

May 17, 2013

Department of Environmental Quality, Air Quality Division
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677
ATTN: Cheryl E. Bradley

Re: Comments of Oklahoma Industrial Energy Consumers
("OIEC") on the March 20, 2013 [Proposed] Revision to
Regional Haze State Implementation Plan ("Proposal")

Dear Ms. Bradley:

OIEC is a non-partisan, unincorporated association of large consumers of energy with facilities located in Oklahoma. OIEC is an advocate for fair, just and reasonable utility rates, and for economic development. OIEC's Members are engaged in energy price-sensitive industries such as pulp and paper, cement, refining, glass, industrial gases, plastic, film and food processing. OIEC Members employ thousands of Oklahomans.

Pursuant to the April 18, 2013 Notice of Public Hearing and Opportunity for Comment, OIEC is hereby submitting comments opposing adoption of the above referenced Proposal. The Proposal would determine the revised best available retrofit technology ("BART") for Public Service Company of Oklahoma's ("PSO") Northeastern coal-fired electric generating units 3 and 4 ("Units").

Under the current federal implementation plan ("FIP"), BART for sulfur dioxide ("SO₂") emitted by the Units is dry flue gas desulfurization ("DFGD") control technology. 76 Fed. Reg. 81728 (Dec. 28, 2011). The Proposal is that BART for SO₂ emitted from the Units be: "(1) the facility will shut down one of the affected units (either 3 or 4) by April 16, 2016; (2) the facility will install and operate a dry sorbent injection ('DSI') system on the remaining unit to meet an emission standard of 0.40 lb/mmBTU or less from April 16, 2016 to December 31, 2026; and (3) the facility will incrementally decrease capacity utilization for the remaining unit between 2012 and 2016, and will shut down the remaining unit no later than December 31, 2016." [Proposed] Regional Haze Implementation Plan Revision, p. 6 (Mar. 20, 2013).

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OIEC is opposing adoption of the Proposal because the agreement on which the Proposal is based may be void; early retirement of a facility cannot be a BART control option; the significant replacement capacity and energy costs arising from the early retirement of the Units have not been considered, and make the Proposal much more costly than the DFGD retrofit alternative; the Proposal cannot be a valid alternative to BART because it results in decreased visibility and higher SO₂ emissions when compared to the DFGD alternative, and therefore does not make greater reasonable progress than does BART; and the significant adverse effect of the Proposal on electricity charges to PSO's ratepayers has been ignored. Accordingly, and based upon the further explanation of each of these points below, OIEC requests that the Proposal be withdrawn¹.

1. The underlying Agreement. The Proposal is based upon, and is intended to implement, a settlement agreement ("Agreement"). [Proposed] Regional Haze Implementation Plan Revision, p. 4 (Mar. 20, 2013). That Agreement was executed on behalf of the State of Oklahoma by Gary L. Sherrer, Secretary of the Environment for the State of Oklahoma (the "Secretary"). The Secretary has certain limited statutory duties, and such other duties as designated by the Governor. 27A O.S. §1-2-101 (2011). Binding the State by entering into settlement agreements is not a statutory power of the Secretary, nor could it be considered an implied power necessary to an efficient exercise of his limited express duties. *Strong v. Police Pension and Retirement Bd.*, 115 P. 3d 889, 893 (Okla. 2005). Accordingly, unless the Secretary has some written authority from the Governor authorizing him to enter into settlement agreements binding the State, which writing would have to have been issued prior to October 1, 2012, the date the Secretary executed the Agreement, the Agreement is an *ultra vires* act of the Secretary and hence void. See, *Canning v. NLRB*, 705 F. 3d 490, 513-14 (CADDC 2013). If the Agreement is void, DEQ should withdraw the Proposal, because it no longer has any basis.

2. Shut down cannot be BART. BART "means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant which is emitted by an existing stationary facility." 40 C.F.R. §51.301. Simply put, BART is defined to constitute the available retrofit technology which is expected to be most cost effective and most effective in reducing air emissions and improving visibility for certain existing stationary sources. EPA's BART Guidelines provide that BART cannot be conversion of an existing coal plant to natural gas (40 C.F.R. Part 51, Appendix Y, §IV(D)(3) and (5)), because conversion is not "retrofitting." See also, 76 Fed. Reg. 81750 (Dec. 28, 2011). For similar reasons, mandating the early retirement of a generating facility to achieve emissions reductions also cannot be BART. Not only would there be no "retrofit"; there would cease to be "an existing stationary facility." Accordingly, the Proposal, which requires retirement of the Units years before the end of their useful operating lives, cannot be adopted as BART.

¹ OIEC suggests that if the Proposal is withdrawn, PSO should provide the Oklahoma Department of Environmental Quality ("DEQ") with additional supplemental BART determination information, based upon conditions as they exist today.

3. Cost Effectiveness Evaluation. Even assuming, *arguendo*, that mandating the early retirement of the Units could be considered as part of a BART proposal, it was error to not consider certain important “costs of compliance” as required by applicable regulations. 40 C.F.R. §51.301 (definition of BART). These omitted compliance costs include: a) the cost of replacement capacity and energy arising from the mandated retirement of one of the Units in 2016; b) the cost of replacement energy arising from the capacity restrictions which are imposed on the second Unit during the period 2021-2026; and c) the cost of replacement capacity and energy arising from the mandated retirement of the second Unit no later than 2026. By improperly ignoring the replacement capacity and energy costs arising from the mandated early retirements of the Units, the analysis has incorrectly concluded that the cost effectiveness in dollars per ton of SO₂ removed for the Proposal is \$1,005 per ton, which is lower than the estimated SO₂ removal cost for the DFGD technology (\$1,544/ton) that EPA determined to be BART in the existing FIP. In fact, by ignoring replacement capacity and energy costs arising from the mandated retirements and operating restrictions, the cost of the Proposal is understated by at least \$262 million per year, as explained further below (this \$262 million does not include the additional replacement energy costs discussed in paragraph (iii) below):

- (i) Based on PSO's forecast as presented in Oklahoma Corporation Commission (“OCC”) Cause No. PUD 201200054, the replacement capacity cost for the Unit which must be retired in 2016 would be at least \$56 million per year.
- (ii) Based on PSO’s forecast in OCC Cause No. PUD 201200054, the replacement capacity cost for the Unit which must be retired in 2026 would be at least \$68 million per year.
- (iii) Based on the 85% annual capacity factor assumed in the analysis, and a forecasted \$20/MWh differential between coal and natural gas energy costs, the replacement energy cost due to the operating restrictions placed on the remaining Unit during the 2021-2026 period would be approximately \$20 million per year (\$120 million total).
- (iv) Based on the 85% annual capacity factor assumed in the analysis, and a forecasted \$20/MWh differential between coal and natural gas energy costs, the replacement energy cost for the Units after both are retired would be approximately \$138 million per year.

Adding the \$262 million per year of estimated replacement capacity and energy costs arising from retirement of the Units to the \$25 million per year cost estimate for other compliance costs under the Proposal results in a total compliance cost of \$287 million per year. This amount is more than six times the cost estimate for the DFGD retrofit option (\$45 million per year). Thus, the Proposal will be approximately \$242 million a year more costly than the existing BART.

The much higher cost which would be incurred by PSO’s customers under the Proposal is not justified when compared to costs of the DFGD retrofit or fuel switching alternatives. For example, as summarized in Table 1, when replacement capacity and energy costs for the retired

Units are properly considered, the compliance costs of the Proposal as measured on a dollars per ton of SO₂ removed (\$11,532 per ton) and a dollars per deciview improvement (\$65,323,175) basis, are three to four times higher than the cost of compliance under the DFGD retrofit alternative, and are approximately three times higher than the upper range of costs which have been found to be cost effective by the EPA in other BART determinations. These results reflect the fact that the Proposal is far more costly than the DFGD alternative or other BART determinations, and at the same time would actually result in higher SO₂ emissions and less visibility improvement than the DFGD alternative.

Table 1
Cost Comparison for RH Compliance Options

	<u>Annual Cost</u>	<u>SO₂ Removal Tons/Yr</u>	<u>SO₂ Emissions Removal \$/Ton</u>	<u>Visibility Improvement dV</u>	<u>Visibility Cost \$/dV Chg</u>
<u>DEQ Original SIP (Feb 2010)</u>					
DFGD Retrofit Option	\$86,752,803	26,339	\$3,294	3.80	\$22,835,694
<u>EPA FIP (December 2011)</u>					
DFGD Retrofit Option	\$44,969,595	29,119	\$1,544	4.66	\$9,639,785
<u>DEQ Revised SIP (March 2013)</u>					
DFGD Retrofit Option	\$44,969,595	29,119	\$1,544	4.66	\$9,639,785
EPA Settlement without Coal Replacement Costs	\$25,000,000	24,888	\$1,005	4.39	\$5,690,172
EPA Settlement including Coal Replacement Costs	\$287,000,000	24,888	\$11,532	4.39	\$65,323,175

In addition, as shown in Table 2, the \$11,532 per ton of SO₂ removed under the Proposal is approximately three to eight times the level of costs approved by EPA in BART determinations for other power plants, which range from \$1,462 per ton up to \$3,547 ton².

² See page 41 of the October 2010 report, "Revised BART Cost-Effectiveness Analysis for Flue Gas Desulfurization at Coal-Fired Electric Generating Units in Oklahoma." Prepared for the U.S. EPA.

Table 2
EPA Cost Effectiveness Values for Coal Unit BART Determinations

	Gross Rating <u>MW</u>	Coal Sulfur <u>lb/MMBtu</u>	Approved BART <u>Cost, \$/Ton</u>
Big Stone 1	475	0.86	\$1,462
Nebraska City 1	650	0.82	\$1,636
Boswell 3	375	0.95	\$1,640
Naughton 1	176	1.18	\$1,877
Naughton 2	234	1.18	\$1,882
Stanton 1	188	1.20	\$2,006
White Bluff 1&2	2 x 850	0.68	\$2,430
Drake 7	142	0.83	\$2,544
Gerald Gentleman	2 x 750	0.75	\$2,726
Drake 6	85	0.82	\$2,816
Boardman	617	0.61	\$3,055
Silver Bay 2	75	<u>0.60</u>	<u>\$3,547</u>
Average		0.87	\$2,302
Northeastern 3&4 (Rev. SIP)	930	0.90	\$11,532

In fact, the Proposal is not cost effective, even when evaluated over an extended time period. For example, on page 4-6 of the Supplemental Bart Determination Information report, Trinity Consultants, Inc. (PSO's consultant) has presented the results of an analysis which suggests that the Proposal would reduce total SO₂ emissions over the 2014-2046 period by approximately 18,145 tons when compared to the level of forecasted SO₂ emissions under the DFGD retrofit alternative. However, the bases for these projections were not provided. Absent back-up documentation, that analysis is unreliable and cannot be relied upon. Even assuming these projections are correct, they would equate to an average SO₂ reduction of 567 tons per year over the 32-year study period when compared to the level of SO₂ emissions under the DFGD retrofit alternative. In light of the fact that the Proposal is forecasted to cost \$242 million per year more than the DFGD retrofit alternative, this means that the incremental cost to achieve the additional 567 tons per year of SO₂ reduction under the Proposal would be approximately \$426.8 thousand per ton. This incremental cost for SO₂ removal under the Proposal is nearly 100 times the first year incremental cost for SO₂ removal (\$4,718 per ton) for the DFGD (i.e., existing FIP) alternative, which itself is too high. Revised BART Determination, p. 11 (Mar. 19, 2013) ("Revised BART Report").

Moreover, it was previously concluded that the much lower cost DFGD retrofit option is not cost effective, as indicated on page 81 of the February 2010 Regional Haze State Implementation Plan ("SIP"):

DEQ conducted a thorough case-by-case five-factor BART analysis for each of the BART-subject units. DEQ determined that Dry-Flue Gas Desulfurization with Spray Dryer Absorber (“Dry FGD with SDA”) is not cost-effective for SO₂ control for any of the six coal-fired steam electric units reviewed, i.e., OG&E Sooner Units 1 and 2, OG&E Muskogee Units 4 and 5, and PSO Northeastern Units 3 and 4. This determination is based on the capital cost of add-on controls, the cost effectiveness both in dollars per ton and dollars per deciview of add-on controls, and the long term viability of coal with respect to other environmental programs, and national commitments. In addition to information provided prior to the public hearing, DEQ considered public comments, and additional information provided by the affected facilities in response to questions raised by the commentors and DEQ staff. Revised cost estimates were provided by the affected facilities that are based on vendor quotes and go well beyond the default methodology recommended by EPA guidance. The cost estimates are credible, detailed, and specific for the individual facilities. The final estimate for Dry FGD with SDA for the six coal-fired units was on average 153% greater than the high end costs assumed by DEQ in the Draft SIP. These costs put the projects well above costs reported for other BART determinations, and above the levels DEQ considered reasonable for cost effectiveness both in terms of dollars per ton of pollutant removed and dollars per deciview (e.g., \$10,000,000/dv) of improved visibility.

In summary, the Proposal is considered cost effective based on an analysis that does not include approximately \$262 million per year of replacement capacity and energy costs which PSO would be required to incur due to the mandated early retirement of the Units. When these replacement costs are considered, the costs of the Proposal are far higher than the DFGD retrofit option, which previously was determined to not be a cost effective option. For these reasons, the Proposal cannot be determined to be cost effective when compared to the DFGD retrofit alternative or other EPA BART determinations.

4. Visibility/Greater Reasonable Progress Evaluation. It has not been demonstrated that the Proposal meets the requirement that approvable alternatives to BART must achieve greater reasonable progress than would be achieved through the installation and operation of BART (i.e., the DFGD retrofit option). 40 C.F.R. §51.308(e)(2)(i). In fact, on page 11 of the Revised BART Report, it is acknowledged that the DFGD option “would provide improvements in visibility above that achieved with the DSI system” but argues that such improvements would not be perceptible. This conclusion clearly indicates that the Proposal does not meet the greater reasonable progress standard with regard to visibility improvement.

In addition, a significant portion of the emissions reductions attributed to the Proposal could also be achieved by switching to ultra-low sulfur coal (as recommended by DEQ’s original SIP) and by installing DSI control technology to meet requirements of the MATS rule, which would be necessary by 2016 even if the Proposal did not exist. For example, by simply switching to ultra-low sulfur coal PSO could reduce total forecasted SO₂ emissions on its system by approximately 33%, while the addition of DSI controls, which is required by MATS, produces approximately 67 thousand tons (6.4%) of the total forecasted SO₂ removal attributed to the Proposal. The DSI emission reductions cannot be used to achieve greater reasonable

progress because it must be: “demonstrat[ed] that the emission reductions resulting from the emissions trading program or other alternative measure will be surplus to those reductions resulting from measures adopted to meet requirements of the CAA as of the baseline date of the SIP.” 40 C.F.R. §51.308(e)(2)(iv) (emphasis added).

By including emissions reductions arising from DSI and by ignoring reductions which could be achieved through switching to ultra-low sulfur coal, the Proposal overstates the emissions reductions due to the Proposal which are surplus to reductions that were achievable through other control measures or by implementing measures to meet CAA requirements that existed as of the baseline date of the revised SIP.

Also, any alternative to BART must require that: “all necessary emission reductions take place during the period of the first long-term strategy for regional haze.” 40 C.F.R. §51.308(e)(2)(iii). The first long-term strategy period ends in 2018. However, the Proposal fails to meet this requirement, because the level of SO₂ emissions under the Proposal is expected to be significantly higher than emissions under the DFGD alternative until well after 2018. SO₂ emissions will only be lower when the second Unit is retired. The SO₂ emission rate for DSI (estimated at 0.4 pounds per MMBtu) is six point six times the forecasted emission rate of the Units (0.06 pounds per MMBtu) with DFGD control technology.

Accordingly, the Proposal cannot be adopted as a formal alternative to BART, and it should be withdrawn.

OIEC also questions the assertion on page 12 of the Revised BART Report that it expects cumulative SO₂ and NO_x emissions from the Units are expected to be approximately 36% of the emissions level that would result from the DFGD retrofit option. Underlying details of the analysis supporting the above assertion were not provided with the Revised BART Report. Absent back-up documentation, that assertion is unreliable and cannot be used to justify the Proposal.

In addition, the Proposal ignores the additional NO_x emissions that would be produced by gas-fired generation or purchased power sources that PSO would have to acquire to replace the Units after they are retired in 2016 and 2026. Finally, it was assumed that, if DFGD retrofitted, the Units would operate for another 30 years (i.e., until 2046). There is no support for this assumption. In fact, PSO has stated in testimony in OCC Cause No. PUD 201200054 that it expects the Units would likely be retired by 2030 (i.e. 13 years after DFGD retrofits are implemented). If the emissions analysis was adjusted to reflect a shorter remaining operating life of the Units, consistent with PSO’s own forecast, and to account for NO_x emissions produced from sources that replace the Units, the estimated emissions reduction attributable to the Proposal would likely be eliminated.

5. The BART analysis is based on outdated planning assumptions. The BART analysis supporting the Proposal is based on PSO long-term planning studies that are no longer valid. On April 9, 2013, the Company announced to the OCC that it will have to update its Integrated Resource Plan (“IRP”) to reflect previously unanticipated increases in near-term peak demand due to recent significant growth in oil and gas production activities on its system. These

changes will increase replacement costs for the Units and also increase future SO₂ and NO_x emissions on PSO's system, and thereby could significantly alter results of the BART analysis supporting the Proposal. Due to these material changes, DEQ's current BART analysis is no longer valid and therefore needs to be revised once PSO's updated IRP is completed and approved by the OCC later this year.

6. Ratepayer Impacts have been ignored. The Proposal completely ignores the potentially devastating impact of the Proposal on PSO's ratepayers, presumably because EPA doesn't consider such impacts relevant in a BART analysis. However, as we have shown herein, the Proposal cannot be BART or a formal BART alternative. In that context, EPA has recognized that utility companies can consider "any potential impact on rates." 76 FR 81749 (Dec. 28, 2011). See also, 27A O.S. 2-5-107(4) (2011) (economic impacts are to be considered). Accordingly, the potentially devastating impact of the Proposal on PSO's ratepayers must be considered here. Evidence presented by PSO in OCC Cause No. PUD 201200054 indicates that the Proposal may significantly increase costs to ratepayers. Parties have presented testimony in OCC Cause No. PUD 201200054 to the effect that the Proposal could increase rates by 15% to 19% in 2016, and that future rate increases due to the Proposal are expected to be much larger. Moreover, PSO's own analysis in OCC Cause No. PUD 201200054 indicates that the costs to ratepayers are expected to be approximately \$1.9 billion higher under the Proposal than they would be under the DFGD retrofit alternative over the 2016-2040 period. This independent analysis by PSO further confirms that the Proposal is not cost effective when compared to the DFGD alternative. Moreover, estimates presented by OIEC in testimony presented in OCC Cause No. PUD 201200054 indicate that the Proposal could be approximately \$5 billion more costly to ratepayers than the low sulfur coal alternative which was designated by DEQ as BART in its original SIP.

In summary, the basis for the Proposal may be void, the Proposal impermissibly mandates retirement of the Units, it is approximately \$242 million per year more costly than the existing BART (DFGD retrofit) alternative, would result in higher SO₂ emissions and lower visibility, and is forecasted to result in much larger rate increases than the DFGD retrofit option. The cost of the Proposal is also far higher than the ultra-low sulfur fuel switch alternative which DEQ determined to be BART in the original SIP and is approximately three to eight times the cost of BART proposals approved by EPA for other coal plants. Accordingly, the Proposal does not meet the criteria established by the EPA for approval as BART, or as an alternative to BART, and it is not in the interest of PSO's ratepayers. The Proposal should, therefore, be withdrawn.

Respectfully submitted,



Thomas P. Schroedter
Executive Director