**MEMORANDUM OF AGREEMENT BETWEEN THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGARDING SUBMISSION OF A STATE IMPLEMENTATION PLAN REVISION TO ADDRESS CERTAIN REGIONAL HAZE AND INTERSTATE VISBILITY TRANSPORT REQUIREMENTS PURSUANT TO SECTIONS 169A AND 110 OF THE CLEAN AIR ACT, 42 U.S.C. § 7491; 42 U.S.C. § 7410.**

## BACKGROUND

On March 31, 2009, Texas submitted a State Implementation Plan (SIP) revision to address Regional Haze. In its 2009 Regional Haze SIP, Texas committed to take appropriate action if EPA issues a replacement program that does not address BART. Additionally, Texas' response to comments states that "[t]he decision to treat CAIR as equivalent to BART will be revisited if CAIR is replaced with a trading program or rule that the EPA considers to be equivalent to BART. . . . *The TCEQ will provide a SIP revision to address this issue*, once the federal government has finalized its decision with respect to CAIR or a replacement trading program for sulfur dioxide and nitrogen oxide." March 31, 2009 SIP submittal, Response to Comments at 17 (emphasis added).

In 2012, EPA finalized a limited disapproval of Texas' regional haze SIP because of its reliance on CAIR as better-than-BART (*see* 77 Fed. Reg. 33,641 (August 6, 2012)). EPA did not include Texas in the simultaneous multi-state FIP which replaced CAIR with the Cross State Air Pollution Rule (CSAPR) as better-than-BART. Because of a partial remand of CSAPR (which included the remand of Texas' CSAPR annual $SO_2$ and ozone season $NO_X$ budgets), EPA split the remaining obligations into two pieces: the majority of Texas Regional Haze, including Reasonable Progress, and Best Available Retrofit Technology (BART), (EPA obtained extensions on the deadline for action in the two relevant consent decrees: *National Parks Conservation Association v. EPA*, No. 1:11-cv-01548 (D.D.C.), addressing Regional Haze, including BART; and *Sierra Club v. EPA*, No. 1:10-CV-01541 (D.D.C.), addressing the related Interstate Visibility Transport requirements). In January 2016, EPA finalized a Reasonable Progress FIP that required controls on 7 coal-fired EGUs (SO2 scrubber upgrades and retrofits) based on costs and visibility impacts at nearby Class I areas (the Fifth Circuit Court of Appeals remanded this action without vacatur in *Texas v. EPA*, 829 F.3d 405 (5th Cir. 2016)).

The Clean Air Act (CAA) § 169A(b)(2)(A) requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress toward the natural visibility goal, 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), including larger "fossil fuel-fired steam electric plants" (i.e., electric generating units or EGUs). The Clean Air Act (CAA) § 110(a)(2)(D)(i)(II) requires that SIPs contain adequate provisions to prohibit interference with measures required to protect visibility in other states, and this requirement is referred to as "interstate visibility transport".

EPA has proposed to remove Texas from CSAPR for 1997 $PM_{2.5}$ and if this proposal is finalized BART for $SO_2$ could not be addressed through the CSAPR better-than-BART pathway (*see* 81 Fed. Reg. 78,954 (November 10, 2016)).

As a path forward, and as described further below, TCEQ , agrees to adopt and submit a SIP that adequately addresses the following outstanding CAA requirements: BART for EGUs for $SO_2$, PM, and $NO_X$; reasonable progress; and interstate visibility transport for 1997 8-hour ozone, 1997 $PM_{2.5}$, 2006 $PM_{2.5}$, 2008 8-hour ozone, 2010 1-hour $NO_2$, and 2010 1-hour $SO_2$ ("outstanding requirements"). TCEQ believes that any approach to



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addressing these requirements should have built-in flexibility because of concerns regarding electric grid reliability and TCEQ needs a sufficient amount of time to develop, adopt, and submit such a program. TCEQ believes the useful life of EGUs is often difficult to determine in a competitive market and that the flexibility of a trading program may mitigate that difficulty. TCEQ plans that the Texas regional haze program, in the form of a SIP, will include an intrastate trading program to address the outstanding requirement (see Attachments A and B).

**NOW THEREFORE, EPA AND TCEQ AND AGREE AS FOLLOWS:**

1. TCEQ agrees in the spirit of cooperative federalism to submit to EPA for action a revision to its SIP to address the outstanding requirements.
    a. To address the outstanding requirements, TCEQ agrees to coordinate with the owners and operators of EGUs in the State as listed in Attachment C to develop a SIP.
    b. TCEQ agrees to submit to EPA for action a revision to its SIP to address the Regional Haze requirements pertaining to the outstanding requirements not later than March 31, 2018.
    c. TCEQ intends for this SIP submittal to incorporate trading program flexibilities, to the extent appropriate.
    d. TCEQ intends to ask EPA to parallel process this SIP submittal.
    e. TCEQ intends for this SIP to meet all outstanding requirements for regional haze under CAA § 169A for $SO_2$, PM, and $NO_X$ BART and reasonable progress, and interstate visibility transport under CAA § 110(a)(II)(D)(ii) for 1997 8-hour ozone, 1997 $PM_{2.5}$, 2006 $PM_{2.5}$, 2008 8-hour ozone, 2010 1-hour $NO_2$, and 2010 1-hour $SO_2$.

2. EPA agrees to parallel process this SIP submittal and sign a final action on the SIP revision by December 7, 2019.

3. TCEQ and EPA intend to work together to meet the goals of this MOA.

4. This document does not establish binding legal requirements on EPA or TCEQ or any of their officers, employees, other representatives, or any other person. EPA retains all the discretion afforded to it under the CAA and the general principles of administrative law. As required by the Antideficiency Act, 31 U.S.C. § 1341 and 1342, all commitments made by EPA herein are subject to the availability of appropriated funds. Nothing in this document in and of itself obligates EPA to expend appropriations or to enter into any contract, assistance agreement, or interagency agreement, or to incur other financial obligations. This document does not create any exemption from policies governing competition for assistance agreements. Any transaction involving reimbursement or contribution of funds between the parties to this document will be handled in accordance with applicable laws, regulations, and procedures under separate written agreements.

5. All commitments made by TCEQ in this agreement are subject to Texas law concerning appropriations. Nothing in this agreement requires TCEQ to expend funds in violation of Texas law.

6. This MOA may be signed in counterparts.

7. This MOA will terminate upon EPA's final rulemaking action on TCEQ's SIP submittal.

Signed this _____ of August 2017.

_____

TCEQ name
TCEQ Title
Texas Commission on
Environmental Quality

_____

Samuel Coleman, P.E.
Acting Regional Administrator
United States Environmental
Protection Agency, Region 6

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**Attachment A**

This document reflects preliminary work by staff; it is not a final product and additional analyses are needed to further develop the concept.

## Regional Haze Best Available Retrofit Technology, Reasonable Progress and Visibility Interstate Transport

The following identifies an option for implementation of Best Available Retrofit Technology (BART) and reasonable progress and visibility transport requirements as focused on the SO2 emissions of Texas Electric Generating Units that is based on an approach similar to the Cross State Air Pollution Rule (CSAPR) and Clean Air Interstate Rule (CAIR).

### Coal-Fired BART Units

*Sulfur Dioxide ($SO_2$) BART*

BART-eligible coal-fired electric generating units (EGUs) would comply with mass-based source or system caps that would be equivalent to the $SO_2$ allocations the units received under the CSAPR, as outlined in Table 1.

- A source cap would apply to all the BART-eligible sources located at a given site.
- A system cap would apply to all the BART-eligible sources at one or more sites under common ownership and control.
- An intrastate trading option would also allow companies to trade between sites or systems within Texas.

The EPA has already determined that CSAPR is better than BART, and the approach, while not applying to all EGUs that were subject to CSAPR, would apply to the majority of $SO_2$ emissions from EGUs in Texas (see Table 3 below). Approximately 60% of the State EGU $SO_2$ emissions come from the BART-eligible sources. In combination with the additional sources discussed below (Table 2), the approach would apply to sources responsible for 94% of the State EGU $SO_2$ emissions. Therefore, the EPA's CSAPR-better-than-BART determination should satisfy the requirement that BART alternatives show greater reasonable progress under this approach. The overall strategy is also meant to address reasonable progress for these sources and address visibility transport requirements, i.e., help ensure that Texas emissions do not interfere with visibility program measures of neighboring states. To demonstrate this, the emission reductions from this program must meet the level of emission reductions relied on by other states during consultation and in development of their reasonable progress goals.

**Table 1: BART-Eligible Coal-Fired EGU and co-located BART-Eligible gas/fuel oil-fired EGUs $SO_2$ Allocations and 2016 Emissions**

| Company | Site | Annual Allocation[1] (tons) | 2016 Emissions (tons) |
|---|---|---|---|
| AEP | Welsh Power Plant (Units 1 & 2[2]) | 13,546 | 6,005 |
| CPS Energy | JT Deely (Units 1 & 2) and Sommers (Units 1 & 2) | 12,314 | 7,627 |
| Dynegy | Coleto Creek (Unit 1) | 9,057 | 8,231 |
| LCRA | Fayette/Sam Seymour (Units 1 & 2) | 15,998 | 877 |
| Luminant | Big Brown (Units 1 & 2) | 17,032 | 42,470 |
| | Martin Lake (Units 1 – 3) | 35,840 | 25,471 |
| | Monticello (Units 1 – 3) | 29,609 | 24,958 |
| | Luminant Subtotal | 82,481 | 92,899 |
| NRG | WA Parish (Units WAP4, WAP5 & WAP6) | 18,483 | 21,841 |
| Xcel | Harrington (Units 061B & 062B) | 10,616 | 8,869 |

| | | | |
|---|---|---|---|
| Total All BART-Subject Units | | 162,495 | 146,349 |

*Nitrogen Oxides ($NO_X$) BART*

Texas' participation in the Ozone Season $NO_X$ CSAPR Program satisfies $NO_X$ BART for the BART-subject units.

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[1] EPA CSAPR allocations after tolling: https://www.epa.gov/sites/production/files/2016-05/unitlevelallocations_tolled- 2.xls. Allocations DO NOT INCLUDE allowances distributed to existing units from the New Unit Set Aside (NUSA) pool after allocation to new units. Including NUSA allowances would increase allocations by approximately 3.5%; however, the amount of NUSA allowances distributed to these units is variable, changing year-to-year. Red indicates the source or system allocation is deficit to the 2016 emissions.

[2] Welsh Unit 2 was BART eligible and would have been subject to BART if the unit had not been retired in April 2016. Welsh Unit 2 is included to allow AEP to take credit for the shutdown.

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*Particulate Matter (PM) BART*

The EPA's interpretation of the July 19, 2006 guidance memorandum regarding BART determinations is not correct and the TCEQ's original SIP submittal screening out PM from EGUs for BART purposes should be approved by the EPA. The July 19, 2006 guidance memo states that EPA does not generally recommend a pollutant specific screening approach, however, it may be appropriate for PM in certain situations. The memo provides the situation of a state relying on the Clean Air Interstate Rule as an example where pollutant specific screening for PM may be appropriate. The approach proposed here for SO2 BART and the Ozone Season NOX CSAPR Program are BART alternatives. Therefore, the EPA's interpretation of the 2006 memorandum is not applicable under this suggested alternative to source-specific BART. See TCEQ's comments dated May 5, 2017 for additional detail. Sources covered by the SO2 BART and the Ozone Season NOX CSAPR Program BART alternatives screen out of PM BART as demonstrated in the TCEQ's original SIP submittal.

## Gas-Fired and Gas/Oil-Fired BART Units

EPA's analysis identified certain gas-fired and gas/oil-fired EGUs that are not co-located with BART-eligible coal-fired EGUs as being subject-to-BART (see Table 2 below). We will evaluate the results of this analysis and address the BART requirements for SO2 and PM BART for these sources, as appropriate. These EGUs could be incorporated into the above approach for $SO_2$ and PM or fuel restrictions may be a more practical approach for satisfying PM and $SO_2$ BART on these units. Texas' participation in the Ozone Season $NO_x$ CSAPR Program satisfies $NO_x$ BART for these units.

**Table 2: EPA identified subject-to-BART gas-fired and gas/oil-fired EGUs SO2 Allocations and 2016 Emissions**

| Company | Site | Annual Allocation[1] (tons) | 2016 Emissions (tons) |
|---|---|---|---|
| Luminant | Graham Unit 2 | 226 | 0.3 |
| Luminant | Stryker Creek Unit ST2 | 145 | 0.5 |
| El Paso Electric | Newman Units 2,3,&4 | 4 | 3.2 |
| AEP | Wilkes Units 1,2, & 3 | 19 | 2.0 |

## Combined BART/Reasonable Progress/Visibility Interstate Transport

A limited expansion of the $SO_2$ approach outlined above for coal-fired BART-eligible units is needed for the alternative BART approach described above, reasonable progress purposes, and. to ensure that the emissions reductions are at least the same as what was relied on by other states for the visibility interstate transport purposes. The inclusion of all these non-BART sources would address emissions from sources having significant potential contributions to visibility impairment due to their potential emissions and location and their inclusion with the BART-eligible sources would result in a coverage of approximately 94% of the EGU SO2 emissions in the state. This expanded approach would use source or system caps for the BART-eligible EGUs (Table 1) and the non-BART EGUs (Table 3), and would allow companies to trade between source or system caps via an intrastate trading program. Table 5 provides a complete summary of source and system caps for all included units.

**Table 3: Non-BART Coal-Fired EGUs, $SO_2$ Allocations and 2016 Emissions**

| Company | Site | Annual Allocation[1] (tons) | 2016 Emissions (tons) |
|---|---|---|---|
| Luminant | Sandow (Unit 4) | 8,370 | 12,105 |
| NRG | Limestone (Units 1 & 2) | 24,374 | 20,801 |
| San Miguel Electric Cooperative | San Miguel (Unit 1) | 6,271 | 6,815 |
| Xcel | Tolk Station (Units 171B & 172B) | 13,962 | 14,977 |
| AEP | Welsh Power Plant (Unit 3) | 7,208 | 5,042 |
| AEP | H W Pirkey Power Plant | 8,882 | 4,441 |
| AEP | Oklaunion Power Plant | 4,386 | 1,530 |
| Xcel | Harrington (Unit 063B) | 5,055 | 5,386 |
| NRG | WA Parish (Unit WAP7, WAP8) | 11,724 | 12,296 |
| LCRA | Fayette/Sam Seymour (Unit 3) | 2,955 | 231 |
| Total All Units | | 93,187 | 83,623 |

**Table 4: Combined BART-Eligible and Non-BART EGUs, $SO_2$ Allocations and 2016 Emissions**

| Approach | Annual Allocation[1] (tons) | 2016 Emissions (tons) | % of Total Texas EGU Emissions |
|---|---|---|---|
| BART-Eligible Coal-Fired Units | 162,495 | 146,349 | 60% |
| Non-BART Units | 93,187 | 83,623 | 34% |
| Combined Total | 255,682 | 229,972 | 94% |
| Total Texas EGU Emissions | 279,740* | 245,737 | |

*Total CSAPR allocation for existing units

**Table 5: System summary: Combined BART-Eligible, and Additional Non-BART units, $SO_2$ Allocations and 2016 Emissions**

| Company | Site | Annual Allocation[1] (tons) | 2016 Emissions (tons) |
|---|---|---|---|
| AEP | Welsh Power Plant (Unit 3) | 7,208 | 5,042 |
| | Welsh Power Plant (Units 1 & 2[2]) | 13,546 | 6,005 |
| | H W Pirkey Power Plant | 8,882 | 4,441 |
| | Oklaunion Power Plant | 4,386 | 1,530 |
| | *AEP subtotal* | *34,022* | *17,018* |
| CPS Energy | JT Deely (Units 1 & 2) and Sommers (Units 1 & 2) | 12,314 | 7,627 |
| Dynegy | Coleto Creek (Unit 1) | 9,057 | 8,231 |
| LCRA | Fayette/Sam Seymour (Units 1 & 2) | 15,998 | 877 |



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| | | | |
|---|---|---|---|
| | Fayette/Sam Seymour (Unit 3) | 2,955 | 231 |
| | *LCRA subtotal* | *18,953* | *1,108* |
| Luminant | Big Brown (Units 1 & 2) | 17,032 | 42,470 |
| | Martin Lake (Units 1 – 3) | 35,840 | 25,471 |
| | Monticello (Units 1 – 3) | 29,609 | 24,958 |
| | Sandow (Unit 4) | 8,370 | 12,105 |
| | *Luminant subtotal* | *90,851* | *105,004* |
| NRG | Limestone (Units 1 & 2) | 24,374 | 20,801 |
| | WA Parish (Units WAP4, WAP5 & WAP6) | 18,483 | 21,841 |
| | WA Parish (Unit WAP7, WAP8) | 11,724 | 12,296 |
| | *NRG subtotal* | *54,643* | *54,940* |
| San Miguel Electric | San Miguel (Unit 1) | 6,271 | 6,815 |
| Xcel | Tolk Station (Units 171B & 172B) | 13,962 | 14,977 |
| | Harrington (Units 061B & 062B) | 10,616 | 8,869 |
| | Harrington (Unit 063B) | 5,055 | 5,386 |
| | *Xcel subtotal* | *29,633* | *29,232* |

**Attachment B**
**DRAFT Trading Program Rules**

**Attachment C** – List of EGUs subject to $SO_2$, PM, and NOx BART (TBD)

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