TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 14, 2014

Ms. Gina McCarthy, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Comments on CO_2 emissions for EGUs, Section 111(d) of the Clean Air Act

Dear Administrator McCarthy:

The Texas Commission on Environmental Quality (TCEQ) and the Public Utility Commission of Texas (PUCT) appreciate the opportunity to provide input to the Environmental Protection Agency (EPA) regarding its plans to develop regulations to address carbon dioxide (CO_2) emissions from existing electric generating units (EGUs) under Section 111(d) of the Clean Air Act (CAA).

We have enclosed our initial responses to the list of questions EPA developed to solicit input from states and other stakeholders on the design of the 111(d) proposal. In addition, we also want to emphasize four specific overriding concerns and issues that require specific consideration by EPA.

First, the State of Texas believes that climate change policy should be at the direction of Congress and not through EPA regulatory efforts under sections of the CAA that were not specifically developed to address the complex nature of greenhouse gases. However, we understand that, under the President's direction, EPA is moving forward in development of regulations under CAA 111(d). In that light, the comments provided herein should not be interpreted as TCEQ's or PUCT's endorsement of EPA's regulatory initiative. In addition, our comments are necessarily initial impressions at this time and not final opinions, and we reserve the ability to alter our opinions based on the EPA's continued development of its regulatory program.

Second, we are also concerned that CAA 111(d) is not the appropriate vehicle for regulating CO_2 emissions from existing EGUs. Under Section 111(d)(1), EPA does not have the authority to prescribe regulation under Section 111(d) for an air pollutant if the source category is already regulated under Section 112 of the Clean Air Act. Existing EGUs are now a regulated source category under Section 112 of the CAA through the EPA's Mercury and Air Toxics Standards and as such, are precluded from regulation under 111(d).

Additionally, section 111(d) of the CAA is not a technology-forcing standard. Under 111(d), the Best System of Emission Reductions (BSER) must be adequately demonstrated and take into account cost and energy requirements. We note that you have publicly stated that carbon

capture and storage (CCS) will not be considered as a requirement as EPA moves forward in its development of 111(d) rules. TCEQ and PUCT support this position and do not consider CCS to be "commercially available" as defined in the CAA for either new or existing EGUs. CCS is not in full-scale operation at any plant in the United States, and current CCS projects have only been possible through significant incentives, government subsidies, and proximity to enhanced oil recovery reserves.

Third, due to the specifics of federal and state electricity regulation, each state has a unique set of circumstances relevant to the provision of electricity in their state which creates unique complications for standard-setting under 111(d). Regulated vs. deregulated electricity market designs as well as the existence or lack of multistate independent service operators/regional transmission organizations within a state may affect how different states are able to address reliability and cost issues within their states. EPA must provide maximum flexibility to states to craft state plans to meet a performance standard to account for the diverse nature of each state's power generation mix and market structures.

In the Electric Reliability Council of Texas (ERCOT) region, which manages the electric grid for over 85% of Texas's electricity load and 23 million customers, economic dispatch is already resulting in lower GHG emissions. The fall in natural gas prices has led to seasonal mothballing of coal units and overall lower output from coal units in the ERCOT fleet, which, of course results in lower GHG emissions. Low natural gas prices have also led to the development of more natural gas plants, which have lower emissions than coal plants.

However, generation resource retirements can affect the reliability of the grid by reducing system-wide reserve margins and by creating areas of the grid (load pockets) in which local generation and import capacity provided by existing transmission infrastructure are insufficient to serve expected peak customer demand. In ERCOT, competition in the current energy-only market design has led to system-wide reserve margins that are at or near the current target reserve margin of 13.75% (established based on a risk tolerance of one outage event due to insufficient system-wide resources every 10 years). If a change in regulations resulted in the retirement of a significant amount of generation capacity, the ERCOT system would likely be left without sufficient reserves to minimize the risk of rotating outages during peak load conditions until changed market conditions led to new investment in generation resources. Given the current timeframe to permit and build new base-load natural gas-fired generation (approximately four years), an implementation period for new greenhouse gas regulations would have to be at least five years (from announcement of unit retirements) in order for the ERCOT market to compensate for any significant unit retirements. An additional year would be necessary for resource owners to complete economic assessments of their generation assets and to determine which units should be retired. One year for retirement analysis and five years for generation development results in the need for at least a six year implementation period from publication of final requirements to rule implementation. Please note that this six year horizon is based on the assumption that the new regulations would not create new barriers to the development of new economically competitive dispatchable generation resources.

ERCOT has a well-developed interconnection wide transmission planning process that assesses system needs for the following six years and establishes any necessary projects to maintain system reliability. This six year planning process has been established because it typically takes up to six years for major transmission projects to be planned, routed and constructed. Based on

this experience, any significant unit retirements resulting from new regulations would have to allow a six year window of implementation to allow for assessment, planning and implementation of any transmission projects needed to address local load-serving needs.

In the event that a proposed unit retirement is expected to result in a local transmission reliability issue, ERCOT has the authority to negotiate Reliability-Must-Run (RMR) contracts with the resource owner. However, the resource owner is not required to enter into an RMR contract. Also, there is no precedent in ERCOT for trying to establish an RMR contract to maintain the operation of a resource that is being retired due to not being in compliance with environmental regulations. So, this alternative may not be sufficient to eliminate the risk of new regulations affecting local transmission reliability.

ERCOT is a summer peaking region with the greatest demands typically taking place during August and early September. EPA should allow states the flexibility to operate their electric grids without penalty in ways that will maintain system reliability. For example, to maintain reliability, ERCOT may require that all available units to operate during peak summer hours. Generators should not be penalized for operating units needed to maintain system reliability, especially during peak periods.

Texas's renewable energy story is well known. Texas is by far the single largest wind energy producing state in the nation. Texas's wind capacity is more than twice the amount of the second closest state (Iowa). Through calendar year 2012, Texas has added 12,776 MW of installed wind capacity. Because wind generation is an intermittent resource, it is necessary to have other generation available to serve load in the event expected wind generation is unavailable. Cycling of fossil fuel units in response to the variable output of wind generation can lead to greater GHG emissions by these plants. Again, generators should not be penalized for increased GHG emissions that may result from operating their plants as needed to maintain system reliability.

The PUCT and TCEQ urge EPA to consider all aspects of grid reliability in developing any GHG rule for existing sources. Maintaining electric reliability and minimizing consumer costs as a result of the rulemaking is a necessity. EPA must be clear and transparent about data and assumptions they make regarding effects on reliability and costs to consumers. In addition, there should not be tradeoffs between EPA's desire to reduce CO^2 emissions and the progress that states have made in reductions of other air pollutants.

Fourth, it is also very important that EPA not penalize states for demographic and geographic factors that complicate the supply of, and demand for, electricity within and between states. Texas's population is growing faster than any other state. Texas is also the nation's leading producer of oil and gas, refined products, and chemicals. These industries are energy dependent, and Texas should not be penalized for the energy used by these industries that provide products to the rest of the nation and the world. According to the U.S. Energy Information Administration (EIA), Texas is also the largest lignite producer and the fifth largest coal producer in the nation.

Texas produces more electricity than any other state, generating almost twice as much as the next largest generating state. Texas is also the largest electricity consuming state. Unlike other regions where large net interstate electricity deliveries are available, the Texas power grid is

largely isolated from the interconnected power systems serving the eastern and western United States. The largest portion of the retail electricity sales in Texas is to the residential sector. One-half of the households in the state use electricity as their primary heating fuel. The residential use of electricity is higher in Texas than in other states, in part because of population size, but also because of high demand for air conditioning during the hot summer months and the widespread use of electricity as the primary energy source for home heating during the generally mild winter months.[1] Any program developed by EPA under 111(d) that does not take factors such as these into account could result in unequal negative impacts on Texas economy relative to other states.

EPA should recognize the difficulty stakeholders have in providing meaningful comment without knowing what direction EPA intends to take. As EPA starts to develop its proposal, it is of the utmost importance that EPA continues to be open regarding its intentions and be inclusive in the process. Not knowing what EPA intends to propose until the rule is actually proposed will not allow adequate time for states to be able to provide meaningful input into the process and prepare for the task of developing state plans.

Thank you for the opportunity to provide comments on this important matter. If you have any questions, please contact Mr. Steve Hagle, Deputy Director of the TCEQ Office of Air at (512)239-2104 (Steve.Hagle@tceq.texas.gov) and/or Mr. Tom Hunter, Agency Counsel of the PUCT at (512)936-7280 (Tom.Hunter@puc.texas.gov).

Sincerely,

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Texas Commission on Environmental Quality

Brian H. Lloyd, Executive Director
Public Utility Commission of Texas

Enclosure

[1] http://www.eia.gov/state/analysis.cfm?sid=TX

Texas Commission on Environmental Quality and Public Utility Commission of Texas

Response to EPA Questions for States on Federal Clean Air Act (FCAA) §111(d) Plan Requirements for Regulating Carbon Dioxide (CO_2) from Existing Power Plants

1. What is state and stakeholder experience with programs that reduce CO_2 emissions in the electric power sector?

- What actions are states, utilities, and power plants taking today that reduce CO_2 emissions from the electric power system? How might these be relevant under section 111(d)?

While Texas does not implement programs specifically to target CO2 emission reduction at this time, Texas has consistently implemented programs designed to both reduce energy demand and to encourage renewable energy resources. States should be allowed to take credit for programs such as renewable energy development, energy efficiency, and demand response for purposes of compliance with a 111(d) performance standard. Texas has more installed wind energy than any other state in the U.S. and has significantly expanded transmission capability in the state to integrate wind-generated electricity into the state's power supply. Texas has over 12,000 MW of wind capacity, more than twice the amount of any other state and more than all but five countries worldwide. In addition, Texas has a number of energy efficiency programs that result in energy savings. Demand response activities have resulted in an impact of greater than 900 MW in 2012. Efforts by states to address both energy demand and renewable energy development could be relevant in EPA's consideration of how a state demonstrates compliance with any standard.

- What systems do states and power plants have in place to measure and verify CO_2 emissions and reductions?

Texas at this time does not have specific regulatory requirements for the reporting of CO2 emissions or reductions in CO2 emissions, but rather relies on the EPA greenhouse gas reporting requirements.

Texas can provide information on its renewable energy portfolio and energy efficiency savings. Specifically, the Energy Systems Laboratory of Texas A&M University develops annual reports of energy savings due to energy efficiency measures in collaboration with the Public Utility Commission of Texas (PUCT), Texas Commission on Environmental Quality (TCEQ), and USEPA's Office of Atmospheric Programs. The energy savings submitted in the reports are based on projects implemented and achieved through the PUC energy efficiency program adopted under state legislation in 1999, 2001, 2007, and 2011.

- How do state programs and measures affect electricity generation and emissions at a regional level? How are interstate effects accounted for when measuring the progress of a state program? For example, are the multi-state effects of state renewable portfolio standards, end use energy efficiency resource standards, emissions performance

standards, and emissions budget trading programs currently accounted for by the state, and if so, how?

The TCEQ and PUCT acknowledge that regional issues can result due to the overlapping nature of the electrical grid in most states. Accounting for renewable energy programs and energy efficiency measures may necessitate coordination with other states for areas that have regional independent service operators (ISOs) or RTOs for electric markets that cross multiple state boundaries. However, ERCOT, which manages the flow of electricity to 85% of Texas, only operates within Texas. As such, while the areas of Texas outside of ERCOT are comprised of several other ISOs that encompass more than one state, Texas' renewable energy and energy efficiency programs in the ERCOT region will not have significant interstate linkages. The EPA needs to consider such unique circumstances when deciding what requirements may be needed for states that wish to include energy efficiency and renewable energy measures in their state plans.

2. How should EPA set the performance standard for state plans?

- Which approaches to reducing CO_2 emissions from power plants should be included in the evaluation of the "best system of emission reduction" that is used to determine the performance level(s) that state plans must achieve? Should the reduction requirement be source- or system-based?

A single approach is not appropriate given the diverse nature of the states' generation mix and utility market structures. A source-based approach may be appropriate for some states while a system-based approach is more appropriate in other states. A system approach would likely provide the most flexibility for Texas given our diversified generation mix.

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. A "system" standard may face additional practical and legal challenges; however, a "system" approach should be allowed as a part of any state's plan on how it will apply the standard of performance to any particular source under the plan.

- How does the amount of flexibility that states are given to include different types of programs in their state plans relate to the "best system of emissions reduction" that is used to set the performance bar for state plans? For example, if state standards to improve end-use energy efficiency were included in state plans, should EPA consider potential improvements in end-use energy efficiency in setting the performance target for states?

The states should have the flexibility to consider and account for current and possible future energy efficiency and renewable energy measures in developing state plans. However, the EPA *should not* attempt to incorporate assumptions regarding energy efficiency or renewable energy generation when setting the performance target under FCAA §111(d). A state's ability to improve energy efficiency measures or expand renewable energy generation is dependent on a

multitude of technical, geographic, and legal factors. If the EPA attempts to set a more stringent performance target for states that account for energy efficiency or renewable energy in their state plans, this will only serve as a disincentive for states to include energy efficiency and renewable energy. Additionally, the EPA may inadvertently penalize states that have been proactive in implementing energy efficiency and renewable energy measures.

111(d) does not convey flexibility to EPA in how they are to establish standards of performance, simply because states are given implementation flexibility in preparing plans that describe how standards of performance will be applied to existing sources. EPA's flexibility exists in its approval of each unique state plan.

- What should be the form and specificity of the performance level(s) in EPA guidelines? (Rate-based or mass-based? Separate levels for each subcategory of sources, or one level for the covered sources in the state? A uniform national level, or different levels by state/region based on an established evaluation process?)

As with the question of source-based vs. system-based, a single approach may not be appropriate for all states. A rate-based approach may be more appropriate in some states whereas a mass-based approach could be more appropriate in others. Rate-based standards of performance may appear to be the most defensible form of a potential standard because they could account for BSER on a source specific basis. However, whatever form of the standard the EPA ultimately decides on, states should have the latitude to translate the standards from one basis to another for purposes of developing the state plans, e.g., converting rate-based standards to a mass-based strategy for compliance, or source-based standards to system-wide approach. The EPA should provide guidance on various mechanisms in which a state can convert the standards to difference compliance approaches for the §111(d) plans.

Regardless of the different possible forms or specificity of the standards of performance, EPA must recognize the difference in source categories [e.g., coal-fired utility boilers (sub-critical, supercritical, and ultra-supercritical), gas-fired boilers, liquid-fired boilers, simple-cycle combustion turbines, combined-cycle units] in developing the standards of performance that reflect BSER. Because of the unique design characteristics of plants that burn different types of coal, performance standards should be based on a further subcategorization of coal plants.

Regional differences in electric markets create additional complexity in the setting of a standard under 111(d). While 111(d) doesn't appear to give EPA authority to establish different standards of performance based upon geographical considerations, the TCEQ supports considerations of regional issues in the standard setting process based on the unique nature of the regulated pollutant and the multiple overriding statutory and regulatory constraints for electric generation.

- When can emission reductions from existing power plants be achieved, considering different reduction strategies?

The amount of time necessary to achieve the emission reduction is dependent on how much reduction will be required to comply with the FCAA §111(d) requirements and the form of the standard. Without knowing the degree of reduction required and what options are available, states cannot estimate the amount of time necessary. We note that 111(d) has no specific compliance timeframes unlike other statutory air programs such as Section 112. We believe that under Section 111(d), that states have the authority to determine compliance timelines through their state plans. This is absolutely necessary given the differences in state energy mixes and the need to ensure that electric reliability is maintained. States need the flexibility to establish compliance deadlines based on a number of factors including the economic and energy needs of the state, the remaining useful life of affected EGUs, grid reliability, and unit-specific factors.

- How should a state, in applying a standard of performance to any particular source, consider a facility's "remaining useful life" and other factors?

The consideration of "remaining useful life" is one that is left to states under 111(d). States should be able to consider the relative age of different portions of its fleet, the present and future investment in pollution controls made at individual plants, and the amount of stranded investment if plants were to be prematurely required to shut down.

3. What requirements should state plans meet, and what flexibility should be provided to states in developing their plans?

- What level of flexibility should be provided to states in meeting the required level of performance for affected EGUs contained in the emission guidelines?

Given the diversity among the states' utility market structures and generation mixes, the EPA should give the maximum flexibility allowed by the FCAA.

- Can a state plan include requirements that apply to entities other than the affected EGUs? For example, must states place all of the responsibility to meet the emission performance requirements on the owners or operators of affected EGUs, or do states have flexibility to take on some (or all) of the responsibility to achieve the required level of emissions performance themselves or assign it to others (e.g., to require an increase in the use of renewable energy or require end-use energy efficiency improvements, which will result in emissions reductions from affected EGUs)?

Energy efficiency and renewable energy measures from sources other than affected EGUs should be tools that states can use in developing state plans. Energy efficiency and renewable energy ultimately affect the energy produced by affected EGUs. However, while we encourage EPA to provide maximum flexibility to states in developing state plans, including other sources that do not have this direct linkage back to the affected EGUs may be problematic. For example, if a state wishes to include non-EGU combustion sources in its state plan, will the state or the EPA decide the appropriate level of performance for these non-EGU sources?

- What components should a state plan have, and what should be the criteria for approvability?

Since EPA has already promulgated general requirements that all state plans must meet in 40 CFR Part 60, Subpart B, the TCEQ and PUCT are unclear as to the intent of EPA's question. If the EPA's question is whether the components in 40 CFR Part 60, Subpart B, are necessary for state plans for control of CO_2 emissions from existing EGUs, then the TCEQ supports reviewing these general requirements to determine whether they are necessary or appropriate in this case. If EPA's question is whether there should be requirements in addition to those in 40 CFR Part 60, Subpart B, it is difficult to answer that question without specific details of the form of the standard and what options will be available for development of the state plans. In general, the TCEQ and PUCT reemphasize the previous comment that maximum flexibility needs to be provided to states in order for states to address their unique situations. Similarly, with regard to approvability, criteria for approval of state plans should be broad in order to better fit the flexibility of the standard currently under consideration.

- Can a state plan include programs that rely on a different mix of emission reduction methods than assumed in EPA's analysis of the "best system of emission reduction" that is used to set the performance standard for state plans?

Yes. EPA should not attempt to limit the methods states might use in their state plans. A performance-based approach encourages innovative solutions.

- What should be the process for demonstrating that a state plan will achieve a level of emissions performance comparable to the level of performance in the EPA emission guidelines?

The information necessary to demonstrate a state plan will achieve emissions performance comparable to that established by the EPA's emission guidelines will be dependent on the form of the standards in the emission guidelines and the approach that a state chooses to follow in their state plan. The TCEQ and PUCT encourage the EPA to be flexible in this process to allow for the wide range of approaches that states are likely to implement in the state plans.

- What enforceability, measurement, and verification issues might arise, depending on the types of state measures and programs that states include in their plans? For example, what issues are raised by actions that have indirect effects on EGU emissions, such as end-use energy efficiency resource standards, renewable portfolio standards, financial assistance programs to encourage end-use energy efficiency, building energy codes, etc.?

With regard to energy efficiency and renewable energy measures, does the EPA intend to hold states to the same requirements as in EPA's guidance for claiming credit for such measures in the state implementation plan (SIP) process? If so, this may be a strong disincentive for states to rely upon energy efficiency and renewable energy in state plans for FCAA §111(d), as has been the case with the SIP process.

- Do different CO_2 reduction methods under different state plan approaches necessitate different timelines for the achievement of emission reductions?

Yes. If a standard is set that will require changes to a state's generation mix, it will take substantial time to avoid adverse consequences for electric reliability. Demand side changes, such enhancing energy efficiency programs, can also require substantial time for the cumulative benefits to be realized. Additionally, factors such as the utility regulatory and market structure, the diversity of the generation fleet, and the amount of reserve resources available in a particular region can also affect the amount of time needed for a particular strategy, i.e., a particular strategy may require more time in one region than may be necessary in another.

- What issues arise from the fact that operation and planning of the electricity system is often regional, but FCAA section 111(d) calls for state plans? How should interstate issues be addressed, where actions in one state may affect EGU emissions in another state? For example, where actions have interstate impacts, which state would receive credit for the emission reductions in its state plan? Could EPA provide for coordinated submittal of state plans that demonstrate performance on a regional basis?

Due to the specifics of federal and state electricity regulation, each state has a unique set of circumstances relevant to the provision of electricity in their state which creates unique complications for standard-setting under 111(d). Given the fact that many ISOs cross state boundaries makes development of individual state plans even more complicated. States should have the flexibility and necessary time to coordinate with other states and ISOs so that individual plans are complementary.

4. What can EPA do to facilitate state plan development and implementation?

- What types and amount of guidance and implementation support should be provided to states?

Given the EPA's aggressive schedule on the FCAA §111(d) rulemaking and for states to develop state plans, states need detailed information early in the process. EPA should not wait until the rule is proposed to give specifics to the states. A 30 or 60-day comment period will not be sufficient for state environmental and utility agencies to assess the potential impacts of the performance level proposed by EPA. EPA needs to continue to be transparent and communicative with states while they develop the 111(d) guidance.

Given the extreme complexity of state energy programs, market structures, ISOs that may cross state lines, etc., Texas is very concerned that the regulatory timelines that EPA is working under may not be adequate for states to develop their plans. At a minimum, guidance regarding EPA's expectations dealing with multijurisdictional issues will be critical and should be available no later than the effective date of the standard.

- Are there benefits for coordination among neighboring states in the development and submittal of state plans? Should EPA facilitate the coordination of multi-state plan submittals?

It is difficult to answer this question without knowing the final nature of the performance standard. In any case, EPA facilitation of multi-state planning process should only occur if requested by the states involved.

- Would certain types of measures that might be included in state plans increase the need for coordination among states?

- Are there model rules that EPA could develop that would assist states, and what would those rules cover?

Other Questions and Issues

States may need to include an emergency provision or a "safety valve" in their state plans for energy emergencies.