6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R06-OAR-2016-0619; FRL-9990-53-Region 6]

Air Plan Approval; Oklahoma; Regional Haze Five-Year Progress Report

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is proposing to approve a revision to a State Implementation Plan (SIP) submitted by the Governor through the Oklahoma Department of Environmental Quality (ODEQ) on September 28, 2016. The SIP revision addresses requirements of federal regulations that direct the State to submit a periodic report describing progress toward reasonable progress goals (RPGs) established for regional haze and a determination of the adequacy of the existing implementation plan.

DATES: Written comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: Submit comments, identified by Docket No. EPA-R06-OAR-2016-0619, at *https://www.regulations.gov* or via email to *steib.clovis@epa.gov*. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit any information electronically that is considered Confidential Business Information (CBI) or any other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is

considered the official comment and should include all discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing systems). For additional submission methods, please contact Bill Deese, 214-665-7253, deese.william@epa.gov. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.*

Docket: The index to the docket for this action is available electronically at *www.regulations.gov* and in hard copy at the EPA Region 6, 1445 Ross Avenue, Suite 700, Dallas, Texas. While all documents in the docket are listed in the index, some information may be publicly available only at the hard copy location (e.g., copyrighted material), and some may not be publicly available at either location (e.g., CBI).

FOR FURTHER INFORMATION CONTACT: Clovis Steib, (214) 665-7566, *steib.clovis@epa.gov*. To inspect the hard copy materials, please schedule an appointment with Mr. Bill Deese at 214-665-7253.

SUPPLEMENTARY INFORMATION: Throughout this document wherever "we," "us," or "our" each mean the EPA.

I. Background

A. Oklahoma's Regional Haze SIP

In section 169A of the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the prevention of any future, and the remedying of any existing, visibility impairment in mandatory Class I Federal areas where impairment results from

manmade air pollution.[1] Congress added section 169B to the CAA in 1990 that added visibility protection provisions, and the EPA promulgated final regulations addressing regional haze as part of the 1999 Regional Haze Rule, which was most recently updated in 2017.[2] The Regional Haze Rule revised the existing 1980 visibility regulations and established a more comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in the EPA's broader visibility protection regulations at 40 CFR 51.300 through 309. The regional haze regulations require states to demonstrate reasonable progress toward meeting the national goal of a return to natural visibility conditions for mandatory Class I Federal areas both within and outside states by 2064. The requirement to submit a regional haze SIP revision at periodic intervals applies to all 50 states, the District of Columbia, and the Virgin Islands. Oklahoma submitted its initial regional haze SIP on February 18, 2010.

Oklahoma's 2010 Regional Haze SIP included calculations of baseline and natural visibility conditions for the Wichita Mountains Wilderness Area ("Wichita Mountains" or WMWA),[3] the only Class I area located in Oklahoma (and potentially affected Class I areas located elsewhere), a long-term strategy to address regional haze visibility impairment, RPGs for

[1] 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. The EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility was identified as an important value. The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. Although states and tribes may designate additional areas as Class I, the requirements of the visibility program set forth in the CAA applies only to "mandatory Class I Federal areas." Each mandatory Class I Federal area is the responsibility of a "Federal Land Manager." When the term "Class I area" is used in this action, it means "mandatory Class I Federal areas." [See 44 FR 69122, November 30, 1979 and CAA Sections 162(a), 169A, and 302(i)].

[2] See the July 1, 1999 Regional Haze Rule final action (64 FR 35714), as amended on July 6, 2005 (70 FR 39156), October 13, 2006 (71 FR 60631), June 7, 2012 (77 FR 33656) and on January 10, 2017 (82 FR 3079).

[3] WMWA is contained within the Wichita Mountains National Wildlife Refuge and is managed by the U.S. Fish and Wildlife Service. The Refuge is located in Comanche County adjacent to Fort Sill Military Reservation, a U.S. Army training base. The city of Lawton is the closest population center and is located 22 miles southeast of the Refuge.

the WMWA reflective of the visibility conditions projected to be achieved by the end of the first implementation period, and a monitoring and reporting strategy. The 2010 Regional Haze SIP also included determinations of emission limitations and schedules for compliance for a group of Oklahoma industrial air emissions sources that are subject to best available retrofit technology (BART)[4] under national Regional Haze Program requirements. Oklahoma's Regional Haze SIP purports that visibility improvement at the WMWA is limited by the impact of out-of-state emission sources.

The 2010 Regional Haze SIP evaluated numerous sources for applicability of BART. Oklahoma relied on BART requirements for emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_X) from certain electric generating units (EGUs) in the State in its regional haze plan to meet certain requirements of EPA's Regional Haze Rule. This reliance was consistent with EPA's regulations at the time that Oklahoma developed its regional haze plan. EPA approved core elements of Oklahoma's Regional Haze SIP, including BART determinations for the majority of emissions units that were subject to BART. Those determinations became effective on January 27, 2012 (76 FR 81728, December 28, 2011). However, EPA disapproved ODEQ's BART determinations for SO_2 emissions from six-coal-fired EGUs located at three facilities. As a result, EPA issued a federal implementation plan (FIP), promulgating revised SO_2 BART emission limits on coal-fired EGUs at those three facilities.[5] The FIP affects two units at each of two facilities owned and operated by Oklahoma Gas and Electric Company (OG&E): Muskogee Generating Station in Muskogee County, and Sooner Generating Station in Noble County. The

[4] Section 169A of the CAA directs states to evaluate the use of retrofit controls at certain larger, often under-controlled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress toward the natural visibility goal by controlling emissions of pollutants that contribute to visibility impairment, including a requirement that certain categories of existing major stationary sources built between 1962 and 1977 procure, install, and operate the "Best Available Retrofit Technology" (BART).

[5] See 76 FR 81728 (December 28, 2011), codified at 40 CFR 52.1923

FIP also initially applied to two units at American Electric Power/Public Service Company of Oklahoma's (AEP/PSO's) Northeastern Power Station in Rogers County, but those requirements have since been removed from the FIP after EPA approval of a SIP revision addressing these units.

In the December 2011 action, EPA also disapproved the State's LTS for regional haze because the LTS relied on the BART limits in the disapproved determinations. EPA also disapproved portions of *Oklahoma's Interstate Transport SIP for the 1997 8-hour Ozone and 1997 PM2.5 National Ambient Air Quality Standards* (submitted to address the requirements of CAA section 110(a)(2)(D)(i)(II) as it applies to visibility, also known as "prong 4"). Specifically, this disapproval found that the SIP submittal had not prevented SO_2 emissions from the above-mentioned units from interfering with measures required to be included in the applicable implementation plans of other states to protect visibility. Subsequently, EPA promulgated the aforementioned FIP, to address these deficiencies.[6] EPA took no action on Oklahoma's RPGs for WMWA, pending its evaluation of impacts of out-of-state emission sources.

On March 7, 2014, EPA published a document[7] in the Federal Register approving Oklahoma's 2013 SIP revision[8] submitted to address certain disapproved portions of the Regional Haze SIP related to the BART determination for two coal-fired units located at American Electric Power/Public Service Company of Oklahoma's (AEP/PSO's) Northeastern Power Station in Rogers County, Oklahoma. A separate document, published simultaneously,[9] withdrew the EPA-issued FIP as it relates to the Northeastern Power Station facility. The

[6] The final rule noted in 40 CFR 52.1928(c) that the FIP satisfied these deficiencies.
[7] See 79 FR 12944.
[8] *Oklahoma's Proposed Regional Haze Implementation Plan Revision* submitted on March 20, 2013; available in Docket No. EPA–R06–OAR–2013–0227.
[9] See 79 FR 12954

approved revision also satisfied the previously disapproved portions of Oklahoma's Interstate Transport SIP and the Regional Haze SIP's LTS, as those portions relate to the subject facility. The FIP still applies (unaltered) to the four affected units at the Muskogee and Sooner Generating Stations.

On December 16, 2014, EPA published a proposed action on the final portion of Oklahoma's 2010 Regional Haze SIP and on regional haze obligations for Texas.[10] As mentioned previously, Oklahoma's 2010 SIP concluded that visibility progress at the WMWA would be limited by the impact of out-of-state emission sources; and documented that a significant portion of the visibility impairment at the WMWA results from emissions generated in Texas.

Given the magnitude of these interstate impacts, EPA determined that the Oklahoma and Texas regional haze SIPs were interconnected, especially considering the relationship between upwind and downwind states in the reasonable progress and long-term strategy provisions of the Regional Haze Rule. On January 5, 2016, EPA issued a final action[11] for Texas and Oklahoma which:

- Disapproved portions of Texas's implementation plan for regional haze related to the effects of its emissions at the WMWA and other Class I areas;
- Disapproved a portion of Oklahoma's regional haze SIP revision, the reasonable progress goals at the WMWA, and its reasonable progress consultation with Texas[12];
- Simultaneously promulgated a FIP for Texas, which required additional reductions from

[10] See 79 FR 74818
[11] See 81 FR 295 (January 5, 2016), codified at 40 CFR 52.2302.
[12] See 81 FR 313: "The Regional Haze Rule required that Oklahoma use the consultation process under 40 CFR 51.308(d)(1)(iv) in the development of reasonable progress goals in tandem with Texas. Nevertheless, throughout the consultations, Oklahoma failed to explicitly request that Texas further investigate whether reasonable controls were available or that Texas reduce emissions from these significantly impacting sources to ensure that all reasonable measures to improve visibility were included in Texas' long-term strategy and incorporated into Oklahoma's reasonable progress goals for the Wichita Mountains. This failure resulted in the development of improper reasonable progress goals for the Wichita Mountains."

eight coal-fired electric power plants; and

- Calculated new (numerical) reasonable progress goals at the WMWA.

EPA's actions did not impose any additional requirements on emission sources within Oklahoma.

That rulemaking was challenged, however, and then stayed in its entirety by the U.S. Court of Appeals for the Fifth Circuit pending resolution of the litigation; in March 2017, following the submittal of a request by the EPA for a voluntary remand of the parts of the rule under challenge, the Fifth Circuit Court of Appeals remanded the rule in its entirety.[13]

EPA has not taken new action with respect to the RPGs for WMWA in Oklahoma. Ultimately, as discussed elsewhere in this action, whether it is the State's RPGs established in the 2010 RH SIP or the EPA's revised RPGs in the January 2016 action that are evaluated, our review of the State's 2016 progress report indicates that Oklahoma's emission reductions and measured visibility conditions are on track to meet those goals.

As we state in the Regional Haze Rule, the RPGs set by the state are not enforceable.[14] The RPGs represent the State's best estimate of the degree of visibility improvement that will result at the State's Class I areas from changes in emissions—changes driven by the particular set of control measures the state has adopted in its regional haze SIP to address visibility, as well as all other enforceable measures expected to reduce emissions over the period of the SIP. Given the forward-looking nature of RPGs and the range of assumptions that must be made as to

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[13] *Texas, et al v. EPA, et al,* No. 16-60118 (March 22, 2017)

[14] See 64 FR 35733: "…the reasonable progress goal is a goal and not a mandatory standard which must be achieved by a particular date as is the case with the NAAQS. Once a State has adopted a reasonable progress goal and determined what progress will be made toward that goal over a 10-year period, the goal itself is not enforceable. All that is 'enforceable' is the set of control measures which the State has adopted to meet that goal. If the State's strategies have been implemented but the State has not met its reasonable progress goal, the State could either: (1) revise its strategies in the SIP for the next long-term strategy period to meet its goal, or (2) revise the reasonable progress goals for the next implementation period. In either case, the State would be required to base its decisions on appropriate analyses of the statutory factors included in 40 CFR 51.308(d)(1)(i)(A) and (B) of the final rule."

emissions a decade or more in the future, we expect there to be some uncertainty in a given State's visibility projections.[15]

B. Oklahoma's Regional Haze Progress Report

Each state is required to submit a progress report that evaluates progress towards the RPGs for each Class I area within the state and for each Class I area outside the state which may be affected by emissions from within the state. 40 CFR 51.308(g). In addition, the provisions of 40 CFR 51.308(h) require states to submit, at the same time as the progress report, a determination of the adequacy of the state's existing regional haze implementation plan.[16] The progress report for the first planning period is due five years after submittal of the initial regional haze SIP and must take the form of a SIP revision. Oklahoma submitted its initial regional haze SIP on February 18, 2010.

On September 28, 2016, Oklahoma submitted its progress report in the form of a SIP revision under 40 CFR 51.308, which, among other things, detailed the progress made in the first planning period toward implementation of the long-term strategy (LTS) outlined in the State's regional haze plan. The progress report also included the visibility improvement measured at the WMWA, the only Class I area within Oklahoma, an assessment of whether Class I areas outside of the State are potentially impacted by emissions from Oklahoma, and a determination of the adequacy of the existing implementation plan.

II. EPA's Evaluation of Oklahoma's Progress Report and Adequacy Determination

A. Regional Haze Progress Report

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[15] See 40 CFR 51.308(d)(1)(v).

[16] The Regional Haze Rule requires states to provide in the progress report an assessment of whether the current "implementation plan" is sufficient to enable the states to meet all established RPGs under 40 CFR 51.308(g). The term "implementation plan" is defined for purposes of the Regional Haze Rule to mean any SIP, FIP, or Tribal Implementation Plan. As such, the Agency may consider measures in any issued FIP as well as those in a state's regional haze plan in assessing the adequacy of the "existing implementation plan" under 40 CFR 51.308(g) and (h).

The progress report provides an opportunity for public input on the State's (and the EPA's) assessment of whether the regional haze SIP is being implemented appropriately and whether reasonable progress is being achieved consistent with the projected visibility improvement in the SIP. This section includes EPA's analysis of Oklahoma's 2016 progress report, and an explanation of the basis for the Agency's proposed approval.

1. Control Measures

In its progress report, Oklahoma summarizes the status of the emissions reduction measures that were relied upon by Oklahoma in its regional haze plan. The major control measures identified by the State in the progress report are as follows:

- Best Available Retrofit Technology (BART) Controls
- Oklahoma Control Measures from:
  1) Air Quality Permits
  2) Prevention of Significant Deterioration
  3) Compliance and Enforcement
  4) Mobile Emissions
  5) Cross-State Air Pollution Regulations
  6) Other Measures
- Additional Air Pollution Emission Reductions

a. Best Available Retrofit Technology (BART) Controls

On July 6, 2005, EPA published final amendments to its regional haze rule, which requires emission sources that fit specific criteria to install BART controls.[17] The 2010 regional haze SIP originally determined that there were twenty facilities[18] in Oklahoma with BART-

[17] See 70 FR 39103 through 39172 (July 6, 2005).
[18] See Table VI-1 of the 2010 regional haze SIP (page 71).

eligible sources.[19] Oklahoma determined six facilities with a combined total of thirteen (now twelve[20]) units, were subject-to-BART[21] in the 2010 regional haze SIP.[22] EPA approved Oklahoma's identification of BART-eligible sources and determination of subject-to-BART sources in our 2011 final action.[23]

Section 2.4 of the progress report provides a discussion of BART requirements and implementation status. The current BART determinations for all subject-to-BART units in Oklahoma following the various, aforementioned series of SIP revisions and FIPs along with their implementation status, are listed in Table 1 below.

Table 1: Current BART Determinations

Facility	Unit	BART Emission Limits (in lb/MMBtu)[a]			BART Conditions
		SO_2	NO_X	PM_{10}	
OG&E Muskogee Generating Station	Unit 4 coal-fired	0.06[b]	0.15	0.10	Meet low NO_X emission limits by 1/27/17 via installation of low-NO_X burners (LNB) with over-fire air (OFA). Completed installation of LNB for Unit 4 in June 2015; Unit 5 in December 2013. Meet lower PM emissions based on existing controls which included electro-static precipitators (ESP).[c] Units 4 and 5 are now planned to be converted over to natural gas in the Fall of 2018.[d]
	Unit 5 coal-fired				
OG&E Seminole Generating Station [e]	Unit 1 natural gas-fired	Natural Gas as primary fuel, no additional control required for BART	0.203	Natural Gas as primary fuel, no additional control required for BART	Meet low NO_X emission limits by 1/27/17 via installation of LNB with OFA and flue gas recirculation (FGR).

[19] BART-eligible sources are those sources that have the potential to emit 250 tons or more of visibility-impairing pollutants, were put in place between August 7, 1962 and August 7, 1977, and whose operations fall within one or more of 26 specifically listed source categories.
[20] AEP/PSO's Northeastern Power Station closed EGU#4 effective April 2016.
[21] Under the Regional Haze Rule, states are directed to conduct BART determinations for "BART-eligible" sources that may be anticipated to cause or contribute to any visibility impairment in a Class I area. Sources that are reasonably anticipated to cause or contribute to any visibility impairment in a Class I area are determined to be subject-to-BART. For each source subject to BART, 40 CFR 51.308(e)(1)(ii)(A) requires that states identify the level of control representing BART after considering the factors set out in CAA section 169A(g).
[22] See Table VI-4 of the 2010 regional haze SIP (page 73) and Table 2.1 of the progress report.
[23] See 76 FR 81728 (December 28, 2011).

	Unit 2 natural gas-fired		0.212		Installation was completed on 2 of the 3 units at the time of the progress report SIP submission (approximately May 2016 for Unit 1 and December 2015 for Unit 2) and the 3rd was completed in May 2017.[f]
	Unit 3 natural gas-fired		0.164		
OG&E Sooner Generating Station	Unit 1 coal-fired	0.06 [b]	0.15	0.10	Meet low NO_X emission limits by 1/27/17 via installation of LNB with OFA Completed installation of the LNB for Unit 1 in March 2014; Unit 2 in April 2013. Meet lower PM emissions based on existing controls which included ESP.[g] Meet lower SO2 emissions via installation of dry gas desulfurization to be installed by 1/4/19 per the FIP. Construction of scrubber currently ongoing for Unit 1. Unit 2 is scheduled to commence in Fall 2018.[h]
	Unit 2 coal-fired				
AEP/PSO Comanche Power Station [e]	Unit 1 natural gas-fired	Natural Gas as primary fuel, no additional control required for BART	0.15	Natural Gas as primary fuel, no additional control required for BART	Meet low NO_X emission limits by 1/27/17 via installation of LNB. Installation completed (April 2016).[i]
	Unit 2 natural gas-fired				
AEP/PSO Northeastern Power Station [e, j]	Unit 2 natural gas-fired	Natural Gas as primary fuel, no additional control required for BART	0.28	Natural Gas as primary fuel, no additional control required for BART	Meet low NO_X emission limits by 1/27/17 via installation of LNB with OFA Completed installation in March 2014.[k]

	Unit 3 coal-fired	0.40	0.15	0.10	Meet interim NO_X and SO_2 emission limits until 4/16/16 when one of the two units would shut down (*Unit 4 shut down on 4/16/16*). Remaining unit (#3) must meet lower SO_2 and NO_X emission limits via installation of LNB with OFA, and further control system tuning. Installation of the LNB was completed in April 2012; and modifications to install SO_2 controls have not yet begun.[h] Remaining unit (#3) also must incrementally decrease capacity utilization during the period from 2021 to 2026; and completely shut down by 12/31/2026.[l]
	Unit 4 coal-fired (Retired as of April 2016)				
AEP/PSO Southwestern Power Station [e]	Unit 3 natural gas-fired	Natural Gas as primary fuel, so no BART requirement for SO_2 control systems	0.45	Natural Gas as primary fuel, so no BART requirement for PM control systems	Meet low NO_X emission limits by 1/27/17 via installation of LNB with OFA Completed installation in May 2014.[m]

a) The facilities are currently operating under the federally-enforceable BART-subject emission limits set forth in 76 FR 81728, December 28, 2011, unless otherwise noted.

b) EPA disapproved Oklahoma's SO_2 BART determinations and issued a FIP covering the BART-subject units at the facility (40 CFR 52.1923 (2015)). Under this FIP, each unit must meet lower SO_2 emission limits (0.06 lbs/MMBtu Boiler Operation Day) based on installation of emission controls, including dry flue gas desulfurization. Due to litigation over EPA's decision, the deadline by which these units are required to meet their new SO_2 emission limits contained in the FIP is January 4, 2019.

c) See page 12 of the progress report SIP.

d) See email response from ODEQ dated June 11, 2018 which has been included in docket for this proposed rulemaking: Units 4 and 5 were converted to natural gas in February 2017.

e) Natural gas units are considered "grandfathered" and currently do not have specific emission limits established in the current permit. The BART NO_X and PM_{10} emission limits for each of the affected units are based on a 30-day rolling average in accordance with the federally-enforceable BART subject emission limits.

f) See page 10 of the progress report SIP; and Email response from ODEQ dated June 11, 2018 which has been included in docket for this proposed rulemaking.

g) See page 11 of the progress report SIP.

h) See email response from ODEQ dated June 11, 2018 which has been included in docket for this proposed rulemaking.

i) See page 10 of the progress report SIP.

j) EPA disapproved Oklahoma's SO_2 BART determinations for Units 3 and 4 at the facility and issued a FIP covering these units. Subsequently, DEQ developed and submitted, and EPA approved, a revision to the

Oklahoma regional haze SIP, which replaced the FIP as it related to EPA's SO_2 BART requirements for Units 3 and 4, as well as revised Oklahoma's original NO_X BART requirements for Units 3 and 4 (79 FR 12954, March 3,2014).

k) See page 12 of the progress report SIP.
l) See page 13 of the progress report SIP.
m) See pages 10-11 of the progress report SIP.

b. Other Oklahoma Control Measures

In its original 2010 regional haze plan, ODEQ cited various air quality rules and programs as part of its long-term strategy for addressing the visibility impairment at WMWA. These efforts include comprehensive permitting, compliance and enforcement programs, an emissions inventory system, and a state-wide ambient air monitoring network.

The progress report states that ODEQ:

- Operates a robust permitting program that addresses both major and minor source facilities. Regular inspections are performed so as to ensure compliance with all permit requirements, applicable statutes, rules and regulations. Additionally, ODEQ's permitting program incorporates new source performance standards (NSPS) and national emission standards for hazardous air pollutants (NESHAP) via its permitting, compliance, and enforcement programs.

- Addresses visibility impairment for new or modified major stationary sources via its Prevention of Significant Deterioration (PSD) Requirements for Attainment Areas permitting process.[24] The PSD permitting rules limit the establishment of air pollution sources which may contribute to visibility impairment and other air pollution problems.

- Addresses violations of its air-related environmental rules by actively pursuing compliance and enforcement actions as appropriate in its ongoing efforts to preserve air quality in the state and surrounding areas. In doing so, these actions also have the added effect of reducing emissions that contribute to visibility impairment at WMWA (and other nearby mandatory Class I areas).

- Relies upon federal regulations on new motor vehicles to limit air pollutant emissions from on-road mobile sources. These federal standards result in emission reductions of PM, O_3 precursors, and non-methane organic compounds. The State anticipates that based on historical trends, the slow decline in motor-vehicle emissions are likely to continue in the future.

[24] OAC 252:100, Subchapter 8, Part 7

- Intends to consider any future *Cross-State Air Pollution Rule* (CSAPR)-related[25] reductions and their effects in any succeeding SIP revision for regional haze. EPA's ongoing updates to CSAPR to address interstate transport for the 2008 ozone National Ambient Air Quality Standard (NAAQS) may lead to additional reductions in emissions that contribute to visibility impairment from sources in Oklahoma, Texas, and various other upwind states.

- Adopted efforts to address controlled and open-burning practices within the state:
  - In 2013, Oklahoma adopted a voluntary Smoke Management Plan (SMP)[26] to address agriculture and forestry smoke.[27]
  - ODEQ also revised its open-burning rules,[28] restricting its use in certain land-clearing operations for several metropolitan counties.

Additionally, the State has made various other updates and modifications to its air quality rules and regulations, which it contends will produce indirect benefits for visibility. These include:

- Incorporation by reference of the latest changes and additions to the federal NSPSs and NESHAPs,

- Updates to minor-facility and major-source permitting requirements, and

- Updates to OAC 252:100, Subchapter 31, Control of Emission of Sulfur Compounds.

Subsequently, since the aforementioned, additional existing control measures also address some of the same emissions that contribute to regional haze and visibility impairment at Class I areas, they are anticipated to have a positive effect on the visibility at WMWA.

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[25] CSAPR, as originally promulgated, required 28 eastern states to reduce power plant emissions that contribute to pollution from O_3 and PM2.5 in other states. The rule requires reductions in O_3 season NO_X emissions that crossed state lines for states under the O_3 requirements, and reductions in annual SO_2 and NO_X emissions for states under the PM2.5 requirements. To assure emissions reductions, the EPA promulgated FIPs for each of the states covered by the rule. The EPA set pollution limits (emission budget) for each state covered by CSAPR. Allowances are allocated to affected sources based on these state emission budgets.

[26] See the *Oklahoma Smoke Management Plan* (February 28, 2013). Recognizing the benefits of prescribed and wildland fires to forest management, wildlife management, and agriculture, the SMP was developed by the Oklahoma Department of Agriculture, Food, and Forestry (ODAFF) and ODEQ in cooperation with federal and private stakeholders in an effort to mitigate smoke emissions from prescribed and wildland fires.

[27] 40 CFR 51.308(d)(3)(v)(E) requires Oklahoma to consider smoke management techniques for the purposes of agricultural and forestry management.

[28] See OAC 252:100-13

c. Additional Air Pollution Reductions

Nationally, there have been several regulatory and economic developments which resulted in reduced emissions of visibility impairing pollutants since the preparation of the initial Oklahoma SIP revision for regional haze. In the progress report SIP, ODEQ discusses the anticipated benefit from efforts designed to meet new NAAQS standards that have been established since the 2010 Regional Haze submittal. Acknowledging the recent trend towards the use of cleaner fuels for many industrial operations and particularly for EGUs, ODEQ's progress report indicates that the resulting lower emissions, particularly of SO_2, would also equate to progress towards the goal of natural visibility conditions at WMWA. Additionally, ODEQ cited the potential impacts of ongoing emissions reductions in multiple pollutants resulting from the EPA's 2013 mercury and air toxics standards (a.k.a. the "MATS" rule), as further contributing to visibility improvement. ODEQ did not perform any technical analyses to quantify the visibility benefits of these developments in its progress report, although it acknowledges that they likely contributed considerably to observed visibility improvement for the state.

EPA proposes to find that Oklahoma has adequately addressed the applicable provisions under 40 CFR 51.308(g) regarding the implementation status of control measures because the State adequately described the status of the implementation of all measures included in the implementation plan for achieving reasonable progress goals for mandatory Class I Federal areas both within and outside the State.

2. Emissions Reductions

In its progress report, ODEQ presents emissions data showing emission trends and reductions due to controls. The State identified Sulfureous Particulate (sulfate), Nitrate Particulate (nitrate), and Organic Carbonaceous Particulate (organic carbon (OC)) as the three

largest contributors to visibility impairment at Oklahoma's WMWA Class I area[29] for the first implementation period for regional haze. Many of the sources that produce these visibility-impairing pollutants in Oklahoma are anthropogenic in nature and are controllable. In 2002, point sources emitted 87.5 percent of Oklahoma SO_2 emissions and 31.6 percent of Oklahoma NO_X emissions.[30] Emissions from Oklahoma sources contributed to 13.25 percent of the overall visibility impairment[31] in Oklahoma's WMWA Class I area. EGUs accounted for 65 percent of the total Oklahoma SO_2 emissions[32] and 17 percent of the total Oklahoma NO_X emissions.[33]

As part of the emission data submitted by the State, the State reported point source emission data for NO_X and SO_2 for the 2002 baseline year and 2011 (the latest official National Emissions Inventory (NEI)-Oklahoma emissions inventory data available at the time the progress report was submitted).[34] The data presented does not reflect any emission reductions from BART-eligible sources due to BART limits, since the six required sources in question had yet to install their respective BART control measures (see Table 1 above). Additionally, the State provided projected emissions data for 2018. Overall point source emissions of NO_X increased slightly from 2002 to 2011, while SO_2 point source emissions decreased by approximately 30,000 tons per year over the same period. EPA reviewed additional, more recent EGU emissions data and, even without emission reductions from all BART limits, the available EGU emissions data through 2017 show large reductions from the 2002 baseline.

Table 2 below, provided by the EPA to evaluate EGU emissions post-2011, shows that NO_X and SO_2 EGU point source emissions have decreased during the 2011 to 2017 time-period.

[29] See Table 5-1 from the progress report SIP (September 2016) and Table V-8 of the Regional Haze State Implementation Plan (February 2010).
[30] See Table IV-1 of the Regional Haze State Implementation Plan (February 2010).
[31] See Table V-7 of the Regional Haze State Implementation Plan (February 2010).
[32] See Table IV-3 of the Regional Haze State Implementation Plan (February 2010).
[33] See Table IV-5 of the Regional Haze State Implementation Plan (February 2010).
[34] See Table 5-2 in the Oklahoma progress report (page 20).

In 2017, the SO_2 emissions were 50,270 tpy lower than the 2011 annual levels while NO_X emissions were 56,786 tpy lower. These results represent an additional 54 percent reduction in SO_2 emissions and 73 percent reduction in NO_X emissions from EGUs since 2011. Overall, from the 2002 baseline year, EGU SO_2 emissions have reduced by 60 percent and EGU NO_X emissions have reduced by 75 percent.

Table 2: Annual NO_X and SO_2 Emissions from EGU Point Sources in Oklahoma*

Year	NO_X (tons)	SO_2 (tons)	Heat Input (MMBtu)	NO_X Emission Rate (lb/MMBtu)	SO_2 Emission Rate (lb/MMBtu)
2002	85,999	106,318	553,566,474	0.311	0.384
2003	86,502	109,803	574,470,072	0.301	0.382
2004	78,217	100,098	558,112,281	0.280	0.359
2005	85,019	103,985	606,763,914	0.280	0.343
2006	82,810	106,091	620,400,705	0.267	0.342
2007	76,529	100,111	622,537,676	0.246	0.322
2008	79,989	101,320	647,315,009	0.247	0.313
2009	73,357	95,307	626,058,610	0.234	0.304
2010	71,439	85,135	603,295,697	0.237	0.282
2011	77,983	92,351	628,579,599	0.248	0.294
2012	64,338	77,128	619,284,535	0.208	0.249
2013	49,178	74,632	558,628,131	0.176	0.267
2014	37,562	72,855	519,423,413	0.145	0.281
2015	28,097	61,971	531,490,156	0.106	0.233
2016	24,895	49,485	502,603,800	0.099	0.197
2017	21,197	42,081	430,070,391	0.099	0.196

* Source: U.S. EPA Clean Air Market Division www.epa.gov/airmarkt/

A more-detailed breakdown of the distribution of emission trends for each contributing pollutant species from all sources can be seen in *Section 4. Emission Tracking,* of this proposed action.

The EPA's NEI total point source data for Oklahoma in Table 3 shows that reported PM emissions remained relatively consistent from their NEI baseline totals for the first implementation period. Total 2014 NO_X and SO_2 point sources emissions are lower than the 2002 baseline emission levels.

Table 3: NEI Total Point Source Emission Data for Oklahoma for 2002-2014[a]

Year[b]	NO_X (tpy)	SO_2 (tpy)	$PM_{2.5}$ (tpy)	PM_{10} (tpy)
2002	163,417	150,388	7,106	12,744
2005	100,681	113,344	3,551	7,044
2008	142,157	137,047	6,638	14,390
2011	161,396	118,921	7,557	13,736
2014	122,346	102,524	6,764	11,225

a) As reported in the online EPA Emissions Inventory System (EIS) Gateway database for point sources only.
b) Comprehensive NEI data is generated every three years

In addition to the above reductions, ODEQ's progress report mentions that it anticipates some additional future reductions in SO_2 and NO_X emissions due to more stringent CSAPR budgets that apply to EGUs in Texas and most eastern states.[35] These emissions contribute to or are precursors for the formation of sulfurous and nitrate PM, which together comprise the majority of haze affecting the WMWA. Also, as mentioned earlier, BART controls at Oklahoma-based EGUs (OG&E's Muskogee and Sooner plants had until January 2019 to complete their installation of BART controls per the recent FIP) are also expected to result in further haze-forming emissions reductions from within the State.

The EPA proposes to conclude that the State adequately addressed the requirements under 40 CFR 51.308(g) with its summary of emission reductions of visibility-impairing pollutants. Overall, the State demonstrated the emission reductions achieved for visibility-impairing pollutants in the State for the first implementation period. Emissions of SO_2, NO_X, and PM, the main contributors to regional haze in Oklahoma, have all been decreasing. Even before additional BART limits and lower CSAPR budgets have been fully implemented, the SO_2 and

[35] Since the submission of Oklahoma's Progress Report, the CSAPR SO_2 budget for Texas has been replaced by the Texas Intrastate Regional Haze Bart-alternative SO_2 trading program—EPA finalized its determination that the intrastate trading program is an appropriate SO_2 BART alternative for EGUs in Texas (see 82 FR 48324 October 17, 2017 and 83 FR 43586, August 27, 2018). Any additional future reductions in SO_2 attributed to Texas would be the result of said trading program.

NO_X haze pollutant precursors from EGU point sources in the State have decreased from the baseline levels in 2002. In addition, with the promulgation of the CSAPR Update in September of 2016, which included Oklahoma and Texas EGUs within the ozone-season NO_X budget trading program and applied in 20 other eastern states, reduced NO_X emissions were required beginning in the 2017 ozone season.[36]

3. Visibility Conditions

In their progress report, ODEQ provides information on visibility conditions for the Class I area within Oklahoma's borders. The progress report addressed current visibility conditions, the difference between current visibility conditions and baseline visibility conditions (expressed in terms of five-year averaged of these annual values, with values for the haziest (i.e., most impaired), and clearest (i.e., least impaired) days), and the change in visibility impairment.

Oklahoma's progress report provides figures with visibility monitoring data for WMWA. Additionally, EPA has obtained and examined visibility data for more recent five-year time periods from the IMPROVE network's monitoring data. Table 4, below, shows the visibility conditions from 2002–16, compared to the natural/baseline visibility conditions in deciviews (dv).

Table 4: IMPROVE Visibility Trends for the Wichita Mountains WIMO1 Monitor*

Year	Annual Average Haze Index, Haziest Days (dv)	Natural Condition Haze Index, Haziest Days (dv)	Annual Average Haze Index, Clearest Days (dv)	Natural Condition Haze Index, Clearest Days (dv)
2002	23.6	7.5	9.8	3
2003	23.6		10	
2004	24.2		9.6	
2005	25.7		10.6	
2006	21.8		9.7	
2007	22.8		9.3	
2008	21.6		9.8	

[36] See 81 FR 74506 (October 26, 2016)

2010	21.8		9.2	
2011	22.9		10.3	
2012	20.2		8.9	
2013	20.3		8.4	
2014	21.2		9.3	
2015	18.8		8.5	
2016	17.2		8.1	

* See the IMPROVE Visibility Trend Charts for the Wichita Mountains WIMO1 monitor: http://vista.cira.colostate.edu/Improve/aqrv-summaries/

Although visibility conditions have varied from year to year, Table 6-8 of the progress report shows that WMWA has displayed an overall improvement in visibility since 2001. At the time the progress report was produced, WMWA showed improved visibility when comparing the 2000 to 2004 baseline period to the 2009 to 2013 visibility period (the most recent five-year average presented in ODEQ's progress report) during the most impaired days of the first implementation period. The progress report's most recent five-year average of 21.25 dv[37] shows that as of 2013, WMWA met the 2010 regional haze SIP RPGs for the twenty percent most impaired days.[38] The WMWA Class I area also showed improvement from the 2000 to 2004 baseline on the twenty percent least impaired days for the first implementation period. Visibility conditions at WMWA had improved nearly enough to meet the RPG for 2018 for the best quintile of days,[39] with a five-year average of 9.25 dv.[40]

That being said, the 2010 Regional Haze SIP RPGs for the twenty percent least impaired and most impaired days for WMWA were disapproved as part of the previously mentioned, EPA FIP of January 2016 and replaced with revised RPGs developed by EPA. Though the FIP was stayed at the time the State submitted the progress report SIP, the State included these revised

[37] See Table 6-8 on pages 27-28 of the progress report.
[38] In the 2010 Regional Haze SIP, WMWA had a visibility impairment reduction goal of 2.33 dv (See Table IX-3, pg. 107) to reach a RPG of 21.47 dv by 2018 for "worst days" (See Table IX-4, pg. 109).
[39] In the 2010 Regional Haze SIP, WMWA had a RPG of 9.23 dv by 2018 for "best days" (page 104). See Table 6-8 (pages 27-28) and the chart on page 29 of the progress report.
[40] See Table 6-8 on pages 27-28 of the progress report.

RPGs (for 2018 standards) of 9.22 dv and 21.33 dv for best and worst quintiles, respectively, in its progress report. When comparing the 2018 RPGs calculated by EPA in its final action with the observed five-year visibility trends reported in the State's progress report, WMWA has exceeded the visibility improvements needed to meet the goal for the worst quintile days; and was close to meeting the goal for the best quintile days (9.25 versus 9.22 dv) as of 2013.

IMPROVE's data from 2001–16 demonstrates that visibility for the haziest/worst days at the Wichita Mountains monitoring site has been improving at a rate of 0.41 dv/year.[41] The average visibility for WMWA on the worst days has been below the 2018 RPGs calculated by EPA since the 2009-14 five-year period, as seen in Table 5. Most recently, the 2012– 16 period showed the visibility at the Wichita Mountains to be 19.54 dv, 1.79 dv below the EPA calculated 2018 RPGs. We note that the visibility conditions needed to meet the uniform rate of progress for 2018 is 20.01 dv for the twenty percent most impaired days.

Table 5: Visibility Conditions at WMWA Class I Area for the Twenty Percent Worst Days

Class I Area	Baseline (2000-2004) (dv)	(2007-2011)[a] (dv)	(2008-2012)[a] (dv)	(2009-2013)[a] (dv)	(2010-2014)[b] (dv)	(2011-2015)[b] (dv)	(2012-2016)[b] (dv)	2018 FIP-Revised RPGs (dv)	Most recently available data v. Baseline data (dv)
Wichita Mountains Wilderness Area	23.83	22.26	21.61	21.25	21.28	20.68	19.54	21.33	- 2.5

a) 4-yr average b/c there was no available data for 2009
b) Source: IMPROVE Visibility Trend monitoring data for Wichita Mountains

IMPROVE's clearest/best days monitoring data from 2001 to 2016 indicates that the haze index values at the WMWA monitor has been declining at a rate of 0.12 dv/year.[42] The average visibility for WMWA on the clearest of days has been below the 2018 RPGs calculated by EPA

[41] Source: IMPROVE Visibility Trend monitoring data for Wichita Mountains: http://vista.cira.colostate.edu/Improve/aqrv-summaries/
[42] Source: IMPROVE Visibility Trend monitoring data for Wichita Mountains: http://vista.cira.colostate.edu/Improve/aqrv-summaries/

since the 2010 to 2015 five-year period as seen in Table 6. Most recently, the 2012 to 2016 period showed the best days' visibility at the Wichita Mountains to be 0.58 dv below the 2018 RPGs.

Table 6: Visibility Conditions at WMWA Class I Area for the Twenty Percent Best Days

Class I Area	Baseline (2000-2004) (dv)	(2007-2011)[a] (dv)	(2008-2012)[a] (dv)	(2009-2013)[a] (dv)	(2010-2014)[b] (dv)	(2011-2015)[b] (dv)	(2012-2016)[b] (dv)	2018 FIP-Revised RPGs (dv)	Most recently available data v. Baseline data (dv)
Wichita Mountains Wilderness Area	9.92	9.80	9.65	9.25	9.22	9.08	8.64	9.22	- 1.28

a) 4-yr average b/c there was no available data for 2009
b) Source: IMPROVE Visibility Trend monitoring data for Wichita Mountains

EPA proposes to conclude that Oklahoma has adequately addressed the applicable provisions under 40 CFR 51.308(g) regarding assessment of visibility conditions because the State provided baseline visibility conditions (2000 to 2004), current conditions based on the most recently available visibility monitoring data available at the time of progress report development, the difference between these current sets of visibility conditions and baseline visibility conditions, and the change in visibility impairment from 2009–13. The WMWA has shown improved visibility for the most impaired and least impaired days since 2001 and is projected to continue to improve with additional future emission reductions due to BART and other measures.

4. Emissions Tracking

In its progress report SIP, the State presents NEI emission inventories for the 2002 baseline year and 2011, as well as projected inventories for 2018.[43] The pollutants inventoried include SO_2, NO_X, NH_3, VOC, $PM_{2.5}$ (i.e., fine particulates), and PM_{10} - $PM_{2.5}$ (i.e., coarse

[43] Emission development and air quality modeling were performed by the Central Regional Air Planning Association (CENRAP) in support of SIP development in the central states region for 2002 and projected 2018 emissions.

particulates). The inventories were categorized for all major visibility-impairing pollutants under biogenic and major anthropogenic source groupings. The anthropogenic source categorization included on and non-road mobile sources; point sources; and area sources. The 2011 NEI inventory was the latest comprehensive inventory available at the time the State prepared its progress report SIP revision in 2016.

Reductions in emissions from the baseline year to 2011 occurred in every pollutant with the exception of VOCs and coarse particulates, which increased by 16 percent and 79 percent respectively. The dramatic increase in coarse particulates can be attributed to drought conditions which developed in late 2010 and intensified in 2011 for the WMWA. The three-month period of June through August of 2011 ranked as the "hottest [summer] ever recorded in any state."[44] ODEQ asserts that the dry conditions and intense heat resulted in an increase in coarse PM from the resulting dust storms.[45] Total NO_X and SO_2 emissions were reduced by 54,211 and 46,372 tpy, with the largest reductions of NO_X being realized from the on-road and non-road mobile sources categories; and two thirds of the SO_2 reductions attributed to point sources [46]

For comparison purposes, EPA provides additional 2008 and 2014 NEI data.[47] A breakdown of the total emissions for the state can be seen below in Table 7.

[44] See page 18, Section 4.4 of the progress report.
[45] *Ibid*.
[46] See Table 5-2 (page 20) of the progress report.
[47] As reported in the online EPA Emissions Inventory System (EIS) Gateway database for total state emissions.

Table 7: Comparison of Total State Emissions to CENRAP 2018 Projections

Pollutant Species	2002 State Reported Baseline Emissions (tpy)	2008 NEI Total Emissions (tpy)*	2011 NEI Total Emissions (tpy)	2014 NEI Total Emissions (tpy)*	CENRAP 2018 Projections (tpy)
SO_2	170,021	148,710	123,649	109,210	119,776
NO_X	502,122	463,951	447,911	385,782	369,248
NH_3	143,179	112,650	112,230	112,863	182,605
VOCs	1,375,653	1,356,355	1,600,734	1,505,886	1,581,788
$PM_{2.5}$	124,954	168,554	103,638	133,381	142,252
PM_{10}	438,852	809,223	666,672	488,258	429,945

*Provided by the EPA from the EIS gateway database

In its 2010 Regional Haze SIP, ODEQ determined that the primary visibility-impairing pollutants in Oklahoma include SO_2, NO_X, and PM (both PM_{10} and $_{2.5}$). Oklahoma provides in its progress report SIP a comparison of the inventories for all potential visibility-impairing pollutants for 2002 (the baseline year), recent NEI data for 2011, and CENRAP-projected data for 2018.[48] This span is sufficiently representative of emission levels for the purpose of EPA's review of the progress report. A comparison of the data for these years shows that total state emissions have decreased for all of the visibility-impairing pollutants except for VOCs and PM_{10}, which had slight to modest increases (14% and 34%) over 2008, respectively. VOC emissions increased by 225,081 tpy since 2002, but CENRAP modeling has demonstrated that anthropogenic VOCs do not significantly impair visibility at WMWA. Total PM_{10} levels appear to have spiked briefly after 2002 and then began to steadily decline. More recently available 2014 NEI data shows that, other than PM_{10} levels, the emissions inventory for all pollutants is currently below the CENRAP 2018 Projections. Despite not already having met the 2018 projections, Oklahoma's PM_{10} emissions declined nearly 40 percent from 2008 levels.

The projected 2018 CENRAP data also showed that there is an anticipated overall

[48] Page 20 of the progress report.

downward trend in SO_2, and NO_X. The decrease in SO_2 is especially noteworthy as sulfurous emissions contribute the most to visibility impairment at WMWA. (Nitrate particulate matter forms from NO_X emissions but occurs predominantly during the winter months; whereas sulfurous aerosol comprises the plurality during the rest of the year.)[49]

Because of the limiting role of NO_X and SO_2 on $PM_{2.5}$-formation, and the uncertainties in assessing the effect of NH_3 emission reductions on visibility, Oklahoma does not consider ammonia among the visibility-impairing pollutants.[50]

When considered as a whole, the above indicates that the main precursors that cause the formation of haze and visibility impairment in Oklahoma are being reduced.

Table 8 below shows the inventoried categories that were the driving factors behind the total emission trends. Nearly every category across the inventory showed emission decreases for each pollutant. The total emissions change for each pollutant, except NH_3 and VOCs, showed a reduction from 2008 to 2014. The trends were consistent with the emission trends shown in section II, A, 2 of this proposed action, which also showed the latest updates for EGUs.

Table 8: 2014 Emission Data (tpy) and the Category Changes since 2008 for Oklahoma*

Category	NO_X	SO_2	PM_{10}	$PM_{2.5}$	NH_3	VOC
Agricultural/ Biogenic	37,854 (-5,637)	0	199,471 (+32,530)	38,845 (+5,457)	95,232 (-2,142)	1,041,372 (+180,237)
Area/Non-point	138,795 (-8,375)	1,759 (-2,976)	421,375 (-305,703)	79,251 (-23,170)	100,409 (+2,166)	1,283,217 (+173,338)
Fires	9,707 (-1,661)	4,362 (-901)	56,858 (-4,145)	47,146 (-4,819)	11,798 (+2,633)	111,238 (-21,782)
Fugitive Dust	0	0	20,292 (-11,924)	2,029 (-1,193)	0	0
Road Dust	0	0	175,729 (-329,400)	19,815 (-33,262)	0	0
Non-road	20,462	44	2,004	1,912	31	20,885

[49] Page 66 of the 2010 Regional Haze SIP.
[50] Page 69 of the 2010 Regional Haze SIP. EPA agreed with Oklahoma's decision to exclude ammonia in our December 2011 final rile. 76 FR 81727, 81754 (December 28, 2011)

Mobile	(-7,180)	(-472)	(-703)	(-677)	(+2)	(-10,011)
On-road Mobile	92,071 (-43,267)	450 (-757)	4,986 (-661)	2,834 (-1,519)	1,600 (-555)	42,735 (-14,225)
Point Sources	126,000 (-17,071)	102,846 (-34,270)	11,486 (-3,056)	8,361 (-619)	3,292 (+233)	50,777 (+23,871)
Total Emission Change	**-83,191**	**-39,376**	**-623,062**	**-59,802**	**+2,337**	**+331,428**

Note: The numbers in parentheses indicate an increase (+) or decrease (-) in emissions from 2008

∗ As reported in the online EPA Emissions Inventory System (EIS) Gateway database.

EPA is proposing to find that the State adequately addressed the provisions of 40 CFR 51.308(g) regarding emissions tracking because the State compared the most recent updated emission inventory data for the key visibility impairing pollutants across Oklahoma available at the time of progress report development with the baseline emissions used in the modeling for the regional haze plan. The results showed that the emissions from SO_2, NO_X, and PM, the main contributors of regional haze in Oklahoma, have all been decreasing since 2008. The State's analysis relied on the latest emissions data available to them at the time (2002 to 2011);[51] and the EPA provided additional updates for 2008 and 2014.

5. Assessment of Changes Impeding Visibility Progress

Oklahoma also provided an assessment of any significant changes in anthropogenic emissions within or outside the State that could limit or impede reasonable progress. Data presented in the State's progress report[52] indicates that there were no significant changes in anthropogenic emissions that have limited or impeded progress in reducing pollutant emissions and improving visibility. Visibility Conditions as the WMWA Class I area demonstrated overall downward trends in Haze Index values for both its best (i.e., "clearest") and worst (i.e., "haziest") days. EPA proposes to agree with Oklahoma's conclusion that there have been no

[51] While ideally the five-year period to be analyzed for emission inventory changes is defined as the time period since the current regional haze SIP was submitted, there is an inevitable time lag in developing and reporting complete emissions inventories once quality-assured emissions data becomes available.

[52] See page 20 of the progress report.

significant changes in emissions of visibility-impairing pollutants which have limited or impeded progress in reducing emissions and improving visibility in Class I areas impacted by the State's sources. Although Oklahoma continues to experience visibility impacts from sources outside the State that affect the WMWA Class I area,[53] this progress report demonstrates that, the State remains on track to meet both its original and the EPA-determined 2018 RPGs for the Class I area in Oklahoma. EPA is not evaluating at this time whether existing trends in emissions are sufficient, or could impede or limit progress, with respect to any future RPGs for subsequent planning periods for Class I areas in Oklahoma.

6. Assessment of Current Strategy

The State concludes that it is on track to meet the 2018 RPGs for the WMWA based on the trends in visibility and emissions presented in its progress report. In its progress report SIP submittal, the State assesses the 2010 SIP elements and strategies and determines that, based upon emission trends and monitor data, they were sufficient to enable Oklahoma to meet all the originally established RPGs.[54] The state notes that the visibility at the WMWA has improved sufficiently to meet the originally established RPGs for 2018 during 2009-2013 for the 20% worst days and they anticipate further improvement in visibility as additional emission reductions occur due to implementation of BART controls.

[53] Oklahoma's initial SIP Revision for Regional Haze documented that the majority of visibility impairment at the Wichita Mountains results from emissions generated in Texas. EPA's examination and review of Oklahoma's reasonable progress consultation with Texas determined that additional emissions reductions from Texas were necessary to address visibility impairment at WMWA for the first implementation period ending in 2018, and issued a FIP for Texas to that effect, requiring additional emissions reductions from eight coal-fired electric power plants (See 81 FR 295). This action was subsequently stayed and later remanded.

[54] Note that states don't necessarily need to refer to specific RPGs to meet the requirements of 51.308(g)(6). If they're currently achieving more reductions than they anticipated when they developed their SIP, this demonstrates that they're on track to ensure RP in class I areas.

The evaluation set forth by the State also shows that it is meeting the revised RPGs that EPA calculated in its currently stayed January 2016 FIP action for Texas and Oklahoma.[55] In its progress report, Oklahoma shows it was achieving greater visibility improvements than the EPA-calculated RPGs at WMWA for the worst quintile of days.[56] Based on more recently available monitored data, the State has also reached its 2018 goals for the best quintile days as well. We note that the recent monitored data showing visibility improvements at WMWA also meet the uniform rate of progress for 2018 of 20.01 dv for the twenty percent most impaired days.

EPA proposes to find that Oklahoma has adequately addressed the provisions of 40 CFR 51.308(g) regarding the strategy assessment. In its progress report SIP, Oklahoma describes the improving visibility trends using data from the IMPROVE network and the downward emissions trends in NO_X and SO_2 emissions in the State. These trends support the State's determination that its regional haze plan is sufficient to meet the 2018 RPGs for Class I areas within the State. Oklahoma also notes that additional improvement in visibility conditions are anticipated in the future after installation of all controls required to meet BART (see Table 1).

EPA's modeling data used to develop the previously mentioned FIP and SIP revisions for Oklahoma's subject-to-BART EGU sources, also demonstrated that the potential visibility impacts for Class I areas outside the state would be significantly reduced by implementation of the associated revised BART controls/limits.[57]

With regards to the effect of Oklahoma's emissions on other states with Class I areas, Oklahoma acknowledges the possible impact of its sources on Arkansas' Class I areas, Caney

[55] On March 18, 2016, Texas filed a request for a stay of the FIP. On July 15, 2016, the court issued a stay of the FIP, including the emission control requirements. ODEQ notes that the RPG at WMWA presumably depends on the outcome of this litigation.
[56] See Table 6-8 on pages 27 to 28 of the progress report SIP.
[57] See *Comments on Modeling* section, 76 FR 81738-81739 (December 28, 2011).

Creek and Upper Buffalo Wilderness Areas, but concludes that the impact on visibility conditions in those areas is negligible.[58] ODEQ could not identify any emissions from within the State that either prevented or inhibited reasonable progress at Class I areas outside the State, nor had they (ODEQ) been contacted any other state to assert such an interstate-transport impact.

In support of this assertion, we submit that Arkansas' Class I areas have seen marked improvement in visibility since the start of regional haze monitoring. Based on Arkansas' respective IMPROVE data, the haze index for the 20 percent worst days of visibility at both the Caney Creek and Upper Buffalo Wilderness Areas have been steadily improving as a result of reduced emissions within Arkansas and because of broader industrial and energy trends in other states. EPA's review of recent monitoring data[59] from Arkansas' Class I areas indicates that both Caney Creek and Upper Buffalo are well on track for demonstrating improved visibility for the most impaired and least impaired days since 2001.[60] Based on the five-year rolling averages, both wilderness areas are not only on schedule but have also outperformed their stricter revised 2018 RPGs for the twenty percent worst days[61] (22.47 and 22.51 dv; See Table 9).

Table 9: Visibility Conditions at Arkansas Class I Areas for Twenty Percent Worst Days

Class I Area	Baseline (2000-2004) (dv)	(2007-2011) (dv)	(2008-2012) (dv)	(2009-2013) (dv)	(2010-2014) (dv)	2018 Revised RPGs (dv)
Caney Creek Wilderness	26.36	22.99	22.69	22.23	21.83	22.47
Upper Buffalo Wilderness	26.27	24.15	22.99	22.16	21.63	22.51

[58] ODEQ noted in its progress report SIP revision (on page 30) that, "Although it is rare that emissions from Oklahoma impact the Caney Creek and Upper Buffalo Wilderness Areas in Arkansas due to the location of large pollutant emitting sources in Oklahoma combined with the prevailing wind direction and topographical setup along the Oklahoma/Arkansas border, DEQ will continue to surveil these and other necessary Class I areas in other states."
[59] See RPG Calculation Data Sheets, sip-rev-rpg-calcs.xlsx and visibility-progress.xlsx provided at https://www.adeq.state.ar.us/air/planning/sip/regional-haze.aspx.
[60] See figures 2 to 9 and tables 5 to 8 (pages 28 to 39) of the Arkansas Regional Haze SO_2 and PM SIP revision.
[61] See page 54 of the Arkansas Regional Haze SO_2 and PM SIP revision.

Based on the above, the State's assertion that sources in Oklahoma are not interfering with the achievement of any other neighboring state's RPGs for their respective Class I areas for the first planning period appears valid.[62]

EPA is proposing to approve Oklahoma's finding that the elements and strategies in its implementation plan are sufficient to achieve the RPGs for the WMWA Class I area in the State and for any Class I areas in nearby states potentially impacted by sources in the State.

7. Review of Current Monitoring Strategy

The monitoring strategy for regional haze in Oklahoma relies upon participation in the Interagency Monitoring of Protected Visual Environments (IMPROVE) regional haze monitoring network. IMPROVE provides a long-term record for tracking visibility improvement or degradation. Oklahoma currently relies on data collected through the IMPROVE network to satisfy the regional haze monitoring requirement as specified in 40 CFR 51.308(d)(4) of the Regional Haze Rule. In its progress report SIP, Oklahoma summarizes the existing IMPROVE monitoring network and its intended continued reliance on it for future visibility planning. Measurements at the Wichita Mountains monitoring site began in March 2001 and were compiled via the IMPROVE "WIMO1" monitor.[63] The IMPROVE program makes data available on the internet and submits it to EPA's air quality system. For the progress report, Oklahoma evaluates its use of the IMPROVE monitoring network and found it to be satisfactory.

Oklahoma reaffirmed its continued reliance upon the IMPROVE monitoring network. Oklahoma also explained the importance of the IMPROVE monitoring network for tracking

[62] In its 2011 SIP submittal, see 76 FR 64186 at 64196 (October 17, 2011), Arkansas concluded that the impact from Oklahoma sources (among other states) was non-impactful: "ADEQ determined that additional emissions reductions from other States are not necessary to address visibility impairment at Caney Creek and the Upper Buffalo for the first implementation period ending in 2018, and all states participating in its consultations agreed with this."

[63] Wichita Mountains Wildlife Refuge personnel operate and maintain the IMPROVE particulate sampler and are responsible for disseminating and submitting the collected data (See Oklahoma's initial regional haze SIP revision, pg. 8.).

visibility trends at its Class I area and identified that it did not anticipate any changes to its reliance on the network for visibility assessments. EPA proposes to find that Oklahoma has adequately addressed the applicable provisions of 40 CFR 51.308(g) regarding monitoring strategy because the State reviewed its visibility monitoring strategy and determined that no further modifications to the strategy are necessary.

B. Determination of Adequacy of the Existing Implementation Plan

In its progress report SIP, Oklahoma submits a negative declaration to EPA regarding the need for additional actions or emissions reductions in Oklahoma beyond those already in place and those to be implemented by 2018 according to Oklahoma's regional haze plan. Oklahoma determined that the current version of its regional haze plan requires no further substantive revision at this time to achieve the 2018 RPGs for Class I areas affected by the State's sources. The basis for the State's declaration is the findings from the progress report SIP which conclude that the control measures in Oklahoma's regional haze plan are on track to meet their implementation schedules and the reduction of SO_2, NO_X and PM emissions from subject to BART EGUs in Oklahoma continues to be the appropriate strategy for improvement of visibility in Oklahoma's WMWA Class I area. Additional improvements in visibility are expected to continue, as at the time of submission for the progress report, the major emitting facilities in Oklahoma had not yet installed their respective BART controls.

Review of more recent emissions and visibility data shows that EGU SO_2 and NO_X emissions dropped from 2002 to 2017 by 64,802 and 64,237 tons, respectively; and the actual change in visibility observed/reported via its IMPROVE monitor through 2016 for the WMWA

Class I area is better[64] than what the State predicted for 2016 and is currently exceeding the uniform rate of progress.[65] EPA proposes to conclude that Oklahoma has adequately addressed 40 CFR 51.308(h) because the visibility trends at the WMWA Class I area and at Class I areas outside the State potentially impacted by sources within Oklahoma and the emissions trends of the largest emitters of visibility-impairing pollutants in the State indicate that the relevant RPGs will be met; and support the State's determination of the adequacy of its SIP.

C. Consultation with Federal Land Managers

In accordance with 40 CFR 51.308(i), the state must provide the FLMs with an opportunity for consultation, at least 60 days prior to holding any public hearings on an implementation plan (or plan revision). The state must also include a description of how it addressed any comments provided by the FLMs. ODEQ shared its draft progress report with the FLMs on April 11, 2016; and notified them of the associated public review comment period on August 2, 2016 and of the opportunity to request a public hearing (for September 6, 2016). The FLM comments and Oklahoma's responses are presented in Appendix II of the progress report.

The EPA proposes to find that Oklahoma has addressed the requirements in 40 CFR 51.308(i). Oklahoma provided a 60-day period for the FLMs to comment on the progress report, which was at least 60 days before seeking public comments, and provides a summary of these comments and responses to these comments in the progress report.

III. Proposed Action

EPA is proposing to approve the State of Oklahoma regional haze five-year progress report SIP revision (submitted September 28, 2016) as meeting the applicable regional haze

[64] AQRV Summary data for the WIMO 1 monitor at WMWA indicates that the 2017 observed visibility was 17.23 dv— 4.1 dv lower than the FIP-revised 2018 RPG for the haziest of days.
[65] See the Visibility Impairment Projections graph on page 29 of the progress report SIP.

requirements under the CAA and set forth in 40 CFR 51.308(g), (h) and (i). Because the SIP and FIP will ensure the control of SO_2 and NO_X emissions reductions relied upon by Oklahoma and other states in setting their reasonable progress goals, EPA is proposing to approve Oklahoma's finding that there is no need for revision of the existing implementation plan to achieve the reasonable progress goals for the Class I areas in Oklahoma and in nearby states impacted by Oklahoma sources.

IV. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable federal regulations. *See* 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this proposed action proposes to approve a State's determination that their current regional haze plan is meeting federal requirements and does not impose additional requirements beyond those imposed by state law. This proposed action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Is not expected to be an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866;
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR

43255, August 10, 1999);

- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);

- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);

- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and

- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Best Available Retrofit Technology, , Incorporation by reference, Intergovernmental relations, , Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Regional haze, Sulfur dioxide, Visibility, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq*.

Dated: March 21, 2019.

Anne Idsal,
Regional Administrator, Region 6.
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