COMMENTS BY THE PUBLIC UTILITY COMMISSION OF TEXAS, RAILROAD COMMISSION OF TEXAS, AND THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY REGARDING THE PROPOSED REPEAL OF CARBON POLLUTION EMISSION GUIDELINES FOR EXISTING STATIONARY SOURCES: ELECTRIC UTILITY GENERATING UNITS; EPA DOCKET ID NO. EPA-HQ-OAR-2017-0355

I. Summary of Proposed Repeal

On October 16, 2017, the United States Environmental Protection Agency (EPA) proposed to repeal the Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units (EGU), also referred to as the Clean Power Plan (CPP), adopted under Federal Clean Air Act (FCAA), §111(d). The proposal would repeal the CPP rule in 40 Code of Federal Regulations (CFR) Part 60, Subpart UUUU, in its entirety as well as certain legal interpretations that the EPA relied upon in adopting the CPP rule. The CPP rule established carbon dioxide (CO_2) emission performance goals for existing EGUs and requires states to submit a state plan to the EPA to demonstrate how the state will achieve the interim and final emission performance goals. However, the CPP rule is currently stayed by the United States Supreme Court.

II. Comments

A. Comments on the Proposed Repeal and Legal Interpretations

1. The Public Utility Commission of Texas (PUCT), Railroad Commission of Texas (RRC), and Texas Commission on Environmental Quality (TCEQ) support the repeal of the CPP rule and its associated legal interpretations.

As discussed in the PUCT, RCC, and TCEQ comments on the proposed CPP rule submitted on December 1, 2014, the EPA's CPP rule was founded on faulty interpretations of the FCAA and usurped states' role in setting energy policy. In addition, the CPP rule would impose substantial burdens on the states. The PUCT, RRC, and TCEQ support the repeal of the CPP rule and its associated legal interpretations.

2. The PUCT, RRC, and TCEQ urge the EPA to also reconsider the underlying justification for not making an endangerment finding specifically for CO_2 to regulate that pollutant under §111 of the FCAA.

EPA should reconsider the underlying assumptions for regulating CO_2 emissions from the fossil fuel electric generation source category under §111 of the FCAA. In the same manner it is conducting the repeal and possible replacement of the CPP rule, the EPA must review its legal authority to regulate CO_2 under §111 in the first place. The EPA must fully consider the statutory text and its context; the legislative history of §111 and the EPA's historical practice implementing this section of the Clean Air Act. The PUCT, RRC, and TCEQ previously submitted extensive comments on the proposed CPP rule and §111(b) rulemakings regarding the requirement to conduct a §111

endangerment finding specifically for CO_2 from this source category. The full comments on the CPP rule proposal, including comments on the need for an endangerment finding, are attached and incorporated as comments on this proposed repeal rulemaking.

3. The TCEQ agrees with and supports the EPA's return to its historical interpretation of Best System of Emission Reduction (BSER).

To support the CPP rule, the EPA created an entirely new interpretation of BSER under FCAA, §111 to fit its desired approach of using redispatching of natural gas combined cycle generation and increasing renewable energy generation as a means of achieving CO_2 emission reductions from the fossil fuel-fired EGU fleet in the United States via generation shifting. The interpretation to support these "outside the fence" measures of the CPP rule was essentially any action that could conceivably reduce emissions at a site could be considered BSER, regardless of whether that action occurred on the same site or was even within the control of the owner or operator of the source subject to FCAA, §111(d).

With the proposed repeal of the CPP rule, the EPA proposes that BSER be limited to measures that can be physically or operationally applied to or at the source itself to reduce emissions. Furthermore, the EPA states that generation shifting, which accounted for nearly all the CO_2 emissions reductions under the CPP rule, fails to meet this limitation of BSER (82 FR 48042). The TCEQ agrees with and supports EPA's proposed revised reading of BSER under §111(a)(1), based on the statutory text, legislative history, and historical practice. Texas agencies (TCEQ, PUCT, and RRC) have repeatedly cautioned the EPA that §111 does not give the EPA unfettered authority to regulate CO_2 emissions from the electric power sector as the EPA was contemplating under the CPP rule. The TCEQ submitted similar comments on the previous legal interpretation of BSER, arguing that the EPA was using §111(d) to regulate outside the fence, which is beyond the authority given by Congress through its definition of BSER. As stated in comments on the proposed CPP submitted December 1, 2014:

> "BSER is a source-based standard and is limited to systems of emission reduction that can be implemented on-site by the affected facility. Thus, a standard of performance under FCAA §111(d) must be based on a set of emission controls that can be implemented at the source that is subject to regulation. (See e.g. *Portland Cement Association v. Ruckelshaus*, 486 F2d 375 (D.C. Cir. 1973).) .... FCAA §111(d) directs the EPA to prescribe regulations to "establish standards of performance for any existing source of any air pollutant..." The EPA is not setting standards of performance for existing sources when it looks outside the fence line of the EGUs to establish 'building blocks' based on renewable energy and energy efficiency programs and uses them to establish a state goal or standard. A standard of performance that requires emission reductions from other sources and even other source categories is fundamentally inconsistent with the plain language of the FCAA. Historically, the EPA has limited BSER to technology-based emission

controls that could be installed and implemented at the facilities subject to regulation. EPA offers no reasonable explanation for abandoning that approach in this rulemaking."

"Prior to this proposed rulemaking [the CPP], the TCEQ and PUCT warned EPA that it did not have broad discretion under the FCAA in setting the standards in response to EPA questions for States on §111(d) plan requirements. (Comments on CO_2 Emissions for EGUs, Section 111(d) of the Clean Air Act, Letter from Richard A. Hyde, P.E., Executive Director TCEQ, and Brian H. Lloyd, Executive Director, PUCT to Gina McCarthy, EPA Administrator, January 14, 2014). The TCEQ and PUCT also warned the EPA that the flexibility given to states in developing plans to meet the standards of performance should not, and legally cannot, be used in setting BSER. As we stated then: "[Section] 111(d) limits EPA to establishing, 'standards of performance for any existing source for any pollutant...if such existing source were a new source...' Establishment of the performance standard must be based upon BSER on a source specific basis." (Comments on Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units (EGU); Docket ID No. EPA-HQ-OAR-2013-0602; page 42)

The EPA notes one other exception to its traditional interpretation of BSER, the Clean Air Mercury Rule (CAMR), which was vacated by the D.C. Circuit Court on grounds unrelated to the matter of BSER. The EPA is unclear as to why CAMR is considered an exception. However, the EPA acknowledges that the CAMR was ultimately based on measures taken at the individual source level (82 FR 48041, footnote 14). While CAMR was adopted as a cap and trade program and the allocations to individual units and states were distributed based on historical heat input adjusted using coal-type factors, the fundamental national budgets used for those allocations were determined based on controls assumed to result from implementation of the Clean Air Interstate Rule (CAIR), such as selective catalytic reduction and scrubbers, and for the final budget, the application of activated carbon injection. In this regard, the TCEQ agrees that CAMR was similar to the EPA's traditional interpretation of BSER. The use of cap and trade programs to provide compliance flexibility is within the EPA's authority, but a cap and trade program itself does not reflect BSER when the allocation methodology does not incorporate the technological feasibility considerations of the control determined to be BSER. It is in the CAMR allocation of mercury allowances that the TCEQ considers the EPA may have deviated from the traditional interpretation of BSER because the allocation methodology did not consider technological feasibility beyond applying a fuel factor based on the type of coal used.

4. Emission guidelines for existing units should not be more stringent than standards of performance for new or modified units of the same category if BSER is interpreted and applied appropriately.

The emission guidelines for existing units under the CPP rule are significantly more stringent than the emission standards of performance finalized for new and modified units of the same EGU categories. The only way to meet the standards for many sources is to cease generating power. For some EGU owners and operators in the ERCOT market, the options for generation shifting are very limited or are not within their power to implement. This sets a standard for these existing EGUs that is significantly more stringent than the standard for new sources, and for many impossible to meet. Never in the history of §111 has the EPA set more stringent standards for existing sources than for new sources.

With the proposed repeal of the CPP rule, the EPA only states that the justification given in response to comments on this issue were insufficient for abandoning the EPA's historical view of the appropriate level of stringency between §111(b) and §111(d) (82 FR 48041, footnote 16). The TCEQ agrees that the EPA's justifications for this outcome with the CPP rule were insufficient. However, this incongruity in relative stringency under FCAA, §111 only occurred because the EPA used a different definition of BSER for existing EGU sources in the CPP than it did in rulemakings for the same category of new or modified EGU sources, violating the statute. The FCAA definition of standards of performance (based on BSER) is the same for both new sources, regulated under §111(b) and existing sources, regulated under §111(d).

> "Section 111 could not be clearer: performance standards apply to sources, not owners and operators of sources that might take actions beyond the sources itself. Under section 111(d), a state-established performance standard may be set for an existing source that would be regulated under section 111(b) 'if such existing source were a new source.'" Opening Brief of Petitioners on Core Legal Issues, page 117, *West Virginia et al v. U.S. EPA*, No. 15-1363, D.C. Circuit.

If BSER is appropriately and consistently interpreted for both §111(b) and §111(d), an outcome where the standards for existing units are more stringent than concurrent standards for new units of the same category is unlikely to occur. However, should the EPA arrive at a similar outcome in the future where emission guidelines for existing sources are determined to be more stringent than concurrently established standards for new sources, such a determination should be justified based on a clear demonstration that it is technologically feasible for an existing unit to achieve better emission performance than a newly constructed unit of the same source category and type.

5. The EPA did exceed its proper role and authority with the CPP rule, which has significant implications beyond just the utility electricity generation sector.

The EPA requested comment on whether the EPA had exceeded its proper role and authority when adopting the CPP rule (82 FR 48042). As the TCEQ commented on the

proposed CPP rule, the EPA did exceed both its proper role and the authority granted to it under the FCAA. The CPP rule is an attempt to require states to comply with the EPA's vision of national energy policy without Congressional approval or endorsement. The EPA imposed its own energy policy on the states by incorporating its preferred energy policies into the building blocks used in the CPP rule under the guise of BSER. Energy policy is not within the EPA's purview under §111 or anywhere else in the FCAA.

The interpretations used by the EPA to defend the CPP rule have significant implications far beyond just the utility electricity generation sector. The EPA gave itself unlimited authority to decide what types of manufacturing would be allowed in the United States for any product by establishing standards of performance for existing sources that can only be achieved through a particular production method, as the EPA did with the CPP rule. The EPA's proper role regarding §111 is to establish standards of performance for the sources of pollution associated with different production methods of a source category based on the appropriate evaluation of the technological feasibility of available pollution control technologies and approaches that can be applied to the source itself. It is not the EPA's place to decide which production methods are allowed or to try to give preference to any particular method of production.

Congress specifically prohibited the EPA from requiring any new or modified source to install and operate any particular technological system of continuous emission reduction to comply with any new source standard of performance under §111(b)(5). As defined in §111, a technological system of continuous emission reduction includes a technological process for production or operation by any source that is inherently low-polluting or nonpolluting, e.g., renewable wind power generation. The only exception to this provision is §111(h) in cases where it is not feasible to prescribe or enforce a standard of performance, but Congress established strict guidelines on when the EPA could exercise such authority by clearly defining what was meant by "not feasible." It is irrational for the EPA to interpret §111(b) and (d) in such a manner to allow it to prescribe particular methods of production for existing sources but not for new or modified sources, as the case with the CPP rule. The EPA may have argued that the CPP rule did not require particular methods of electricity production, but this argument is misleading and disingenuous when the owners of certain sources such as coal-fired EGUs have no option to comply except either to decrease generation thereby shifting generation to renewable and natural gas combined cycle generators under a mass-based CPP rule approach, or to purchase credits from such sources under a rate-based CPP rule approach.

The PUCT, RRC, and TCEQ agree with the EPA's new proposed reading of its authority under §111 to regulate individual sources. The PUCT, RRC, and TCEQ also support this reading as it avoids violating or infringing upon the authority of the states, and the Federal Energy Regulatory Commission (FERC), to regulate the electric generation market. Texas agencies made this clear in comments submitted on the proposed CPP on December 1, 2014:

"The EPA's expansion of BSER to the electric grid is unreasonable because it would bring about an enormous and transformative expansion in EPA's regulatory authority without clear congressional authorization. The Supreme Court most recently spoke to this situation in *Utility Air Regulatory Group v. EPA* (cited above).

When an agency claims to discover in a long-extant statute an unheralded power to regulate "a significant portion of the American economy," we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign an agency decision of vast "economic and political significance."

....

"The EPA cannot take control of a state's electric grid in the name of BSER seizing upon the word "system" to justify an expansion of regulatory authority that did not come from Congress, which has already spoken to issues regarding regulation of interstate transmission and whole electric sales by granting that power to the Federal Energy Regulatory Commission (FERC) under the Federal Power Act, which reserved authority over intrastate transmission and wholesale electric sales to the states. The FCAA does not give the EPA the authority to set energy policy or regulate the nation's electrical power generation system through BSER. State jurisdiction over retail power markets was recently upheld by the United States Court of Appeals for the District of Columbia Circuit in *Electric Power Supply Association v. Federal Energy Regulatory Commission*, holding that FERC Order 745 violates states' jurisdiction over retail power markets." (Comments on Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units (EGU); Docket ID No. EPA-HQ-OAR-2013-0602, pages 47-48)

6. The EPA's previous Legal Memoranda supporting the CPP rule should be withdrawn.

The PUCT, RRC, and TCEQ agree that the Legal Memoranda provided by the previous Administration in support of the CPP as adopted by the EPA is inconsistent with the interpretation the EPA has proposed in this notice. Further, the PUCT, RRC, and TCEQ agree with the legal justification provided for the proposed repeal and that it is the correct legal interpretation of EPA's authority under §111(d) of the FCAA. The previous Legal Memoranda should be withdrawn as an official agency position, as part of this repeal action.

B. Comments on the Regulatory Impact Analysis (RIA)

1. The TCEQ appreciates the opportunity to comment on the RIA for the proposed repeal of the CPP rule.

The public typically is not provided an opportunity to comment on RIAs. In posting this RIA, the EPA provides the public with a unique chance to provide feedback on one of the most important assessment documents used by high-level EPA risk managers. Indeed, benefit estimates, both monetary and numbers of avoided health outcomes, become the most widely cited statistics about proposed and final rules. The TCEQ appreciates the EPA's renewed commitment to transparency and public involvement in this process by taking comment on this important document.

2. The TCEQ appreciates the EPA's commitment to more fully characterizing uncertainty in the upcoming analysis. In doing so, the TCEQ encourages the EPA to consider important methodological aspects of the underlying epidemiology literature and models and to quantify and clearly communicate uncertainty in the final analysis.

The TCEQ applauds the EPA's interest in quantifying the uncertainties of its benefits calculation method. The current RIA's use of cut-points [based on the lowest measured level (LML) of the premature mortality studies (Krewski et al. 2009 or LePeule et al. 2012), or on the National Ambient Air Quality Standards (NAAQS)] in the benefits calculations for particulate matter with diameters equal to or less than 2.5 micrometers ($PM_{2.5}$) is a notable improvement in illustrating one aspect of uncertainty, namely the benefits predicted at low ambient concentrations. A similar cut-point approach should also be applied to ozone health benefits in this RIA. Effects below these cut-point levels are indeed highly uncertain, as represented in the EPA's justification for the level of the NAAQS in the respective final rules (USEPA 2012, USEPA 2015a). In addition to the cut-point approach, the TCEQ strongly encourages the EPA to use its upcoming uncertainty evaluation to provide more detailed information on the benefits estimation method (specific points to consider are detailed below), to provide necessary information about model performance and limitations, and to quantitatively characterize uncertainty through the use of confidence intervals or some similar metric.

Benefit Per-Ton Method

The EPA employs the benefits per-ton approach to quantifying benefits in the current RIA, as well as in numerous other RIAs within the last eight years. Any analysis that builds upon so many underlying analyses [e.g., concentration-response (C-R) functions from epidemiology studies, air pollutant emissions data, census data, etc.] will accumulate the uncertainties of all of the underlying analyses. The benefit per-ton technique is no different. Therefore, it is important to incorporate some quantification of those uncertainties into final benefit per-ton estimates.

The benefit per-ton method itself could be better described in the RIA to assist in the uncertainty evaluation. Rather than fully describing the method, the RIA currently provides generalized statements, some of which are out of sequential order, and

references secondary sources, mostly other RIAs, rather than primary sources. In addition to providing a clearer methodological discussion, the EPA should also provide the final benefit per ton dollar amount used in the final calculation of benefits so that the public is better able to understand the impact of each decision made in the overall analysis.

Finally, the EPA should describe what, if any, performance evaluation has been completed on its technique and if any model corrections have been made. For example, Fann et al. (2009), which describes an early iteration of the benefit per-ton approach, discusses the influence of geographic location, source, and emission type on the benefit per-ton estimate. According to the author, location alone caused the monetized dollar per ton of $PM_{2.5}$ precursor emissions (carbon from EGUs and non-EGUs) to range from $65,000 to $1,100,000 in the nine modeled areas studied. The newer version of the benefit per-ton approach used in the current RIA does not appear to have evaluated how regional heterogeneity may impact the final benefit estimate and to what extent. The EPA should clarify if/how these sources of variability were addressed through model corrections or the uncertainty should be presented if they were not addressed.

Concentration-Response Function

To estimate health impacts resulting from decreases in ambient $PM_{2.5}$ concentrations, the EPA uses C-R functions from multiple epidemiology studies. In combining information from these different studies, it is important to consider the methods that were used to derive those functions to ensure proper comparisons and applications. Below are a few specific methodological considerations that should be carefully considered as the EPA determines which studies should be included and what level of uncertainty exists within the individual studies and in the final collection of studies.

- *The indicator of $PM_{2.5}$ in the studies* - $PM_{2.5}$ has only been measured in a consistent manner in the national air quality networks since approximately 1999, so there are a number of epidemiology studies, including those used for quantifying $PM_{2.5}$ benefits in this RIA, that did not use measured $PM_{2.5}$ data. Instead, these studies generated estimations of $PM_{2.5}$ that were partially or completely imputed from other measures, such as from particulate matter with diameters equal to or less than 10 micrometers (PM_{10}), particulate matter with diameters equal to or less than 2.1 micrometers ($PM_{2.1}$), airport visibility, clearing index, and light scattering data. Because of these alternative measures, there is substantial variability and uncertainty in how those estimates are relevant to current or future potential $PM_{2.5}$ health impacts. The TCEQ encourages the EPA to limit this uncertainty by restricting its analysis to the numerous studies that have measured $PM_{2.5}$ directly, especially those using federal reference methods. Studies completed since 1999 would not only provide a more reliable measure of $PM_{2.5}$, but would also produce more relevant risk estimates because the study populations would be more like current populations.
- *Monitor averaging* - Many studies (including those used to derive C-R functions in this RIA) derive a concentration function from the pollutant average across all of the monitors in a particular area. However, other papers (and the attainment of a

NAAQS) are derived based on single monitor data. As noted by the EPA in this RIA, regional heterogeneity of $PM_{2.5}$ can be substantial, so the mixing of C-R functions based on different metrics (e.g., a regional average, a regional maximum, or an individual measurement) could add considerable uncertainty to the resulting C-R functions. To the best of our knowledge, this uncertainty is not considered when the EPA applies or compares C-R functions. The TCEQ suggests that the EPA control for this uncertainty by using papers with consistent and explicit data handling methods, particularly when data from multiple monitors are used.

- *Multiple averaging days* - The $PM_{2.5}$ NAAQS is intended to be applied to a daily 24-hour or annual average of $PM_{2.5}$ concentrations; however, the number of days that concentrations are averaged over varies greatly across epidemiology studies. Of the $PM_{2.5}$ studies cited in this RIA, 24-hour average concentrations were averaged over periods of several days, two weeks, or two months; and annual averages were calculated over periods of up to seven years. Of the ozone studies, averaging times from single days to four weeks were used (the ozone NAAQS is based on a daily eight-hour maximum average). One example of why this is important is related to the thresholds used in the foregone benefits calculations in this RIA: the Lowest Measured Level (LML) [5.8 $\mu g/m^3$ from Krewski et al. (2009) and 8 micrograms per cubic meter ($\mu g/m^3$) from LePeule et al. (2012)], and the 2012 annual $PM_{2.5}$ NAAQS (12 $\mu g/m^3$). The annual NAAQS is a three-year average of the annual average, whereas the LML values are based on a two-year annual average (Krewski et al. 2009) and a one-year annual average (LePeule et al. 2012). It is unclear whether these averaging differences are considered in the benefits calculations, but the impact should be discussed and quantified. Alternatively, the EPA could control for this uncertainty by using C-R functions and thresholds with comparable averaging periods.
- *Conversions amongst ozone averaging times* - The ozone NAAQS is set with an averaging time of the maximum daily eight-hour average, but the cited studies on which it is based use different averaging times, including the one-hour maximum, 24-hour average, and eight-hour average from 10 am-6 pm. While the EPA has a method to convert amongst these averaging times, the conversion adds unquantified uncertainty to the estimates. To deal with this uncertainty, the EPA could use available ambient air monitoring data to quantify the impact of converting amongst these estimates and then add this uncertainty to the risk estimate, or could restrict its analysis to only C-R functions using the form of the standard (i.e., the maximum daily eight-hour concentration).
- *Pooling over multiple studies* - Epidemiology studies use a wide variety of methods for calculating exposure concentrations, as detailed in the previous bullet points. Because of this variability, caution should be used when pooling C-R functions from multiple papers. If pooling must be done, then an effort should be made to ensure that the C-R functions are truly comparable.
- *Recent analyses* - Older studies likely use more crude or inconsistent methods of calculating pollutant concentrations. In addition, ambient pollutant concentrations have decreased dramatically over the last 30 years while populations have

dramatically increased (USEPA 2017b). In order to have a more reliable and representative evaluation, the EPA should consider more recent analyses whenever possible. For example, the EPA should use C-R functions from the studies and conclusions in the 2015 ozone NAAQS review, instead of the 2008 ozone NAAQS review.

3. The EPA should provide a new model performance evaluation that considers important sources of variability including regional heterogeneity of $PM_{2.5}$ concentrations.

The TCEQ was unable to find any evaluation of the models supporting the benefit per-ton method used in this RIA. In 2011, the EPA released a model performance evaluation in the *Air Quality Modeling Technical Support Document: Source Sector Assessments* (USEPA 2011). It remains unclear if the model described in the Technical Support Document is relevant to the modeling in the current RIA. The presentation of results obscures $PM_{2.5}$ modeling performance results by breaking the table into speciated $PM_{2.5}$, which is not considered in the RIA. In addition, although the document suggests that the modeling error is within the range found with other models, the error is still quite large and the model could be improved. Ideally, the EPA should provide a new or revised modeling performance evaluation that reflects the parameters used in the current RIA and the results should be accurately characterized in the EPA's uncertainty analysis and future RIAs. The presentation of results should also provide total $PM_{2.5}$ because that is the metric used in the RIAs (i.e., the RIAs treat all particulate matter species as equally toxic, and do not differentiate amongst species when calculating health risks or benefits).

4. The TCEQ supports the removal of co-benefits calculations in RIAs, as those benefits are achieved in other rules.

The EPA solicited feedback on whether co-benefits should be considered in the benefits calculations of RIAs. Monetized co-benefits can be substantial. For example, monetized co-benefits comprised between 38 to 63 percent (or between $6.7 and $18 billion) of the total monetized benefits in the 2015 RIA for the final CPP rule for the 2025 analysis year (USEPA 2015b). Co-benefits that outweigh the direct benefits of a rule not only obscure the direct impact of the rule, but also raise the logical question of whether the rule is effectively regulating the most important pollutants in the first place. Further, the pollutants reduced to achieve the monetized co-benefits, typically $PM_{2.5}$ and ozone, are directly regulated in other rules and it is unclear how the EPA ensures that benefits are not double-counted. Removal of co-benefits from the benefit-cost analysis would correct these issues and provide greater transparency in the EPA's rule analysis.

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