciview or more. 40 C.F.R. Part 51, Appendix Y. BART must be installed and operated no later than five years after the SIP/FIP approval. 40 C.F.R. § 51.308(e)(1)(iv).

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. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and nonair quality (sic) environmental impacts of compliance,

any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

40 C.F.R. § 51.301; see also 42 U.S.C. § 7491(g). This definition establishes a framework for conducting a BART analysis. First, the agency must identify the “best system of continuous emission reduction” or the best technology, for each relevant pollutant. *Id.* Once the best technology is selected, the agency should then apply the five-factor test to determine the best emission limitation achievable by that technology.

Additionally, EPA cannot exempt Utah emission sources from BART. BART is a mandatory measure that must be implemented to achieve reasonable progress toward restoration of natural visibility conditions. The Clean Air Act expressly requires states to adopt SIPs that “contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress toward meeting the national goal . . . including” installation and operation of BART at BART-eligible sources that emit any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility in any Class I area. 42 U.S.C. § 7491(b)(2)(A) (emphasis added). The only permissible exemption from BART is when EPA, by rule promulgated with sufficient notice and opportunity for public comment, determines that the source does not either by itself or in combination with other sources “emit any air pollutant which may reasonably be anticipated to cause or contribute to a significant impairment of visibility in any mandatory class I federal area.” *Id.* § 7491(c)(1) (emphasis added). Further, the appropriate Federal Land Manager or managers must agree with the exemption before it can go into effect. 42 U.S.C. § 7491(c)(3). EPA has not issued any such exemption for Units 1 and 2 at the Hunter and Huntington coal plants.

Response: We disagree with this comment. First, the commenters incorrectly state that a “BART-eligible source is one that meets the above criteria and is responsible for an impact on visibility in a Class I area of 0.5 deciview or more.” A BART-eligible source is an existing stationary source in any of 26 listed categories which meets the criteria for startup dates and potential emissions.¹⁹ A BART-eligible source need not be responsible for causing or contributing to visibility impairment (in this case, a 0.5 dv impact or more to any Class I area). Instead, visibility impairment is considered in the next step of the BART analysis when identifying which BART-eligible sources are subject-to-BART. Determination of BART is required for subject-to-BART sources, but not for BART-eligible sources.²⁰ Regardless, we note that pursuant to 40 CFR 51.308(e)(2)(i)(B), Utah identified that Hunter Units 1 and 2 and Huntington Units 1 and 2 as subject to BART in their 2011 SIP,²¹ and the EPA approved Utah’s findings in our 2012 rulemaking.²²

Second, the commenters incorrectly state that “[o]nce the best technology is selected, the agency should then apply the five-factor test to determine the best emission limitation achievable by that technology.” The five statutory factors are used to determine the control technology that

¹⁹ 40 CFR part 51, app. Y, § II.

²⁰ See 85 FR 3560.

²¹ See Utah Air Quality Board, “Utah State Implementation Plan Section XX,” June 24, 2019, D.6.

²² See 77 FR 28825, 28827 (May 16, 2012); 77 FR 74355, 74372 (Dec. 14, 2012).

constitutes BART for a source, after which a state must establish an enforceable emission limit for that source that “reflect[s] the BART requirements.”²³ However, the BART Guidelines do not explicitly require that installation of the associated control technology also be made enforceable.

We also disagree with the commenters’ assertion that the EPA proposed to exempt Utah sources from BART. The claim that EPA must establish a BART emission limit for each subject-to-BART source is belied by the Regional Haze Rule’s explicit authorization of BART alternatives. As such, among other things, this comment is an untimely attack on EPA’s Regional Haze Rule and beyond the scope of this action. As discussed in the background section of our proposed rule, states may opt to submit an alternative program in lieu of source-specific BART for a SIP submitted under 40 CFR 51.308 or 51.309.²⁴ As explained in the preambles to the proposed and final rules, and in this RTC document, Utah has demonstrated that its SIP meets the requirements for BART alternatives, as applicable, in 40 CFR 51.308(e)(2)(i) through (vi). In our July 2016 final rule, the EPA identified NO_x BART as SCR plus upgraded combustion controls at the Hunter Units 1 and 2 and Huntington Units 1 and 2. Utah in turn used this as the BART Benchmark when demonstrating that the NO_x BART Alternative achieves greater reasonable progress than BART.²⁵ Thus, because BART requirements are met through the NO_x BART Alternative, the final rule does not exempt the four BART units from BART requirements.

Comment: [Cons Orgs, p. 15-16] *The CAMx Modeling Assumes Lesser NO_x Emissions Reductions from BART than is Achievable.*

The CAMx modeling is flawed for the additional reason that it underestimates the emission reductions—and thus visibility benefits—achievable through the operation of SCR in the BART scenario. As described above [in the comment letter], EPA may approve a BART alternative only if EPA rationally determines that that the alternative would yield “greater reasonable progress” toward eliminating visibility impairment than implementation of BART. 40 C.F.R. § 51.308(e). In making that determination, EPA must compare the visibility improvement achievable through implementation of BART (the BART benchmark) to that achievable under the BART alternative. *See id.* § 51.308(e)(2)(i)(C)-(E), (3). The comparison of the two scenarios must rest on a rational assessment of the emissions rates achievable with the controls constituting “the best system of continuous emission control technology available” for the relevant source(s), i.e., the BART benchmark, and the emissions rates “achievable” with the controls contemplated under the BART alternative. *See id.* § 51.308(e)(2)(i)(C)-(D). EPA failed to conduct such a rational assessment for the Proposed Rule, instead relying on an obsolete and erroneous emission rate “achievable” for SCR.

Specifically, Utah’s SIP continues to assume that the installation and operation of SCR on Hunter Units 1 and 2 and Huntington Units 1 and 2 would achieve a NO_x emission rate of 0.07

²³ 40 CFR part 51 app. Y, § V.

²⁴ See 40 CFR 51.309(d)(4); 85 FR 3560-61.

²⁵ In the July 2016 FIP, EPA determined these same controls—SCR plus LNB/SOFA—constitute BART for each of the four subject-to-BART units. Utah’s July 2019 SIP submittal thus refers to the BART Benchmark controls as the “EPA FIP,” as do many of the commenters. While the controls represented by the BART Benchmark and EPA’s 2016 FIP are indeed the same, the relevant comparison for the purpose of this analysis is between the BART Benchmark and the NO_x BART Alternative. We therefore refer to the 2016 FIP as the BART Benchmark as appropriate in this RTC document and in the preambles to the proposed and final rules.

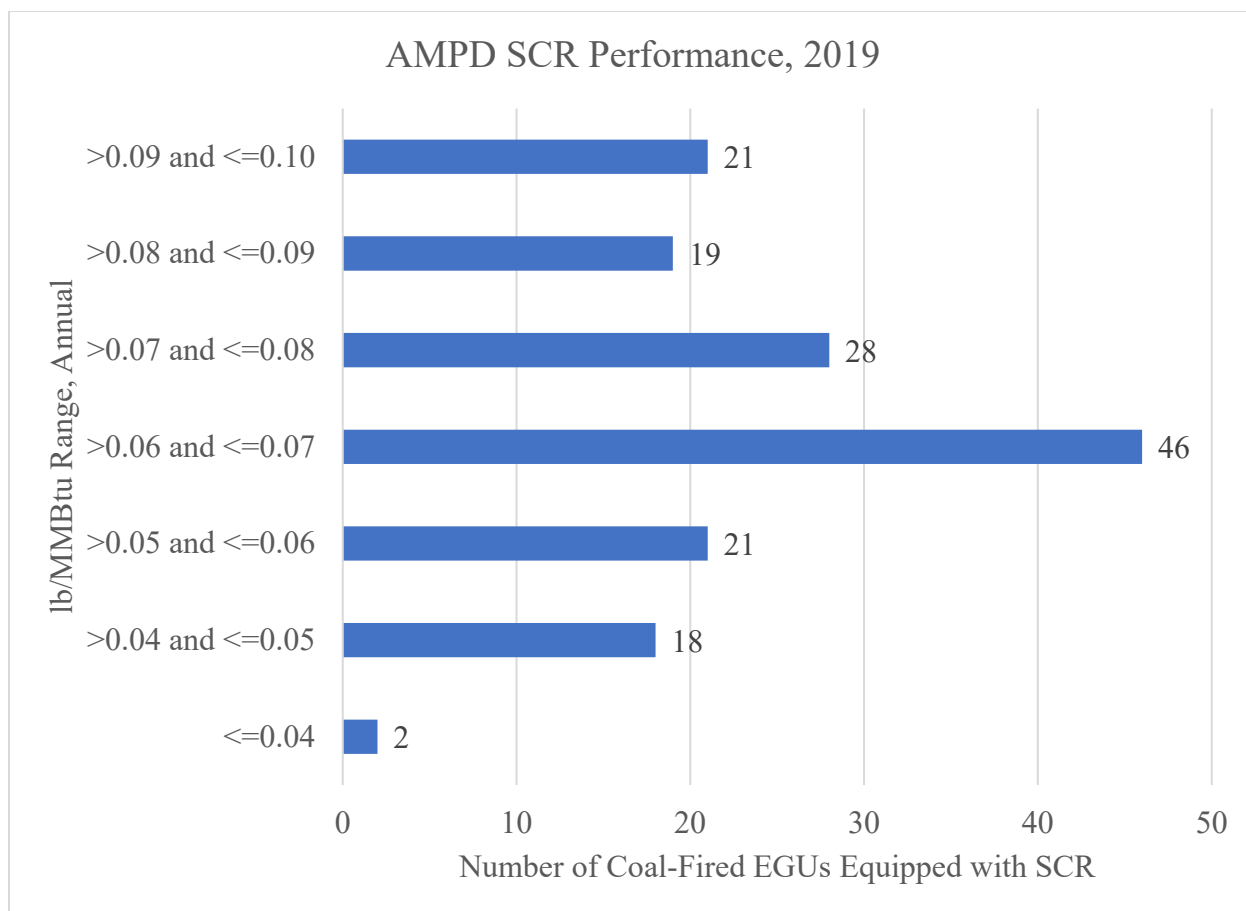
lb/MMBtu on a 30-day rolling average, as approved by EPA four years ago in its FIP. However, there are several EGUs that have achieved NO_x emission rates of 0.04 lb/MMBtu or lower on an annual average basis. A review of recent emissions data from EPA's Air Markets Program Database shows that the following units have achieved annual average NO_x rates of 0.04 lb/MMBtu with SCR, including Jeffrey Energy Center Unit 1 in Kansas, Edgewater Unit 5 in Wisconsin, Gallatin Units 1 and 2 in Tennessee, Ghent Unit 4 in Kentucky, John W Turk Jr. Unit 1 in Arkansas, Dry Fork Unit 1 in Wyoming, Sandy Creek Unit 1 in Texas, and W A Parish Unit 7 in Texas.

Moreover, EPA's recent regional haze revision adopting a BART alternative for the Laramie River Station in Wyoming acknowledged that a 0.04 lb/MMBtu NO_x emission rate would be achieved with SCR on an annual average basis under a 0.06 lb/MMBtu NO_x limit applicable on a 30-day average basis. [fn omitted] EPA maintained that it was appropriate in that circumstance to compare the visibility impacts of the BART alternative against a BART determination that assumed a higher, 0.07 lb/MMBtu 30-day average NO_x emissions rate associated with SCR, which EPA determined to be achievable in 2014. [fn omitted] However, as it has become increasingly clear that SCR achieves lower emissions, it would be improper to judge the Utah BART Alternative in 2020 against a BART benchmark that utilizes obsolete emissions information.

The Hunter and Huntington BART-subject units have been achieving 0.19-0.20 lb/MMBtu NO_x rates on an annual average basis in the last two years, according to emissions data submitted to EPA. These units should be able to readily achieve a 0.04 lb/MMBtu annual average NO_x rate with SCR. Such a NO_x rate equates to a 74-80% NO_x removal efficiency across the SCR, and SCR systems are routinely designed to achieve 90% NO_x removal. [fn omitted] Thus, EPA should not have assumed a controlled annual average NO_x rate any higher than 0.04 lb/MMBtu for the Hunter and Huntington units in BART modeling.

By understating emissions reductions achievable with BART and overstating emissions reductions achieved through Utah's BART Alternative, Utah and EPA have set up a flawed comparison that cannot support approval of Utah's SIP.

Response: The EPA responds to this comment in the preamble to the final rule. The figure below supports that response.



c. Emission Assumptions

Comment: [Cons Orgs, p. 10] *The CAMx Modeling Uses Flawed Baseline Emissions Assumptions.*

One of the primary reasons PacifiCorp’s CAMx modeling is flawed is because it modeled the 2001-2003 baseline emissions scenario relative to the 2011 (2009-2013 average) IMPROVE data, yet the modeling scenarios do not reflect the emissions control systems that were in place and reflected in the 2011 IMPROVE data. Several of the Hunter and Huntington units made SO₂ and NO_x reductions between 2003 and 2011 which are already reflected in the IMPROVE data (including the Hunter Unit 3 NO_x controls installed in 2007, the Huntington Unit 2 new SO₂ scrubber and NO_x combustion controls installed in 2006, the Huntington Unit 1 SO₂ scrubber upgrade and the NO_x combustion controls installed in 2010, and to some extent the Hunter Unit 2 SO₂ scrubber upgrade and NO_x combustion controls installed in spring 2011). [fn omitted] Mr. Gebhart stated that this deficiency in PacifiCorp’s CAMx model allows the emission reductions that occurred prior to 2011 to get “double counted” because “the SO₂ controls and associated emission reductions are already reflected in the 2009-2013 IMPROVE data ... ” [fn omitted]

While we agree that it is most appropriate to use 2001-2003 emissions data as reflective of the regional haze baseline, the CAMx model platform used by PacifiCorp, which relies on

IMPROVE data reflective of 2011, is not appropriate for the particular circumstances of the three Utah power plants that would be covered by Utah's proposed BART Alternative – specifically because the Hunter and Huntington units reduced NO_x and SO₂ emissions between the regional haze baseline and the 2011 IMPROVE data.

Response: The EPA responds to this comment in the preamble to the final rule.

d. Seasonality in Emissions

Comment: [Cons Orgs, pp. 11-13] *The CAMx Modeling Fails to Account for Seasonality in Emissions.*

PacifiCorp's CAMx modeling also cannot support the BART Alternative because it relied on obsolete emissions data. First, section 2.1.1 (Typical Year (2011) Modeling Scenario) of the modeling protocol states:

The total annual emissions must be temporally allocated throughout the year so that CAMx modeling can be performed. This allocation is referred as the emissions temporal profile. The temporal profile used for this and all other modeling scenarios was estimated to represent a "typical" level of operations for all the units from the PacifiCorp power plants during the 2001 to 2003 period (USEPA 2017a). The temporal profile was derived by taking the average of the CAMD daily SO₂ and NO_x emissions from 2001 to 2012 for each power plant. This period covers the entire time span of the emissions used for the various modeling scenarios considered. Using the average from eleven years provides a temporal profile that retains a realistic day-to-day variability without fluctuations attributable to temporary shutdowns or restarts at each unit. The daily percentage contribution was then calculated by determining the percentage the 3-year daily contributes to the annual total. The resulting temporal profile for each power plant is shown in Figure 2-1 as the daily percentage contribution for SO₂, NO_x and all the other pollutants. The SO₂ and NO_x profiles are then applied to the SO₂ and NO_x emissions, respectively for each power plant's units. Notice that the temporal profile for all the other pollutants was determined through the average of the SO₂ and NO_x profiles and is applied to the power plant's emissions for VOC, CO, PM 10, PM_{2.5} and NH₃. In general, the profiles show a constant level of operations without a strong seasonality. For comparison a constant profile that allocates emissions equally throughout the year would represent a flat line at 0.27% every day.

While the temporal profile for the 2001 to 2012 period may have been relatively constant, there have been drastic changes in the utility industry since then. Over the past 3 years, there has been strong seasonality in heat input and SO₂/NO_x emissions at these coal units, with prominent peaks in the summer and winter. Table 1 shows average daily emissions over 2018-2019 for Winter (Dec-Feb), Spring (Mar-May), Summer (June-Aug), and Fall (Sept-Nov), excluding days the units did not operate. As shown, springtime emissions are lower, and for some units, also the fall emissions, than emissions in either winter or summer.

Table 1. Changes in Daily NOx Seasonal Emissions (tons/day) in 2001-2003 compared to current (2018-2019)

Plant	Hunter 1	Hunter 2	Hunter 3	Huntington 1	Huntington 2
01-03 Winter Daily Avg NOx	20.54	18.58	19.26	17.91	16.81
18-19 Winter Daily Avg NOx	8.49	8.98	14.40	9.14	8.73
01-03 Spring Daily Avg NOx	20.77	18.96	18.20	17.97	17.84
18-19 Spring Daily Avg Nox	6.90	6.86	8.90	6.06	5.04

01-03 Summer Daily Avg NOx	20.81	18.44	18.97	16.40	17.42
18-19 Summer Daily Avg NOx	8.78	9.39	12.05	8.33	7.94
01-03 Fall Daily Avg NOx	18.38	18.76	19.79	17.43	17.45
18-19 Fall Daily Avg Nox	9.12	9.35	13.49	8.83	7.83

Utah’s modeling for all scenarios, e.g. 2011 Typical Year, 2025 Baseline, 2025 Utah SIP, failed to reflect this seasonality. Once again, because PacifiCorp’s modeling does not accurately portray emissions and their interaction with atmospheric chemistry and meteorology on a seasonal basis, it cannot support a finding that Utah’s BART Alternative achieves greater reasonable progress than BART.

Response: We disagree with the comment that the CAMx modeling should have based on seasonal emissions profiles determined using facility operating data from 2018 and 2019. As described in the modeling protocol,²⁶ we determined that it was reasonable to use the averages of operating data from 2001 to 2012, which is the period that covers the entire time span of the emissions used for the various modeling scenarios considered. This “retains a realistic day-to-day variability,” including seasonal variability, over an 11-year period. The BART alternative modeling tried to represent the temporal operating pattern from the 2001-2003 period, when the annual emissions were higher. This resulted in seasonal average emissions that were always

²⁶ AECOM, “Photochemical Modeling Protocol to Assess Visibility Impacts for PacifiCorp Power Plants Located in Utah,” January 2018, page 2-2.

higher than the more recent 2018-2019 emissions. So the modeling did not underestimate or misrepresent the emissions in any way. It did a very reasonable job of replicating the typical seasonal pattern that is representative of the BART time period from 2001-2003. It would have been inappropriate to use the more recent data, and in any case, the more recent data from 2018 and 2019 was not available when the modeling was performed. Finally, there is no evidence that would suggest that using a different set of seasonal emissions profiles would have changed the results of the comparison of the BART Benchmark and the NO_x BART Alternative emissions scenarios.

e. CAMx Model Performance

Comment: [Gebhart Report, pp. 14-15] *CAMx Model Performance Evaluation.*

As part of the CAMx modeling effort, a model performance evaluation (MPE) was conducted (Reference 6 [omitted]). The MPE is an assessment of the ability of the model to reproduce actual concentration measurements. The MPE for the original WAQS 2011 modeling platform showed poor performance in the ability to correctly reproduce ambient nitrate and ammonia concentrations. Based on this, the Utah SIP amendment CAMx modeling included two adjustments in an attempt to improve upon the CAMx model performance for nitrate.

- The boundary conditions on the northern edge of the 4 km CAMx grid were estimated using the WAQS 12 km grid CAMx modeling, but the nitrate concentrations for the boundary conditions were increased by a factor of 7.51.
- The ammonia deposition velocity rates in CAMx were decreased by setting the RSCALE parameter to 1 in the CAMx input file.

Accounting for the changes above, a review of the MPE (Reference 6 [omitted]) identified the following conclusions: 1) sulfate performance was similar to the WAQS 2011 platform, which showed a tendency for a consistent over-prediction of ambient sulfate concentrations, 2) nitrate performance was improved compared to the WAQS 2011 platform, but the tendency remained for under-prediction of the ambient nitrate concentrations in most comparisons, and 3) the ammonia performance was also improved compared to the WAQS 2011 platform, but the consistent under-prediction of ambient ammonia concentrations was still present.

The MPE for the Utah SIP amendment CAMx modeling produces some troubling results, especially given that the primary purpose of the modeling was to evaluate alternative control strategies which in general traded increases in NO_x emissions for decreases in SO₂ emissions. As noted above, the MPE, even with the adjustments made to compensate for known performance issues in the 2011 WAQS platform, continued to show a tendency for CAMx to over-predict actual sulfate concentrations while at the same time under-predicting nitrate concentrations. In other words, the Utah SIP CAMx modeling introduces a positive bias for changes in SO₂ emissions (changes in SO₂ emissions produce a greater change in sulfate compared to observations), but a negative bias for changes in NO_x emissions (changes in NO_x emissions produce a smaller change in nitrate compared to observations). This finding indicates an inherent

tendency of the Utah CAMx modeling to unfairly bias the model results toward changes in SO₂ emissions over changes in NO_x emissions.

If the CAMx model is going to fairly represent the SO₂/NO_x emissions tradeoff proposed by the Utah Regional Haze SIP amendments, improvements must be made to the performance of the CAMx modeling platform. The model does not need to perfectly represent the actual sulfate and nitrate measurements. However, given that the concentration changes reflected in the modeling results are very subtle, any inherent modeling biases that favor SO₂ controls over NO_x controls need to be eliminated. Currently, the CAMx modeling cannot be used to defend the proposed Regional Haze SIP amendments because it fails to treat the different emission controls options equally and fairly. The MPE (Reference 6 [omitted]) suggests that the current modeling platform fails to accomplish this important objective and instead, the modeling platform used by Utah is inherently biased to favor the proposed SIP amendments over the EPA FIP.

Response: We disagree that the CAMx modeling fails to treat the BART Benchmark and NO_x BART Alternative equally and fairly and thus cannot be used to support the final rule. Because the MPE for the original WAQS 2011 modeling platform showed poor performance in the ability to accurately reproduce measured ambient ammonia and ammonium nitrate concentrations, the EPA recommended, and PacifiCorp agreed, to perform additional model simulations and model performance evaluations designed to improve the model performance for ammonia and ammonium nitrate. The revised simulations resulted in substantially improved model performance for ammonia and ammonium nitrate compared to the WAQS 2011 modeling platform.

We agree with the comment that the model does not need to perfectly represent the actual sulfate and nitrate measurements. Because of uncertainty in model input data, including uncertainty in meteorological data, emissions data, and long-range transport of air pollutants, models typically have bias when comparing model simulated concentrations to measured concentrations of air pollutants. The EPA has developed guidance for model performance evaluations and criteria for determining acceptable model performance, and the modeling platform used here conformed to the EPA guidance.²⁷ The EPA recognizes that bias in model results – for example, the overestimates of sulfates and underestimates of nitrate as described by the commenter here – can result in incorrect estimates of the relative benefits of SO₂ and NO_x emissions reductions if the modeling results are compared in absolute terms without correcting for model bias. To address this concern, the EPA has developed guidance and software to help correct for bias in model results. The EPA’s recommended approach is outlined in the photochemical modeling guidance and implemented in publicly available software called the Software for the Model Attainment Test - Community Edition (SMAT-CE).²⁸ In the recommended approach, the model-simulated future concentrations of sulfate and nitrate are weighted by the amount that the model over or underestimated observed sulfate and nitrate concentrations in the base year simulation. Thus, in this application, the SMAT-CE software was used to reduce the model-simulated future sulfate benefits for each emissions scenario, proportional to the extent that the model overestimated

²⁷ EPA, “Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze. U.S. Environmental Protection Agency,” November 2018.

²⁸ The SMAT-CE software and documentation are available for download at: <https://www.epa.gov/scram/photochemical-modeling-tools> (last visited September 18, 2020).

sulfate in the baseline simulation, and to increase the model-simulated future nitrate benefits for each emissions scenario, proportional to the extent that the model underestimated nitrate in the baseline simulation. This approach is consistent with previous EPA applications of the CAMx modeling for CSAPR, Laramie River Station, and the Coronado Generating Station, in which the model also had positive or negative bias for sulfate or nitrate. While no model can perfectly simulate the measured concentrations, the EPA has determined that this is a reasonable approach to correct for systematic bias in model simulations of individual PM_{2.5} species, and this approach for correcting bias is used in most regulatory applications of photochemical air quality models, both for regional haze and for PM_{2.5} nonattainment state implementation plans.

Comment: [Cons Orgs, p. 17] *Under-prediction of nitrates and over-prediction of sulfates result in inaccurate modeling results.*

Mr. Gebhart found other deficiencies in PacifiCorp's CAMx modeling that similarly skew the BART Alternative analysis. Those issues include that the model performance evaluation of PacifiCorp's CAMx model found an under-prediction of nitrates and an over-prediction of sulfates. [fn omitted] Mr. Gebhart refers to these biases as "troubling results" and states "[t]his finding indicates an inherent tendency of the Utah CAMx modeling to unfairly bias the model results toward changes in SO₂ emissions over changes in NO_x emissions." [fn omitted] Utah claims its BART Alternative reduces SO₂ emissions by 5,814 tons per year over EPA's NO_x BART FIP (although, in reality, SO₂ emission reductions would have occurred independently from the NO_x BART FIP anyway due to the requirement for the Carbon units to comply with the acid gas MATS limit or shut down). [fn omitted] Based on Utah's calculations, the EPA's NO_x BART FIP would result in 4,238 less tons per year of NO_x. [fn omitted] However, if PacifiCorp's CAMx model under-predicts nitrate formation and over-predicts sulfate formation in the Colorado Plateau Class I areas, then the CAMx modeling results would inaccurately show less of a visibility benefit from the NO_x BART FIP than it would show from Utah's proposed BART Alternative, even if the erroneous emission input could somehow be overcome. These model biases alone make PacifiCorp's CAMx modeling of the proposed BART Alternative and the BART FIP unreliable.

Mr. Gebhart also expressed significant concerns with the use of Particulate Source Apportionment Technology (PSAT) which was used to track the Carbon/Hunter/Huntington emissions within the model. Mr. Gebhart is concerned with using PSAT to track changes in sulfate when both SO₂ emissions and NO_x emissions are different in each of the modeling scenarios. Mr. Gebhart states "[t]he reality is that PSAT overestimates the actual ambient sulfate that can be tied to the Carbon/Hunter/Huntington source emissions." [fn omitted] Between PacifiCorp's CAMx modeling under-predicting nitrate and over-predicting sulfate and the PSAT technique also overestimating the true sulfate contribution of an individual source, it seems very likely that Utah's CAMx model will inaccurately predict greater benefits of the BART Alternative, which considers greater SO₂ emission reductions from shut down of the Carbon units, than it would of the BART FIP, which has greater NO_x reductions due to installation of SCR at Units 1 and 2 of the Hunter and Huntington power plants. These are significant issues that, in addition to all other issues discussed above [in the comment letter], put the accuracy of PacifiCorp's CAMx modeling in serious doubt.

Response: We disagree with this comment. Above, we explain the use of the SMAT software to help correct model results for bias in model performance compared to measured ambient data. We further disagree with the comment that the PSAT technique overestimates the true sulfate contribution of an individual source. In each of the model simulations, the CAMx Particulate Source Apportionment Technology (PSAT) was used to track the emissions contribution from the facilities to sulfate and nitrate, and the SMAT-CE software was used, as described in the response above, to correct the PSAT estimates for bias in the model simulated sulfate and nitrate in each emissions scenarios. Thus, the PSAT estimates of sulfate benefits were reduced proportional to the amount that CAMx overestimated sulfate, and nitrate benefits were increased proportional to the amount that CAMx underestimated nitrate at each IMPROVE monitoring site.

Comment: [Gebhart Report, pp. 15-18] Response: *CAMx Model Accuracy Issues*.

To understand and interpret the CAMx visibility modeling results, it is important to understand the underlying pollutant concentrations from which the visibility results are derived. The CAMx model generates concentration estimates for the pollutants of concern. These pollutant concentrations are then converted to visibility impacts using the so-called IMPROVE equation, listed at <http://vista.cira.colostate.edu/Improve/the-improve-algorithm/>. Using the IMPROVE equation, pollutant concentrations are converted into light extinction (b_{ext}) in units of inverse megameters (Mm^{-1}).

The light extinction (b_{ext}) is then converted to the deciview (dV) metric for visibility, defined as follows:

$$dV = 10 \ln (b_{ext}/10)$$

In the CAMx modeling report, the visibility impacts are listed in deciviews (dV). However, using the relationships described above, one estimate the sulfate concentrations used to generate the reported CAMx visibility modeling results. By understanding the relative magnitude of the sulfate concentrations generated within CAMx, one can better understand how potential CAMx errors might influence the associated modeling results and conclusions.

Step one is to convert the dV index to the light extinction coefficient (b_{ext}). Because of the natural logarithm (\ln) function, the relationship between change in dV and change in b_{ext} varies over the range of dV outcomes. To better define this relationship, the dV index predicted in the CAMx model was taken from Table 5 in the CAMx modeling report (Reference 1 [omitted]), which lists the predicted dV index predicted under all emissions scenarios. For the difference between the EPA FIP and proposed Utah SIP, the average dV change reported for the CAMx modeling is about 0.0006 dV (Reference 1 [omitted], Table 5).

When the dV is in this range, the change in dV is approximately linear with the change in b_{ext} , or in other words, a change in the dV index of 0.0006 dV produces an equivalent b_{ext} change of 0.0006 Mm^{-1} .

If the change in b_{ext} is known, the IMPROVE equation can then be used to calculate the associated change in pollutant concentrations that would produce an equivalent change in b_{ext} or dV. As it is understood that the sulfate concentration drives the predicted visibility changes between the different emission control options, the IMPROVE equation can be simplified to address only the sulfate concentration components, as follows:

$$b_{ext} = 2.2 * fs(RH) * \text{small SO}_4 \text{ mass} + 4.8 * fl(RH) * \text{large SO}_4 \text{ mass}$$

The terms $fs(RH)$ and $fl(RH)$ are the relative humidity factors for the small ($fs(RH)$) and large ($fl(RH)$) sulfate mass respectively. The $f(RH)$ factors vary by month. For the purpose of these calculation estimates and to keep the mathematics simple, the $f(RH)$ for my calculation is assigned to be 2.0, which is within the expected $f(RH)$ range.

In the IMPROVE equation, the sulfate mass is apportioned between “small” and “large” sulfate. Light extinction increases for “large” sulfate as the particle size tends to be closer to the wavelength of light, which increases scattering. The fraction of “large” sulfate also increases as the overall sulfate mass increases. In order to keep the mathematics simple, my calculations assume that 100% of the sulfate mass is “small”.

Under the above assumptions, the IMPROVE equation simplifies to:

$$b_{ext} = 2.2 * 2.0 * \text{SO}_4 \text{ Mass, or } \text{SO}_4 \text{ Mass} = b_{ext}/4.4$$

For the proposed Utah Regional Haze SIP, the claimed visibility improvement over the EPA FIP averages is 0.00058 dV, which means that the implied change in sulfate mass is only 0.00013 micrograms per cubic meter, assuming that the dV improvement occurs primarily from sulfate. This concentration estimate would be even smaller if some of the sulfate mass were in the “large” fraction.

The above calculations are not intended to be precise estimates of the sulfate mass, but rather give a general indication of the relative range of sulfate mass values generated by the CAMx model. A precise estimate would vary depending on the individual day and would also require detailed results from CAMx and MATS not readily available within the docket. In any event, the CAMx sulfate mass which is needed to generate the reported visibility improvement which is alleged in the Utah CAMx modeling is extremely small—essentially indistinguishable from zero.

In my opinion, the reported visibility modeling results using CAMx are essentially zero and should be treated as such in this analysis.

The fact that the CAMx model projected very small visibility impacts becomes especially important when one considers the uncertainties embedded in the modeling exercise, which likely negate any alleged benefit linked to the Utah SIP proposal. Although the CAMx model used in the Utah Regional Haze visibility analysis is generally considered to be relatively advanced in the overall realm of dispersion modeling, CAMx is still an approximation of physical processes in the atmosphere and has inherent uncertainties, as discussed in more detail below. The inherent uncertainties in the model grow as the transport time and distances increase. In this case, CAMx

is being applied to estimate concentrations and associated visibility impacts at distances in some cases exceeding 500 km, which involves transport times typically spanning days. At a 2.0 m/sec wind, the transport time for emissions to travel 500 km is almost 3 days (69 hours).

Most of the CAMx modeling uncertainty occurs due to errors in simulating the following physical processes and/or errors in assigning the required modeling data inputs. Many of the uncertainties cited below are inherent to all air quality models and are not unique to CAMx. Modeling uncertainty is discussed within the USEPA Guideline on Air Quality Models (Reference 7 [omitted]) and other scientific literature cited within the Guideline.

- The model has errors in correctly simulating the meteorological data fields. Errors in the meteorological fields, in particular wind speed and wind direction, leads to errors in correctly simulating pollutant transport.
- The model has errors in correctly simulating atmospheric turbulence and dispersion, which leads to errors in the model pollutant concentration estimates.
- The model has errors in the emissions inventory which extend beyond the errors listed previously for Carbon, Hunter, and Huntington. Besides errors in estimating the correct magnitude of emissions at each source, the model also uses assumptions to simulate the temporal and spatial variability of the emissions.
- The grid-based nature of the CAMx model introduces uncertainty. Data inputs (meteorology, emissions, terrain, etc.) are averaged over the grid sizes, which in the case of the Utah SIP CAMx modeling was 4 km.
- The model has errors in correctly simulating the atmospheric chemistry reactions in the atmosphere. These errors occur both from model simplifications in simulating key atmospheric chemical reactions, but also errors in specifying required data inputs for these reactions. Data inputs are often based on assumptions or extracted from limited monitoring data which do not capture the spatial and temporal variability of these data inputs. In the Utah Regional Haze SIP, a key parameter is sulfate, which is formed in the model from primary precursor emissions such as sulfur dioxide (SO₂) and ammonia.
- The model errors listed above are multiplied when the pollutant transport distances increase. As mentioned previously, the pollutant transport distance to many Class I areas evaluated by Utah exceeded 300 km, and in the extreme, exceeded 500 km for the San Pedro Parks Wilderness. Actual pollutant transport distances may significantly exceed 500 km in cases where the modeled emissions followed an indirect trajectory for any individual Class I areas (which is what would normally be expected).
- San Pedro Parks was modeled with CAMx at over 500 km, but other Class I areas of approximately equal distance were not considered. For example, Bridger Wilderness, Fitzpatrick Wilderness, Jarbidge Wilderness, and several other Class I areas in Colorado were not considered in the CAMx modeling, even though these areas are also in the 500-600 km range from the Carbon/Hunter/Huntington source region.

The errors listed above are inherent in CAMx and other air dispersion models and for the most part, cannot be avoided. However, where the Utah Regional Haze SIP modeling analysis fails in particular is in accepting the CAMx modeling results as accurate and precise, without considering how known modeling errors and other uncertainties may alter the results and associated conclusions. This is especially true for this modeling effort given the implied precision in the CAMx modeled concentrations that becomes necessary to support the alleged findings and conclusions. For the Utah CAMx modeling, the modeling uncertainty likely exceeds the magnitude of the modeled concentration, especially with respect to the modeling results assigned to more distant Class I areas, where the underlying visibility precursor concentration estimates are small and the inherent CAMx modeling uncertainty increases. In reality, after considering the likely modeling errors and uncertainties, there are a range of possible outcomes if the inherent modeling errors are considered.

When the inherent modeling errors are properly considered, the reported visibility modeling results, especially for Class I areas with very small visibility precursor concentration changes, are essentially zero and should be treated as such in this CAMx modeling analysis. The visibility benefit claimed for the Utah Regional Haze SIP alternative analysis simply is not supportable.

Response: We agree in part and disagree in part with this comment. We agree with the comment that the CAMx model used in the Utah Regional Haze visibility analysis is generally considered to be relatively advanced in the overall realm of dispersion modeling. In the 2017 updates to the Appendix W Revisions to the Guideline on Air Quality Models, the EPA concluded for photochemical grid model including CAMx:

EPA has relied upon extensive peer-reviewed literature showing that photochemical grid models have been applied for source impacts and, compared with near-source downwind in-plume measurements, that the models adequately represent secondary pollutant impacts from a specific facility. The literature shows that these models can clearly differentiate impacts of a specific facility from those of other sources. Other peer-reviewed research has clearly shown that photochemical grid models are able to simulate impacts from single sources on secondarily-formed pollutants. Further, single-source secondary impacts have been provided in technical reports that further support the utility of these tools for single-source scientific and regulatory assessments. The EPA firmly believes that the peer reviewed science clearly demonstrates that photochemical grid models can adequately assess single-source impacts.²⁹

We also agree with the comment that CAMx is still an approximation of physical processes in the atmosphere and has inherent uncertainties. We have elsewhere in this RTC document explained how these inherent uncertainties or biases were addressed. Consistent with EPA guidance, the modeling analysis submitted by Utah includes measures to address uncertainty in the model simulation, including the use of the SMAT-CE analysis to correct for model bias in individual components of pollutants that contribute to haze, including sulfate and nitrate. Importantly, other uncertainties in the CAMx modeling such as errors in wind speed, wind

²⁹ 82 FR 5193-5194.

direction and atmospheric turbulence, apply to both the BART Benchmark and NO_x BART Alternative modeling scenarios. The EPA is not relying on the absolute model simulated visibility impacts, but rather, the EPA is comparing the model simulated visibility impacts in the BART Benchmark and NO_x BART Alternative emissions scenarios. Thus, the EPA has confidence in the finding of relatively greater visibility benefit in the NO_x BART Alternative scenario even when the absolute visibility benefits are small. Accordingly, the EPA disagrees that the visibility benefits of the NO_x BART Alternative are not supported by the CAMx modeling.

f. CAMx Modeling

Comment: [Cons Orgs, p. 17] *Counting benefits at multiple Class I areas.*

Mr. Gebhart also critiqued PacifiCorp's accounting of average visibility improvement over the modeled Class I areas. First, PacifiCorp's modeling counts the modeled visibility benefits multiple times when calculating the average visibility benefit across all Class I areas (e.g., for those Class I areas where one IMPROVE monitor is used to represent more than two Class I areas, PacifiCorp counted the modeled visibility benefits twice in determining average visibility benefits across all Class I areas). [fn omitted] Rather than relying on proxy results that cannot even be representative for a given Class I area, Mr. Gebhart explained that PacifiCorp's modeling should have used site-specific visibility data available from the CAMx model to more accurately represent impacts at Class I areas that lack IMPROVE monitors.

Response: We disagree with the comment that the use of a single IMPROVE monitor cannot be, in appropriate circumstances, representative of visibility benefit in multiple Class I areas. The regional haze program uses IMPROVE monitoring network data to track progress towards the long-term statutory goal of eliminating anthropogenic visibility impairment. The Regional Haze Rule requires states to calculate and track progress for each of their Class I areas. But to conserve resources, the IMPROVE program did not employ a separate monitor at every Class I area. In some cases, the IMPROVE steering committee identified IMPROVE site locations that are representative of more than one nearby Class I area. With the implementation of the Regional Haze Rule in 1999, the IMPROVE network expanded to 110 monitoring sites that were deemed representative of the regional haze conditions for 155 of the 156 Class I areas.³⁰ Therefore, the data from some of those IMPROVE sites will be used to represent the change in visibility impairment at multiple Class I areas. The EPA recommends using the modeling results at the IMPROVE monitors to determine whether the BART alternative achieves greater reasonable progress than BART.³¹ In the calculations, each affected Class I area should be counted, including those that use the same IMPROVE monitor for tracking visibility impairment. Therefore, logically, the modeling results for those IMPROVE monitors should be counted more than once, so that the modeled impacts at all affected Class I areas are properly counted. In this respect, we note that the CAMx modeling for the Utah NO_x BART Alternative used the same approach that the EPA used in previous CAMx modeling for assessing CSAPR as a BART

³⁰ Interagency Monitoring of Protected Visual Environments (IMPROVE website), <http://vista.cira.colostate.edu/Improve/improve-program/> (last visited 9/29/2020).

³¹ EPA, "Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze. U.S. Environmental Protection Agency," November 2018, page 164.

alternative—in appropriate cases, the model results at a single IMPROVE monitor were determined to be representative of visibility benefits for more than one Class I area.

Comment: [Cons Orgs, p. 17] *Counting benefits at Class I areas farther than 300 km from sources*

In addition, PacifiCorp's CAMx modeling and determination of average visibility benefit included Class I areas beyond 300 kilometers from the Carbon, Hunter, and Huntington power plants. In concluding greater average visibility improvement across all modeled Class I areas, Utah afforded equal weight to areas near and distant from the pollution sources even though there is higher confidence in the CAMx modeling at sites within 300 kilometers of the sources. [fn omitted] Furthermore, PacifiCorp included certain areas (e.g. San Pedro Parks Wilderness Area (New Mexico)) farther than 500km from the sources, while apparently omitting others a similar distance away (e.g. Craters of the Moon in Idaho; Jarbidge in Nevada; Yellowstone, Grand Teton, Washakie, Fitzpatrick, and Bridger in Wyoming; Petrified Forest and Sycamore Canyon in Arizona; and Rocky Mountain, Eagles Nest, Rawah, and Great Sand Dunes in Colorado, among others). In other words, while Utah appeared to give undue weight to visibility benefits at certain distant Class I areas, Utah gave zero weight (and did not even analyze) visibility impacts at similarly distant sites. Without further justification, it appears the Class I areas assessed were selected in an arbitrary manner as it does not appear that Utah's analysis accounts for visibility impacts "over all affected Class I areas," as required by the Regional Haze Rule. 40 C.F.R. § 51.308(e)(3)(ii). Indeed, if corrected, these errors may flip the outcome of Utah's analysis; If the Class I areas outside of 300 kilometers from the power plants are omitted, PacifiCorp's modeling fails to demonstrate that the average visibility benefit of the BART Alternative will be greater than the BART FIP. [fn omitted]

For all of the above reasons [in the comment letter] and as detailed in Mr. Gebhart's expert report, the CAMx modeling conducted by PacifiCorp to support the proposed BART Alternative is technically and legally flawed. It cannot be relied upon to justify the proposed BART Alternative as providing for greater reasonable progress than would result from implementation of the BART FIP.

Response: The EPA responds to this comment in the preamble to the final rule.

Comment: [PacifiCorp, pp. 3-4] CAMx is a three-dimensional photochemical grid air quality modeling program designed to address pollution impacts over a range of geographic scales, meteorology, and time periods using inputs from weather prediction models. *See* <http://www.camx.com/about/faq.aspx>. For regional haze, CAMx works by modeling interactions between the precursors and pollutants that contribute to the haze and using inputs for the specific area and sources being modeled. CAMx is especially effective for modeling larger impact areas that involve pollutant transportation over 50 kilometers or more. *See* EPA 2028 Regional Haze Modeling Technical Support Document, at 3.

EPA has found CAMx "well suited for the purpose of estimating long-range impacts of secondary pollutants, such as PM_{2.5} that contribute to regional haze" *See* 82 Fed. Reg. at 5196; *see also* 5194, note 23 (citing numerous studies validating CAMx and similar models).

While use of CALPUFF may be appropriate in some instances, CAMx is now one of EPA's preferred models for regional haze. As EPA explains, CAMx is one of the most appropriate models for regional haze where Class I areas are fairly distant from the multiple sources being evaluated, meaning that long-range transport is involved:

CAMx has a scientifically current treatment of chemistry . . . and is often employed in large-scale modeling when many sources of pollution and/or long transport distances are involved. Photochemical grid models like CAMx include all emissions sources and have realistic representations of formation, transport, and removal processes of the particulate matter that causes visibility degradation.

See 82 Fed. Reg. 19333, 19338-39. EPA has approved CAMx modeling for at least six regional haze planning organizations (including the WRAP organization for the region including Utah) as well as for BART determinations in Arizona, Arkansas, Oklahoma, and Texas. *See* 81 Fed. Reg. 296, Jan. 5, 2016 (Texas/Oklahoma BART determination); 82 Fed. Reg. 46903, 46909-11, Oct. 10, 2017 (Arizona BART determination); 84 Fed. Reg. 11697, 11701 (Arkansas SIP approval including updated BART determinations); *see also* 83 Fed. Reg. 62204, 62235, Nov. 30, 2018 (Arkansas BART updates and discussion of CAMx).

Response: We agree that the EPA has determined that photochemical grid models such as CAMx are well suited for the purpose of estimating long-range impacts of secondary pollutants, such as PM_{2.5}, that contribute to regional haze, and that CAMx has been widely used by the EPA and the states in previous regulatory applications for PM_{2.5} and regional haze. The EPA takes no position on the remainder of this comment.

Comment: [PacifiCorp, pp. 6-7] *The CAMx Model Results Show that the Utah BART Alternative for NO_x Passes the Two-Prong "Greater Reasonable Progress" Test of the Regional Haze Rule.*

The Regional Haze Rule provides three acceptable methods to demonstrate that a BART alternative meets the requirement for "greater reasonable progress" than BART: (1) show greater emissions reductions than BART (40 C.F.R. § 51.308(e)(3)); (2) conduct modeling to show no visibility decline and an overall visibility improvement (40 C.F.R. § 51.308(e)(3)); and (3) "otherwise based on the clear weight of evidence" (40 C.F.R. § 51.308(e)(2)(i)(E)). Option 2 is often referred to as the "two-prong test." This is the method used in the Proposed Rule to analyze the recent CAMx modeling results. Utah previously used the third test, the "clear weight of evidence" test, to analyze Utah's BART Alternative for NO_x. The state agreed to conduct the "two-prong test" with the recent CAMx modeling to verify that the BART Alternative achieves greater visibility results than BART in the FIP. In the Proposed Rule, EPA agrees that the two-prong test appropriately demonstrates compliance. PacifiCorp remains confident that the BART Alternative also passes the weight of evidence test.

States may use any of these three methods to meet the "greater reasonable progress" demonstration requirement. *See, e.g.,* 71 Fed. Reg. 60612, 60622 (Oct. 13, 2006) (establishing the three demonstrations for a BART Alternative); 81 Fed. Reg. 19519, 19524, April 5, 2016 (EPA approving a weight of evidence analysis); 77 Fed. Reg. 39938, 39940, July 6, 2012 (EPA approving a greater emissions reductions analysis); 82 Fed. Reg. 46903, 46911, Oct. 10, 2017

(EPA approving a modeling analysis). Courts have also concurred that successful application of any of the three demonstrations can be used to establish a BART Alternative. *See Wildearth Guardians v. EPA*, 770 F.3d 919, 933-35 (10th Cir. 2014). Because EPA has identified CAMx both as particularly well-suited for use under the two-prong test, 82 Fed. Reg. at 46911, and because of the factors present in the Utah BART Alternative analysis, Utah's selection of CAMx to demonstrate that the BART Alternative makes greater reasonable progress than BART is legally and technically correct.

Application of the CAMx model results to the two-prong test demonstrates that the BART Alternative, and EPA's associated Proposed Rule, should be approved. First, visibility impacts derived from the CAMx modeling results show that the emissions for the Utah SIP BART Alternative will not result in degradation of visibility on the 20 percent best days compared to the baseline conditions at any of the analyzed Class I areas. In each individual area, visibility is predicted to improve compared to the baseline visibility. Thus, the Utah SIP meets the requirements of the first prong of the test for the 20 percent best days (i.e. no visibility decline). The Utah SIP also meets the requirements of the second prong of the test for the 20 percent best days by showing an overall improvement in visibility over the EPA FIP. The BART Alternative shows an average improvement in visibility of 0.00494 dv relative to the EPA FIP for the best 20 percent days.

Additionally, the Utah SIP meets the two-prong test for the 20 percent worst days. For the first prong, the CAMx model results demonstrate that the emissions under the BART Alternative would not result in degradation of visibility on the 20 percent worst days compared to the baseline conditions at any of the analyzed Class I areas. For the second prong, in each individual area, visibility is predicted to improve compared to the baseline visibility. Also, the Utah SIP scenario shows an average improvement in visibility across all Class I Areas of 0.00058 dv compared to the EPA FIP for the 20 percent worst days. The Utah SIP meets the requirements of the second prong of the test for the 20 percent worst days.

In summary, the Utah SIP meets the requirements of both prongs of the two-prong test for both the 20 percent best and 20 percent worst visibility days. CAMx modeling results predict that Utah's SIP proposal improves visibility relative to the baseline scenario at each of the analyzed Class I areas during both the 20 percent best and 20 percent worst visibility days. Furthermore, modeling results show that, on average, visibility improvement at the analyzed Class I areas is greater under the proposed Utah SIP than for the EPA FIP during both the 20 percent best and 20 percent worst visibility days.

Moreover, when viewed on a Class I Area-specific basis, the BART Alternative provides better visibility improvement than the EPA FIP. On the 20 percent best days, the CAMx model results indicate the BART Alternative has greater visibility impacts than EPA's FIP at 13 out of 15 Class I areas. On the 20 percent worst days, the CAMx model results indicate the BART Alternative has greater visibility impacts at 11 out of 15 Class I areas. Therefore, the CAMx model results indicate that the BART Alternative provides better visibility improvement than EPA's FIP, both on a Class I Area-specific basis as well as an average basis. Therefore, the EPA's Proposed Rule should be made final.

Response: We explain elsewhere in this RTC document and in the preambles to the proposed and final rules that the NO_x BART Alternative met the requirements of the greater reasonable progress two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [PacifiCorp, pp. 7-8] While CALPUFF modeling was used during the first planning period for regional haze actions in Utah, the chemical transport capabilities of CAMx are more appropriate and accurate in this instance to analyze the BART Alternative. CALPUFF [fn As EPA explained, the state of scientific knowledge and modeling science has “expanded significantly” since CALPUFF was recommended as a regional haze model by EPA in 1999. *See* 82 Fed. Reg. at 5215. The broad use of CALPUFF over the past two decades showed it sometimes may not reliably translate to real visibility improvement in many western Class I areas and can be inconsistent in predicting visibility outcomes in general. *See* 81 Fed. Reg. at 26946.] may still be useful for BART determinations for regional haze, and is helpful for comparing past and current CALPUFF analyses. CAMx is more accurate and useful here, and serves as a check on the previous modeling analyses.

EPA has a duty to determine the “degree of improvement in visibility which *may reasonably be anticipated to result*” from the control technologies it requires through the regional haze program. 42 U.S.C. § 7491(g)(2) (emphasis added). To comply with this requirement, Utah and EPA jointly determined that CAMx should be used in this instance to supplement the visibility analyses for the FIP and BART Alternative, and to provide context for existing CALPUFF model results. EPA has a longstanding policy which allows states to use different air quality models, including photochemical grid models like CAMx, if they work in consultation with the appropriate EPA office. *See* 40 C.F.R. § Pt. 51, App. W, § 3.0 (“The model that most accurately estimates concentrations in the area of interest is always sought.”). EPA recommends that states work cooperatively with EPA if a certain model is more appropriate for their regional haze and BART analyses. *See* 80 Fed. Reg. at 45350; *see also* 82 Fed. Reg. 46903, 46911, Oct. 10, 2017 (“as a result of recent developments in modeling techniques, the EPA and states have begun to use photochemical models such as CAMx to assess the visibility impacts from individual sources”). This is what occurred in Utah. PacifiCorp supports the use of CAMx modeling in this instance as an additional source of information that is more up-to-date and accurate than previous models in this instance. Previous CALPUFF modeling, and the manner it was applied by EPA, produced some inconsistent results that have not borne out in reality.

Response: We explain elsewhere in this RTC document and in the preambles to the proposed and final rules why the use of CAMx modeling is reasonable and appropriate for this action. We take no position on the remainder of this comment.

Comment: [PacifiCorp, pp. 8-9] *CAMx Modeling was Performed for the Utah BART Alternative for NO_x in a Manner Approved by Utah and EPA.*

A modeling protocol for the CAMx analysis was negotiated with and agreed to by Utah and EPA in February 2018. (AECOM, 2018). The CAMx modeling analysis appropriately used the Western Air Quality Modeling Study (“WAQS”) platform, which is a publicly available modeling platform intended to facilitate consistent air resource analyses in the western United

States. The CAMx system was configured using the WAQS configuration settings to simulate future-year 2025 visibility conditions for different modeling scenarios. The only differences among scenarios are the emission rates for PacifiCorp's power plants in Utah. The three CAMx modeling scenarios were:

- Baseline Scenario. This scenario simulates representative emissions from Carbon, Hunter and Huntington power plants during the Regional Haze Rule baseline period of 2001 to 2003.
- EPA FIP Scenario. This scenario simulates the emission control strategy for Hunter and Huntington units stipulated by the EPA in the FIP. The Carbon power plant is modeled with the same level of emissions as the Baseline scenario because the FIP did not include any requirements regarding Carbon, nor can it since it is based on unit-specific BART determinations.
- Utah SIP Scenario. This scenario includes the BART Alternative strategy identified in Utah's SIP. It simulates representative emissions from Hunter and Huntington units during the period 2014 to 2016, which included emissions controls required by the SIP. For this scenario, the Carbon power plant emissions were set to zero since the power plant was decommissioned in April 2015 under a requirement that is part of the BART Alternative.

Other than the emissions for the PacifiCorp power plants, all other model inputs, including other regional emissions sources, are identical for each of the emission scenarios modeled with CAMx. Maintaining consistent model inputs enables comparison of the effects of the three different scenarios. The Particulate Source Apportionment Technology (PSAT) tool was applied in the CAMx simulations to track and account for the particulate mass concentrations that originate from or are formed by PacifiCorp power plant emissions.

Once each of the three scenarios above was simulated with CAMx, model results were processed to isolate the changes to visibility conditions. To assess compliance with Regional Haze Rule requirements, visibility impacts were assessed for the 20 percent best visibility days and the 20 percent worst visibility days at each potentially affected, federally regulated Class I area in the modeling domain (see below). The visibility estimates were provided as deciview (dv) contributions from PacifiCorp's power plants. A deciview is a measure of visibility derived from light extinction that is designed so that incremental changes in the measurement of haze correspond to uniform incremental changes in visual perception, across the entire range of conditions from pristine to highly impaired. Model-predicted visibility impacts at these fifteen Class I areas in the 4-km modeling domain were estimated for each of the three modeling scenarios:

- Grand Canyon National Park NP
- Arches NP
- Black Canyon of the Gunnison NP
- Bryce Canyon NP
- Canyonlands NP
- Capitol Reef NP
- Mesa Verde NP

- Zion NP
- Flat Tops Wilderness Area WA
- Mount Zirkel WA
- Maroon Bells-Snowmass WA
- West Elk WA
- La Garita WA
- Weminuche WA
- San Pedro Parks WA

The CAMx modeling in the Proposed Rule was conducted according to the EPA-approved protocol and provided reliable information re visibility. The CAMx modeling consultant used the EPA's Software for Model Attainment Test – Community Edition (SMAT-CE) to convert model concentrations to visibility estimates and account for quantifiable model bias. All models are affected by biases: model results are a simplification of natural phenomena so model results over- or under-estimate true conditions. SMAT-CE helps mitigate model bias by pairing model estimates with actual measured conditions. By also using the PSAT tool in conjunction with SMAT-CE, this modeling effort estimates PacifiCorp's power plants' visibility impacts for each model scenario in a realistic manner.

Response: We agree with the comment that Utah and PacifiCorp worked cooperatively with the EPA, including revising the modeling protocol as requested by the EPA, and performing additional model sensitivity simulations and performance evaluation to improve model performance for this application of the model. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules why the modeling protocol was reasonable and appropriate for this action.

Comment: [Gebhart Report, p. 1-3] *Introduction and Executive Summary.*

This report contains technical comments concerning the State of Utah Draft State Implementation Plan (SIP) Amendments proposed for Regional Haze. These comments primarily address the air dispersion modeling conducted using the Comprehensive Air Quality Model with Extensions (CAMx), which has been used by the State of Utah (Utah) to support to proposed SIP amendments. In general, the proposed SIP amendments would relax proposed nitrogen oxide (NO_x) emission controls listed in the US Environmental Protection Agency (EPA) Federal Implementation Plan (FIP) for Regional Haze by taking credit for the previous and unrelated closure of the Carbon Plant operated by PacifiCorp and the associated emission reductions for sulfur dioxide (SO₂) and NO_x.

In summary, the modeling of visibility impacts supporting the proposed Utah Regional Haze SIP amendments using CAMx does not support the claimed visibility benefits of Utah's SIP amendments. There are serious technical issues with the CAMx modeling, in particular the inputs used to describe emissions from the various PacifiCorp sources modeled (i.e., Carbon, Hunter, and Huntington Plants). Using appropriate emissions data is important because the CAMx modeling links to monitoring data from the Interagency Monitoring for Protected Visual Environments (IMPROVE) program for a specific time period. In particular, CAMx results are used to estimate future visibility conditions by mathematically scaling the IMPROVE

measurements based on a ratio of modeled impacts compared to a reference case, called the “typical year”. However, in the Utah CAMx modeling, the reference case uses incorrect emissions information that does not match the reference year modeled and this mismatch causes the CAMx analysis to count emission reductions at Hunter and Huntington which actually occurred prior to the 2011 “typical year” reference condition. In essence, emission reductions realized prior to 2011 are improperly double counted because the emissions control benefits are already reflected in the 2009-2013 IMPROVE data used as the “typical year” reference condition.

Also, the Carbon Plant SO₂ emissions modeled under the EPA FIP scenario are in error because the emissions fail to account for emission reductions which would have occurred due to the EPA Mercury and Air Toxics (MATS) standard. The MATS standard would have been applicable if the Carbon Plant had continued operating beyond 2016. The CAMx analysis for the EPA FIP case assumes that the Carbon Plant (which was been closed by PacifiCorp in 2015) would hypothetically continue operations until 2025 without controls to address its MATS obligations. However, compliance with MATS would have been necessary if the Carbon Plant were to operate until 2025 and thus a lower SO₂ emissions rate should have been modeled resulting in greater visibility benefits of the EPA FIP scenario and lower visibility benefits from the Carbon plant retirement.

As a result of the emission inventory errors summarized above, the CAMx modeling results are in error and produce unreliable results. In addition, the CAMx modeling itself, and in particular the application of the particulate source apportionment technique (PSAT), introduces significant error and uncertainty into the visibility modeling results.

Furthermore, Utah’s CAMx modeling calculates impacts at IMPROVE monitors, but counts the same alleged visibility benefits multiple times when computing the average benefit across all Class I areas. For example, benefits to visibility are claimed at both Canyonlands National Park and Arches National Park, based on the CAMx model results for a single IMPROVE monitor location. Under the approach used by Utah, the same CAMx results are counted multiple times when computing the average change in visibility across the modeling domain. It is recognized that IMPROVE monitors are not located at all Class I areas and that visibility conditions at certain Class I areas may be characterized by monitors located at nearby Class I area due to resource constraints in the IMPROVE program. While the definition of the background visibility condition is by necessity tied to the IMPROVE monitoring location, the CAMx modeling results are not limited in the same manner. Instead, to accurately project the visibility impacts of each scenario, CAMx results unique to each individual Class I area should have been modeled, with these results tied to the appropriate IMPROVE monitor. However, this was not done in the Utah modeling, and the CAMx model results were calculated only at IMPROVE locations. As a result, the same model result was counted multiple times when computing the domain-wide average. If the model results were instead averaged by providing equal weight to the actual CAMx model results (and not counting the same result multiple times), the resulting average showed that the proposed Utah SIP amendments would not have produced better visibility on average for the worst-case days compared to the EPA FIP scenario.

Even if the CAMx modeling results did not suffer from the flaws summarized above, the modeling results would not show clearly greater benefits of the proposed SIP amendments as compared to the EPA FIP scenario. For example, if the alleged visibility benefits were averaged across only those Class I areas in Utah, the proposed SIP amendments would not produce improved visibility on average for the worst-case days. Also, if the CAMx modeling was limited to areas matching the list of Class I areas addressed in the 2011 Utah Regional Haze SIP, the proposed SIP amendments would not have provided for improved visibility on average for the worst-case days compared to the EPA FIP. It is only by extending the CAMx modeling analysis to more Class I areas, relying on unreasonably low concentration estimates, and by counting the same modeling result multiple times, that Utah reaches the conclusion that its BART alternative achieved greater visibility improvement than the EPA FIP.

In addition, Utah's claim that the CAMx modeling results demonstrated greater visibility benefits on average across all 15 Class I areas modeled were based on concentration estimates which are so small that, in my professional experience, they should be interpreted as essentially zero. The potential errors in Utah's CAMx results are based on factors besides distance, as discussed in more detail within my report.

For these and the other reasons discussed below, Utah's conclusions based on the CAMx modeling that the Utah Regional Haze SIP amendments achieved greater visibility benefits than the EPA FIP are flawed, technically deficient, and as such invalid.

Response: We disagree with this comment. The EPA has responded to each of the claims made by the commenters elsewhere in this RTC document and in the preambles to the proposed and final rules.

Comment: [Gebhart Report, p. 2-6] *Emission Inventory Issues.*

There are multiple technical deficiencies with the emissions inventory used in the proposed Utah Regional Haze SIP CAMx modeling. Without an accurate emissions inventory, the CAMx modeling as a whole is technically flawed and cannot be used to support the conclusions presented by Utah concerning the proposed Regional Haze SIP amendments.

The most fundamental technical deficiency is the emissions information used by Utah for the "typical year" scenario. The "typical year" emissions scenario forms a reference case to which the other emission modeling scenarios are evaluated using CAMx. In essence, the modeled change in concentrations of visibility precursors for each future emissions case (Baseline, EPA FIP, and Utah SIP) are compared to the reference case and the future visibility for each case is then calculated by assuming that the same percentage change also occurs in the historical IMPROVE measurements. In the Utah SIP CAMx modeling, the "typical year" is 2011 and the IMPROVE data is taken from the five year average centered on 2011 (2009-2013 average).

The CAMx modeling report prepared by AECOM & Ramboll (Reference 1 [omitted]) indicates that the emissions for the typical year scenario (2011) were based on the 2011 WAQS platform, except that emissions at the three PacifiCorp Plants (Carbon, Hunter, and Huntington) were modeled using the average emissions for the 2001-2003 baseline period. There is no explanation

in Reference 1 [omitted] as to why the 2011 reference case was modeled with the 2001-2003 baseline period emissions at Carbon, Hunter, and Huntington.

In the interval between the baseline period and the typical year, PacifiCorp installed significant emissions control improvements at both Hunter and Huntington. These emissions control improvements are summarized in Table 1. Table 2 lists the 2010-2012 average emissions at Hunter and Huntington and compares these emissions to the 2001-2003 baseline period modeled for the 2011 reference year by Utah. The emissions shown in Table 2 were extracted from the EPA Air Markets Program Data (<https://ampd.epa.gov/ampd>). The 2010-2012 emissions would be the proper emissions to use when modeling Hunter and Huntington for the 2011 reference year case.

The Hunter and Huntington emission controls are important because the associated impact of such controls on visibility conditions in Class I areas in Utah and neighboring states would already be reflected in the 2009-13 five-year average IMPROVE data used in the CAMx modeling. This is especially true for the Huntington Unit 2 emissions, where a substantial reduction in SO₂ emissions occurred about 2006 with the addition of an SO₂ scrubber. However, by using the 2001-2003 baseline emissions to describe the Hunter and Huntington Plants for the 2011 reference year, the result is that the post-2003 emission reductions at Hunter and Huntington are essentially double counted. As discussed in more detail below, the SO₂ controls and associated emission reductions are already being reflected in the 2009-2013 IMPROVE data, so the Utah CAMx modeling is in reality double counting the SO₂ emission reductions associated with such controls and inappropriately counts Huntington and Hunter as creating an additional reduction in sulfate relative to the 2009-2013 IMPROVE measurements.

Table 1
PacifiCorp Hunter and Huntington Plants - Emission Controls Installed After 2003 and Prior to 2011

Plant/Unit	Controls Installed or Upgraded	Date Controls Installed
Hunter Unit 2	<ul style="list-style-type: none"> • Conversion of electrostatic precipitators to baghouses • Replacement of 1st generation low NOx burners with Alstom TSF 2000TM low NOx firing system and installation of separated overfire air • Upgrade of flue gas desulfurization system to >90% SO₂ removal 	2011
Hunter Unit 3	<ul style="list-style-type: none"> • Installation of New Low NOx Burners and Overfire Air 	2007
Huntington Unit 1	<ul style="list-style-type: none"> • Conversion of electrostatic precipitators to baghouses • Replacement of 1st generation low NOx burners with Alstom TSF 2000TM low NOx firing system and installation of separated overfire air • Upgrade of flue gas desulfurization system to >90% SO₂ removal 	2010
Huntington Unit 2	<ul style="list-style-type: none"> • Conversion of electrostatic precipitators to baghouses • Replacement of 1st generation low NOx burners with Alstom TSF 2000TM low NOx firing system and installation of separated overfire air • Installation of new flue gas desulfurization system 	2006

Table 2
Hunter and Huntington SO₂ Emissions (2010-12 Average)
Modeled CAMx “Typical Year” Emissions vs. Actual Emissions

Plant	Units	SO ₂ Emissions (tpy)		NOx Emissions (tpy)	
		Modeled	Actual	Modeled	Actual
Hunter	1	2,535.1	1,920.21	6,379.7	5,439.99
	2	2,531.4	1,605.34	6,092.1	4,005.99
	3	1,204.0	1,058.34	6,530.2	5,159.57
Huntington	1	2,380.4	1,640.41	5,944.3	3,919.54
	2	12,380.0	1,008.19	5,816.5	3,389.26

In the Utah Regional Haze SIP modeling, the CAMx modeling results from the various scenarios (Baseline, EPA FIP, Utah SIP) are each referenced back to the Typical Year (2011) case. In essence, the difference in CAMx modeling results between each scenario and the reference case defines a Relative Response Factor (RRF), which is then applied to the historical IMPROVE measurements to estimate the future visibility associated with each scenario. Since everything ties back to the Typical Year or reference case, the Hunter and Huntington emission inputs modeled for the typical year (2011) need to be consistent with the time period for the IMPROVE data (2009- 2013).

However, for some reason, the CAMx modeling for the "typical year" used the 2001-03 baseline emission data for Hunter and Huntington. While it is consistent with the Regional Haze requirements that the 2001-2003 period was used for "Baseline" emissions scenario, there is no rational reason for using 2001-2003 emissions in the Typical Year (2011) modeling. The Typical Year modeling should be the best representation possible for 2011 as the CAMx results are linked with the 2009-2013 IMPROVE data. Clearly, for some unexplained reason, such is not the case for the Hunter and Huntington emissions modeled in Utah's Regional Haze SIP.

The most dramatic error introduced into the Typical Year (2011) modeling occurs with the Huntington Unit #2 SO₂ emissions (See Table 2). Similar errors also occur at other Hunter/Huntington units, but to a lesser degree. As noted in Table 1, Huntington Unit #2 installed SO₂ controls about 2006. Table 2 shows that the 2010-2012 Huntington Unit #2 SO₂ emissions were at levels roughly 90% below the baseline (2001-2003) SO₂ emissions, which makes sense if the design basis for the Huntington Unit #2 SO₂ control was around 90%. On a mass emissions basis, the Huntington Unit #2 error exceeds 10,000 tpy, which is very significant. Since CAMx references each future year modeling scenario back to the Typical Year 2011 case, the result is that these emission inventory errors artificially inflate the sulfate RRF calculated by CAMx for the future year scenarios. The Huntington Unit #2 SO₂ controls are already reflected in the 2009-2013 IMPROVE data, so the Utah CAMx modeling is in reality double counting the effect of the Huntington Unit #2 SO₂ controls, i.e., the CAMx RRF inappropriately counts Huntington Unit #2 as creating an additional reduction in sulfate relative to the 2009-2013 IMPROVE measurements. Similarly, the same RRF error is exacerbated by SO₂ emission control improvements at other Hunter/Huntington units that were in placed in service after 2003, but prior to 2011.

As noted above, the error introduced by using the baseline (2001-2003) emissions in lieu of actual 2010-2012 emissions comes in calculating the correct RRF. In this instance, applying the baseline SO₂ emissions as representative of the 2010-2012 period would result in the sulfate RRF being biased high (i.e., the sulfate RRF is based on emission reductions already reflected in the IMPROVE data). As a result, the Utah CAMx modeling provides excessive credit for SO₂ reductions when calculating the resulting visibility benefits from the IMPROVE data. The excessive credit for sulfate reductions in the RRF also carries over to the incremental SO₂ reductions calculated for the Carbon Plant under the Utah SIP amendments. Similarly, the CAMx modeling credits various NO_x and SO₂ emission control improvements at Hunter #2, Hunter #3, and Huntington #1, all of which were installed by 2011. This is a fundamental error with the CAMx modeling and the resulting implication is that the modeling results cannot be

used to support Utah's conclusion that the proposed amendments to the Utah Regional Haze SIP would result in greater visibility improvement compared to the EPA FIP.

Response: The EPA responds to this comment in the preamble to the final rule.

Comment: [Gebhart Report, pp. 7-8] *Visibility Conditions from CAMx Modeling at Utah Class I Areas.*

Table 4 presents the CAMx results from the Utah SIP modeling, but the Table 4 results have been limited to the five Utah Class I areas (Arches, Bryce Canyon, Canyonlands, Capitol Reef, and Zion National Parks). This information was extracted from the Utah SIP CAMx modeling report (Reference 1 [omitted]). The focus on Utah's Class I areas is because the CAMx modeling produces the most significant visibility changes at the Utah Class I areas compared to more distant Class I areas outside of Utah. There is higher confidence in the CAMx modeling results at Utah's Class I areas because the underlying concentration changes are greater in Utah compared to other Class I areas (this technical basis for this claim is discussed later in the report). Please note that when computing an average for calculating the visibility benefit, a positive result under Column E means that the EPA FIP is better whereas a negative result under Column E means that the proposed alternative Utah SIP is better.

Based on the CAMx modeling results as presented in Reference 1 [omitted], if only Utah's Class I areas are considered, the proposed Utah SIP amendment does not improve visibility on the worst-case days when compared to the EPA FIP. Specifically, the CAMx modeling results in Table 4 show that visibility would be better under the EPA FIP at both Capitol Reef and Bryce Canyon. Of any individual Class I area, Capitol Reef experiences the greatest change in visibility when comparing the EPA FIP and proposed Utah SIP. Based on the modeled change in deciviews, the EPA FIP is almost three times better at Capitol Reef (0.03 dV) compared to the Utah SIP modeled improvement at Arches/Canyonlands (0.01 dV). Even if averaged over all Utah Class I areas, the EPA FIP with the increased NO_x controls at the Hunter and Huntington Units in fact produces better visibility. This result occurs in spite of the significant CAMx modeling errors noted above which tend to bias the CAMx modeling in favor of the Utah SIP alternative. It is only when Class I areas outside of Utah are considered in the CAMx modeling that the modeling results allege to produce better visibility on average across all Class I areas modeled (however, even this conclusion may not be valid after correcting for modeling errors noted elsewhere in these comments). While Utah could certainly elect to sacrifice visibility at its own Class I areas for the benefit of improving visibility at Class I areas in neighboring states, it should be clear to all interested parties that the CAMx modeling used in support of the proposed Utah SIP amendments clearly indicates such an outcome.

Table 4
Utah Regional Haze SIP Amendments
Modeled Changes to Visibility Conditions at Utah Class I Areas
(Worst-Case Days)

	A Baseline dV	B EPA FIP dV	C BART Alternative dV	D BART Alt- Baseline dV	E BART Alt - FIP dV
Arches	0.2574	0.1378	0.12584	-0.13156	-0.01196
Bryce Canyon	0.04945	0.02184	0.0247	-0.02475	0.00286
Canyonlands	0.2574	0.1378	0.12584	-0.13156	-0.01196
Capitol Reef	0.261	0.11672	0.14568	-0.11532	0.02896
Zion	0.00155	0.00051	0.00051	-0.00104	0
AVERAGE - Utah Class I Areas Only					0.00158

Response: We disagree with this comment to the extent it claims EPA or the state must give greater weight to the changes in visibility at class I areas within Utah rather than assessing impacts at all affected class I areas equally.³² We explain in the preamble to the final rule the basis for the selected modeling domain, and why there is not higher confidence in CAMx modeling at Class I areas within 300 km than there is at more distant areas in the domain.

Comment: [Gebhart Report, pp. 8-10] *Visibility Conditions from CAMx Modeling at Class I Areas Previously Modeled by Utah.*

In the 2011 Utah Regional Haze SIP (Reference 3 [omitted]), the modeling evaluations were limited to those Class I areas within 300 kilometers of the Carbon/Hunter/Huntington source region. In the Utah 2011 SIP, the CALPUFF model was used for visibility modeling and at the time, it was decided that CALPUFF modeling beyond 300 km contained inaccuracies that made model results beyond 300 km unreliable.

Consistent with Utah's previous modeling approach, the Utah CAMx modeling protocol (Reference 4 [omitted]) also indicated that the modeling would be performed for Class I areas within 300 km of Carbon/Hunter/Huntington. However, the actual CAMx modeling performed for the Utah SIP deviated from the published CAMx modeling protocol, extending beyond this distance out to about 550 km for the most distant Class I area (San Pedro Parks in New Mexico). As presented in Reference 1 [omitted], the CAMx results at each Class I area are given equal

³² This does not mean, however, that it may never be appropriate to give greater weight to more significant improvements in nearer class I areas. Such may be appropriate, for instance, where there is greater uncertainty regarding impacts at Class I areas at further distances. Here, as explained, EPA has confidence in the CAMx results for the many Class I areas across the entire modeling domain.

weight in the average, irrespective of the travel distance for Carbon/Hunter/Huntington emissions.

For consistency with the Utah 2011 SIP, it is appropriate to consider whether the overall conclusions from the CAMx modeling would be affected if one considered just the results for the same Class I areas addressed in Utah's 2011 Regional Haze SIP. These results are presented in Table 5. Also, in my opinion, it would be appropriate to weight more heavily the CAMx results for closer Class I areas when computing the average visibility changes across the entire modeling domain given that the CAMx results at closer areas are inherently more reliable (as discussed later, this conclusion is based on the fact that the closer Class I areas tend to show larger changes in the modeled concentrations for visibility precursors. As the CAMx modeling results approach zero, these results are inherently less reliable).

Table 5
Utah Regional Haze SIP Amendments
Modeled Changes to Visibility Conditions at Class I Areas from 2011 Utah SIP
(Worst-Case Days)

Class I Area	A Baseline dV	B EPA FIP dV	C BART Alternative dV	D BART Alt- Baseline dV	E BART Alt – FI dV
Arches	0.2574	0.1378	0.12584	-0.13156	-0.01196
Bryce Canyon	0.04945	0.02184	0.0247	-0.02475	0.00286
Canyonlands	0.2574	0.1378	0.12584	-0.13156	-0.01196
Capitol Reef	0.261	0.11672	0.14568	-0.11532	0.02896
Zion	0.00155	0.00051	0.00051	-0.00104	0
Black Canyon	0.01265	0.00682	0.0054	-0.00725	-0.00142
Grand Canyon	0.00186	0.00089	0.00056	-0.0013	-0.00033
Mesa Verde	0.06203	0.02524	0.02959	-0.03244	0.00435
Average - All Areas from Previous SIP					0.0013125

Again, based on the CAMx modeling results as presented in Reference 1 [omitted], if once considered only the same Class I areas evaluated under the 2011 Utah Regional Haze SIP), the proposed Utah SIP amendment does not improve visibility on the worst-case days when compared to the EPA FIP. The EPA FIP with the increased NO_x controls at the Hunter and Huntington Units in fact produces better visibility when averaged across the list of Class I areas evaluated in the 2011 Regional Haze SIP. It is only when additional Class I areas are considered that the CAMx modeling results allege to produce better visibility on average across all Class I areas modeled. In my opinion, the visibility benefits associated with the EPA FIP that are shown

in Table 5 would be even greater once the CAMx modeling is corrected for the errors noted elsewhere in these comments.

Response: We disagree with this comment. We explain in the preamble to the final rule the basis for the selected modeling domain, and why there is not higher confidence in CAMx modeling at Class I areas within 300 km than there is at more distant areas in the domain.

Comment: [Gebhart report, pp. 10-12] *Visibility Conditions Calculated with Equal-Weight based on IMPROVE Monitors.*

Utah's conclusions from the CAMx modeling results are also suspect because Utah did not attempt to project representative visibility benefits for all affected Class I areas. As noted elsewhere in these comments, the CAMx model results provided in Reference 1 [omitted] have been calculated only at locations representing IMPROVE monitors. For some Class I areas, IMPROVE monitors do not exist and a nearby IMPROVE monitor is considered representative of visibility precursor concentrations. As a result, the CAMx modeling results at some IMPROVE locations are counted multiple times when computing the domain-wide averages reported in Reference 1 [omitted].

It is unknown why Utah relied upon only the IMPROVE monitor locations when computing the CAMx results. It is recognized that not all Class I areas have an IMPROVE monitor, but this does not limit the CAMx modeling. CAMx produces results for concentrations of visibility precursors across each 4 km grid cell. As such, there is no plausible reason why the a unique RRF was not calculated individually for each Class I area of interest, as such information is available within the CAMx results. Also, for many Forest Service Class I areas, the IMPROVE sampler is nearby, but actually physically outside the Class I area, so the CAMx model results used by Utah are not even always for receptors physically within the Class I area being represented. For example, the White River (WHRI1) IMPROVE monitor deemed representative of Flat Tops, aroon Bells-Snowmass, and West Elk, is actually located near the summit of Aspen Mountain within the confines of the Aspen Ski Resort. Likewise, the Weminuche IMPROVE monitor (WEMI1) is not within the Weminuche Wilderness, but is located on the southern approach to Coal Bank Pass near the Durango Mountain Ski Resort. The WEMI1 IMPROVE monitor is on the order of 100 km distant from the Black Canyon of the Gunnison National Park, but Utah's CAMx modeling uses the WEMI1 CAMx result to depict the modeled visibility changes at Black Canyon. Utah's approach to only calculate visibility results for the IMPROVE monitoring locations introduced avoidable errors to the CAMx modeling, especially for those Class I areas which are not physically represented by an IMPROVE sampler. CAMx results should instead have been calculated using model receptors specific to each Class I area. These unique Class I RRF factors could still have been applied to the appropriate IMPROVE monitor for the final model calculations.

However, given that the recommended approach described above was not applied, the only fair approach to apply the CAMx modeling results as presented by Utah would be to provide equal weight to each unique CAMx modeling result. Table 6 presents the computation of the domain-wide average visibility conditions when each IMPROVE monitor is provided equal weight in the averages. This is a more accurate representation of the actual "average" modeling result, instead

of providing added weight in the computation of averages for those Class I areas where an IMPROVE monitor is not present.

Again, based on the CAMx modeling results as presented in Reference 1 [omitted], if the average change in visibility is computed by equally-weighting the IMPROVE monitor results (which is how CAMx actually made its calculations in this study), the proposed Utah SIP amendment does not improve visibility on the worst-case days when compared to the EPA FIP. The EPA FIP with the increased NO_x controls at the Hunter and Huntington Units in fact produces better visibility when the reported CAMx modeling results used by Utah are provided equal weight.

Without making unique calculations for each Class I area as described above, equally weighting each CAMx modeling result is a more fair and accurate representation of the “average” across the entire modeling domain. Also, in my opinion, the visibility benefits associated with the EPA FIP that are shown in Table 6 would be even greater once the CAMx modeling is corrected for the errors noted elsewhere in these comments.

Table 6
Utah Regional Haze SIP Amendments
Modeled Changes to Visibility Conditions with Equal-Weight based on IMPROVE Sites
(Worst-Case Days)

Class I Area	A Baseline dV	B EPA FIP dV	C BART Alternative dV	D BART Alt- Baseline dV	E BART Alt - FIP dV
Arches/Canyonlands	0.2574	0.1378	0.12584	-0.13156	-0.01196
Bryce Canyon	0.04945	0.02184	0.0247	-0.02475	0.00286
Capitol Reef	0.261	0.11672	0.14568	-0.11532	0.02896
Zion	0.00155	0.00051	0.00051	-0.00104	0
AVERAGE - Utah Class I Areas Only w/o Double Counting					0.004965
More Distant Areas - Remove Double Counting					
Black Canyon/La Garita/Weminuche	0.01265	0.00682	0.0054	-0.00725	-0.00142
Flat Tops/Maroon Bells - Snowmass/West Elk	0.02703	0.01387	0.01011	-0.01692	-0.00376
Grand Canyon	0.00186	0.00089	0.00056	-0.0013	-0.00033
Mesa Verde	0.06203	0.02524	0.02959	-0.03244	0.00435
Mount Zirkel	0.03312	0.01705	0.01198	-0.02114	-0.00507
San Pedro Parks	0.00154	0.00074	0.00073	-0.00081	-0.00001
Average - All Areas (Incl Utah) Minus Double Counting					0.001362

If Utah wishes to estimate the visibility changes at all of the Class I areas listed in Reference 1 [omitted], then the CAMx modeling needs to calculate the visibility precursor concentrations and appropriate RRF at each Class I area and not the IMPROVE monitor. Serious differences in the

CAMx results and resulting RRF are likely present at each Class I area and this is not captured by the Utah CAMx modeling at present. A unique RRF can and should be calculated for each Class I area, while still retaining the designated IMPROVE concentrations to calculate the precursor concentrations for each modeling scenario. While the background IMPROVE concentrations may represent more than one Class I area, the same is not true for the Utah CAMx results, especially since the modeling purports to address changes in emissions at a small group of emission sources located in close proximity to one another. The CAMx results likely have spatial variability based on distance and direction from the Carbon/Hunter/Huntington emission sources. Given that such variability is not captured in the Utah CAMx modeling analysis, Table 6 with all IMPROVE results weighted equally would represent the true and accurate “average” of the modeling results.

Response: We disagree with this comment. We explain in the preamble to the final rule the basis for the selected modeling domain, and why there is not higher confidence in CAMx modeling at Class I areas within 300 km than there is at more distant areas in the domain. We also explain elsewhere in this RTC document why a single IMPROVE monitor can be, in appropriate circumstances, representative of visibility benefit in multiple Class I areas.

Comment: [Gebhart, p. 12] *Flat Tops IMPROVE Monitor.*

An IMPROVE monitor was installed near the Flat Tops Wilderness (FLTO1) in 2011 and IMPROVE data exist for this site for two years (2012 and 2013) within the reference year monitoring period (2009-2013) used by CAMx. Utah should use this IMPROVE monitor to define the visibility precursor concentrations for Flat Tops (FLTO1) instead of the WHRI1 IMPROVE site (which is the assumption in the current CAMx modeling). Flat Tops is more than 80 km from the WHRI1 IMPROVE monitor. At a minimum, the FLTO1 and WHRI1 IMPROVE data should be compared for the 2012-13 period to provide confidence in the validity of WHRI1 to define conditions at Flat Tops. Presumably, the Flat Tops IMPROVE site was installed because of Federal Land Manager (FLM) concerns that the WHRI1 IMPROVE monitor did not accurately define the visibility precursor concentrations at Flat Tops.

Response: We disagree with this comment. The EPA requires three complete years of IMPROVE data to be considered a complete dataset to account for interannual variability in meteorological conditions that can affect visibility at Class I areas.³³ With only two years of data at the Flat Tops Wilderness, it is not possible to account for variability in factors such as drought, precipitation, or fires that can substantially impact monitored concentrations in any given year. In any case, the commenter has not explained how, if at all, the use of this monitor’s data would have changed the modeling results or whether that would have had any impact on the ultimate outcome of the regulatory analysis.

Comment: [Gebhart Report, pp. 12-13] *Computational Errors Introduced by PSAT.*

³³ Memorandum dated June 3, 2020, from Richard A. Wayland to Regional Air Division Directors, Subject: “Recommendation for the Use of Patched and Substituted Data and Clarification of Data Completeness for Tracking Visibility Progress for the Second Implementation Period of the Regional Haze Program,” page 1.

Within CAMx, the Utah SIP modeling analysis utilized the PSAT option to track the Carbon/Hunter/Huntington emissions within the model. PSAT uses “tagging” to apportion particulate matter (PM) components to individual emission sources (or groups of sources). The advantage of PSAT is that it provides significant computational efficiencies compared to other alternative modeling approaches, in particular the “brute force method” (BFM) where the entire emissions inventory is run multiple times. In BFM, the difference between the modeling scenarios of interest defines the individual source contributions of interest.

The ability for PSAT to reproduce accurate CAMx modeling results has been investigated and reported by Koo et al (Reference 5 [omitted]), which found that “*source contributions calculated by PSAT start to deviate from actual model responses as indirect effects from limiting reaction or non-primary precursor emissions become important.*” In other words, the CAMx model simplifications inherent to PSAT introduce calculation errors in some circumstances.

These circumstances actually occur in the Utah CAMx modeling. Koo et al reports that errors are introduced into the sulfate calculations in particular because PSAT fails to account for indirect effects that influence sulfate formation. For example, sulfate formation can be limited by the availability of oxidants and PSAT by design does not account for such effects. The results reported by Koo et al are that PSAT tends to overestimate sulfate formation compared to the BFM approach.

Koo et al also reports that PSAT errors are introduced because the method fails to account for the interrelationships on sulfate formation between SO₂ and NO_x precursors. During winter when atmospheric temperatures are less, changes in NO_x emissions can alter the acidity of the aqueous phase which in turn affects SO₂ and its ability to dissolve and become oxidized through the aqueous phase. Also, during the warmer summer months, NO_x emissions impact the availability of oxidants needed for sulfate formation because NO_x emissions compete with the SO₂ emissions for the available oxidants. In the proposed Utah SIP amendments, the alternative proposal in general decreases SO₂ emissions while increasing NO_x emissions. In other words, more NO_x would be available under the alternative SIP proposal, and this increased NO_x competes with the SO₂ emissions for any available oxidants. Since PSAT apportions sulfate to the primary precursor emission (SO₂), the PSAT method works best when addressing changes in a single precursor pollutant. However, in the SIP amendments analysis, both SO₂ and NO_x emissions change and PSAT fails to account for the potential influence of the change in NO_x emissions on the sulfate concentrations assigned to the source.

The potential errors in applying PSAT to track changes in sulfate in a situation where both SO₂ and NO_x precursor emissions have been modified results in potentially serious computational errors. These errors influence model results more significantly when the PSAT concentrations generated are themselves small, as occurs in the Utah SIP modeling. In this case, PSAT errors may approach or exceed the magnitude of the concentration estimate itself. For this situation (increased NO_x and decreased SO₂ emissions), the reality is that PSAT overestimates the actual ambient sulfate that can be tied to the Carbon/Hunter/Huntington source emissions. The result is an alleged finding that visibility improvement tied to SO₂ emission reductions will occur when in fact, no such improvement can be substantiated.

In summary, the PSAT technique used in CAMx to track Carbon/Hunter/Huntington emissions has been shown to overestimate the true sulfate contribution assigned to an individual emissions source or group of sources. The PSAT errors are introduced by the failure of PSAT to properly account for indirect influences on sulfate formation and also a failure to adequately account for changes in non-SO₂ emissions such as NO_x. The proposed Utah SIP amendment alters both SO₂ and NO_x emissions compared to the EPA FIP. These are exactly the conditions where PSAT performs poorly.

The PSAT computational problems noted above are in fact exacerbated by the emission inventory errors noted elsewhere in these comments. The reference year CAMx modeling has excessively high SO₂ emissions compared to actual emissions, and the emissions inventory errors will also translate similar errors in the CAMx concentration estimates using PSAT.

Response: We disagree with the comment that the use of the CAMx PSAT is a source of computational errors. While we agree that the CAMx PSAT provides source attributes that differ from model sensitivity simulation approaches, the CAMx PSAT approach was selected because it provides more accurate results than sensitivity approaches which can be subject both to non-linear chemistry effects and numerical error. The paper by Koo et al. that was cited in this comment is a comparison of CAMx PSAT to a model sensitivity simulation approach, the Decoupled Direct Method (DDM), which is also available in the CAMx model. The DDM is a first order sensitivity simulation method, which means that it does not attempt to account for the second order effects of non-linear chemistry on the model results. Koo et al. concluded that “[t]he DDM first-order sensitivity is useful for determining source contributions only if the model response to input changes is reasonably linear.” Thus, the commenter misrepresented the finding of the paper, which found that CAMx PSAT does account for non-linear chemistry effects and provides more reliable source apportionment estimates compared to sensitivity approaches such as DDM. Additionally, model sensitivity approaches can also produce numerical artifacts in first model sensitivity simulations that are associated with instability in the thermodynamics calculations used to estimate partitioning between the gas and particulate phases of nitric acid, ammonia, and ammonium nitrate. The CAMx PSAT method was selected because it avoids the numerical artifacts of sensitivity simulations by directly tracking source specific emissions contributions to sulfate and nitrate formation. Thus, contrary to the commenter’s assertion, the CAMx PSAT results provide a more accurate estimate of visibility impacts by correcting for errors in first order model sensitivity approaches.

Comment: [Gebhart Report, p. 20] Because of the significant technical deficiencies identified in this Report, Utah’s CAMx modeling results cannot be relied upon to support its revised Regional Haze SIP. The CAMx modeling errors noted in this Report inappropriately bias the CAMx results in favor of the proposed Utah SIP over the EPA FIP. In addition, my opinion is that once a new CAMx modeling analysis is completed that corrects for the noted technical deficiencies, the CAMx results will most likely support a conclusion that the EPA FIP provides better overall protection to visibility at Class I areas in Utah and neighboring states.

Response: We disagree with this comment. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules why the modeling protocol was reasonable and appropriate for this action.

g. Visibility Metric

Comment: [Cons Orgs, pp. 16-17] *The CAMx Modeling Uses an Obsolete and Unlawful Visibility Metric.*

PacifiCorp's CAMx modeling cannot support the BART Alternative because it employs the wrong metric for comparison. Utah chose to demonstrate greater reasonable progress by conducting air quality modeling to try to show that its BART Alternative meets the two prong test required by 40 C.F.R. § 51.308(e)(3), i.e., that "for the worst and best 20 percent of days" at each impacted Class I area, dispersion modeling demonstrates that: "(i) Visibility does not decline in any Class I area, and (ii) There is an overall improvement in visibility, determined by comparing the average differences between BART and the alternative over all affected Class I areas." PacifiCorp's modeling projected contributions to visibility on the 20 percent best days and worst days, respectively, for the Baseline, the EPA FIP, and the proposed BART Alternative scenarios at each of the Class I areas analyzed.

However, in evaluating the "worst" days, the CAMx modeling contradicted EPA's January 10, 2017 revisions to the Regional Haze Rule that redefined impairment for purposes of tracking visibility progress.[fn omitted] Under the current regulation, Utah should have substituted its prior understanding of the 20% "worst" days with an analysis for the 20% of days in a calendar year "with the highest amount of anthropogenic visibility impairment." [fn omitted] The 1999 Regional Haze Rule's methodology of selecting the monitored days with the worst visibility impairment was determined by EPA to not be a useful metric for analyzing visibility improvements in Class I areas impacted by wildfires and dust storms, because the visibility improvements from reductions in anthropogenic emissions "can be hidden by this natural variability." [fn omitted] Accordingly, Utah's greater reasonable progress demonstration under 40 C.F.R. §51.308(e) must evaluate the differences in visibility under BART and the BART Alternative for the 20 percent best and 20 percent worst (meaning worst anthropogenically impaired days as defined in 40 C.F.R. §51.301) to ensure that the visibility improvements from BART and the BART Alternative are fairly analyzed in the absence of wildfires and dust storms which could mask the visibility improvements from these measures.

The altered metric yields meaningfully different results. IMPROVE aerosol monitoring data demonstrate that the "worst" visibility days of the year at Canyonlands National Park are influenced by carbon from wildfires and dust, while ammonium sulfate and ammonium nitrate are more important contributors to aerosol light extinction on the most impaired days. To accurately capture the visibility response to emissions controls at the Hunter, Huntington, and Carbon power plants at Canyonlands and other Class I areas impacted by these facilities, EPA must evaluate the proposed BART Alternative using the most impaired days from the CAMx modeling exercise.

Without such modeling, EPA cannot demonstrate in accordance with the regional haze requirements that the BART Alternative would result in greater reasonable progress than BART as determined in EPA's FIP, and the BART Alternative is not approvable.

Response: The EPA responds to this comment in the preamble to the final rule.

h. Other Evidence

Comment: [Cons Orgs, p. 19] *Evidence Beyond PacifiCorp's Modeling Demonstrates that the Proposed BART Alternative Will Not Achieve Greater Reasonable Progress than EPA's BART FIP.*

For the reasons discussed above [in the comment letter] and in Mr. Gebhart's expert report, the CAMx modeling provided by PacifiCorp in support of the BART Alternative is technically and legally flawed and is thus not reliable for evaluating whether the emissions that will occur under the proposed BART Alternative will result in greater reasonable progress towards attainment of the national visibility goals when compared to the BART FIP. Because PacifiCorp's CAMx modeling is technically and legally flawed, it cannot legitimately demonstrate that Utah's BART Alternative will result in greater reasonable progress than the EPA's FIP.

Indeed, a review of other available modeling done to date of the emissions reductions of Utah's BART Alternative compared to implementation of EPA's NO_x BART FIP supports the opposite finding – that EPA's FIP will result in greater reasonable progress than Utah's BART Alternative.

Response: We disagree with this comment. We explain elsewhere in this RTC document and the preambles to the proposed and final rules why the modeling protocol was reasonable and appropriate for this action. We likewise explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We respond to specific comments regarding other available modeling below.

Comment: [Cons Orgs, pp. 20-22] *Utah's BART Alternative Would Steer Affected Class I Areas Further Off the Glide Path Instead of Towards Achieving the National Visibility Goal.*

While PacifiCorp's CAMx modeling does not demonstrate greater reasonable progress from the proposed BART Alternative, other evidence shows that the BART Alternative fundamentally fails to further the regional haze program's national visibility goal. In 2017, EPA conducted preliminary modeling with CAMx as a "first look" at regional haze in 2028. [fn omitted] That CAMx model platform was set up very similarly to PacifiCorp's CAMx modeling of the Utah proposed BART Alternative, in that EPA based the modeling on a 2011 base year using the National Emission Inventory data to project 2009-2013 IMPROVE data (the five year period centered on 2011) to a future year. [fn omitted] EPA projected an initial look at 2028 visibility based on various projections of 2011 emissions, and electric generating unit (EGU) emissions for 2028 were derived from the Integrated Planning Model (IPM v.5.16). [fn omitted] This IPM Model run projected emissions for EGUs considering the effects of the national Title IV SO₂ cap and trade program, the Mercury and Air Toxics Rule, the Cross-State Air Pollution Update Rule; the Clean Power Plant, and settlements and state rules through June 2016 impacting SO₂, NO_x, directly emitted PM and CO₂. [fn omitted] The IPM model run was based on an update to the National Electric Energy Data System (NEEDS) which is posted in spreadsheet form on EPA's

website for IPM v.5.16. [fn omitted] That NEEDS v.5.16 spreadsheet shows assumptions regarding emissions and pollution controls and, notably, Carbon Units 1 and 2 are listed as retired by 2016. [fn omitted] Also, Hunter Unit 3 was identified as having low NO_x burners/overfire air and Huntington Unit 2 was identified as having a scrubber installed in 2006. [fn omitted] The NEEDS spreadsheet also indicates the Hunter Units 1 and 2 scrubbers being upgraded from 80% control efficiency to 90% control efficiency to meet MATS, and indicates that the BART-subject units have low NO_x burners with overfire air. [fn *Id.* While no NO_x combustion controls are listed for Huntington Unit 1, this is most likely an error, because the spreadsheet identifies Huntington Unit 1 as having an upgraded scrubber to meet MATS and as having an ESP-cold side plus a baghouse. Those controls along with new low NO_x burners and overfire air were all installed in 2010 and would be reflected in the National Emission Inventory data from 2011, so the emissions modeled for Huntington Unit 1 presumably reflect the controls installed in 2010.]

Thus, the EPA's 2028 future year modeling with CAMx essentially reflects the controls of Utah's proposed BART Alternative and also reflects the existing pollution controls at the BART-subject units. EPA's modeling is also based off of actual 2011 emissions and 2011 IMPROVE data – in other words, EPA appropriately paired the emissions year data with the IMPROVE data that is used to project future visibility. [fn This is not to say that EPA should use 2011 emissions data as baseline for the proposed BART Alternative. For the purpose of demonstrating the BART Alternative is better than BART, the emission reductions have to be surplus to the emissions as of the baseline date of the regional haze SIP (i.e., 2000-2004). *See* 40 C.F.R. 51.308(2)(2)(iv).] Moreover, EPA evaluated visibility impacts in 2028 based on the 20% most impaired days, rather than the 20% worst days, for each Class I area. Thus, EPA's CAMx modeling projections for 2028 generally reflect a proper accounting of the visibility impacts of Utah's proposed BART Alternative. Importantly, EPA's modeling for the Class I areas modeled by PacifiCorp shows that, with the exception of the Mount Zirkel Wilderness, none of the Class I areas will be on the glide path to meet natural background visibility by 2064 with Carbon Units 1 and 2 shutdown and Hunter Unit 3's low NO_x burners/overfire air combustion controls.

A summary of EPA's 2028 Projected Visibility Impairment analysis is presented in Table 2, below:[fn omitted] [fn EPA stated that a glide path could not be calculated for [Capitol Reef NP] due to incomplete ambient IMPROVE data in the 2000-2004 baseline. *See* EPA's October 2017 Documentation for the EPA's Preliminary 2028 Regional Haze Modeling at B-63.] [fn EPA stated that a 2028 visibility projection could not be calculated for [Zion NP] due to incomplete IMPROVE data in 2011. *See* EPA's October 2017 Documentation for the EPA's Preliminary 2028 Regional Haze Modeling at B-68.]

Table 2. EPA’s Projected 2028 Visibility with Carbon Units 1 and 2 Shut Down and With Hunter Unit 3’s NOx Combustion Controls, Compared to 2028 Glide Path⁵⁰

Class I Area	Projected 2028 Impairment, 20% Most Impaired Days (dv)	2028 Glide Path 20% Most Impaired Days (dv)
Arches NP	7.46	6.92
Black Canyon of the Gunnison NM	6.38	6.28
Bryce Canyon NP	7.14	6.68
Canyonlands NP	7.46	6.92
Capitol Reef NP	7.42	N/A ⁵¹
Flat Tops WA	5.19	4.99
Grand Canyon NP	7.48	6.44
La Garita WA	6.38	6.28
Maroon Bells/Snowmass WA	5.19	4.99
Mesa Verde WA	7.33	7.22
Mount Zirkel WA	5.49	5.64
San Pedro Parks WA	6.35	5.94
Weminuche WA	6.38	6.28
West Elk WA	5.19	4.99
Zion NP	N/A ⁵²	

Further, EPA’s 2028 model results likely under-predict the deciview impacts on the 20% most impaired days because EPA’s evaluation of its CAMx modeling showed that sulfate was under-predicted and that nitrate as “severely under-predicted” at most sites on the Colorado Plateau, especially “Bryce Canyon, Canyonlands, Capitol Reef, and Grand Canyon.[fn omitted] The model performance evaluation of PacifiCorp’s CAMx model platform found similar issues as discussed above [in the comment letter]. [fn omitted] Thus, the predicted visibility impacts in 2028 shown in the table above likely are higher for the 2028 scenario due to this under-prediction, and thus the gap between the projected visibility and the level of visibility needed to be on the glide path to make reasonable progress is likely greater than indicated in the above table.

Response: We disagree that the information in this comment alters or should alter our approval of Utah’s BART Alternative. We explain elsewhere in this RTC document and in the preamble to the final rule why the modeling protocol used by the State was reasonable and appropriate for this action. Moreover, the EPA’s modeling for 2028 is not pertinent to this action for other reasons. First, the purpose of EPA’s 2028 modeling was to provide preliminary estimates of visibility projections for 2028 to inform reasonable progress analysis and obligations for the second planning period under 40 CFR 51.308(f). Therefore, consistent with this goal, the modeling provides results for the most impaired days, consistent with revisions to the Regional Haze Rule applicable to second planning period. By contrast, the Utah BART Alternative is intended to meet certain outstanding first planning period requirements under the provisions of

40 CFR 51.308(e) where the EPA has not changed the use of the haziest days metric. See our response in Section 4.g, *Visibility Metric*, above. Second, we disagree with the commenter's view of how emission reductions from the Carbon power plant and Hunter 3 should be treated. See our response in on this issue in the preamble to the final rule. Third, the EPA's 2028 modeling reflects all anticipated emission reductions from all sources and source categories between the 2011 baseline and the 2028 future year, rather than just from the EGUs under consideration here, and as such cannot be used to assess the visibility impacts from the Utah BART Alternative relative to BART.

More fundamentally, whether the affected class I areas are projected to be above, below, or on the glidepath in 2028 is simply not relevant to EPA's determination here that the NO_x BART Alternative satisfies the requirements of 51.308(e)(2) and (3). We further disagree that the Utah NO_x BART Alternative must result in visibility that is below the regional haze glidepath. This is not a requirement for BART alternatives under the Regional Haze Rule. Instead, pursuant to 40 CFR 51.308(e)(2)(i)(E), the state or the EPA must provide a determination that the alternative program achieves greater reasonable progress than BART. Thus, the EPA's 2028 modeling, which compares the projected 2028 impairment to the 2028 glidepath (dv; 20% most impaired days), is not relevant to the EPA's approval of Utah's SIP revisions.

Comment: [Cons Orgs, pp. 22-24] *Contrary to Utah's Findings, Emissions from the Three Power Plants Would Be Lower Overall under the BART FIP Compared to the BART Alternative.*

The Utah BART Alternative would not yield lower visibility impairing emissions than would installation of BART. 40 C.F.R. § 51.308(e)(2)(i)(E). Utah erroneously claimed that its BART Alternative would result in a lower total of SO₂ plus NO_x emissions than would occur under the BART FIP. [fn omitted] As discussed above [in the comment letter], a proper evaluation of the emissions from the Hunter, Huntington, and Carbon Power Plants that would actually occur under EPA's BART FIP and Utah's Proposed BART Alternative are not as portrayed by Utah or by EPA in its proposed rule. That is because Utah's SIP submission did not consider that, if the Carbon units continued operating under EPA's BART FIP scenario, then the units would have had to comply with the acid gas requirements of EPA's MATS rule. [fn omitted] Utah also did not consider that Hunter Unit 3's NO_x combustion controls which were installed in 2007 would continue to reduce NO_x regardless of whether a BART FIP or a BART Alternative applied.

Although we do not agree that it is appropriate to use an emissions reductions test or aggregate different visibility impairing pollutants that perform uniquely in the atmosphere for BART Alternatives relying on multi-pollutant reductions, even if such a test were appropriate, the Utah BART Alternative would fail if realistic emissions were assumed. Below we provide a revised, more accurate, version of the Utah Division of Air Quality's Staff Review of the estimated emissions under EPA's FIP and the BART Alternative, taking these issues into account.

Table 3. Revised Estimate of Emissions (tpy) Under the EPA FIP (most stringent NO_x scenario), and the Alternative Scenario⁵⁷

Unit	NO _x – EPA FIP, tpy	NO _x , Utah BART Alternative, tpy	SO ₂ - EPA FIP ⁵⁸ , tpy	SO ₂ , Utah BART Alternative, tpy	Combined – EPA FIP, tpy	Combined – Utah BART Alternative, tpy
Carbon 1	1,312	0	594	0	1,906	0
Carbon 2	1,977	0	901	0	2,878	0
Hunter 1	796	3,166	1,153	1,153	1,949	4,319
Hunter 2	798	3,028	1,408	1,408	2,206	4,436
Hunter 3	4,490	4,490	1,230	1,230	5,720	5,720
Huntington 1	793	3,147	1,254	1,254	2,047	4,401
Huntington 2	753	3,366	1,201	1,201	1,954	4,567
Total	10,919	17,197	7,741	6,246	18,660	23,443

As the above table demonstrates, the BART FIP will actually result in 4,783 tons per year fewer emissions of SO₂ plus NO_x combined compared to Utah’s proposed BART Alternative SIP, because the Carbon units would have to comply with MATS if the units were not shut down and because Hunter Unit 3’s NO_x combustion controls would operate to reduce NO_x under either the BART FIP or Utah’s proposed NO_x BART Alternative.[fn This table is derived from Table 2 in the Utah Staff Report with changes being made for SO₂ emissions from Carbon Units 1 and 2 under EPA FIP and for Hunter Unit 3 NO_x emissions under the EPA FIP, and new totals of emissions are calculated.] [fn See Stamper Technical Report from March 14, 2016 for the calculations of SO₂ emissions at Carbon Units 1 and 2 under MATS.] [fn omitted] While SO₂ emissions would be 1,495 tons per year lower under the BART Alternative compared to the BART FIP, NO_x emissions would be 6,278 tons per year lower under the BART FIP (2,040 more tons per year than indicated by Utah in its Staff Report that failed to take into account the fact that Hunter Unit 3’s NO_x combustion controls would operate the same either under BART or a BART Alternative). Overall, this more realistic assessment of SO₂ and NO_x emissions from the Carbon, Hunter, and Huntington Power Plant units under the BART FIP compared to Utah’s proposed BART Alternative shows that the visibility-impairing emissions from the Carbon, Hunter, and Huntington power plants that would occur under the BART FIP would be significantly lower than under Utah’s BART Alternative.

Response: We disagree with this comment. The emissions comparison presented by the commenters is not the correct analysis for purposes of the EPA’s approval of Utah’s SIP revisions because, in demonstrating that the NO_x BART Alternative achieves greater reasonable progress than BART, Utah relied on the two-prong modeling test described at 40 CFR 51.308(e)(3)(i) and (ii) rather than the direct comparison of emissions test available earlier in 40 CFR 51.308(e)(3). Moreover, we explain in the preamble to the final rule how the closure of the Carbon plant, MATS compliance, and the installation of combustion control upgrades on Hunter

Unit 3 should be treated when comparing the BART Benchmark to Utah's NO_x BART Alternative.³⁴

Comment: [Cons Orgs, pp. 24-26] *CALPUFF Modeling that Properly Accounts for Emissions under the BART FIP Scenario Demonstrates Greater Visibility Improvements from BART than the BART Alternative.*

Furthermore, visibility modeling employing appropriate emissions assumptions demonstrates greater visibility improvement under EPA's FIP rather than Utah's BART Alternative. As stated above [in the comment letter], PacifiCorp's CAMx modeling is not reflective of the emissions that would actually occur at Carbon Units 1 and 2 and Hunter Unit 3. While the record for Utah's BART Alternative does not include a CAMx model run that truly reflects the fact that under a BART FIP scenario, Carbon Units 1 and 2 would have to comply with MATS and that Hunter Unit 3's NO_x combustion controls installed in 2007 would continue to operate, the Conservation Organizations previously provided such a modeling analysis performed with CALPUFF to Utah on May 1, 2015. That modeling clearly showed that the BART FIP would result in greater visibility benefits than the state's proposed BART Alternative.

Specifically, the Conservation Organizations submitted CALPUFF modeling performed by Gray Sky Solutions to the Utah Division of Air Quality on May 1, 2015 in the context of Utah's proposed adoption of its BART Alternative as proposed for public comment in April 2015. We are resubmitting Dr. Gray's modeling report with these comments. [fn omitted] In his modeling, Dr. Andrew Gray replicated Utah's CALPUFF modeling for Utah's BART Alternative and the EPA BART FIP (which Utah referred to at that time as the "Most Stringent NO_x" scenario). The only major difference between Dr. Gray's modeling and Utah's 2015 modeling was the SO₂ emission inputs for Carbon Units 1 and 2. Instead of adopting Utah's assumption of uncontrolled SO₂ emissions from the Carbon units into the future in the "Most Stringent NO_x" [fn This was the term Utah used in its 2015 regional haze plan revision to reflect SCR installation at the four BART-subject units of Hunter Units 1 and 2 and Huntington Units 1 and 2.] scenario, Dr. Gray used SO₂ emissions that reflected compliance with MATS (Gray modeling scenario MATS#1 and MATS#2). The only difference between the MATS#1 and MATS#2 scenarios run by Dr. Gray is that the MATS#1 scenario does not allow for a NO_x emission reduction credit at Hunter 3 resulting from installation of LNB in 2008. In other words, the MATS#1 scenario reflects the fact that the Hunter Unit 3 combustion controls installed in 2007 will continue to operate under either the BART FIP or the BART Alternative. In contrast, the MATS#2 scenario does give credit for the installation of NO_x combustion controls as part of the BART Alternative.

Dr. Gray's modeling results clearly show that Utah's BART Alternative will not achieve greater reasonable progress than would implementation of EPA's BART FIP when Carbon Units 1 and 2 are required to comply with MATS rather than be allowed to continue to operate out of compliance with MATS, as PacifiCorp's CAMx modeling improperly assumes. Dr. Gray's CALPUFF modeling shows greater visibility benefits of the BART FIP as compared to the BART Alternative regardless of whether the Hunter Unit 3 NO_x combustion controls that were installed in 2007 are considered as in operation during the BART FIP or only under the BART Alternative. Of course, the greatest visibility benefits are shown with the MATS#1 scenario that

³⁴ See Table 2 in Section 2.a, *Carbon Power Plant and Hunter Unit 3*, of this RTC document.

properly assumed that the NO_x combustion controls at Hunter Unit 3 will be operating under either the BART FIP or the BART Alternative. Dr. Gray’s results are presented in Table 3 of his report, which is reproduced as Table 4, below.[fn omitted] [fn This CALPUFF modeling (both Utah’s 2015 modeling and Dr. Gray’s revisions to that modeling, assessed visibility impacts for 9 Class I areas - Canyonlands National Park, Arches National Park, Zion National Park, Capitol Reef National Park, Bryce Canyon National Park, Grand Canyon National Park, Mesa Verde National Park, Black Canyon of the Gunnison National Park, and Flat Tops Wilderness.]

Table 4. Summary of Visibility Impacts with CALPUFF Modeling of Utah’s BART Alternate Compared to EPA’s BART FIP, Based on Changes to the Emissions Modeled in Utah’s 2015 CALPUFF Modeling.⁶¹

All 9 Class I Areas ⁶²	Utah’s BART Alternative	Utah’s Most Stringent NO _x (BART FIP)	MATS#2	MATS#1
# Days ≥ 0.5 dV impact	441	499	409	367
# Days ≥ 1.0 dV impact	258	264	217	186
Avg 98 th percentile delta-dV	2.39	2.25	1.93	1.69
Avg delta-dV All Days	0.28	0.29	0.23	0.20
3-yr 98 th percentile (24 th high)	2.33	2.18	1.88	1.63
3-yr 90 th percentile (110 th high)	0.81	0.82	0.69	0.60

In evaluating each of the visibility metrics evaluated by Utah in its 2015 BART alternative evaluation, Dr. Gray concludes that, “[e]xamination of ALL the visibility metrics leads to the same conclusion: Utah’s ‘Alternative to BART’ strategy would result in significantly *greater visibility impairment* in ALL modeled Class I areas than BART (MATS#1 or MATS#2). Visibility conditions would decline in Class I areas if the Utah’s BART Alternative scenario is adopted over either the MATS compliance scenario #1 or MATS compliance scenario #2, which are more realistic representations of emissions that would occur under the BART FIP than the Most Stringent NO_x scenario.” [fn omitted] It is very important to note that Dr. Gray did not change Utah’s modeling of Carbon Units 1 and 2’s SO₂ emissions from the 2012-2013 to the more representative 2001-2003 time period, even though Carbon Plant’s higher SO₂ emissions in 2012-2013 were atypical of historical SO₂ emissions and that such emissions were not surplus to the lower SO₂ emissions of the regional haze baseline. [fn omitted] Regardless, Dr. Gray concluded that Utah’s BART Alternative scenario will result in significantly greater visibility impairment at every modeled Class I area for every metric used.

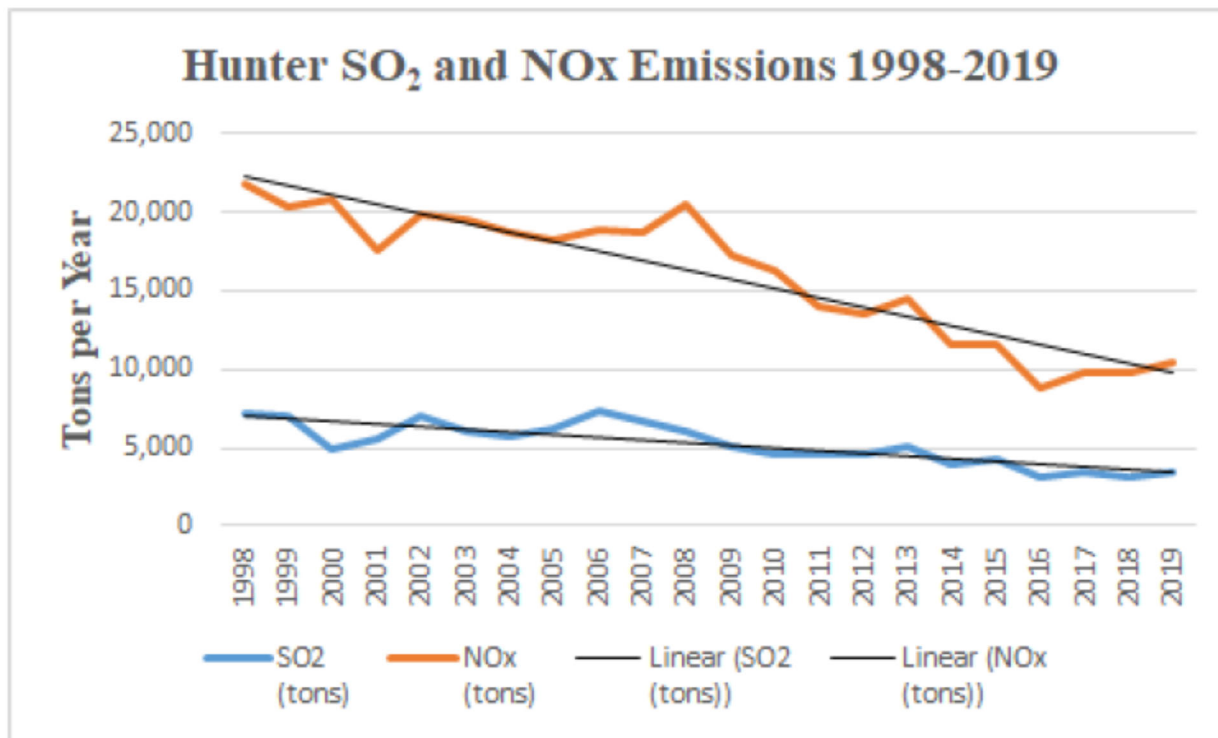
The CALPUFF model is an appropriate model for determining whether a BART alternative is better than BART and has been the model for which the vast majority of first planning period regional haze plans have relied upon in evaluating and determining BART. Prior Utah haze SIP proposals as well as EPA’s BART FIP for the Hunter and Huntington units, were based on visibility benefits modeled with CALPUFF. Further, when modeling was done for a BART alternative for one or a small group of sources, the modeling was typically done using CALPUFF. [fn omitted]

With respect to the modeling that has been done for the Utah BART Alternative, the PacifiCorp CAMx modeling has too many deficiencies in the emissions modeled, among other flaws, to be reliable for demonstrating that the BART Alternative will result in greater reasonable progress than BART. While the CALPUFF modeling results done by Dr. Gray are not directly comparable to PacifiCorp's CAMx modeling, Dr. Gray's CALPUFF modeling more accurately reflects the emissions that are likely to occur at Carbon Units 1 and 2 and Hunter Unit 3 under the BART FIP as compared to the BART Alternative. Further, PacifiCorp's CAMx modeling improperly analyzed the 20% worst visibility days, while Dr. Gray's CALPUFF modeling properly analyzed the 20% most anthropogenically impaired days.[fn omitted] Thus, given the technical deficiencies in PacifiCorp's CAMx modeling including, but not limited to, the failure to model the emissions that would be allowed to occur from Carbon under MATS if the units continued to operate under a BART FIP and the failure to model Hunter Unit 3 with its combustion controls continuing to operate under the BART FIP, along with the fact that PacifiCorp's CAMx modeling fails to comport with the current regional haze regulations that require reasonable progress be assessed on the most anthropogenically-impaired visibility days, Dr. Gray's 4/30/15 CALPUFF modeling is the only reliable modeling reflective of the emissions that would actually be allowed to occur under the BART FIP in the record for Utah's proposed BART Alternative. And Dr. Gray's modeling clearly shows that the BART FIP will provide for greater visibility improvement than the BART SIP.

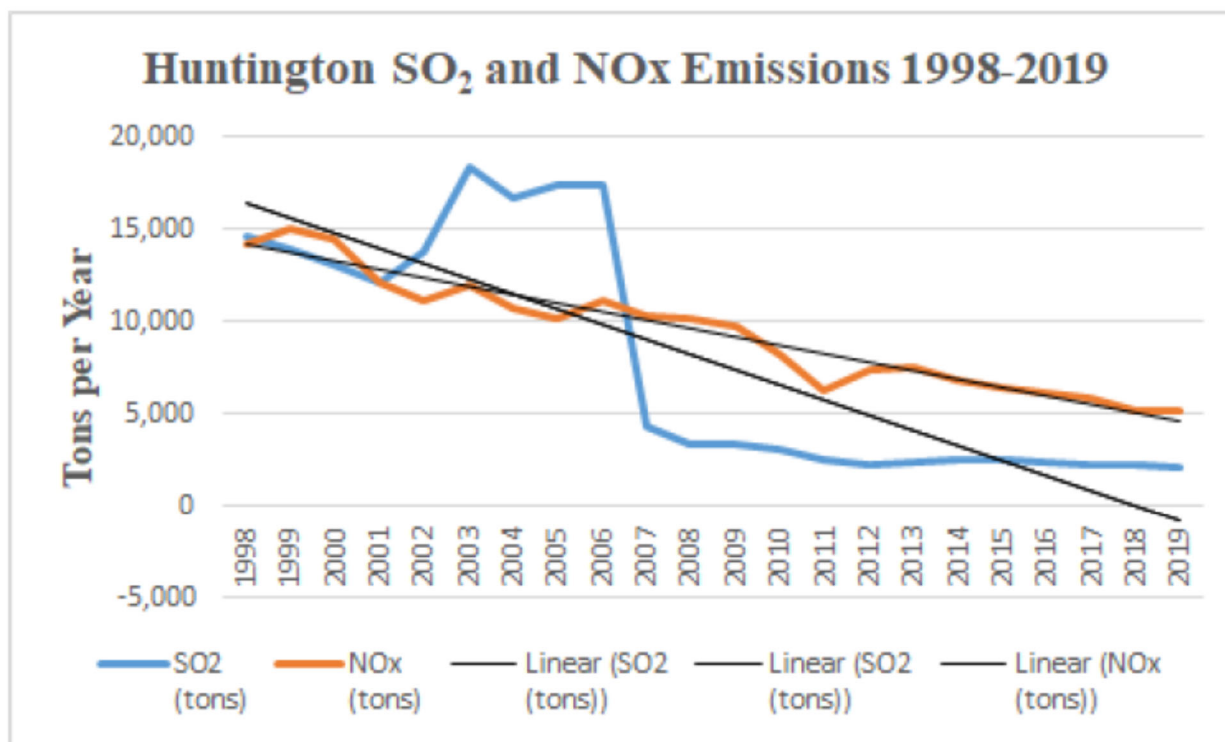
Response: We disagree with this comment. We explain elsewhere in this RTC document and in the preamble to the final rule why the modeling protocol, including the use of CAMx, was reasonable and appropriate for this action, including that the model analyzes the best and worst 20% of days consistent with the BART-alternative provisions of the Regional Haze Rule. We likewise explain elsewhere in the preamble to the final rule how the closure of the Carbon plant, MATS compliance, and the installation of combustion control upgrades on Hunter Unit 3 should be treated when comparing the BART Benchmark to Utah's NO_x BART Alternative. We also explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii).

Comment: [PacifiCorp, pp. 4-5] *Emissions Are Declining at the Hunter and Huntington Power Plants, and Have Been Since the First Regional Haze Planning Period Began.*

Evidence from EPA's Acid Rain Database (found on EPA's publicly available Air Markets Program Data website) demonstrates that emissions from the Hunter and Huntington Power Plants have greatly decreased since 1998, about the time the regional haze program began. In 1998, the Hunter Plant's emissions of sulfur dioxide ("SO₂") were 7,226 tons per year, decreasing 51% to 3,546 tons per year of SO₂ by 2019. Likewise, the Hunter Plant's emissions of NO_x were 21,841 tons per year in 1997, decreasing 52% to 10,514 tons per year of NO_x by 2019. The graph below, based on emissions data from EPA's Acid Rain Database, shows SO₂ and NO_x emissions from the Hunter Plant between 1998 and 2019. Despite claims by critics to the contrary, this graph clearly shows emissions have greatly decreased at the Hunter plant.



The Huntington power plant has seen similar emissions decreases. In 1998, the Huntington Plant's emissions of SO₂ were 14,567 tons per year, decreasing 85% to 2,144 tons per year of SO₂ by 2019. Likewise, the Huntington Plant's emissions of NO_x were 14,122 tons per year in 1997, decreasing 63% to 5,206 tons per year of NO_x by 2019. The graph below, based on emissions data from EPA's Acid Rain Database, represents SO₂ and NO_x emissions from the Huntington Plant between 1998 and 2019.



As the graphs above demonstrate, Utah’s air quality program is working, and the Hunter and Huntington Plants’ impact on air quality in the general area is improving. It is against this backdrop that EPA’s Proposed Rule should be considered.

Response: We acknowledge the emission reductions cited by the commenter that have occurred at the Hunter and Huntington power plants. However, this information is not pertinent to EPA’s approval of Utah’s NO_x BART Alternative which relies on the two-prong modeling test described at 40 CFR 51.308(e)(3)(i) and (ii) rather than the clear weight-of-evidence test described at 40 CFR 51.308(e)(2)(i)(E).

Comment: [PacifiCorp, pp. 12-13] *The Utah BART Alternative also Easily Passes the “Weight of Evidence” Test, and the New Visibility Data only Strengthens this Conclusion.*

PacifiCorp supports the Proposed Rule and the use of the quantitative two prong-test under the BART alternative rules to demonstrate that the BART Alternative makes greater reasonable progress than BART as identified in EPA’s FIP. PacifiCorp also believes, just as it has argued in previous rulemakings, that the BART Alternative also passes the “weight of evidence” test previously performed by the state of Utah. In fact, the new modeling information adds significant support to that analysis, and clearly demonstrates that the BART Alternative makes greater reasonable progress than BART, as required by the regional haze rules. PacifiCorp offers the following revised “weight of evidence” chart to demonstrate how the BART Alternative also meets the regulatory “weight of evidence” test, followed by a discussion of the statutory factors for reasonable progress, including visibility.

Factor ³	Weight	Supports BART Alternative?	Supports FIP BART?
Visibility (including early reductions, total days of improvement, CALPUFF modeling results, CAMx modeling results, etc.)	Heavily weighted	YES	NO
Cost of compliance	Heavily weighted	YES	NO
Energy & non-air quality benefits	Important but not dispositive	YES	NO
Time necessary for compliance (including early reductions)	Important	YES	NO

Response: We appreciate the commenter’s support for the proposed rule. However, the weight-of-evidence information provided by the commenter is not pertinent to the EPA’s approval of Utah’s NO_x BART Alternative which relies on the two-prong modeling test described at 40 CFR 51.308(e)(3)(i) and (ii) rather than the clear weight of evidence test described at 40 CFR 51.308(e)(2)(i)(E).

Comment: [PacifiCorp, p. 13] *The New CAMx Modeling Adds Support to the Previous “Weight of Evidence” Visibility Analysis Performed by Utah*

While Utah opted not to factor in the new CAMx modeling analysis into a revised “weight of evidence” analysis, nor did EPA address any “weight of evidence” analysis in the Proposed Rule, it certainly could have. In the prior SIP, Utah evaluated the BART Alternative using the “weight of evidence” test found in the BART rules. *See* 40 C.F.R. § 51.308(2)(i)(E). Under this test, a state may use all available information and data that can inform a decision while also “recognizing the strengths and weaknesses of that information”. *Wildearth Guardians v. U.S. E.P.A.*, 770 F.3d 919, 935 (10th Cir. 2014). As explained above in Section 3 [of the comment letter], the CAMx modeling results demonstrate that the BART Alternative achieves “greater reasonable progress” than EPA’s FIP. Therefore, the “weight of evidence” analysis is not necessary to approve the proposed SIP. However, the “weight of evidence” analysis provides additional justification that EPA’s proposed approval is appropriate, and the visibility information from the CAMx modeling confirms and adds to the weight of evidence that supports adoption of the BART Alternative.

Response: We agree with the commenter that the CAMx modeling results demonstrate (via the two-prong test under 51.308(e)(3)) that the BART Alternative achieves greater reasonable progress than the BART Benchmark and that the weight-of-evidence analysis is not necessary.

Comment: [PacifiCorp, pp. 13-14] *The BART Alternative Provides Early and Ongoing Emissions Reductions*

The emissions reductions resulting from the BART Alternative began in 2007 and continue today, while no reductions have occurred from the EPA's FIP BART requirements because they have not yet been installed. In EPA's FIP, it acknowledged that the "*reductions under the Utah BART Alternative [were] required under the State SIP by August 2015 . . . providing an early and on-going visibility benefit as compared to BART.*" See 81 FR at 2018, 2024, and 2030 (*emphasis added*). EPA went on: "*Also notable is that combustion control upgrades at the Hunter and Huntington facilities have been achieving significant NO_x reductions since the time of their installation between 2006 and 2014.*" *Id.* at 2030 (*emphasis added*). The BART Alternative already has resulted in hundreds of thousands of tons of combined emissions reductions beginning in 2007 and continuing today. This information should be given considerable weight because of the significant visibility benefits these early emissions reductions create.

Response: We agree that the emission reductions from the Utah NO_x BART Alternative have already achieved significant emission reductions. However, we disagree that this information should be given significant weight because it is not relevant to whether the two-prong test under 40 CFR 51.308(e)(3)(i) and (ii), as utilized by Utah to show greater reasonable progress, is met.

Comment: [Gebhart Report, p. 18] *Wintertime Park Visitation*

In the Utah staff review of the proposed SIP amendments (Reference 8 [omitted]), a graph is presented showing the seasonal variability of nitrate levels at Canyonlands National Park (See Reference 8 [omitted], Figure 4). Overlaid on this chart is a depiction of park visitation, showing higher visitation during the summer and less visitation during the winter. Nitrate concentrations are also generally higher during the winter. While the presentation is factual, the implication of this figure is that Utah considers the visitor experience at Canyonlands during the winter months to be less important, and as such, NO_x emissions controls to reduce nitrate levels during the winter are viewed by Utah as unimportant and/or unnecessary.

It is totally inappropriate for Utah to devalue the visitor experience based on time of year, just because the park experiences fewer wintertime visitors. Wintertime visitors to Canyonlands (and other National Parks/Class I areas in Utah and elsewhere) are just as entitled as others to an opportunity to experience the natural wonders of the park, which includes an experience free of haze and other man-made impairments to visibility. In particular, visitors may be at Canyonlands and other Utah parks specifically during the winter months in part to experience the relative solitude of their wilderness experience made possible by fewer park visitors.

Devaluing wintertime park visitation as has been done Reference 8 [omitted] is inappropriate and simply represents bad public policy.

Response: We agree that it is inappropriate to devalue park visitor experiences based on the time of year. However, the EPA is not relying on the visitation data provided by Utah in our approval of their NO_x BART Alternative. Instead, we are relying on the two-prong modeling test described at 40 CFR 51.308(e)(3)(i) and (ii).

Comment: [Gebhart Report, pp. 19-22] *Nitrate Levels are an Important Contributor to Regional Haze in Utah's Parks*

Overall, the proposed Utah Regional Haze SIP amendments devalue improvements in NO_x controls at Hunter and Huntington as an effective tool to improve visibility. Utah needs to realize that choosing between SO₂ and NO_x controls is not good public policy. Control of both SO₂ and NO_x precursor emissions will be needed to reach the given the end goal of the regional haze program, which is to eliminate human-made impairments to visibility.

Utah's choice is particularly troubling given that the primary emissions reductions claimed through the proposed SIP amendments are artificial, e.g., permanent closure of the PacifiCorp Carbon Plant. The proposed SIP amendments are in reality just a paper study that will not produce the implied visibility benefits in the real-world. The PacifiCorp Carbon Plant is already closed and there are no future plans to reopen the plant. Even if Carbon were to reopen, a significant capital investment to meet the MATS standard would be required, which would translate to substantial SO₂ emissions reductions. The Carbon emissions reductions which are listed in the proposed SIP amendments have already occurred, and in reality, these reductions are already permanent, whether or not they become legally enforceable under the Regional Haze SIP.

The proposed SIP amendments would eliminate future use of selective catalytic reduction (SCR) for NO_x emissions control at Hunter and Huntington, and as such would serve to eliminate the visibility benefits that would otherwise occur from these emission controls. In real-world terms, there is no significant reduction in actual SO₂ emissions that would offset the increased Hunter/Huntington NO_x emissions. The improved visibility as claimed in the proposed Regional Haze SIP amendments will not translate into real-world visibility improvements. The proposed Utah Regional Haze SIP amendments will in fact set back the goal of improving visibility.

The importance of nitrate reductions toward visibility improvements at Utah's national Parks is illustrated by the current IMPROVE monitoring data. Figures 1a through 1d are the current visibility trends thorough 2017 at Utah's IMPROVE monitoring site. These data were downloaded from the IMPROVE website (vista.cira.colostate.edu/Improve) and depict the "most-impaired days", which based on the January 2017 amendments to the Federal Regional Haze regulations (Reference 9 [omitted]) is the currently applicable visibility metric. The "most-impaired days" looks at the IMPROVE visibility data and removes natural causes of visibility impairment such as fire. This metric is significantly different from looking at worst-case visibility days which are often impaired by secondary organic aerosols (SOA) due to wildfires. In cases where fire and other natural causes of visibility impairment dominate the worst-case visibility days, the contribution from anthropogenic sources is masked. The current "most-impaired days" metric required under the regional haze regulations addresses this issue and

returns the planning to assessing and reducing human-made causes of visibility impairment. The IMPROVE website contains additional details on how the IMPROVE data are evaluated to derive the “most-impaired days”. Utah should have used the “20% most-impaired” days and not the “20% worst days” when evaluating the differences between the EPA FIP and proposed Utah SIP using CAMx.

In these charts (Figures 1a through 1d), the nitrate extinction is depicted by the red color in the bar graphs and is second from the bottom in the stack. When reviewing these charts, what is most telling is that when the overall extinction in any year spikes up above the trend line, the nitrate contribution in that year is also high compared to other years. This effect is visible at Canyonlands (2010 and 2013), Capitol Reef (2010 and 2013), and Bryce Canyon (2007). In each of these periods, the increase in nitrate extinction is significant and is the primary cause of the elevated extinction in that year compared to other years. In another words, the “worst-of-the worst” anthropogenic visibility degradation at Utah’s parks occur when there is a significant nitrate concentration that impairs visibility. Because the predominant issue facing visibility in Utah’s Class I areas going forward will be impairment from nitrates, the technical problems with the Utah Regional Haze SIP CAMx modeling noted elsewhere in this report become even more compelling.

Additional studies on the nitrate contribution to visibility impairment in Utah’s national parks have been conducted by the National Park Service (NPS). The NPS information is documented in comments provided by NPS as part of EPA’s action to partially approve Utah’s Regional Haze SIP in 2016 (Reference 10 [omitted]). NPS conducted back-trajectory analyses for elevated nitrate days at Canyonlands/Arches National Parks to determine the likely source regions for NO_x emissions. A back-trajectory analysis determines the backwards path of air parcels arriving at a given location at a given time and as such, helps define likely source regions for emissions contributing to visibility impairment. The NPS analyses demonstrated that back-trajectories passed through the geographic areas near the Hunter and Huntington Plants, indicating that NO_x emissions from Hunter and Huntington likely reached Canyonlands/Arches and would have been contributors to the elevated nitrate levels measured at these parks.

The above data demonstrate that NO_x emissions and the resulting nitrate levels are important contributors to existing visibility impairment at Utah’s National Parks. It is a mistake to abandon improved emissions controls at NO_x emission sources that contribute to nitrate levels at Utah’s parks. Utah’s Regional Haze emissions control strategy needs to address large NO_x emission sources such as PacifiCorp’s Hunter and Huntington Plants. Abandoning NO_x emission controls, as proposed in the Utah Regional Haze SIP amendments, only sets back the goal of improving visibility in Utah’s parks. Visibility improvements only occur by targeting emission reductions for all precursor pollutants and not just SO₂.

Figure 1a – IMPROVE Light Extinction Measurements (Canyonlands)

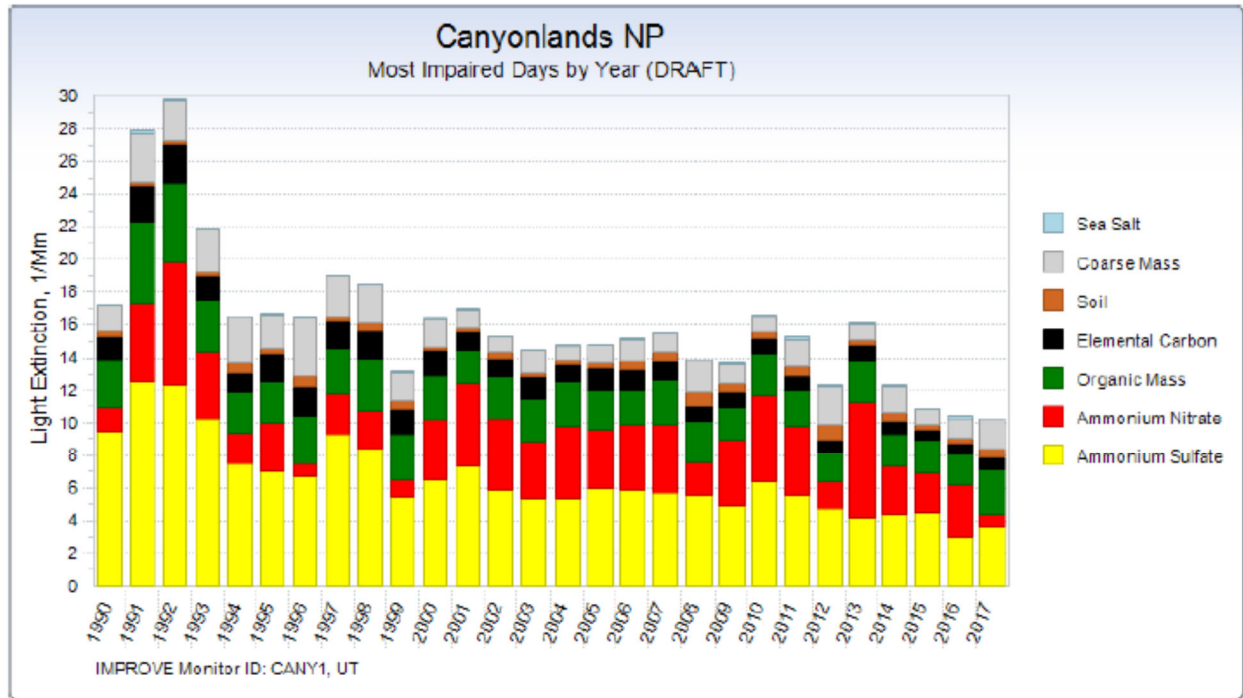


Figure 1b – IMPROVE Light Extinction Measurements (Capitol Reef)

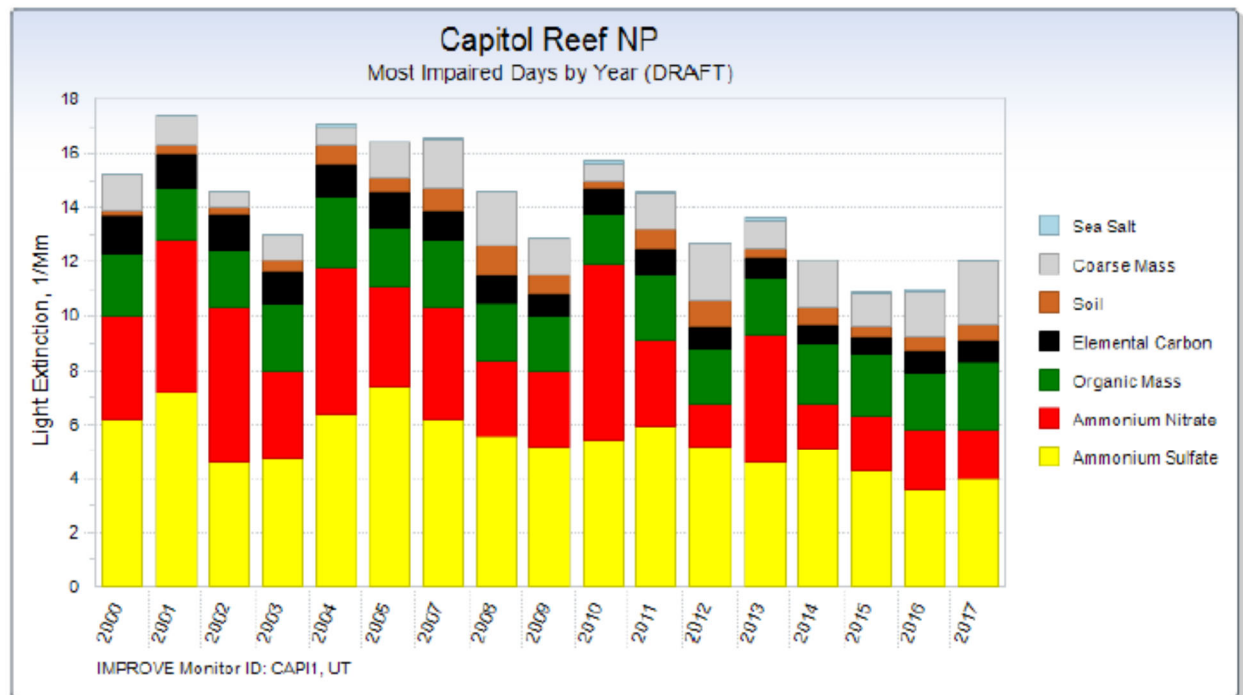


Figure 1c – IMPROVE Light Extinction Measurements (Bryce Canyon)

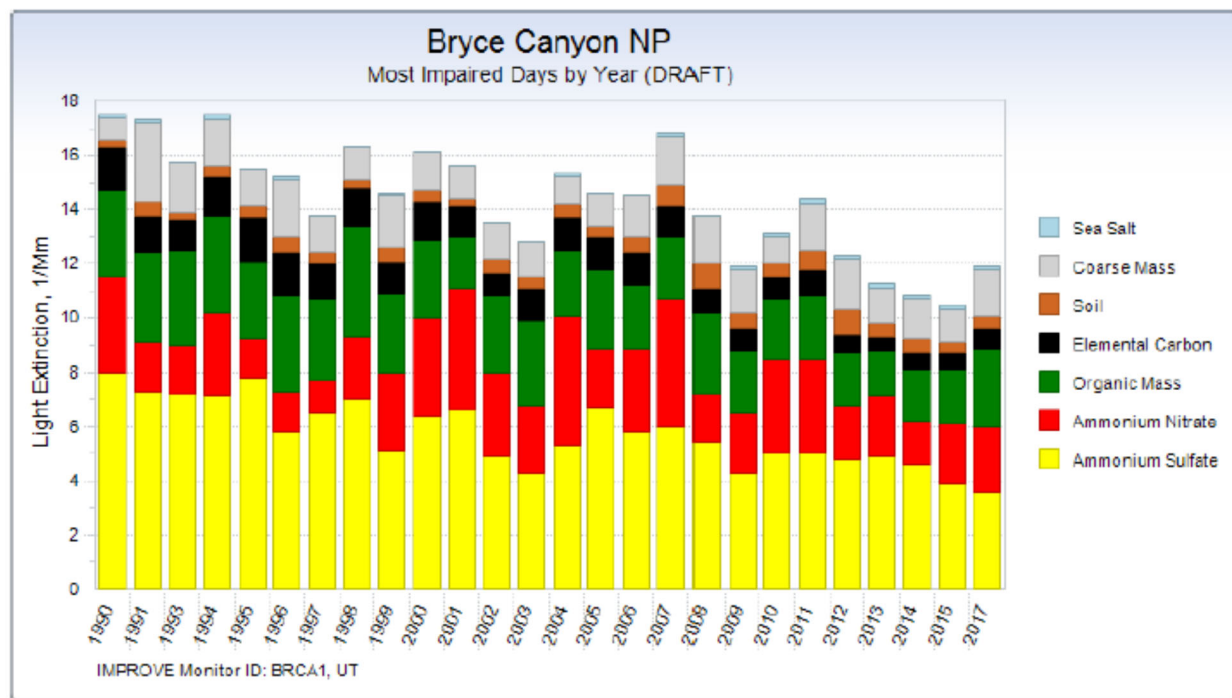
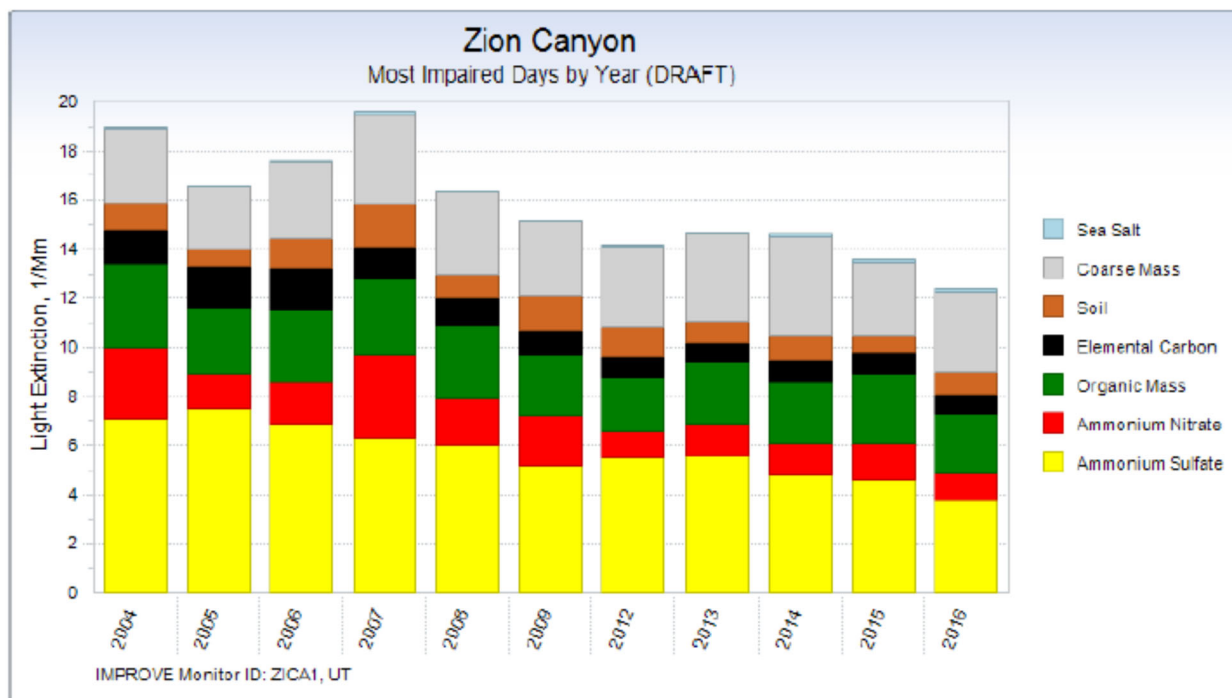


Figure 1d – IMPROVE Light Extinction Measurements (Zion)



Response: We disagree with this comment. We explain elsewhere in this RTC document and preambles to the proposed and final rules why the modeling protocol was reasonable and appropriate for this action, including that the model analyzes the best and worst 20% of days consistent with the BART-alternative provisions of the Regional Haze Rule. Additionally, the commenter has not provided evidence to support a conclusion that use of the most impaired days would have changed the outcome of the two-prong test used to assess whether the Utah NO_x BART Alternative achieves greater reasonable progress.

Regarding the importance of NO_x reductions relative to SO₂ reductions in addressing visibility impairment, we do not dispute that NO_x reductions may yield meaningful visibility improvements. Yet, the IMPROVE data provided by the commenter for the most impaired days shows that sulfate is almost always a larger contributor to visibility impairment at the Class I areas in question. Utah has successfully demonstrated that substituting SO₂ reductions for NO_x reductions under the Utah NO_x BART Alternative achieves greater reasonable progress in accordance with 40 CFR 51.308(e)(2) and (3).

Finally, we explain in the preamble to the final rule how the closure of the Carbon plant, MATS compliance, and the installation of combustion control upgrades on Hunter Unit 3 should be treated when comparing the BART Benchmark to Utah's NO_x BART Alternative.

5. General

a. Opposition to Proposed Rule

Comment: [Cons Orgs, p. 1] On behalf of Heal Utah, National Parks Conservation Association, Sierra Club, Utah Physicians for a Healthy Environment, and Natural Resources Defense Council (collectively referred to herein as the "Conservation Organizations"), we respectfully submit these comments on EPA's above-referenced [in the comment letter] proposed rule which would eliminate the air quality protections for regional haze contained in EPA's own previously promulgated federal implementation plan ("FIP") for Utah's largest stationary air pollution sources—Hunter Units 1 and 2 and Huntington Units 1 and 2. The Conservation Organizations represent thousands of Utahans and hundreds of thousands of people throughout the nation that care deeply about protecting the air quality in our national parks and wilderness areas in Utah, the Four Corners region, the Colorado plateau and the Intermountain West. For the reasons stated [in the comment letter], the undersigned Conservation Organizations strongly oppose EPA's proposed rule.

Response: We acknowledge the Conservation Organizations' opposition to the proposed rule. In this RTC document and in the preamble to the final rule, we have responded to Conservation Organizations' comments.

Comment: [Cons Orgs, pp. 28-29] We respectfully urge EPA to reverse course in its efforts to abandon its regional haze FIP for Utah. Utah's SIP does not comply with the Clean Air Act or Regional Haze Rule requirements and would result in greater visibility impairment in Class I areas when compared to EPA's Utah Regional Haze FIP. As such, EPA may not lawfully substitute Utah's SIP for EPA's FIP, which properly requires NO_x emissions reductions

necessitated by the Clean Air Act and essential to restoring clear and healthful air to Utah and beyond.

Response: We acknowledge the Conservation Organizations' opposition to the proposed rule. In this RTC document and in the preamble to the final rule, we have responded to Conservation Organizations' comments.

Comment: [CHAG, p. 1] Members of Salt Lake City's Capitol Hill Action Group (CHAG) Environment Committee submit this public comment to register CHAG's strong opposition to the Utah July 2019 Regional Haze State Implementation Plan (SIP) now proposed for EPA approval, because it fails to require installation of the best pollution reduction controls on PacifiCorp's Hunter and Huntington coal-fired power plant units. Inasmuch as these energy generation units (EGUs) contribute to regional air quality degradation as well as climate change, with increasing costs to the public, they should be subjected to the most stringent pollution standards and controls until their expedited replacement by less costly, clean electricity generation and storage.

We urge the EPA to reject the July 2019 SIP revision because, among other flaws, it does not provide an acceptable alternative to best available retrofit technology (BART) controls for nitrogen oxides (NO_x) at the PacifiCorp Hunter and Huntington power plants. CHAG members believe that the Utah NO_x BART Alternative for Hunter and Huntington fails to provide greater reasonable progress toward natural visibility conditions than BART and is at odds with the requirements of the Clean Air Act and the EPA's Regional Haze Rule (RHR).

The Utah Department of Environmental Quality's Division of Air Quality (DAQ) SIP would allow PacifiCorp (acting as Rocky Mountain Power) to forgo installation of BART equipment to control emissions of NO_x and let PacifiCorp avoid use of selective catalytic reduction (SCR) equipment as the Environmental Protection Agency's (EPA) Federal Implementation Plan (FIP) does. DAQ's SIP lets PacifiCorp use a less effective "BART alternative" to the detriment of the environment and the public's best interests.

Response: We disagree with this comment. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). While we understand and appreciate the commenter's concerns with respect to climate change and public costs associated with this action, as stated elsewhere in this document, consideration of climate change is outside the scope of our action. Likewise, neither the CAA nor the Regional Haze Rule requires EPA to consider other types of alleged costs to the public when considering a BART alternative SIP submitted by a state that satisfies applicable requirements, *see* CAA section 110(k)(3). Finally, for the reasons detailed in the preambles to the proposed and final rules and elsewhere in this RTC document, we disagree with the commenter that this rulemaking is at odds with the requirements of the CAA and the EPA's Regional Haze Rule.

Comment: Mass form letter commenters expressed general opposition to the EPA's proposed approval of the state's regional haze implementation plan amendment. The commenters state that Utah's plan provides no reduction in pollution from the Hunter and Huntington coal plants while reports show that pollution reduction controls on these coal plants would result in some of the

most cost-effective and greatest haze reduction in the country. Unlike the partial FIP approved in 2016 which used the best available science to determine SCR would be both cost-effective and necessary to reduce tons of NO_x, the current SIP proposal is not based on science and flies in the face of 99% of the more than 30,000 public comments urging for greater pollution controls, according to the commenters. In summary, the commenters express that parks offer clean air and water as part of the wilderness experience and are a national treasure that deserve better than this plan.

Response: We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii).

Comment: We also received individual comments in the docket and at the public hearing expressing general opposition to the EPA's proposed approval of the state's regional haze implementation plan amendment. The commenters urge the EPA to: (1) reject the state plan allowing the Hunter and Huntington coal plants to emit unacceptable levels of haze-causing air pollution, and (2) require the Hunter and Huntington coal plants to install emission controls to eliminate or greatly reduce harmful emissions.

The commenters support the 2016 FIP as it provided a cost-effective way to reduce NO_x pollution and protect public health as well as clear view throughout the West where inversions and bad air quality are more and more common at places like Arches National Park. According to the commenters, the 2016 FIP made the right decision based on sound science to require SCR at these units after more than a decade of careful deliberation.

The commenters summarize that the Hunter and Huntington power plants should not be permitted to emit weakly regulated pollution in one of the last areas in the USA with clean air at the heart of nine sensitive Class I areas. The EPA should, according to the commenters, keep moving rapidly forward to clean up our air, reject the flawed state SIP, and reinstate the 2016 FIP so that current and future generations of Utahns can benefit from the tangible aesthetic, economic, and environmental benefits.

Response: We disagree with these comments to the extent they argue EPA must retain the 2016 BART FIP for Hunter and Huntington. We acknowledge the commenters' opposition to the proposed rule and thank those who attended and participated at our public hearing. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii).

b. Support for Proposed Rule

Comment: [PacifiCorp, p. 1] PacifiCorp is submitting these comments in support of the United States Environmental Protection Agency's ("EPA") proposed rule, entitled "Approval and Promulgation of Air Quality Implementation Plans; Utah; Regional Haze State and Federal Implementation Plans," published at 85 Fed. Reg. 3558 (Jan. 22, 2020) ("Proposed Rule"). As the owner and operator of Huntington Units 1 and 2 and Hunter Unit 3, and the majority owner

and operator of Hunter Units 1 & 2, PacifiCorp will be directly impacted by EPA's actions regarding the Proposed Rule, as will PacifiCorp's customers.

As EPA has noted, the Best Available Retrofit Technology ("BART") Alternative ("BART Alternative") addressed in the Proposed Rule demonstrates an overall visibility improvement at all affected Class I areas when compared to previous BART determinations. This EPA finding in the Proposed Rule is supported by new dispersion modeling, and EPA reached its decision to approve the BART Alternative by applying the two-prong test prescribed by the Regional Haze Rule under 40 CFR 51.308(e)(3). PacifiCorp supports the EPA's basis and reasoning for the Proposed Rule, and strongly encourages a final decision to adopt it.

Response: We acknowledge PacifiCorp's support for the proposed rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [PacifiCorp, p. 17] For all the reasons stated above [in the comment letter], EPA should finalize and adopt the Proposed Rule.

Response: We acknowledge PacifiCorp's support for the proposed rule. In this RTC document and in the final rule, we have responded to PacifiCorp's comments.

Comment: [Edison Electric Institute, p. 5] The Proposed Approval Of Utah's Plan Is Consistent With The Clean Air Act And The Regional Haze Rule And Should Be Finalized.

EPA's administration of the Regional Haze Program, as well as the history of this proposed action, is a long and winding road. Ultimately, however, in this action what EPA must assess is whether the State's proposed Best Available Retrofit Technology (BART) alternative achieves "greater *reasonable* progress"—that is, whether it achieves greater progress than EPA's preferred BART based upon a consideration of *all* the statutory BART factors. Since Utah's submission results in both greater emission reductions *and* improved modeled visibility impacts at lower cost than EPA's previously proffered BART, the Agency appropriately proposes to approve Utah's BART alternative, and EPA should finalize the proposed approval expeditiously. Finalizing the proposed rule would provide Rocky Mountain Power with regulatory certainty for units that have satisfied the State's more environmentally protective BART alternative.

Response: We acknowledge the Edison Electric Institute's support for the proposed rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Docket ID -0252] I am a resident of Carbon County and I appreciate the opportunity to comment on this issue. I am in support of approving the State implementation plan.

I also would like to thank you for listening in 2016 to the concerns of the those commenting on the Federal Implementation Plan (FIP) and for taking the time to look into a more practical

solution. The States plan makes more sense for the residence of Utah as a whole and this new plan will allow these clean and efficient plants to continue to operate. This is important because Hunter and Huntington power stations provide critical electricity to the residents of Utah and without them the current renewable industry could not sustain the grid. These two plants are relied on to ramp up during peak hours and sustain base load during off hours. The only reason residents in this state have a consistent available supply is because coal can burn hot enough and adapt do the changing power demands. Renewables and natural gas cannot adapt during peak and off-peak hours as these plants do. These two plants are at the top of the list as the buffers for a less reliable grid. These 2 plants make up approximately 25% of Utahs Total MW capacity and coal in total makes up over 50% of the total capacity in this state. Because of their reliability, they support the less consistent sources. Without these two plants and relying solely on Utahs current renewable and natural gas grid we would see rolling brownouts that would have large impacts on the state. These two plants are able to ramp up and down to maintain the critical base load of power demand because they are fed by clean coal that is produced locally and blended to spec. Not only are they able to adapt and meet load demand, but spec coal, available in Utah, allows them to burn clean.

The SIP is an excellent recommendation for the state because it allows these plants to operate under these conditions and still closely regulate and monitor the haze causing pollutants from these point sources. This helps Utah take advantage of the resources it has and maintains well-paying jobs. If you look at these point sources as the Utah division of air quality has done a good job doing, mobile sources are a far larger contributor to the haze causing pollutants. That is why areas in central Utah have beautiful views without haze. Anyone can look up on the DAQ website at the air quality forecast and see that Carbon County is typically in the good status according to the index compared to other counties that are typically in the moderate or worse categories. The only days this county has bad air is due to forest fires not point sources that help Utah have access to affordable electricity.

Again, I agree with the State Implementation plan and I appreciate your willingness to listen and come to a reasonable compromise to recognize PacifiCorps closing of the Carbon plant and additional reporting as good progression. This will allow the state time to take advantage of the available resources as we diversify our grid. A healthy economy and way of life is fueled by a diverse energy grid that relies on a strong base of coal.

Response: We acknowledge the commenter's support of the proposed rule. However, the ability for current renewable industries to sustain power demand is beyond the scope of this action. Likewise, and as stated elsewhere in this RTC document, the Regional Haze Rule does not require states or the EPA to consider potential job impacts in determining whether to approve a state's BART alternative. With respect to forest fires and mobile sources, we agree that both of these types of sources can impact visibility. However, in this action, we are implementing Congress's direction that the EPA address on-going emissions from stationary sources determined to be subject to BART to remedy the existing impairment of visibility in Class I areas. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Docket ID -0321] Thank you for taking the time to read the comments of the local public regarding the previously proposed regional haze regulations. Thank you for researching and seeing the facts that the Huntington and Hunter power plants do not contribute to any regional haze, for being reasonable, and understanding that the power plants and energy producers in Carbon and Emery Counties already comply fully and completely with all pollution reducing policies needed to keep our environment healthy. Thank you also for providing a hearing session in Carbon and Emery Counties, the communities that these potentially harmful and economy destroying policies so directly effect. Our skies in Carbon and Emery counties are clear, blue, and refreshing. The haze that so many people from the Salt Lake area are upset with are caused by their own vehicles and the geology of the valley that they sit in, not from the energy producers of Southeastern Utah.

Response: We acknowledge the commenter's support of the proposed rule. While the commenter describes clear, blue, and refreshing skies, our record data supports a finding that regional haze impacts many counties, including Carbon County. Furthermore, haze that may be caused by motor vehicle emissions fall outside the scope of this action and are generally regulated under other provisions in the CAA and are therefore not a part of the State's regional haze SIP submittal. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: Many comments, received both at the public hearing and through the docket, expressed general support for the EPA's proposed approval of the state implementation plan and withdrawal of the EPA's 2016 FIP. The state's plan, according to commenters, achieves visibility improvement in the most prudent and cost-effective manner without requiring extensive emission control upgrades and will allow all stakeholders to "close the book" on the first regional haze planning period to allow focus to shift to the next steps on the glide path towards clearer air and protections of the natural wonders of Utah.

Response: We acknowledge and appreciate commenters' support for this action and thank those who attended and participated at our public hearing. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

c. Economics and Employment

Comment: [Cons Orgs, p. 7] Finally, requiring antiquated facilities to install pollution control technologies is a job-creating mechanism in itself. Each installation creates short-term construction jobs as well as permanent operations and management positions.[fn omitted] All of these environmental, public health, and economic impacts are important co-benefits resulting from the reduction of visibility impairment in national parks and wilderness areas that are affected by Utah sources of air pollution.

Response: We acknowledge that requiring the installation of emission control technologies may have positive economic impacts, as described by the Conservation Organizations. However, we have not taken potential economic benefits into account in this action approving a SIP, nor are we required to. Neither the CAA nor the Regional Haze Rule require us to consider the potential jobs created (or jobs lost) in acting on a state's BART alternative SIP submittal. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Edison Electric Institute, cover letter] The Edison Electric Institute (EEI) appreciates the opportunity to submit these comments to the U.S. Environmental Protection Agency (EPA) on the proposed rule *Approval and Promulgation of Air Quality Implementation Plans; Utah; Regional Haze State and Federal Plans*. 85 Fed. Reg. 3558 (Jan. 22, 2020) (Proposed Utah Approval). EEI is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than seven million jobs in communities across the United States.

The electric power industry is in the middle of a profound, long-term transformation in how electricity is generated, transmitted, and used. This transformation is being driven by a wide range of factors, including: low and declining costs for natural gas and renewable energy resources, technological improvements, changing customer expectations, federal and state regulations and policies, and the increasing use of distributed energy resources.

As a result, the mix of resources used to generate electricity has changed dramatically over the last decade and is increasingly clean. Since 1990, EEI member companies have significantly reduced emissions that can impact visibility: sulfur dioxide (SO₂) and nitrogen oxides (NO_x) have been reduced by approximately 90 percent. Since the Regional Haze Program will be gradually implemented over the next 45 years, EEI also is interested in consistent application of the law and associated regulations as the Program moves forward.

The Proposed Utah Approval should be finalized expeditiously to provide EEI member Rocky Mountain Power with regulatory certainty as it continues to implement Utah's regional haze program now and in future years. EPA's proposed approval of Utah's submission is appropriate because it provides for greater reasonable progress toward meeting regional haze goals with both considerably lower costs *and* equivalent or greater emission reductions and visibility improvements than EPA's previous federal plan.

Response: We acknowledge the Edison Electric Institute's support for the proposed rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Edison Electric Institute, pp. 1-2] The Edison Electric Institute (EEI) appreciates this opportunity to submit comments to the U.S. Environmental Protection Agency (EPA or Agency) on the proposed rule *Approval and Promulgation of Air Quality Implementation Plans*;

Utah; Regional Haze State and Federal Implementation Plans. 85 *Fed. Reg.* 3558 (Jan. 22, 2020) (Proposed Rule or Proposed Utah Approval). The Proposed Utah Approval should be finalized expeditiously to provide Rocky Mountain Power with regulatory certainty as it continues to implement Utah's regional haze program now and in future years. EPA's proposed approval of Utah's submission is appropriate because it provides for greater reasonable progress toward meeting regional haze goals with both considerably lower costs *and* equivalent or greater emission reductions and visibility improvements than EPA's previous federal plan.

EEI is the association that represents all U.S. investor-owned electric companies, including Rocky Mountain Power. Our members provide electricity for more than 220 million Americans and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than seven million jobs in communities across the United States. EEI member companies invest more than \$110 billion annually to make the energy grid smarter, cleaner, more dynamic, more flexible, and more secure in order to provide affordable and reliable electricity to customers. [fn omitted]

Since 1990, EEI member companies have significantly reduced emissions that can impact visibility: sulfur dioxide (SO₂) and nitrogen oxides (NO_x) have been reduced by approximately 90 percent, as discussed *infra*. Since the Regional Haze Program will be gradually implemented over the next 45 years, [fn omitted] EEI also is interested in consistent application of the law and associated regulations as it moves forward.

Response: We acknowledge the Edison Electric Institute's support for the proposed rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [CHAG, p. 2-3] PacifiCorp's Hunter and Huntington EGUs are much more expensive to the general public than is reflected in current utility rates and would still be so even if rates were adjusted upward for the installation and maintenance of BART equipment. We are aware that utility rates in Utah fail to take account of significant environmental, health, and other societal and economic costs. These costs continue to be shifted from utilities to the public for payment in medical bills, lost wages, and delayed transition to a clean energy economy. As such, this represents yet another subsidy to the fossil fuel industry.

For insights into historic and ongoing fossil fuel subsidies, our references include the 2019 Environmental and Energy Study Institute's "Fact Sheet: Fossil Fuel Subsidies: A Closer Look at Tax Breaks and Societal Costs" at <https://www.eesi.org/papers/view/fact-sheet-fossil-fuelsubsidies-a-closer-look-at-tax-breaks-and-societal-costs>

Response: We are bound to evaluate the state's regional haze SIP based on the CAA and the Regional Haze Rule and have based our action solely on these requirements. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii).

Comment: [CHAG, p. 3] Our point is that, by comparison, money spent now reducing power plant emissions through BART acquisition is a relative pittance compared to the costs we and our children will face if we do not halt the inequitable and unsustainable system that continues to prop up fossil fuel profiteers like PacifiCorp and Utah companies such as Wolverine Fuels that feed Rocky Mountain Power coal EGUs.

Response: We are bound to evaluate the state's regional haze SIP based on the CAA and the Regional Haze Rule and have based our action solely on these requirements. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii).

Comment: [Docket ID -0523] The commenter supports the EPA's proposal to withdraw the 2016 FIP that would have, according to the commenter, required expensive and extensive control upgrades to the Hunter and Huntington power plants. Specifically, the commenter states that these upgrades would have potentially limited the life of these low cost electrical generation plants, and the revised SIP achieves similar reductions in a more economic and practical manner than was to be required by the FIP. Furthermore, according to the commenter, the revised SIP will result in the Hunter and Huntington Power Plants to continue to provide electricity to the state's residents at relatively low cost helping to fuel the vibrant economy Utah currently enjoys. Acceptance of the revised SIP, states the commenter, will ultimately help to support the high paying jobs associated with the power plants and area coal mines, which are filled in large part, by residents of Carbon, Emery, Sanpete, and Sevier counties.

The commenter also states that Wolverine Fuels Mines currently supplies the majority of the coal burned at these power plants and approval of the SIP will help the mines stay economically viable with a workforce of approximately 900 persons in the central Utah area. The employees and their families are significant contributors to the local economies as coal mined and supplied to the power plants results in annual royalties and taxes paid to the state and federal government to the tune of many tens of millions of dollars. The total economic impact the mines have on the local economy and state economy is more than \$300 million/ year, according to the commenter.

Response: We appreciate and acknowledge the commenter's support for this action. As stated elsewhere in this document, neither the CAA nor the Regional Haze Rule requires the EPA to consider ratepayer impacts or potential job impacts in evaluating a state's BART alternative SIP. We take no position on the remainder of the comment.

Comment: In support of the state's implementation plan, several commenters at the public hearing discussed the importance of local energy jobs to the community. Wolverine Fuels, which supply the Hunter and Huntington power plants with the majority of their fuels, employs over 900 employees and has an annual economic impact of over \$300 million in the local communities where they work. Specifically, the commenters favor the state implementation plan because it would: (1) help protect the jobs at Wolverine Fuels, (2) add revenue to the local tax base to keep taxes low, (3) prevent expensive retrofit emission control installations that could potentially limit the lifespan of these low-cost electrical generation plants, (4) result in substantially lower costs to PacifiCorp and Rocky Mountain Power customers compared to the

federal plan while allowing Rocky Mountain Power to continue to provide reliable service to these customers, and (5) achieve better visibility results at a fraction of the overall cost. In summary, according to the commenters, there would be a devastating impact to the local economy if the Hunter and Huntington power plants were jeopardized.

Response: First, we thank those who attended and participated at our public hearing in support of our proposed action. We appreciate and acknowledge the commenter's support for this action. Neither the CAA nor the Regional Haze Rule requires the EPA to consider the affordability of controls, ratepayer impacts, or potential job losses in evaluating a state's BART alternative SIP. We take no position on the remainder of the comment.

Comment: [Transcript, pp. 53-56] One commenter in support of the state implementation plan claims that the state's plan will allow the power plants to continue to operate and provide critical electricity to the residents of Utah. According to the commenter, current renewable industries could not sustain the grid as the two Hunter and Huntington power plants are relied on to ramp up during peak hours and sustain base load during off hours. Furthermore, the commenter states that the consistent and available supply of coal can easily adapt to changing power demands thereby allowing these power plants to support less consistent sources and prevent rolling brownouts.

Response: We thank those who attended and participated at the public hearing. However, the ability for current renewable industries to sustain power demand is beyond the scope of this action. We take no position on the remainder of this comment.

a. Tourism and Visitation

Comment: [Cons Orgs, p. 2] EPA's proposal to approve Utah's plan to allow ongoing, unacceptable levels of nitrogen oxide ("NO_x") pollution from four units at the Hunter and Huntington coal plants should be rejected because it would unlawfully reverse EPA's longstanding position that NO_x emissions reductions from these large pollution sources are necessary to comply with the Clean Air Act's regional haze provisions. PacifiCorp's Hunter and Huntington coal plants are responsible for haze pollution in all of Utah's iconic national parks, including Arches, Canyonlands, Zion and Capitol Reef, as well as numerous national parks and wilderness areas beyond Utah's borders. As EPA previously recognized, "[a]ddressing visibility impairment [caused by Hunter and Huntington] is critical not only to the experience of visitors to these parks, but also to the economic well-being of the local communities near the parks and state-wide." [fn omitted]

Response: With respect to the commenters' remarks on the impact of our action on tourism in the parks and the economic well-being of local communities near the parks, the EPA is not obligated to take these types of economic benefits into account in evaluating a state's BART alternative SIP. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

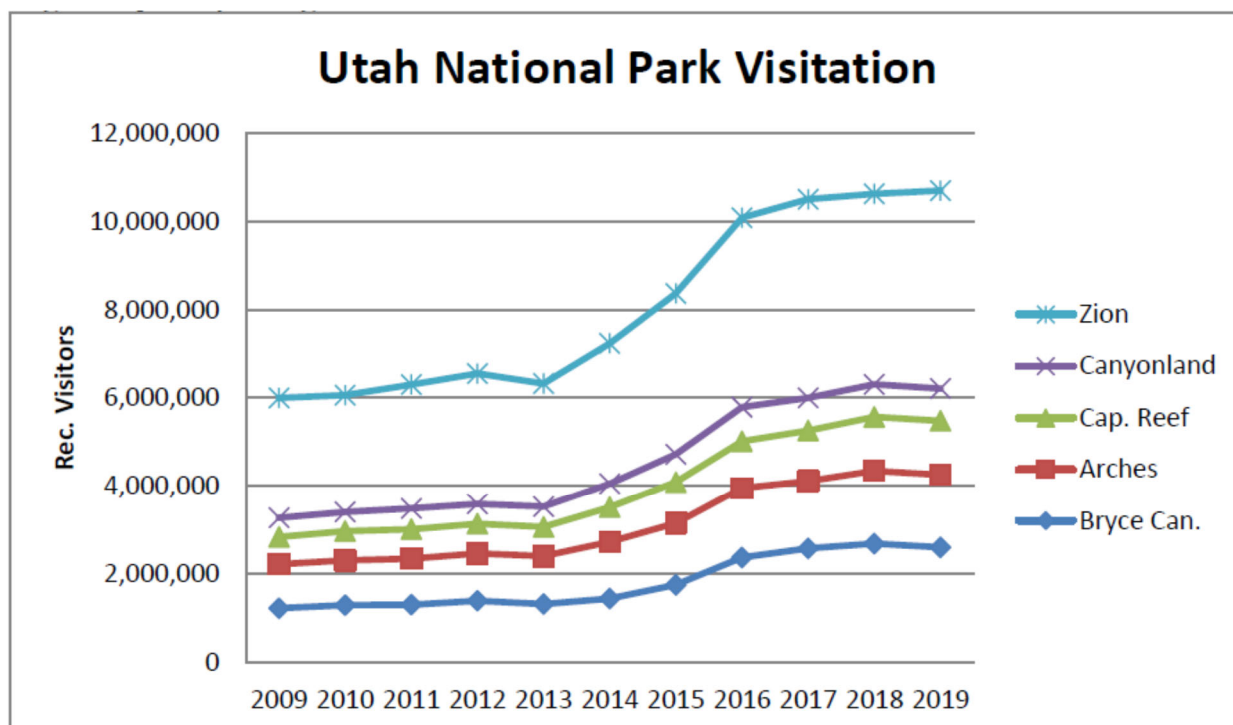
Comment: [Cons Orgs, pp. 6-7] Rigorously addressing visibility and, more specifically, visibility-impairing pollutants, would allow Utah and its businesses to reap significant benefits and avoid serious consequences. Across the country, national parks and wilderness areas are of great natural and cultural value and are also engines for sustainable local capital. In 2019, National Park Service units received over 327.5 million visits, an increase of 2.9 percent over 2018 visitation. [fn omitted] In 2018 visitation to national parks supported \$40.1 billion benefit to the nation's economy and over 329,000 jobs. [fn omitted] These public lands attract businesses and individuals to the local area, resulting in economic growth in areas near parks that is an average of 1 percent per year greater than statewide rates over the past three decades. [fn omitted] National parks generate more than four dollars in value to the public for every tax dollar invested. [fn omitted] This tourism is a critical component of the economy of Utah. For example, in 2018 Zion National Park generated over 4.3 million recreational visits, in excess of \$246,000,000 in local spending, and more than 4,130 jobs. [fn omitted]

While the visibility in national parks across the country has improved over the decades with the implementation of the Clean Air Act, in western national parks, air pollution still compromises between 50-105 miles of visual range. [fn omitted] Studies have shown visitors value clean air in national parks, are able to tell when it is hazy, and enjoy their visit less when haze is bad. Moreover, visitors alter their length of stay based when the air quality is poor. [fn omitted] Shorter park visits, or none at all, means less time and money spent in gateway communities. [fn omitted] A study by Abt Associates found that eliminating haze in national parks from power plants alone would result in \$5.62 billion in increased tourism dollars nationally. [fn omitted]

Response: We agree that while the purpose of this action is to reduce regional haze, improvements in air quality in national parks and wilderness areas can have other ancillary benefits, including supporting the state's outdoor recreation industry and its jobs. However, as discussed previously, the EPA is not obligated to take these types of benefits into account in evaluating a state's BART alternative SIP. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [PacifiCorp, pp. 14-15] Visitation and Use of Utah's National Parks are Increasing.

At the public hearing in Price, Utah, on February 12, 2020, critics of the Proposed Rule suggested that air quality in the affected Class I areas is declining and that this declining air quality was negatively impacting visitation at Utah's Class I areas. Both claims are incorrect.



The chart above, which contains visitor data from the National Park Service website, shows a significant increase in visitation at Utah’s National Parks over the last 10 years. [fn omitted] Any claims that air quality issues are chasing away visitors from Utah’s national parks is obviously incorrect. In fact, increased visitation has its own environmental challenges. [fn omitted] As one spokesperson for Zions National Park stated in an article a few years ago, “In the last few years, this huge uptick in visitation has overwhelmed our infrastructure facilities, our trails, our backcountry, it goes on and on.” [fn omitted] When evaluating the Proposed Rule, EPA should be suspicious of any claim of declining interest or visitation to Utah’s national parks in light of evidence to the contrary.

Response: While the BART Guidelines do mention visitation as something that can inform a control decision,³⁵ the BART Alternative submitted to the EPA by the State of Utah did not include visitation statistics in their analysis and we therefore did not consider it. Furthermore, the regional haze provisions of the CAA declare a national goal of remedying all manmade visibility impairment in all Class I areas which includes both heavily-visited national parks and seldom-visited wilderness areas. We take no position on the remainder of this comment.

Comment: [CHAG, p. 3] Additionally, CHAG is concerned that pollution and regional haze associated with the Hunter and Huntington EGUs has specific negative impacts on the

³⁵ 70 FR 39104, 39130 (July 6, 2005) (“Other ways that visibility improvement may be assessed to inform the control decisions would be to examine distributions of the daily impacts, determine if the time of year is important (*e.g.* high impacts are occurring during tourist season), consideration of the cost-effectiveness of visibility improvements (*i.e.* the cost per change in deciview), using the measures of deciview improvement identified by the State, or simply compare the worst-case days for the pre- and post-control runs. States may develop other methods as well.”).

environmental quality and associated visitor experiences at Capitol Reef, Arches, and Canyonlands national parks. According to the National Parks Conservation Association, visitors to Utah's national parks spend \$1.2 billion per year, primarily in rural communities that need to transition from dependence on extractive industries such as those that feed Hunter and Huntington. The proposed SIP threatens Utah's economy.

Response: With respect to the commenter's remarks on the impact of our action on tourism in the parks and the economic well-being of rural communities near the parks, the EPA is not obligated to take these types of benefits into account in evaluating a state's BART alternative SIP. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: During the public hearing, several commenters expressed concerns about tourism in Utah's Class I areas. Similar concerns were expressed in the mass form letters submitted to the docket by NPCA and Sierra Club members and supporters, as well as by citizens and anonymous commenters.

Reduced visibility and decreasing air quality is, according to commenters, negatively impacting Utah's national parks and local economies that depend on clean, healthy parks for tourism. People come from around the world to see our extraordinary landscapes with colorful views and rock formations painted red, pink, and yellow with dramatic distant backdrops and experience the increasingly rare dark night skies found on the Colorado plateau. According to commenters, visitors to Utah's national parks spend an estimated \$1.2 billion in gateway communities, mostly in rural Utah, and generate an estimated \$1.8 billion in economic output each year. Indeed, as people travel from across the world to visit Utah's vast vistas and minimally developed areas, commenters point to the long-term economic impacts of reduced visibility and decreasing air quality versus the short-term gains. Specifically, according to one commenter, a study shows that the number of visitors to our national parks is acutely related to how much pollution is in the air over those parks. A one part per billion increase in ozone decreased visitation anywhere from 1.5 to 4 percent thereby hurting the entire state economy.

Given the increasing and significant economic value of these parks and viewsheds, and Utah's promotion of the "Mighty Five Parks" tourism campaign, it is disingenuous and hypocritical for Utah to be pushing this regressive SIP revision according to commenters.

Response: We thank those who attended and participated at the public hearing and acknowledge the commenters' support for clean air at Utah's Class I areas as well as concerns regarding the impacts on tourism and the state's implementation plan. We agree that protecting visibility in national parks and wilderness areas may have a role in providing ancillary economic benefits, including supporting tourism throughout Utah. We disagree that the potential economic benefits stemming from such scenery should be specifically accounted for in our action (as we state elsewhere in this document, we cannot and have not considered tourism benefits in arriving at our decision). We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the

two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: Likewise, many commenters remarked, both in the public hearing and in letters submitted to the docket, on their own positive experiences camping and hiking in Utah’s Class I and that clean air is important for viewing and safely enjoying and appreciating these scenic places. Specifically, commenters state that the outdated coal plants [Hunter and Huntington] have muddied scenic views and obstructed clear night skies in Utah’s Arches, Canyonlands, Bryce Canyon, Capitol Reef, and Zion National Parks – as well as others in the Southwest such as Grand Canyon, Mesa Verde, and Black Canyon of the Gunnison. Commenters also shared personal experiences of haze obstructing vistas.

Response: We acknowledge the commenters’ experiences in our national parks and thank those who attended and participated at our public hearing. We take no position on the remainder of these comments.

Comment: [Transcript pp. 40-42] In expressing similar concerns about the impact of the proposed state implementation plan on tourism, a mountain bike tour company located near Utah’s Class I areas noted that their seasonal payroll supports about 40 people and comes largely from the “jaw-dropping” views that people travel all over the world to see. According to the commenter, the air pollution has become noticeably worse which may jeopardize their business that depends on clear vistas. The commenter urged the EPA to protect the scenic vistas for both the millions of visitors to Utah’s Class I areas as well as the livelihood of their tourism-based company and employees.

Response: We thank those who attended and participated at the public hearing and acknowledge the commenter’s support for clean air at Utah’s Class I areas as well as the commenter’s concerns regarding the impacts on tourism and the State’s implementation plan. As we state elsewhere in this document, the EPA is not obligated to take these types of benefits into account in evaluating a state’s BART alternative SIP. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: Several commenters at the public hearing remarked on the clean airshed and beautiful views in central Utah in contrast to other comments made at the public hearing about haze in the area. For example, Carbon County is typically in “good” status on the Utah Division of Air Quality air quality forecast website compared to other counties that are typically in moderate or worse categories, according to one commenter.

Response: The EPA disagrees with the commenters because the record data supports a finding that regional haze impacts many counties, including Carbon County. The EPA takes no position regarding the Utah Division of Air Quality air quality forecast in Carbon Country compared to other counties.

b. Public Health and Welfare

Comment: [Cons Orgs, pp. 5-6] Pollutants that cause visibility impairment also harm public health. Haze pollutants include NO_x, SO₂, PM, ammonia, and sulfuric acid. NO_x is a precursor to ground level ozone, which is associated with respiratory diseases, asthma attacks, and decreased lung function. In addition, NO_x reacts with ammonia, moisture, and other compounds to form particulates that can cause and worsen respiratory diseases, aggravate heart disease, and lead to premature death. [fn omitted]

EPA estimated that in 2015, full implementation of the Regional Haze Rule nationally will prevent 1,600 premature deaths, 2,200 non-fatal heart attacks, 960 hospital admissions, and over 1 million lost school and work days. [fn omitted] The Regional Haze Rule was projected to result in health benefits valued at \$8.4 to \$9.8 billion annually. [fn omitted] Emissions reductions from Utah's sources as required in the 2016 FIP would ease the impact of pollution related health problems and costs.

These same haze-causing emissions also harm terrestrial and aquatic plants and animals, soil health, and moving and stationary waterbodies—entire ecosystems—by contributing to acid rain, ozone formation, and nitrogen deposition. Ground-level ozone formation, for which haze pollutants are precursors, impacts plants and ecosystems by: “interfering with the ability of sensitive plants to produce and store food, making them more susceptible to diseases, insects, other pollutants, competition and harsh weather; damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, as well as vegetation in national parks and recreation areas; and reducing forest growth and crop yields, potentially impacting species diversity in ecosystems.” [fn omitted]

Response: We appreciate the commenters' concerns regarding the negative public health and ecosystem impacts of emissions from coal-fired power plants. We agree that nitrogen deposition and ground-level ozone formation can have negative impacts on ecosystems and public health, including on the Colorado Plateau. However, under the Regional Haze Rule, the EPA is not obligated to take these types of non-visibility related environmental concerns into account in evaluating a state's BART alternative SIP. Our analysis under CAA section 110(I) regarding other CAA requirements is discussed in the preamble to the final rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: Several commenters at the public hearing along with a mass form letter, raised concerns about the health implications of emissions from the Hunter and Huntington power plants. Citing the Clean Air Task Force, one commenter stated that toxic pollution from these power plants contributed to an estimated 18 premature deaths annually and that Carbon and Emery counties have the lowest life expectancy of any county in the state with a combined 74.7 years due, in part, from particulate matter and brown level ozone. Thus, the commenter summarizes that not only does pollution affect our aesthetic enjoyment of our national parks, it affects our health and can be passed on and impair the health and life expectancy of future generations even at surprisingly low levels.

Another commenter at the public hearing stated that ozone is a powerful oxidizing agent and has been proven to cause a decrease in lung function. Specifically, the commenter claims that just a three parts per billion increase in ozone exposure over ten years causes as much lung damage as smoking a pack of cigarettes a day for 29 years. Studies in other areas have found that installing SCR on coal-powered plants can reduce ozone concentrations throughout the region and downwind of the plants by five parts per billion. Thus, the commenter summarizes that the lack of SCR on these coal-fired power plants is currently costing the people who live in the area a loss of lung function over ten years equal to what they would have incurred had they smoked a full pack of cigarettes a day for 40 years.

Other commenters were concerned that the coal plants harmed their lungs and negatively impacted the health of their children and their grandparents as nitrogen oxide pollution adds to ozone and fine particulates in the air which is dangerous for children and people with asthma to breathe and harms ecosystems, including sensitive plant species, and even erode park scenery.

Response: We acknowledge the commenters' concerns regarding the effects of fine particulates and ozone exposure on human health. However, under the Regional Haze Rule, the EPA is not obligated to take these types of non-visibility related environmental concerns into account in evaluating a state's BART alternative SIP. Our analysis under CAA section 110(l) regarding other CAA requirements is discussed in the preamble to the final rule. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

c. Climate Change

Comment: [Transcript p. 11] A lot of the scientists coming up with the global warming issues, it's 50/50 on what side of the coin. You do need more substantial information that's one hundred percent positive. Yes, global warming is happening. But the latest information that I could see is through global warming and CO₂ process, that's 10,000 years from now to be substantial.

Response: The commenter did not provide enough information for us to adequately respond to this comment.

Comment: [CHAG, p. 2] We urge the EPA to join us in acknowledging the evidence-based research, conclusions, and warnings of climate scientists worldwide as reported through the U.N.'s Intergovernmental Panel on Climate Change and the U.S. Fourth National Climate Assessment that greenhouse gases like those issuing from PacifiCorp's fossil fuel power plants are changing earth's climate in ways that are harmful to all Americans now and will be increasingly so into the future.

Response: While we acknowledge the commenter's concerns with respect to climate change, consideration of climate change is outside the scope of our action. Carbon dioxide, an emission resulting from the generation of coal-based power, is a

greenhouse gas (GHG) pollutant but is not considered a visibility impairing pollutant. However, the EPA implements other regulations that address GHGs. We take no position on the remainder of this comment.

Comment: [CHAG, p. 3] CHAG members urge the EPA to reject the Utah SIP proposal presented under Docket ID No. EPA-R08-OAR-2015-0463-0225. We request that you, instead, require stronger fossil fuel EGU regulatory actions befitting the climate crisis we now face.

Response: As discussed previously, consideration of climate change is outside the scope of our action. We take no position on the remainder of this comment.

d. Reasonable Progress and Visibility Trends

Comment: [Cons Orgs, pp. 7-8] Emissions from Utah's coal plants are a large source of air pollution that impairs visibility at national parks both within Utah and beyond its borders. These include Utah's "mighty five" national parks (Arches National Park, Bryce Canyon National Park, Canyonlands National Park, Capitol Reef National Park, and Zion National Park), which were established to honor the contrasting scenic vistas of colorful rock canyons, arches, domes, hoodoos and spires against the clear blue skies. These Class I areas preserve the State's inspiring landscapes and rare geologic formations. Utah's significant emissions also impact numerous Class I areas in other states including, but not limited to: Craters of the Moon National Monument (Idaho); Black Canyon of the Gunnison National Park, Flat Topps Wilderness Area, Mesa Verde National Park (Colorado); Jarbridge Wilderness Area (Nevada); and, Grand Canyon National Park (Arizona). As EPA stated in opposing motions to stay its FIP, "[a]ddressing visibility impairment [from Hunter and Huntington] is critical not only to the experience of visitors to these parks, but also to the economic well-being of the local communities near the parks and state-wide." [fn omitted] The Regional Haze Rule establishes a target for achieving natural visibility conditions at all Class I areas by 2064, within 45 years. However, EPA has made clear through the 2017 Regional Haze Rule amendments and the 2019 Guidance that being on the 2064 glidepath is not a safe harbor, rather the regional haze program compels states to advance haze plans in each planning period that result in emission reductions to make reasonable progress towards the natural visibility goal. Instead of advancing requirements to make progress, EPA now proposes to reverse course, barring progress towards Utah's Class I areas achieving natural visibility conditions.

EPA and Utah must act to reduce NO_x emissions from the Hunter and Huntington plants to enable national parks and wilderness areas affected by their emissions to achieve reasonable progress towards Congress' stated visibility goal: to fulfill their respective duties to take all reasonable measures to adequately temper these source contributions to visibility impairment instead of abdicating obligations.

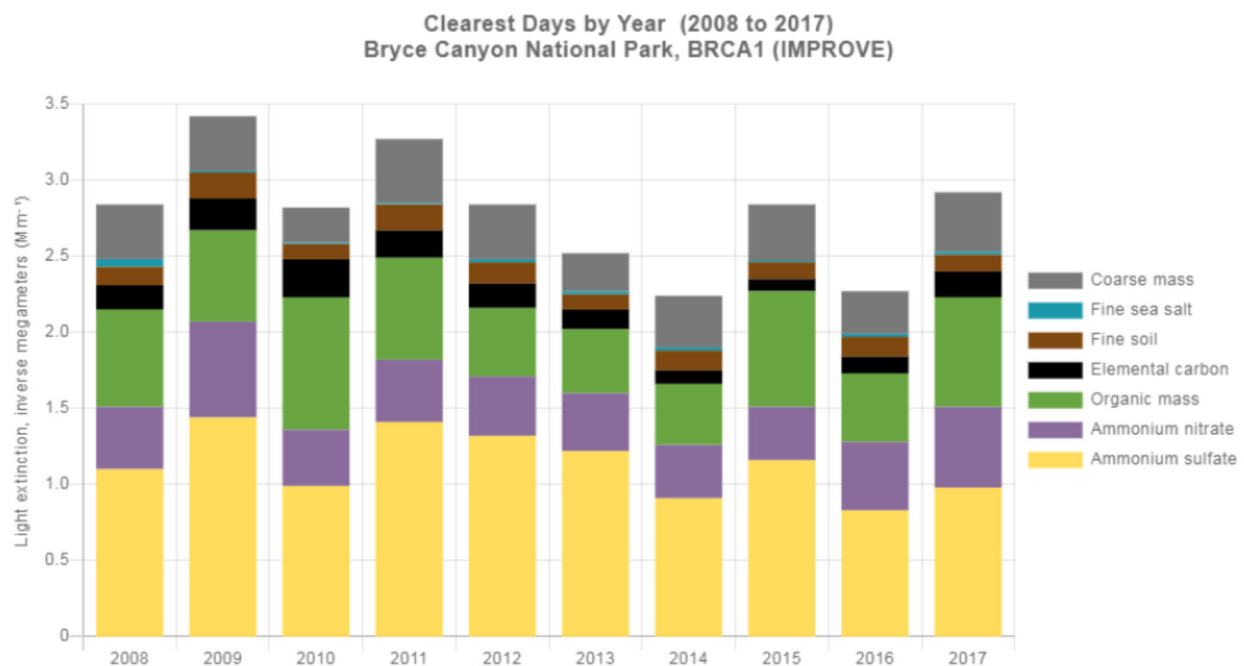
Response: We acknowledge the importance of visibility to the experience of visitors to Utah's Class I areas and to the economic well-being of the local communities near the parks and state-wide. We disagree with the commenters that this final rulemaking reverses course and bars reasonable progress towards achieving natural visibility conditions in Utah's Class I areas. BART is just one component of a state's required plan to make reasonable progress towards the

national visibility goal.³⁶ We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater visibility improvement than BART under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

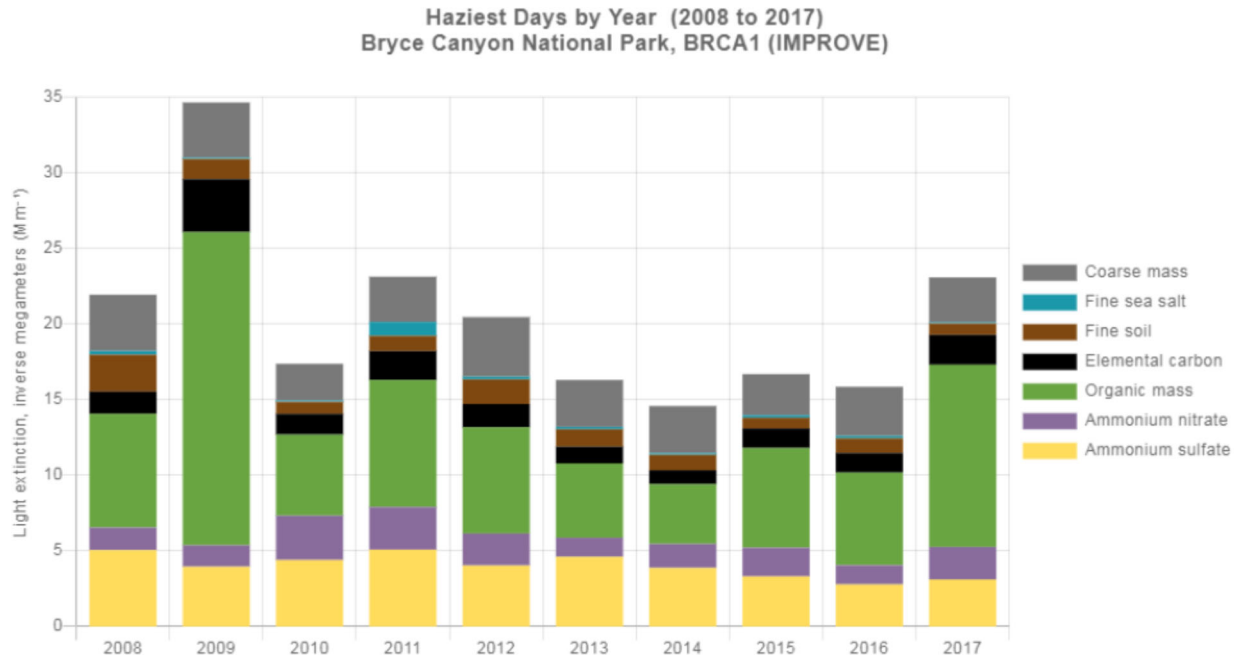
Comment: [PacifiCorp, pp. 15-16] Critics’ Claims about Visibility in Utah’s National Parks are also Incorrect.

Again, critics of the Proposed Rule at the February 12, 2020, public hearing in Price, Utah, created a very negative picture of air quality (specifically visibility) in Utah’s national parks, and the alleged contribution to air quality issues in those parks by PacifiCorp’s Hunter and Huntington power plants. But the facts paint a different picture. For example, according to the National Park Service, Bryce Canyon National Parks’ visibility situation is in “fair condition” and for “2008-2017, the 10-year trend in visibility . . . improved on the 20% clearest days and the 20% haziest days, resulting in an overall improving visibility trend.” [fn omitted] Similar or identical trends exist in Arches National Park and Canyonlands National Park. [fn omitted] Capitol Reef National Park’s and Zions National Park’s visibility has been found to be in fair condition, remaining relatively unchanged in the last 10 years. [fn omitted]

EPA’s Proposed Rule includes both SO₂ and NO_x emissions reductions, which are relevant given that both play a role in visibility issues at Utah’s national parks. In fact, the NPS data indicates that sulfates are most often a larger contributor to visibility than nitrates, demonstrating the wisdom of a regional haze strategy that incorporates reductions of both pollutants. *See e.g.*, charts re components of haze at Bryce Canyon below.



³⁶ See 42 U.S.C. 7491(b)(2).



These charts are found at the National Park Service’s website. See Air Quality Conditions & Trends [https://www.nps.gov/subjects/air/park-conditions-trends.htm?tabName=summary&parkCode=BRCA¶mCode=Overall%20Air%20Quality&startYr=2008&endYr=2017&monitoringSite=BRCA1%20\(IMPROVE\)&timePeriod=10-year](https://www.nps.gov/subjects/air/park-conditions-trends.htm?tabName=summary&parkCode=BRCA¶mCode=Overall%20Air%20Quality&startYr=2008&endYr=2017&monitoringSite=BRCA1%20(IMPROVE)&timePeriod=10-year). These charts demonstrate that organic matter--which is not related to power plant operations-- is the biggest contributor to haze at Bryce Canyon on the haziest days. The visibility data from Utah’s other national parks is similar to the data for Bryce Canyon. See <https://www.nps.gov/subjects/air/airprofiles.htm>.

All of this data demonstrates that, contrary to some claims, visibility has improved or remained relatively unchanged over the past decade at affected national parks, and a significant amount of the haze at Utah’s national parks comes from sources other than power plants. These are important considerations that support approval of EPA’s Proposed Rule.

Response: While we acknowledge the commenter’s support for Utah’s regional haze SIP revisions, we disagree that the EPA’s approval of the state’s plan should be premised on improved or unchanged visibility at affected Class I areas. Section 169A of the 1977 Amendments to the CAA establishes “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.”³⁷ Furthermore, Section 169A directs the EPA

³⁷ 42 U.S.C. 7491(a). Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977. 42 U.S.C. 7472(a). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value. 44 FR 69122 (Nov. 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. 42 U.S.C. 7472(a). Although states and tribes may designate as Class I additional areas whose visibility they consider to be an important value, the requirements of the visibility program set forth in section

to establish regulations for states to submit SIPs to make “reasonable progress” toward the national visibility goal through long-term strategies and to implement BART at certain BART-eligible sources. Regional haze SIPs must assure reasonable progress toward the national goal of achieving natural visibility conditions in Class I areas. These requirements are not waived or altered if a Class I area’s visibility situation is in “fair condition” and remaining relatively unchanged over the past 10 years as suggested by the commenter.

With respect to the commenter’s assertion that a significant amount of haze comes from other sources, including organic matter, other than the Hunter and Huntington power plants, we agree that non-EGU emissions, including organic matter, can impact visibility in Class I areas. However, this action implements Congress’s direction that the EPA address on-going emissions from stationary sources that are determined to be subject to BART in order to help remedy the existing impairment of visibility in Class I areas. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

e. Background Information

Comment: [Cons Orgs, p. 3] The Clean Air Act imposes a legal obligation on states and EPA to abate haze pollution and its adverse visibility effects [fn Regional haze results from small particles in the atmosphere which impair a viewer’s ability to see long distances, color and geologic formation. While some haze causing particles result from natural processes, most result from anthropogenic sources of pollution. Haze forming pollutants including sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), volatile organic compounds (VOCs), and ammonia (NH₃) contribute directly to haze or form haze after being converted in the atmosphere. Visibility impairment is measured in deciviews, which is understood as the perceptible change in visibility. The higher the deciview value, the worse the impairment.] in our nation’s Class I Areas—156 national parks and wilderness areas. 42 U.S.C. § 7491. In order to protect their “intrinsic beauty and historical and archeological treasures,” the regional haze program establishes a national regulatory floor and requires states to design and implement programs at least as stringent as this floor to curb haze-causing emissions located within their jurisdictions.³⁸ Congress established a “national goal” for the regional haze program of “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.” Id. § 7491(a)(1)

To implement the regional haze program, a state is required to design an implementation plan to reduce, and ultimately eliminate, haze from air pollution sources within its borders that may reasonably be anticipated to cause or contribute to visibility impairment for any protected area located within or beyond that state’s boundaries. The haze requirements present an unparalleled opportunity to protect and restore regional air quality by curbing visibility-impairing emissions

169A of the CAA apply only to “mandatory Class I Federal areas.” Each mandatory Class I Federal area is the responsibility of a “Federal Land Manager.” 42 U.S.C. 7602(i). When we use the term “Class I area” in this section, we mean a “mandatory Class I Federal area.” The list of mandatory Class I Federal areas is located in 40 CFR part 81 subpart D.

from some of the nation's oldest and most polluting facilities. However, when a state fails to establish a program that is at least as stringent as the national floor, EPA has an obligation to promulgate a Federal Implementation Plan ("FIP"). See 42 U.S.C. § 7410(c)(1).

Each SIP/FIP must provide "emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress towards meeting the national goal." 42 U.S.C. § 7491(b)(2). One of the most critical features of a regional haze SIP/FIP is the requirements for the installation of BART for delineated major stationary sources of pollution. 40 C.F.R. § 51.308(d)(1)(i)(B). The BART program was supposed to be completed and implemented before the end of the first regional haze planning period, being 2018.

Response: We agree that the CAA, the Regional Haze Rule and the BART Guidelines set out specific requirements that the Regional Haze SIPs must meet in order to be approved by the EPA. In this action, we address these requirements as they apply to Utah's BART Alternative for the Hunter and Huntington power plants. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We also respond to the commenters' concern regarding the completion and implementation of BART before the end of the first planning period in 2018 elsewhere in this RTC document.

Comment: [Cons Orgs, pp. 8-9] EPA's proposed rule is the latest of Utah's repeated attempts to justify exempting Hunter and Huntington from compliance with the Clean Air Act or making any significant NO_x emissions reductions. Utah's first regional haze SIP in 2008 found that PacifiCorp's Hunter Unit 1, Hunter Unit 2, Huntington Unit 1, and Huntington Unit 2 EGUs were subject to BART, but proposed to find that limited emissions reductions achievable by replacing the units' first-generation of low- NO_x burners with upgraded combustion controls satisfied BART for NO_x. EPA disapproved the state's NO_x BART proposal on December 14, 2012, stating that Utah failed to perform a proper, five-factor BART analysis. [fn The above-referenced controls were installed and operating on three of the four EGUs prior to EPA's proposed disapproval and were installed on the 4th EGU in 2014.] On June 4, 2015, Utah submitted a BART Alternative for NO_x for the same PacifiCorp EGUs. The alternative measure relied on the installation of low- NO_x burners with overfire air at Hunter Units 1 and 2 and Huntington Units 1 and 2. In addition, Utah's BART Alternative took credit for unrelated and wholly past reductions of visibility impairing pollutants from three EGUs that are not subject to BART. Specifically, Utah relied on past NO_x emissions reductions from upgraded combustion controls on Hunter Unit 2, and reductions in particulate matter, NO_x, and SO₂ resulting from the permanent closure on August 15, 2015 of both units of the Carbon Plant and rescission of the plant's operating permit by December 31, 2015. PacifiCorp shut down the Carbon Power Plant in 2015 due to the high cost and infeasibility of controlling mercury to meet the requirements of EPA's Mercury and Air Toxics Standards (MATS).

EPA's January 14, 2016 proposed rule on Utah's 2015 SIP submission for NO_x took the form of a co-proposal. EPA proposed in the alternative either to approve Utah's NO_x BART Alternative or to disapprove it and impose a FIP containing NO_x emissions limits based on the installation and operation of Selective Catalytic Reduction ("SCR") for BART. On July 5, 2016, EPA issued the final rule disapproving the BART Alternative for NO_x and instead promulgated a FIP. In

developing the FIP, EPA evaluated thousands of pages of comments and expert analysis submitted by the State of Utah and owners of the Hunter and Huntington power plants. Following exhaustive review, EPA concluded that current high levels of nitrogen oxide (“NO_x”) pollution from these coal-burning facilities, which would continue under Utah’s BART Alternative, must be reduced significantly to satisfy the Clean Air Act’s regional haze provisions. Thus, EPA adopted a FIP that required limits reflective of the installation of SCR on Hunter Units 1 and 2 and Huntington Units 1 and 2 as BART by August 2021.

Utah and PacifiCorp immediately challenged EPA’s FIP and disapproval of the BART Alternative for NO_x in the U.S. Court of Appeals for the Tenth Circuit. After EPA vigorously defended its FIP in early stages of the litigation through its opposition to state and industry motions to stay the rule, new EPA Administrator Scott Pruitt informed the State of Utah and PacifiCorp on July 14, 2017 that EPA was granting their requests to “reconsider” the plan. In contrast with the years it took EPA to develop the plan, EPA’s reconsideration decision came less than two weeks after Utah’s and PacifiCorp’s letters imploring EPA to abolish the plan based almost entirely on information that EPA previously considered and already rejected. To accommodate EPA’s intent to reconsider it’s FIP, the Tenth Circuit litigation has been held in abeyance since September 11, 2017, and EPA’s FIP requiring SCR installation is stayed, resulting in a corresponding delay in air quality improvements promised under that rule.

As discussed below [in the comment letter], EPA cannot justify approving a BART Alternative that it has already twice rejected, because it backslides from air quality improving requirements and cannot achieve greater reasonable progress toward eliminating the visibility impairment that plagues Utah’s national parks and impacts out of state Class I areas than would the installation of industry-standard, cost-effective SCR controls on Utah’s EGUs.

Response: We acknowledge the factual background provided by the commenters. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). Our analysis under CAA section 110(l) regarding backsliding is discussed in the preamble to the final rule. We take no position on the remainder of this comment.

Comment: [PacifiCorp, pp. 1-3] The EPA issued the Regional Haze Rule to protect visibility in over 150 national parks and wilderness areas in 1999. The Regional Haze Rule requires states to establish BART and Reasonable Progress Goals for improving visibility, with the overall goal of attaining natural background visibility conditions by 2064.

Utah’s current nitrogen oxides (“NO_x”) BART Alternative is a natural progression from the larger regional haze program that the State of Utah undertook as early as 1991. Utah submitted its initial regional haze state implementation plan (“SIP”) to EPA in 2003 [fn From as early as 2003, Utah has been engaged in significant SO₂ reduction efforts under the Regional Haze Regulations at 40 C.F.R. Sections 51.300-51.309. Utah submitted a SIP proposing an alternative-to-BART program under 40 C.F.R. Section 51.309, and EPA approved that SIP. Section 309 establishes requirements for an alternative to BART regional haze implementation plan to address visibility impairment in the sixteen Class I areas covered by the Grand Canyon Visibility

Transport Commission Report. 40 C.F.R. § 51.309.2. Consistent with the alternative program's incentives for voluntary efforts to reduce SO₂ emissions to avoid the backstop trading program, the Utah 2003 SIP influenced long-term planning for sources in the region, and utilities began upgrading plants based on the provisions of the SIP years earlier than would have been required under a case-by-case BART determination in a Section 308 SIP. Since 2003, Utah has achieved great success reducing SO₂ emissions through the implementation of voluntary SO₂ emission-reduction measures under the alternative program measures proposed in 2003. For example, SO₂ emissions in the three-state region including Utah decreased by 35% between 2003 and 2010. *See* 77 Fed. Reg. at 74361.] with a subsequent revision that included BART requirements for NO_x and particulate matter ("PM") in 2008. *See* 77 Fed. Reg. 74355-02, 74356 (Dec. 14, 2012). EPA did not act for quite some time on either the 2003 submission or the 2008 revision. *See* 42 U.S.C. § 7410(k)(2); 77 Fed. Reg. at 74355. In fact, EPA did not disapprove Utah's PM and NO_x BART plan until 2012 (four years after submission by Utah), and then only after it was compelled to act under the terms of a consent decree. *See* 77 Fed. Reg. at 74367.

Even then, EPA did not disapprove Utah's choice of controls for PM and NO_x BART in 2012, but instead claimed that Utah did not properly perform the five-factor BART analysis, *see id.* at 74,367, and improperly relied on BART presumptive limits, *see id.* at 74,363. Utah and PacifiCorp challenged this disapproval, but their petitions were dismissed on time-based jurisdictional grounds that resulted from EPA's confusing publication of the rule. *See Utah v. EPA*, 765 F.3d 1257 (10th Cir. 2014).

By the time of EPA's tardy disapproval in 2012, PacifiCorp had nearly completed installation of the controls required under Utah's 2008 SIP. *See* Progress Report for Utah's State Implementation Plan for Regional Haze (Progress Report) 6 (Sept. 23, 2014). These installations were obligatory because the 2008 SIP had become binding state law as soon as the Utah Air Quality Board approved it. *See* Staff Review 2008 PM BART Determination and Recommended Alternative to BART for NO_x (Review) 5 (May 13, 2015); 81 Fed. Reg. at 43910 (agreeing that the controls under 2008 SIP were "required by Utah law"); 42 U.S.C. §7410(a).

To address the disapproved NO_x and PM BART determinations, Utah re-proposed its SIP for PM BART and submitted a BART Alternative for NO_x on June 4, 2015. *See* 81 Fed. Reg. 43894. Utah worked closely with EPA to develop the BART Alternative, and EPA did not raise any concerns with Utah's methodology or approach at the state level. On January 14, 2016, EPA surprised Utah and PacifiCorp by issuing a proposed rule containing co-proposals either to approve the BART Alternative or disapprove it and impose a federal implementation plan ("FIP") for NO_x BART. *See* 81 Fed. Reg. 2004, 2006-07 (Jan. 14, 2016) ("2016 Proposed Rule").

On July 5, 2016, EPA approved some parts and disapproved other parts of Utah's regional haze SIP. Specifically, EPA disapproved the State's NO_x BART determinations for four units at two PacifiCorp power plants: Hunter Units 1 and 2 and Huntington Units 1 and 2. To address the portions of Utah's SIP that EPA disapproved, EPA finalized a FIP that determined NO_x BART controls for all four applicable units at the Hunter and Huntington power plants required the application of selective catalytic reduction ("SCR") controls with low NO_x burners and separated overfire air ("SCR + LNB/SOFA").

The State of Utah and PacifiCorp disagreed with the FIP determination and challenged it in court. EPA relied, in large part, on certain results from the CALPUFF computer model to reject Utah's BART Alternative; however, the State of Utah and PacifiCorp believe the CALPUFF model results used by EPA had several limitations, and that EPA ignored other CALPUFF results and visibility information that supported the BART Alternative. The Tenth Circuit found Utah and PacifiCorp's arguments were sufficiently convincing to stay EPA's FIP, and Utah and PacifiCorp began again working with EPA on the regional haze issues. Based on this history and the additional work done since the court proceeding was stayed, Utah and PacifiCorp are confident that the BART Alternative for NO_x as addressed in the Proposed Rule is legal, cost-effective, and the most effective option to reduce haze.

Response: The EPA acknowledges the background on regional haze planning for Utah provided by the commenter. The commenter's statements regarding the alleged limitations of the CALPUFF modeling underlying our 2016 final rule are not pertinent to this action because Utah's revised SIP no longer relies on the clear weight of evidence test provided for at 40 CFR 51.308(e)(2)(i)(E). Instead, the revised SIP relies on the two-prong test provided for at 40 CFR 51.308(e)(3)(i) and (ii) that, as described in the proposed rule and throughout this RTC document and final rule, in turn relies on CAMx modeling rather than CALPUFF modeling. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Edison Electric Institute, pp. 5-7] As enacted in 1963, the Clean Air Act (CAA or Act) aims to reduce the emission of air pollutants that endanger "the public health and welfare." 42 U.S.C. § 7401(b)(1); *see Ala. Power Co. v. Costle*, 636 F.2d 323, 346–50 (D.C. Cir. 1979). In 1977, Congress amended the Act to cover manmade visibility impacts in Class I Federal areas—i.e., most national parks and wilderness areas. *See Clean Air Act Amendments of 1977*, Pub. L. No. 95–95, § 128, 91 Stat. 685, 742. The 1977 amendments required EPA to restore natural visibility conditions by adopting nationwide rules limiting the release of visibility-impairing pollutants. *See* 42 U.S.C. § 7491(b). As under many CAA programs, the States are charged with initially implementing these requirements by proposing state implementation plans (SIPs) for EPA's approval. *See id.* at §§ 7410(a)(2)(J), 7491(b)(2). If a SIP satisfies the "applicable requirements ... relating to ... visibility protection," EPA must approve it. *See id.* at § 7410(a)(2)(J). Only if a SIP falls short of those requirements is there a further role for EPA. In that instance, EPA must reject the SIP and issue a federal implementation plan (FIP) to take its place. *Id.* at § 7410(c)(1).

The CAA requires each regional haze SIP or FIP to "contain such emission limits, schedules of compliance and other measures as may be necessary to make reasonable progress" toward the statutory goal of eliminating manmade visibility impairment in Class I Federal areas. *Id.* at § 7491(b)(2). In determining what measures amount to "reasonable progress," a State must consider four criteria: (1) the costs of compliance; (2) the time necessary for compliance; (3) the energy and nonair quality environmental impacts of compliance; and (4) the remaining useful life of any existing source subject to such requirements. *Id.* at § 7491(g)(1).

To ensure States achieve “reasonable progress,” every SIP or FIP for the first planning period must require certain large-scale, stationary sources of air pollutants to implement controls known as BART—or adopt a BART alternative. *See id.* at §7491(b)(2)(A); 40 C.F.R. § 51.308. The CAA requires that BART be determined based on a source-specific evaluation of five factors. *See Oklahoma v. EPA*, 723 F.3d 1201, 1208 (10th Cir. 2013). These “BART factors” are

- (1) The costs of compliance;
- (2) The energy and non-air quality environmental impacts of compliance;
- (3) Any existing pollution control technology in use at the source;
- (4) The remaining useful life of the source; and
- (5) The degree of visibility improvement which may reasonably be anticipated from the use of BART.

See 42 U.S.C. § 7491(g)(2).

Each State has considerable latitude in determining how to weigh the five BART factors in determining BART for each individual source, subject only to the requirements that the State: (1) justify its decision about which combination of controls constitutes BART for that source; and (2) explain the weighing of factors that led the State to conclude that the chosen strategy was the “best” relative to available alternatives. *See Regional Haze Regulations and Guidelines for Best Available Retrofit Technology*, 70 *Fed. Reg.* 39104, 39130 (July 6, 2005) (“[States] are free to determine the weight and significance to be assigned to each factor.”); *id.* at 39,170 (“[States] have discretion to determine the order in which [they] should evaluate control options for BART.”); *id.* at 39,137 (“Congress evinced a special concern with ensuring that States would be the [BART] decision makers.”); *see also* 42 U.S.C. § 7491(b)(2)(A), (g)(2) (requiring that BART is to be “determined by the State” through its own assessment of the five BART factors); *id.* at § 7410(k)(3) (EPA may reject SIP only if it would “interfere with ... [an] applicable requirement of [the Act]”).

In 1999, EPA promulgated the Regional Haze Rule (Rule) to implement the CAA’s regional haze provisions. *See Regional Haze Regulations*, 64 *Fed. Reg.* 35714 (July 1, 1999). Among other things, the Rule provides that a SIP may satisfy the CAA’s BART requirement by implementing a “BART alternative” in lieu of BART. EPA defined “BART alternative” to include any alternative measure that achieves “greater reasonable progress than would be achieved through the installation and operation of BART.” *See* 40 C.F.R. § 51.308(e)(2).

Response: Comments noted. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: During the public hearing several commenters spoke in support of the state’s implementation plan by claiming that the Utah BART Alternative recognizes the proactive emission reductions already in place as PacifiCorp and the state of Utah took significant steps to reduce emissions even before the EPA made its first decision about the Utah Regional Haze SIP in 2012. According to the commenters, these early emission reductions, costing several hundreds

of millions of dollars, resulted in measured improvements to visibility long before what was required by the Regional Haze Rule.

Response: We thank those who attended and participated at the public hearing and acknowledge the commenters' remarks. We explain elsewhere in this RTC document that the timing of the NO_x BART Alternative complies with 40 CFR 51.308(e)(2)(iii). The commenters do not provide enough information regarding the nature and timing of the referenced previous emission reductions for us to respond with any further specificity to this comment.

f. Tribal Consultation

Comment: [Ute Mountain Ute Tribe, pp 1-3]

The Ute Mountain Ute Tribe Environmental Program Department (EPD) is pleased to submit these comments on EPA's proposal *Approval and promulgation of Air Quality Implementation Plans: Utah; Regional Haze State and Federal Implementation Plans*.

The Ute Mountain Ute Indian Reservation is located in extreme southwestern Colorado, southeastern Utah and northwestern New Mexico. The Reservation is approximately 933 square miles in total area of trust land which is homeland for the population of 2,100 members. While the main community is in Towaoc, CO, a small community of members also reside in White Mesa, Utah, on tribal lands and private allotments. The Tribe also has an interest in ancestral lands which encompass Bears Ears and other surrounding areas because traditionally, the Ute Tribes lived throughout Colorado, Utah, and New Mexico, and consider viability and the subsequent ability to recognize familiar geological features as important to them. In addition, many areas contain archeological sites and petroglyphs in the Tribal areas. Presently, there are several pollution sources in the area and in the region of Tribal Reservation Lands that have decreased the visibility in and around the Tribal Lands and the Ute Mountain Ute Tribe has concerns that pollutants are also acting to compound adversely to the health of the tribe's environment and population, and that of the region as well.

The Sections 169A and B, also known as the Regional Haze Rule (RHR), were created by the EPA for reduction of regional haze and visibility. The Grand Canyon Visibility Transport Commission (GCVTC) which was established under the Rule, determined that all Transport Region States could potentially impact the Class I areas on the Colorado Plateau. One of these transport states is Utah.

The documentation and information for discussing the arguments for present and past actions regarding Utah's SIP for RHR were presented in Federal Register, Volume 85, No. 14, January 22, 2020/Proposed Rules (85FR3558). The impacts of the submitted Utah SIP RHR call for a decrease in pollutants, specifically sulfur oxides (SO_x), nitrogen oxides (NO_x), and particulate matter (PM) with milestones at designated years. The Utah SIP addresses the potential decrease of pertinent emissions (NO_x and PM) at the four PacifiCorp Huntington and Hunter fossil-fuel electric generating units with respect to other trading programs. These sites are approximately 150 miles northwest of the White Mesa community in Utah. Ultimately, these potential reductions would impact not only the Class I Areas that the RHR was designed to safeguard, but

the Tribal Lands as well, because the entire region would be impacted. The Ute Mountain Tribe or representative would have been interested in ‘consultation’ to understand what the impacts are under this SIP, and whether they were indeed protective enough. If the total net reduction is enough, then that level of consultation on that basis alone should have been offered.

Utah is also a member of the Western Regional Air Partnership (WRAP), the successor organization to GCVTC. The WRAP established a Communications Framework for Regional Haze Planning, adopted by Consensus, Sept. 3, 2019. [fn omitted] Members of the WRAP also include EPA and the Ute Mountain Ute Tribe. The Ute Mountain Ute Tribe EPD would like to see the steps outlined in the document, as all had agreed upon, be followed by states, Tribes, and EPA when developing SIPs. The document outlines the value of working together and how it should proceed:

“The purpose of this document is to provide a general framework for efficient and effective coordination among WRAP partner, including the western states and their local air agencies, federal agencies (EPA and FLM [Federal Land Managers]), and tribes throughout the Regional Haze planning process. Successful development of a Regional Haze State Implementation Plan (SIP) or Tribal Implementation Plan (TIP) requires that responsible agencies effectively communicated and consult with a variety of stake holders on a defined timeline with varying degrees of formality.” (p.1)

“Additionally, engagement between states/local agencies and tribes is a form of government-to-government consultation. As such, state and local agencies should dedicate substantial consideration their consultations with tribes, maintaining the same level of respect and thoughtfulness as with federal government-to-government consultation with tribes.” (p. 6)

Also noted in 85 FR 3576, Section 8.G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments, where it states, “This proposed Rule does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments.” Clearly, no part of the WRAP Communication process was followed for this stage of the Utah SIP for RHR by the state nor EPA. As a Tribal member of WRAP, the Ute Mountain Ute Tribe EPD strongly encourages Utah, EPA, and other federal managers and states to utilize the steps in order to uphold consultation communication.

Response: As noted in the final rule, the EPA offered consultation, but the Ute Mountain Ute Tribe later waived the opportunity for consultation.³⁹

g. EPA’s 2016 Disapproval

Comment: [Edison Electric Institute, pp. 8-9] EPA’s Previous Erroneous Disapproval of Utah’s SIP Reflected a Misreading of the Regional Haze Rule.

³⁹ Letter dated July 29, 2020, from Carl Daly (EPA) to Manuel Heart (Ute Mountain Ute Tribe); E-mail dated August 28, 2020, from Scott Clow (Ute Mountain Ute Tribe) to Kimberly Varilek (EPA), Subject: Offer for Tribal Consultation on Utah Regional Haze Plan.

Before the current proposal to approve Utah's BART alternative, EPA disapproved those parts of Utah's Regional Haze SIP relating to control of NO_x emissions, and instead chose to finalize its own FIP requiring installation of new NO_x controls at several stationary sources. Utah is home to four BART-eligible sources, all of which emit NO_x. *See* 81 *Fed. Reg.* 43894, 43895 (July 5, 2016). In 2015, Utah submitted a revised SIP that included a BART alternative. Utah's BART alternative called for the shutdown of two sources (Carbon Units 1 and 2), required upgraded NO_x controls at a non-BART source (Hunter Unit 3), and mandated the use of upgraded NO_x controls at the State's four BART-eligible sources (Hunter Units 1 and 2 and Huntington Units 1 and 2). 81 *Fed. Reg.* 2004, 2014 (Jan. 16, 2016). The SIP explained in detail how Utah had determined that the proposed BART alternative controls were the "best" options for reducing NO_x.

Despite Utah's comprehensive and protective submission, EPA rejected the BART alternative portion of Utah's SIP and promulgated a FIP imposing different, more expensive, and more demanding NO_x controls on Utah's four BART-eligible facilities. 81 *Fed. Reg.* at 43895 (July 5, 2016). In its final action, EPA conceded that the Agency had either ignored or given no weight to all but one of the five statutory BART factors in deciding whether Utah's proposed BART alternatives satisfied the CAA and the Rule. *See, e.g., id.* at 43897 (noting that EPA "did not give [information about costs or energy and non-air quality impacts] *any* weight in [its] evaluation") (emphasis added). The *only* BART factor that EPA weighed was the degree of visibility improvement which could reasonably be anticipated from using certain technologies at the Utah sources. *See id.* at 43897–902 (addressing and weighing only visibility benefits from BART-affected sources). [fn EPA did not examine the overall emissions reductions and visibility benefits of Utah's BART alternative—choosing to focus myopically on the visibility benefits in maximal terms from BART-affected sources. This approach was not consistent with the overall goals of the Regional Haze Program to gradually improve visibility to natural background conditions in 2064.]

Because EPA erroneously found that Utah's proposed BART alternative for NO_x would not improve visibility compared to the technologies that EPA separately determined constituted BART at BART-affected sources, EPA refused to approve the BART alternative portions of the proposed SIP dealing with NO_x, and the Agency instead adopted a FIP mandating installation of a combination of low- NO_x burners, separated overfire air, and selective catalytic reduction as BART, on the ground that that particular combination of technologies would result in the greatest improvements in visibility. *See id.* at 43,903. EPA's final FIP was challenged in the U.S. Court of Appeals for the Tenth Circuit, but that litigation has been held in abeyance pending the outcome of this proposed rule. *See State of Utah et. al. v. EPA*, Nos. 16-9541, et al. (10th Cir.)(held in abeyance Sept 11, 2017).

Response: We acknowledge the factual background provided by the commenter. We take no position on the remainder of this comment.

h. Other

Comment: [Edison Electric Institute, pp. 2-4] *Electric Companies Continue To Lead the Clean Energy Transition And Reduce Emissions.*

The electric power industry is in the middle of a profound, long-term transformation in how electricity is generated, transmitted, and used. This transformation is being driven by a wide range of factors, including: declining costs for natural gas and renewable energy resources; technological improvements; changing customer expectations; federal and state regulations and policies; and, the increasing use of distributed energy resources. As a result, the mix of resources used to generate electricity in the United States has changed dramatically over the last decade and is increasingly clean. In 2018, natural gas surpassed coal as the main source of electricity generation in the United States for the third year in a row, with natural gas-based generation powering 35.2 percent of the country's electricity and non-emitting generation comprising 37.2 percent of all generation—compared to coal-based generation at 27.5 percent. [fn omitted] Since 2014, more than half of the industry's investments in new electricity generation have been in wind and solar generation resources, [fn omitted] and nearly 40 percent of America's electricity now comes from emissions-free resources, including nuclear power, hydropower, solar, and wind. [fn omitted] Further, the EIA conservatively projects that the United States will add 72 gigawatts of new wind and solar capacity between 2018 and 2021 alone and that, long-term, demand for new electric generating capacity will be met by renewables and efficient natural gas as older coal-based and less-efficient natural gas-based generating units retire. [fn omitted] States are expected to rely on the electric power sector for electrification of other sectors to achieve clean energy and climate goals, as mitigating the impacts of climate change continues to be an essential public policy question.

These changes have had a beneficial impact on the sector's greenhouse gas emissions. As of the end of 2018, the electric power sector has reduced its carbon dioxide (CO₂) emissions by 27 percent compared with near peak levels in 2005—the lowest level in nearly 30 years.[fn Final data for 2019 is not yet available but is expected to show continued decreases in CO₂ emissions from electricity generation.] [fn omitted] EEI's member companies have reduced their CO₂ emissions even more dramatically to approximately 37 percent below 2005 levels. [fn omitted] And these reductions will continue: EEI's member companies are on a path to reduce CO₂ emissions at least 50 percent by 2030 and potentially 80 percent or more by 2050 compared to 2005 levels while keeping electricity affordable and reliable.

Other environmental benefits of this clean energy transition include significant reductions in criteria pollutants, acid gases, and other hazardous air pollutants (HAPs), like mercury. As of 2019, emissions of SO₂ and NO_x have been reduced by 94 and 86 percent, respectively, from 1990 levels. [fn omitted] The industry also has reduced mercury emissions by approximately 86 percent from 2010 to 2017, and emissions of both acid gases and of total HAPs were reduced by 96 percent over the same period. [fn omitted] The clean energy transition also has led to significant improvements in the sector's impact on water resources as the volume of chemical discharges by the electric sector were nearly 82 percent less in 2018 as compared to 2005 levels. [fn Based on an EEI analysis of overall discharges reported in EPA's Toxic Release Inventory for 2005 and 2018 from coal- and oil-based generating facilities.] These reductions—especially of both SO₂ and NO_x—are not only beneficial to human health and the environment, but also have led to significant reductions of haze-causing emissions.

Response: Comments noted. We agree with the commenter that the same emissions that can cause visibility impairment can also contribute to negative health impacts. As described earlier in this RTC document, for purposes of this action, we are not authorized by Congress in the CAA or under the Regional Haze Rule to consider such health impacts in evaluating this BART alternative SIP. Our analysis under CAA section 110(l) is presented in preamble to the final rule. We take no position on the remainder of this comment.

Comment: [Docket ID -0251] The state of Utah has failed repeatedly to clean its air and has demonstrated a complete inability under the governor herbert and the legislature to clean the air. The state leaders are unable to manage air and lands and therefore need to be led by more capable federal scientists located in Washington DC.

Response: We take no position on this comment.

Comment: [Docket ID -1127] I recommend we keep the goal of BART and not change the plan. I further recommend the head of the EPA resign immediately for this obviously step backwards in protecting the environment. This proposal is obviously not in the interests of protecting Americans health, or the environment. It is instead appears to "bailout" a hazardous, medieval energy industry that has caused great harm to the planet and it's inhabitants.

Response: We acknowledge the commenter's opposition for the proposed SIP revisions. We explain elsewhere in this RTC document and in the preambles to the proposed and final rules how the NO_x BART Alternative achieves greater reasonable progress under the two-prong test in 40 CFR 51.308(e)(3)(i) and (ii). We take no position on the remainder of this comment.

Comment: [Docket ID -0293 and mass form letters] The Conservation Organizations (HEAL Utah, National Parks Conservation Association, and Sierra Club) requested a 30-day extension of the period for public comment to afford members of the public—including the Conservation Organizations—adequate time to fully evaluate the technical bases of the EPA's proposal and prepare comments. We also received mass form letters requesting the comment period be paused and resumed at a later date, as Americans focus on the coronavirus pandemic, so that the EPA can gather appropriate public comment.

Response: The EPA provided a 60-day review and comment period as well as a public hearing, held on February 12, 2020, for the January 22, 2020, proposed rule. The comment period ended on March 23, 2020. We did not grant requests to extend or pause the comment period. Section 307(h) of the CAA instructs EPA to provide "a reasonable period for public participation of at least 30 days" when promulgating a FIP. Here, the EPA chose to provide a longer 60-day public comment period in addition to a public hearing as another means to obtain public comment, as required under section 307(d)(5) of the CAA. The EPA believes that 60 days was a reasonable amount of time for the public to comment. Furthermore, the EPA was not made aware of any barriers, including any caused by the coronavirus pandemic, that prevented the public from participating in the public comment process.

Comment: [Docket ID -1126 and Transcript] Several commenters expressed the opinion that haze found in Utah's Class I areas is attributed to sources other than the Hunter and Huntington power plants. For example, according to one commenter, the blue skies found throughout Emery County, where the power plants are located, suggest that the haze in the parks can be attributed not to the power plants but to vehicle exhaust from park visitors that increases during the tourist season. Another commenter stated that haze also comes from the Wasatch Front population. Likewise, at the public hearing, commenters said they have observed haze coming from across the mountains and from California and not from the power plants.

Response: Motor vehicle emissions fall outside the scope of this action and are generally regulated under other provisions in the CAA. While we acknowledge that automobile exhaust is another major source of NO_x emissions, we note that mobile source emissions, either from within the parks or other parts of the state or other states, are not a part of the State's SIP submittal evaluated in this action, which is related to BART requirements. Likewise, we also acknowledge the possibility for visibility impacts from sources outside of Utah; however, this does not relieve the State from addressing BART requirements.

Comment: In addition to motor vehicle emissions, several commenters at the public hearing raised concerns about ozone in the parks and wildfires leading to haze. According to one commenter, a recent study showed that many national parks have pollution levels similar to major cities and annual ozone concentrations are indistinguishable from those under metropolitan areas for most samples. Another commenter stated that the number one contributor to regional haze, especially in the summertime, is wildfires.

Response: First, the EPA agrees that forest fires, when they occur, can impact visibility to a greater extent than anthropogenic sources of emissions. However, this action implements Congress's direction that the EPA and states address on-going emissions from certain stationary sources subject to BART to help remedy the existing impairment of visibility in Class I areas. Furthermore, the adequacy of the current primary ozone standard and whether it is able to address the problems of long-term ozone in Class I areas is beyond the scope of this action and we take no position as to these specific statements.

Comment: [Transcript pp. 50-51] The commenter thanked the EPA for allowing the states the right to monitor and to dictate their own state's rights and stressed the importance of states having rights to regulate themselves. According to the commenter, the previous Administration put an undue burden on their way of life that was not justified.

Response: We thank those who attended and participated at the public hearing and take no position on this comment.

Comment: [Transcript, p. 66] I hope that EPA will remember that there's other people's lives that are affected from places that aren't in Utah, and they get blamed for it. And people need a new religion. They're tired of Christianity, so they'll hop on the environmental bandwagon and make that their religion, hobbyhorse that and find something that gives meaning to their lives. But I think there is an incredible amount of injustice that goes along with militant EPA groups

that are either nongovernment or governmental that can be overzealous. I think we ought to be more concerned about the humanity and the impact that our motives have on society.

Response: We thank those who attended and participated at the public hearing and note these comments have no bearing on the proposal.

Comment: [Transcript, p. 9] If your proposed shutdown eventually does come through of the power plants – and the emissions, I understand, are forthcoming – how does that justify shutting down our power plant? I'm not saying eliminating some of the emissions, but one country alone, Japan, within the next five years is going to build 22 more power plants. This is a global issue. Shutting down or taking ours away, what are you going to do about the 22 coming up in other countries?

Response: This action is limited to a determination of whether the Utah's NO_x BART Alternative would provide greater reasonable progress than BART. Therefore, an EPA assessment of international emissions of visibility impairing pollutants is beyond the scope of this action and we take no position as to these specific statements.

Comment: [Transcript, p. 15] We [PacifiCorp and Rocky Mountain Power] have refined our current operating practices at the Utah plants to allow PacifiCorp to better incorporate the growing but valuable variable renewable energy resources.

Response: We appreciate the efforts by PacifiCorp and Rocky Mountain Power to incorporate renewable energy resources into their current operating practices. We take no position on this comment.

Comment: [Transcript, p. 13] Opponents of the Utah BART Alternative routinely reference concerns about issues such as health or air quality issues along the Wasatch Front. These concerns are addressed by other Clean Air Act programs that these plants must also comply with. The Regional Haze Rule focuses on visibility impacts at Class I areas.

Response: We agree with the commenter that for the purposes of this action, we must approve the state's BART-alternative SIP if it meets the applicable requirements of the Act and the Regional Haze Rule, *see* CAA section 110(k)(3).

Comment: [Transcript, pp. 25-26] One commenter at the public hearing raised concerns about environmental justice issues. According to the commenter, these communities have been an energy colony to the rest of the nation while the companies that have benefited the most from energy extraction do not have headquarters on the Colorado plateau or south eastern Utah. The export of wealth and energy have left the area with a legacy of air and water pollution where youth do not want to come back to the area for lack of opportunity. Furthermore, Carbon County continually ranks as the least healthy county in the state, with a high incidence of respiratory disease and oxygen use, despite the very good health care providers and facilities.

Response: The EPA acknowledges that the benefits and burdens from energy production do not accrue equally everywhere. In making a final determination in this case, the EPA considered

Executive Order 12898, which established federal executive policy on environmental justice. The EPA's consideration of Executive Order 12898 is included in the federal register notice for the final rule.

Comment: [Transcript, p. 29] In 2017, under new leadership, the EPA made a decision unsupported by science to reverse this ruling and now propose that the state promulgate the same haze plan that was previously rejected. This decision has been made as the Trump Administration pursues an all-out assault on our air and water protections. Over the past three years more than 95 environmental regulations that are meant to protect clean air and clean water have been seriously weakened or eliminated putting many of our vulnerable communities at risk. It's relevant to note that to date the Trump Administration has actually lost 97 percent of the lawsuits raised against them in defense of these environmental regulations and protections as the offending agency has either withdrawn that action or has been proven to have been acting unlawfully.

Response: The basis for this action is set forth in the record at proposal, in response to comments, and as otherwise set forth in the preamble to the final rule and other record materials. The federal government's actions related to other environmental regulations are beyond the scope of this action. We take no position on this comment.