

SENATE COMMITTEE
ON
GOVERNMENT OPERATIONS

Sen. Mike Bell, Chair

Sen. Ferrell Haile, 1st Vice Chair

Sen. John Stevens, 2nd Vice Chair

Sen. Janice Bowling

Sen. Rusty Crowe

Sen. Thelma Harper

Sen. Jack Johnson

Sen. Becky Massey



STATE OF TENNESSEE
GENERAL ASSEMBLY
NASHVILLE

HOUSE COMMITTEE
ON
GOVERNMENT OPERATIONS

Rep. Judd Matheny, Chair

Rep. John Ragan, Vice Chair

Rep. Craig Fitzhugh

Rep. Curtis Halford

Rep. G.A. Hardaway

Rep. Curtis Johnson

Rep. Gerald McCormick

Rep. Johnnie Turner

AGENDA
INFORMATION HEARING
ON EPA REGULATIONS

DECEMBER 16, 2014

WELCOME

CHAIRMAN MIKE BELL

OPENING STATEMENT

CLEAN AIR ACT (CAA): 111(d)

OFFICIAL COMMENTS SUBMITTED TO THE EPA

HONORABLE BOB MARTINEAU
COMMISSIONER, TDEC

MICHELLE WALKER OWENBY
DIRECTOR, POLICY & PLANNING

PANEL DISCUSSION

MR. JOHN MYERS

TENNESSEE VALLEY AUTHORITY

MR. MIKE KNOTTS

TENNESSEE ELECTRIC COOPERATIVE ASSOCIATION

MR. PAUL BAILEY

AMERICAN COALITION FOR CLEAN COAL ELECTRICITY

MR. CHUCK LAINE

TENNESSEE MINING ASSOCIATION

MS. AMY MARTIN

TENNESSEE CHAMBER OF COMMERCE & INDUSTRY

CLEAN WATER ACT (CWA): WATERS OF THE U.S.

OFFICIAL COMMENTS SUBMITTED TO THE EPA

HONORABLE JULIUS JOHNSON
COMMISSIONER, TN DEPT. OF AGRICULTURE

HONORABLE BOB MARTINEAU
COMMISSIONER, TDEC

PANEL DISCUSSION

MR. STEFAN MAUPIN

TENNESSEE FARM BUREAU

MR. BILL PENNY

HOMEBUILDERS ASSOCIATION OF TENNESSEE

TENNESSEE CHAMBER OF COMMERCE & INDUSTRY

STORM WATER REGULATIONS

PANEL DISCUSSION

MR. JOHN FARRIS • MR. STEVE HODGKINS • MR. GARY THOMPSON
HOMEBUILDERS ASSOCIATION OF TENNESSEE

CLOSING DISCUSSION

REGULATION, RESPONSE AND THE FUTURE

MR. JUSTIN OWEN, THE BEACON CENTER
COMMITTEE MEMBERS & GUESTS

ADJOURN



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

ROBERT J. MARTINEAU, JR.
COMMISSIONER

BILL HASLAM
GOVERNOR

December 1, 2014

Via Upload and Email to Docket and First Class Mail

United States Environmental Protection Agency
Gina McCarthy, *Administrator*
EPA Docket Center (EPA/DC)
Mail Code 28221T
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
ATTN: Docket ID No. EPA-HQ-OAR-2013-0602

RE: The Tennessee Department of Environment and Conservation Comments regarding EPA's Proposed Emission Guidelines for Existing Stationary Sources: Electric Generating Units (commonly referred to as the Clean Power Plan), Docket ID No. EPA-HQ-OAR-2013-0602

Dear Ms. McCarthy:

Tennessee takes great pride in the quality of its air resources and works diligently to improve and maintain these resources consistent with the protection of human health and welfare of Tennesseans while preserving maximum employment and enhancing economic development within the State. We also enjoy reliable, low-cost electricity provided by our utilities and their distribution partners throughout the state, making Tennessee an attractive place to live, work and play. We need to ensure this all continues. As we evaluated the Environmental Protection Agency's ("EPA") proposed Clean Power Plan, we kept these goals in the forefront of our considerations.

The Tennessee Department of Environment and Conservation supports a clean energy future and is pleased that our utility partners in the state feel the same way. Across its system, the Tennessee Valley Authority has diversified its generation portfolio and reduced carbon emissions by more than 30% since 2005. Those reductions have come with significant investment and it is important to recognize what has been accomplished. We also take our role in cooperative federalism seriously, and we support preserving and protecting the rights of states to develop the right plan that is the right fit for the particular circumstances of Tennessee. In our comments you will find thoughtful, comprehensive analysis of EPA's proposed Best System of

Emission Reduction with regard to carbon emissions at existing power plants. We've also taken a hard look at Tennessee's goal and provided constructive comment as to how and why it needs to be adjusted.

For example, Tennessee, along with two other states in the Southeast, are constructing new nuclear units that will, for the first time in decades, expand this valuable generation resource in the United States. For Tennessee, Watts Bar 2, when operational, will be able to deliver about 8,000,000 MWh of power annually. However, these zero-emitting units are still under construction and have not received all the necessary approvals to deliver power. It is important to allow the Tennessee Valley Authority to bring its unit to operational status in a safe and reliable manner, not to rush them with the fear of noncompliance. Given the sizeable amount of emission reduction represented by nuclear units, incorporating these yet-to-be completed units in state goals also removes most, if not all, the flexibility Tennessee should have to develop a compliant state plan.

We have worked diligently with stakeholders to understand EPA's proposal and its potential impact on Tennesseans. Although we have answered some questions, many important questions remain. We encourage EPA to continue its efforts to work with state agencies and other important stakeholders to ensure we find the right approach for accomplishing the goal.

Executive Summary

The United States ("U.S.") does not have an established national energy policy, particularly as it relates to Greenhouse Gas ("GHG") emissions. Citing the need to address climate change due to its impact on human health and the environment, President Obama, in June 2013, issued a Climate Action Plan that details a variety of actions the executive branch will undertake to reduce GHG emissions. The Plan specifically calls for a reduction in CO₂ emissions from power plants; therefore, President Obama issued a Presidential Memorandum that directed EPA to complete carbon pollution standards, regulations or guidelines for modified, reconstructed and existing power plants by June 1, 2015. EPA formerly issued the "proposed guidelines" under Section 111(d) of the Clean Air Act ("CAA") on June 18, 2014.¹

Tennessee

The Tennessee Department of Environment and Conservation ("TDEC") is the environmental regulatory agency in Tennessee that implements programs under the CAA. Tennessee currently ranks 25th for energy expenditures among U.S. states, spending \$4,436 per capita on energy. This is slightly higher than U.S. average energy expenditures at \$4,319 per capita. Tennessee's 2012 average retail electricity price (9.27 cents/kWh) fell below the U.S. average retail electricity price (9.84 cents/kWh) for all sectors, which has historically contributed to the State's national competitive advantage for residents, business, and industry. The competitive advantage contributes to positive economic development for the state. However, energy costs to Tennesseans should be considered significant given that Tennesseans make less than the average American, and thus spend a higher portion of their income on energy. The 2008-2012 median

¹ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (proposed June 18, 2014) (to be codified at 40 C.F.R. pt. 60).

household income in Tennessee falls 17% below the national average. Tennessee families spend an estimated average of 12% of their after-tax incomes on energy. Moreover, 58% of Tennessee's families (1.4 million) have gross annual incomes of \$50,000 or less, therefore devoting an estimated 20% of their after-tax incomes to energy. Tennessee's economy is dependent on affordable and reliable energy. Tennessee is home to many energy-intensive industries, such as manufacturing, transportation and logistics, agriculture, and healthcare that are dependent on reliable and affordable electricity and natural gas for their operations.

Tennessee exhibits a diverse electric generation portfolio. Coal-fired power plants generated about 45% of the electricity produced in Tennessee, with nuclear plants accounting for 32%, hydroelectric power for 11%, natural gas for 10%, and the remainder resulting from renewable and other sources. In 2012, the overwhelming majority of renewable electricity generation was provided through hydroelectric power (91%), followed by wood products (7.7%), other biomass (0.7%), wind (0.5%), and solar power (0.1%). Tennessee ranked 19th of all U.S. States for total CO₂ emissions (thousand metric tons) and 27th for pounds of CO₂ emitted for every megawatt-hour (MWh) of electricity produced from the electric power sector in 2012 (where a ranking of 1 corresponds to greatest total emissions and emission rate, respectively). Carbon emissions from Tennessee's entire electric power sector have steadily declined since 2005, due to significant utility commitments to retire or idle many fossil units, declining demand and a shifting of load to lower-emitting generation resources across the state's portfolio.

The Tennessee Valley Authority ("TVA") is the primary electric power provider in Tennessee, serving nearly 99.7 percent of the state. The remaining portion of the State is served by four utilities: Appalachian Power Company, Entergy Arkansas, Kentucky Utilities Company, and Kingsport Power Company. Currently, TVA is the only known owner/operator of facilities in Tennessee with affected fossil fuel-fired EGUs that would be subject to the proposed guidelines. TVA completed its most recent electric power generation and delivery strategy, or Integrated Resource Plan, in the Spring of 2011, and is presently operating under that Plan. However, TVA is currently in the process of updating its Integrated Resource Plan, a draft version of which and associated materials will tentatively be available in the Summer of 2015. Because TVA, with rare exception, is overwhelmingly the primary electric provider in Tennessee, the energy choices it makes during its IRP process largely dictate generation options throughout the state. However, it is important to note that TVA's structure lacks vertical integration, meaning that it does not have total control over its supply chain. Most jurisdictions (over 70%) in Tennessee have electric cooperatives or municipal electric power providers that deliver TVA's power to end-use customers. Typically, these local power companies set their own rates, passing along the power rate that is charged to it by TVA to its customers as well as any additional program costs that they may incur.

Legal Authority

There are numerous critical legal issues for which EPA has not provided sufficient legal support for the proposal. As set forth below, among other issues, EPA has expanded key definitions in the CAA; not recognized key language in the CAA and its current regulations regarding state discretion to set the standards of performance recognizing the unique characteristics of sources in a state; and failed to satisfy legal requirements in defining the Best System of Emission

Reduction. Notwithstanding or waiving the issues of legal uncertainty, TDEC's comments predominantly focus on concerns around EPA's methodologies, approach, application and technical support. TDEC believes it is necessary to provide EPA with substantive comments on the proposed guidelines, while, at the same time, recognizing over-arching legal issues that would cause the entire approach under Section 111(d) to fail legal challenge. ***TDEC recommends EPA revisit its effort to explain the legal and regulatory support that provides the foundation for its action prior to finalizing the guidelines or make necessary revisions to the guidelines.***

Overarching Comments

There are a variety of reasons that support diversification of the electric system's generation resource portfolio and TDEC is pleased with TVA's historic and current efforts to do this within Tennessee. TVA's actions across its system are reflective of similar choices that have been and are being made by utilities and states across the U.S. for some time. The U.S. electric system is undergoing transformation and change as environmental regulations become stricter, traditional generation resources become older and the distributed market transitions to both an electric generator and user simultaneously. TDEC also recognizes that generation resource choices within the electric system are still relatively significant investments that require long term planning and design. Every state and region is different. Resource options are not always available or viable in every state and dictating a one-size-fits-all solution is unworkable when building within a system that has an infrastructure created by a long history of individualized state and utility choices driven by various factors.

In developing the Best System of Emission Reduction, required by Section 111(d) of the CAA, EPA specifically explains that each of the technologies and measures chosen are being utilized throughout the country within the electric system. TDEC is concerned that EPA has taken the fact that some states and/or utilities have invested in certain technologies and/or measures, concluded that they are equally applicable everywhere and apply the entirety of its Best System of Emission Reduction to every state, requiring emissions reductions representative of all the technologies and/or measures (set at best practices levels) from all states in the form of mandatory state goals. The result is that, for the most part, each state's mandatory goal represents a level of emissions reductions built from the application of each and every component of the System with no analysis by EPA as to whether that actually makes any sense or is economically reasonable for each state. EPA's application of its proposed Best System of Emission Reduction to states reflects the inequity that is created by the agency's failure to develop a System that is as dynamic as the electric system, reflecting a myriad of state policies and utility investment choices. For example, state goals for Tennessee, Georgia and South Carolina reflect a significant amount of emissions reduction required from the application of "under-construction" nuclear units included within EPA's System that are not yet complete. EPA determined that these units are technologies that should be included within the System, but only applied the representative emission reductions to these three states. On the other hand, EPA determined the growth of renewable energy generation is also a measure that should be included within the System and the measure is applied to every state. Therefore, states such as Iowa, Maine, Minnesota, North Dakota, South Dakota and others that invested heavily in a resource that is readily available in these states, have state goals that reflect emission reductions

associated with the growth of renewable energy generation that they have already met or exceeded. Every other state, including Tennessee, must make additional investments to grow this resource. The application and results make evident that EPA's proposed System does not reflect the dynamic, varied nature of the electric system and may not, for some states, be achieved at a reasonable cost. In particular, the mandatory nature of the state goals make EPA's proposed guidelines particularly troublesome. ***TDEC recommends EPA reevaluate its Best System of Emission Reduction, taking into consideration the specific comments provided below and revise the System accordingly, or publish the final guidelines with state goals as presumptive values, for which states can request modification during the state planning process in their respective plans.***

EPA states numerous times throughout the proposed guidelines that it believes that the broad flexibilities proposed will enable states and utilities to build on their longstanding, successful records of taking actions to reduce carbon emissions while assuring adequate, affordable, and reliable electricity. EPA touts the success of state and industry actions to reduce emissions as a basis for the design of the proposed Best System of Emission Reduction and also as a basis for the framework of state plan guidelines. TDEC believes it is essential for EPA to allow for the crediting of actions taken since 2005 to reduce carbon emissions and diversify state electricity portfolios in state plans. In addition to actions taken prior to the 2012 baseline date used by EPA in the proposed guidelines, the issue of what to do with emissions reduction actions taken between 2014 and 2020 must also be addressed in the final guidelines. ***Due to the fact that EPA's proposed guidelines inject carbon regulation onto the electric system long after states and utilities have invested resources and made choices to reduce these emissions on their own, TDEC recommends EPA make a concerted effort to recognize and provide some mechanism for crediting these investments and programs.***

EPA's Best System of Emission Reduction includes the growth of renewable energy generation resources. EPA, in applying its System to calculate state goals, starts with each state's 2012 renewable energy generation. For a number of states, including Tennessee, this number includes a significant amount of generation from biomass, a resource/measure for which EPA has not yet indicated it will provide full credit in state compliance plans. ***TDEC recommends EPA revise all applicable state goals to reflect only the portion of 2012 starting renewable generation for which the agency will allow states to credit in their compliance plans.***

TDEC recognizes the significant, unprecedented amount of outreach EPA has done with regard to the proposed guidelines. TDEC also recognizes the fact that EPA initially provided a longer time period for review and comment on the proposed guidelines and then later provided an extension. TDEC appreciates what EPA has done to engage with states throughout the public comment period and is grateful for the longer timeframe for review and comment. Despite the accommodations provided by EPA, TDEC believes, overall, the timeframe provided for review and comment associated with the proposed guidelines has been insufficient given the scope and complexity associated with EPA's proposal, the amount of options provided and EPA's request for comment on them all, the sheer amount of material and data in the docket (some provided late in the comment period) and the necessity for state agencies to both evaluate and understand the proposal as well as seek stakeholder feedback. This is particularly concerning because of the potential magnitude and scope of the proposed guidelines- one that EPA admits could potentially

be the most significant energy-environmental regulatory action in decades. *TDEC requests EPA consider extending the deadline for comments specifically relating to information and data issued during the late-October and November time frame.*

Tennessee Goal Adjustment

For all of the applicable reasons and information provided and discussed throughout these comments, TDEC specifically requests that EPA revise Tennessee's state goal as follows:

- 1. Remove emissions reductions and/or applicable additional generation capacity associated with the under construction nuclear unit at Watts Bar; and*
- 2. Remove any emission reductions and/or applicable additional generation capacity associated with biomass renewable energy generation for which Tennessee will not be able to fully credit in its state plan.*

TDEC believes the information and discussion provided in these comments provides adequate basis and support for the requested goal adjustment.

Best System of Emission Reduction and State Goals

Section 111 of the CAA requires EPA to promulgate a list of categories of stationary sources that the Administrator, in his or her judgment, finds "causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." Within one year after EPA lists a stationary source category, EPA must propose standards of performance for emissions of air pollutants from new sources in the source category. After establishing these standards, the CAA directs EPA to develop emission guidelines, when certain conditions are met, for existing sources in the same category which reflect the EPA's determination of what is the Best System of Emission Reduction ("BSER"). States must then develop and submit a plan to EPA that establishes standards of performance for the existing sources, considering the remaining useful life of those sources, and provides for the implementation and enforcement of the standards. BSER represents a technology standard or measure common among the federal environmental pollution control statutes. In defining BSER for existing sources, EPA must demonstrate that it is both the best system of for reducing emissions, considering the cost of such reduction, and that it is "adequately demonstrated." The key components are:

- BSER must be technically feasible;
- The costs of BSER must be reasonable;
- EPA must consider the amount of emissions reductions BSER would achieve; and
- EPA must consider whether it would promote existing technology implementation and development of emerging technology.

EPA must also consider non-air quality health and environmental impacts and, particularly for this proposal, energy impacts associated with BSER.

According to EPA, the determination of BSER is "based on strategies currently being used by states and companies to reduce CO₂ emissions from EGUs." These strategies are divided across

four “building blocks” where EPA relies on the concept of the interconnected electricity system to extend its regulatory reach to an unprecedented distance “outside of the fence” of affected EGUs, setting mandatory carbon reduction goals for states using measures within the four blocks.

The proposed guidelines apply BSER to affected EGUs on a statewide basis to set state-specific, rate-based emissions limitations, referred to as “state goals,” that state plans must be designed to meet. These state-specific goals are based on EPA’s assessment of the amount of emissions that can be reduced at affected EGUs through application the proposed BSER. EPA believes that states have flexibility in assigning the emission performance obligations to affected EGUs in the form of standards of performance or, for the portfolio approach, in imposing requirements on other entities as long as the required emission performance level is met. The proposed guidelines also include requirements for the process and timing for demonstrating achievement of the required emission performance level, including performance and emission milestones. Applying the proposed BSER to Tennessee’s affected EGUs, EPA establishes the following goals for Tennessee:

Tennessee 2020-2029 Interim CO₂ Performance Goal (lbs/MWh)	1,254
Tennessee 2030 Final CO₂ Performance Goal (lbs/MWh)	1,163

The proposed goals reflect EPA’s quantification of the state’s average emission rate from affected EGUs that could be achieved by 2030 and sustained thereafter, with an interim goal that would apply over a 2020-2029 phase-in period, through implementation of BSER based on all four building blocks. EPA is also taking comment on a second set of state-specific goals that would reflect less stringent application of the same BSER, in this case by 2025, with interim goals that would apply over a 2020-2024 phase-in period. Tennessee’s goals on this shorter time period are 1,363 lbs/MWh (interim) and 1,326 lbs/MWh (final). EPA indicates that the interim and final goals, as promulgated in the final guidelines, will be binding emission reduction requirements for state plans.

BSER- the System

TDEC has concerns with the data and methodology EPA relies on to determine whether the specific technologies or strategies within each building block meets the requirements of BSER and whether the quantification of the amount of emissions reductions are achievable from each of those technologies or strategies. It stands to reason, then, that TDEC would also have concerns about EPA’s application of all four building blocks to the state’s affected EGUs as BSER. In fact, TDEC is predominantly concerned that the application of EPA’s BSER, consisting of required emission reductions from four building blocks collectively, to the state’s affected EGUs to create mandatory state goals will require the states and utilities to try and accomplish something that has not been adequately demonstrated. As such, TDEC believes EPA has failed to establish that its proposed BSER meets all the requisite components as required by the CAA.

EPA's proposed BSER is a combination of all four building blocks and EPA considers the combination as a "system of emission reduction." EPA also indicates that the combination is the "best system" and is "adequately demonstrated" in that it is technically feasible, capable of achieving meaningful reductions in CO₂ emissions from affected EGUs at a reasonable cost and satisfies other BSER criteria. EPA indicates its interpretation that the measures in each building block can be considered components of a system is reasonable and entitled to deference. EPA provides data and information relevant to the individual strategies in each building block, but relies on generalized assumptions or theories as to how all the building blocks would work together as BSER. Although EPA provides, within the discussion of each building block, the data and information it believes demonstrates that the specific measure is technically feasible, has been adequately demonstrated, and can be achieved at the quantified levels EPA prescribes, EPA fails to provide this information or data for the proposed BSER—the combination of all four buildings blocks applied and working together. EPA, instead, relies on the fact that because it believes the individual building blocks meet the criteria for the "best" and "adequately demonstrated," the combination of the blocks (particularly blocks 2-4) do as well. EPA relies on two additional theories—that the measures in blocks 2, 3, and 4, individually and in combination, are 'adequately demonstrated' due to the integrated nature of the electricity system and that they have long been relied on to reduce costs in general, assure reliability, and implement pre-existing pollution control requirements in the least-cost manner and the fact that some utilities, states, and regions are already relying on these measures for the specific purpose of reducing CO₂ emissions from EGUs. EPA also assumes that because the measures can be undertaken or invested in by affected EGUs themselves and/or that states may adopt them and/or that they may be accommodated by regional organizations, they are adequately demonstrated.

None of this demonstrates that the proposed BSER, at the levels proscribed by EPA, is technically feasible or adequately demonstrated nationwide or even statewide. EPA acknowledges, throughout the proposed guidelines, that program development, fuel supply infrastructure growth, transmission infrastructure changes, renewable energy development and delivery will all be required. EPA believes it has provided adequate time for all of this to occur in the proposed guidelines. But, EPA hasn't provided any evidence to suggest that anything like the proposed BSER, with all of its moving pieces and at the proposed scale and level, has occurred in the electric system. EPA's attempt to take a holistic approach across the electric system in formulation of the proposed BSER is fatally underpinned by the assumption that all of the moving parts and entities involved in, and responsible for, the generation, transmission, distribution and end-use consumption of electricity would be able to act in relative coordination to reduce carbon emissions in applying the proposed BSER while also being able to provide adequate, reliable and affordable electricity. The proposed guidelines fail to provide information that adequately supports this assumption.

TDEC acknowledges that the electric system is integrated and that utilities, states and regional organizations have integrated all of the measures included in the proposed BSER into the operation of that system over the last few decades. However, those changes have occurred over the longer term and entities have had relative flexibility to make investment choices as they related to state and other requirements without being held to an overall level of emission reduction based on a quantified amount derived from all 4 building blocks, as applied over the

same compliance period. Additionally, while the overall goal has been diversification of portfolios and the adoption of lower-emitting generation, states and utilities have moved at different paces, chosen different strategies, different implementation rates, etc. In short, they have not acted in concert, over a short time frame, to drive toward a dramatic reduction in emissions and potentially shock the system all at once. While TDEC cannot demonstrate that this will occur, EPA has not demonstrated that it will not occur. EPA has not provided clear information or data supporting that the proposed BSER, when applied to states through mandatory goals for emission reduction, in concert, over a relatively short time frame, has been adequately demonstrated as technical feasible and achievable, at the level proscribed, such that negative energy impacts will be avoided. Given the relatively untested nature of what EPA is proposing to occur nationwide, TDEC believes it is critical that EPA provide relevant data and support to indicate the proposed BSER is technically feasible at the level EPA proscribes and has been, to some extent, adequately demonstrated. ***TDEC recommends EPA include concrete data and information that demonstrates the proposed BSER, at the levels prescribed state-by-state as well as nationally, is technically feasible within the electric system and has already been adequately demonstrated, taking into consideration and/or adjusting BSER based on the following specific recommendations:***

- ***TDEC recommends EPA use a more gradual “glide path” in applying BSER, in its totality, to states to set state goals.***
- ***TDEC recommends EPA evaluate the interaction between the building blocks encompassed within BSER, including any negative impacts that will occur, and correct the proposed BSER to account for the interplay between blocks.***
- ***TDEC recommends EPA provide data or information that indicates the proposed BSER, applied at EPA’s prescriptive levels state-by-state and nationwide, is achievable at a reasonable cost.***
- ***TDEC recommends EPA address the North American Reliability Corporation’s concerns and provide a clear demonstration of how the proposed BSER, as implemented state-by-state and nationally, will not negatively impact electric system reliability.***

BSER- the Building Blocks

EPA indicates that each of the strategies or measures included within the proposed BSER are “adequately demonstrated” because they “are each well-established in numerous states, and many of them have already been relied upon to reduce GHGs and other air pollutants from fossil fuel-fired EGUs.” The proposed guidelines emphasize EPA’s view that these measures are consistent with current trends in the electricity sector, and that all measures can be undertaken by EGUs.

In building block 1, EPA applies a 6% reduction to the emission rates of all affected coal-fired EGUs nationwide due to increased efficiency from heat rate improvements. EPA then applies the entire 6% reduction to all affected coal-fired EGUs at the start of the compliance period in 2020 and requires states to hold that reduction level constant through the interim goal (2029) and the final goal (2030) periods. Application of the 6% heat rate improvement to Tennessee’s existing affected coal-fired EGU fleet reduces the fleet’s baseline 2012 average emission rate of 2,244

lbs/MWh to 2,110 lbs/MWh. This represents 13% of EPA's proposed emission rate reduction goal for Tennessee.

TDEC has concerns about the methodology used for building block 1. First, TDEC is concerned about the accuracy of data used in studies EPA relies upon to make assumptions across a portfolio of affected coal-fired units at the national level. Second, TDEC believes it is inappropriate for EPA to apply a nationally assumed HRI to each state, given the unknown technical feasibility of implementing HRI at the proposed levels across affected coal EGUs in Tennessee. Third, EPA's approach serves to potentially require costly additional equipment upgrades and practices at units for utilities that chose to maximize efficiency early on, serving to disincentivize early action and increase rates disproportionate to utilities that chose to do nothing. Finally, there are various other considerations EPA ignored or failed to address with regard to achieving the 6% HRI. EPA assumes an average HRI of 6% to be achievable across the nation's entire fleet of coal-fired EGUs. This standard of HRI is then applied to each state, absent consideration of unit-level information, including its remaining useful life and without full consideration of the drivers of net generating efficiency. TDEC provides the following recommendations related to building block 1:

- *TDEC recommends EPA evaluate specific characteristics of the affected coal EGUs today and modify the 6% accordingly or finalize the 6%, and the corresponding emission reduction included in each state's goal, as presumptive and allow states to perform this analysis during the state planning process to provide a demonstration of technical feasibility at a reasonable cost or a demonstration of what is technically feasible at a reasonable cost within building block 1, given state-specific, unit-specific circumstances.*
- *TDEC recommends EPA address the impact of control technology on the technical feasibility of achieving the 6% HRI and adjust the target accordingly or finalize the 6%, and the corresponding emission reduction included in each state's goal, as presumptive and allow states to perform this analysis during the state planning process to provide a demonstration of technical feasibility at a reasonable cost or a demonstration of what is technically feasible at a reasonable cost within building block 1, given state-specific, unit-specific circumstances.*
- *TDEC recommends EPA reconsider costs estimates related to applying a 6% HRI standard to accurately reflect the effect of reduced generation levels and the potential for stranded investments.*
- *TDEC recommends EPA consider HRI loss over time and variability at the unit level and adjust the proposed BSER accordingly or finalize the 6%, and the corresponding emission reduction included in each state's goal, as presumptive and allow states to perform this analysis during the state planning process to provide a demonstration of technical feasibility at a reasonable cost or a demonstration of what is technically feasible at a reasonable cost within building block 1, given state-specific, unit-specific circumstances.*
- *TDEC recommends EPA provide clear legal and regulatory guidance as to the consequences of pursuing HRI measures and, taking into consideration those consequences, including cost, modify the proposed BSER in building block 1 accordingly.*

In building block 2, electric generation from higher-emitting affected coal-fired EGUs is re-dispatched to lower-emitting affected Natural Gas Combined Cycle (“NGCC”) units at a level equivalent to maintaining an average 70% capacity factor at all existing NGCC plants in each state throughout the decade-long interim goal period. As applied to Tennessee, this approach would significantly increase the state’s NGCC capacity factor from the 2012 annual average baseline capacity factor of 47%, and would correspondingly increase NGCC generation from an estimated ~6,549 GWh to ~9,846 GWh, while reducing generation from coal-fired EGUs by ~3,297 GWh. Application of this step of EPA’s proposed BSER lowers Tennessee’s mandatory goal by an additional 104 lbs CO₂/ MWh, and represents 12.2% of the state’s proposed target reduction rate. EPA focuses on reducing emissions from the most carbon-intensive affected EGUs, coal-fired EGUs, by replacing generation at those sources with generation from less carbon-intensive affected fossil fuel-fired EGUs, NGCC units. This shifting of demand from one affected unit to another is commonly referred to as “re-dispatching.” The rationale behind this approach is that shifting generation among affected EGUs would lower the carbon emissions from higher intensity coal-fired EGUs; therefore, lower the carbon intensity across all affected EGUs on average.

EPA asserts that affected EGUs have already demonstrated an ability to re-dispatch in a manner similar to what would be required though proposed BSER, and that the approach is technically feasible. EPA relies upon the interconnected nature of the EGUs and the electric grid coupled with the fact that electricity demand varies across geography and time in response to numerous conditions; therefore, EGU owners and grid operators are already responding to changes in demand and re-dispatching to meet demand in the most reliable and cost effective manner possible. EPA also cites market-based air pollution programs that utilize re-dispatching to comply with environmental constraints.

Re-dispatch of generation from higher-emitting units to lower-emitting units may be a strategy to reduce carbon emissions across an EGU portfolio when the electricity supplied by one facility is interchangeable and easily substituted with that of another. However, the electric system may not work that way; therefore, a well-supported, reasonable re-dispatching scenario must analyze the system’s ability to adequately, reliably, and affordably manage supply and demand constraints. EPA analysis concludes that utilities and the electric system, as a whole, would be able to deliver reliable, cost effective electricity under operating and dispatch scenarios that have been modeled, but what EPA is proposing has never actually occurred, at the level prescribed across the NGCC fleet, in the electric system. EPA relies on the performance of a relatively small portion of the NGCC fleet over a one year period; therefore, EPA’s own data indicates that what is proposed has not occurred, even within a small portion of the fleet, over the long term. TDEC provides the following recommendations related to building block 2:

- *TDEC recommends EPA reevaluate the timeline and milestones for this block as applied to the states in the proposed BSER in order to provide for a gradual “glide path” approach just as is done for building blocks 3 (renewable) and 4.*
- *TDEC recommends EPA analyze the proposed BSER for all relevant interactions between the building blocks and adjust the proposal where necessary to ensure the*

entirety of BSER is technically feasible and can be achieved at a reasonable cost without negative reliability impacts.

- *TDEC recommends EPA reconsider the level included within proposed BSER from building block 2 after analyzing longer term performance for a greater percentage of the NGCC fleet as well as the need for maintenance and other operational considerations relevant to a base load power generation source.*
- *TDEC recommends EPA update its modeling with current data inputs prior to finalizing the guidelines and include consideration of secondary uses and localized price impacts in its analysis of natural gas fuel supply.*

In building block 3, EPA proposes to reduce mass emissions from all affected EGUs through the use of an expanded amount of less carbon-intensive generating capacity. Unlike the measures included in building blocks 1 and 2, EPA assumes carbon emission reductions in this building block will occur across all affected EGUs. EPA's proposed approach divides generation technologies selected for inclusion in its definition of BSER into two categories: (1) new and preserved nuclear capacity and (2) renewable generating capacity. Building block 3 represents more than half of the mandatory emission rate reduction that EPA has proposed to impose on Tennessee (56.04%), and would require an unprecedented, and potentially unachievable, amount of growth in new low- and zero-emitting generation capacity.

EPA's methodology lumps together low- and zero-emitting generation as a strategy to reduce carbon emissions at affected EGUs, but then applies the individual technologies within the block (nuclear and renewable) arbitrarily and inconsistently as compared to one another. The inclusion of under construction nuclear units for only three states produces inequitable results between states and across regions of the country. The proposed guideline's distinction between states with nuclear and those without nuclear is arbitrary and punishes three states in the Southeast for forward-thinking investments in large-scale, zero-emitting technology. States that chose to invest heavily in renewable generation do not have the additional requirement to invest in and build a new nuclear unit, but the three states that chose to invest heavily in building new nuclear must not only complete those units with the guaranteed delivery of power at a high rate on a date certain, but also invest in and grow renewable energy. Further, EPA fails to treat nuclear consistently with renewable technologies in the same building block- although under construction nuclear units were included in the goals of three states, under construction renewable projects were not included within state goals as the 2012 starting point from which states are required to grow renewable technology.

There are a wide variety of generation technologies that should be eligible measures for compliance in state plans. Nuclear and other low-carbon technologies will continue to have an important role in reducing emissions in Tennessee and the Southeast. However, TDEC does not agree that EPA should include all of these technologies in BSER for the purposes of setting state goals. Each of the technologies contemplated in building block 3 has its own unique characteristics and potential within each state. States and utilities within the states are not starting from scratch, they are continuing on a spectrum of investment and portfolio diversification choices that ratepayers will shoulder—this must be taken into consideration in EPA's final guidelines. Additionally, EPA should refrain from advocating, even inadvertently, for one low-carbon generation choice over another. *TDEC recommends EPA reconsider BSER*

within building block 3 and perform further analysis regarding to what extent generation at affected EGUs can be replaced by expanded amounts of lower-carbon generating capacity given the realities of these technologies and historic and current investment choices.

EPA includes nuclear generating capacity in building block 3 under the assumption that it can replace generation at fossil fuel-fired EGUs, thereby reducing CO₂ emissions. EPA concludes that increasing nuclear capacity above the amount of nuclear capacity that "would otherwise be available to operate" is a technically viable approach, citing low variable operating costs of nuclear and its priority in resource dispatching order before fossil fuel-fired EGUs. EPA proposes two strategies for increasing the amount of nuclear capacity available to displace fossil fuel-fired EGUs: (1) building new nuclear facilities and (2) preserving nuclear at existing nuclear facilities that might otherwise be retired. EPA and these comments generally refer to the first as "under-construction" nuclear and the second as "at risk" nuclear.

The nuclear portion of building block 3, as encompassed within proposed BSER and applied to Tennessee, places a disproportionate burden on Tennessee and represents significant compliance risk for the State. EPA's proposed approach forces the State to create a state plan requiring the finished construction and operation of a new nuclear unit that must come online and deliver power at a time certain and at a high utilization rate. The significant amount of emission reduction represented by this one yet-to-be completed nuclear unit is an immovable, inflexible mandatory requirement that Tennessee cannot replicate or meet through another technology or strategy. Therefore, the treatment of under-construction nuclear generation *essentially eliminates all flexibility* for Tennessee in designing a state plan to meet its goal. Technology or strategy options within other building blocks in EPA's proposed BSER will not be able to compensate for reductions required by the nuclear portion of this building block in the circumstance that this unit is unable to perform as EPA is proposing. This is particularly true given the fact that Tennessee's existing nuclear units are and will continue to operate, but they are unlikely to displace generation from affected units as EPA assumes they will. EPA has suggested that states have the flexibility to use options outside the proposed BSER for compliance, but has indicated that states *can and will* be able to meet their mandatory goals utilizing the technologies and strategies within the proposed BSER. For Tennessee, this assurance may very well not be true.

EPA's inclusion of the under-construction nuclear units in the proposed BSER is arbitrary and capricious. These units are not complete and have not received all necessary approvals to operate to deliver power. These units are not NGCC units in any way, shape or form and they should not be treated as such. First, they are not affected units under Section 111 of the CAA. Second, the amount of investment, time, and owner/operator sophistication required to finance, construct, complete, receive approval and operate a nuclear unit is vastly different than an NGCC unit. Utilities investing in new nuclear units were unlikely to be spending large amounts to grow renewable generation resources or perhaps even energy efficiency. Yet, the states that these units are within are now held to growing these other low-carbon emitting resources based on quantified amounts derived from what EPA determined to be the best performing states. However, states without under construction nuclear units are not required to invest in this zero-emitting technology, even if those states may have applications before the Nuclear Regulatory Commission or other planning efforts already underway. TDEC does not include this information to suggest that EPA require every state in the U.S. to invest in new nuclear units—

this information is included to point out that EPA's choice to apply the under-construction nuclear unit in setting goals for Tennessee, Georgia and South Carolina is arbitrary and cannot stand.

EPA's inclusion of the under-construction nuclear units in the proposed BSER is inconsistent when compared to how EPA deals with renewable generation in the same building block. EPA's proposed BSER included under-construction nuclear units in three state goals, but it *does not* include under-construction renewable projects in 2012, 2013 or 2014 for any state. EPA's starting point for applying the quantified amount of renewable generation growth included within the proposed BSER to states for computation of their goals is the current level of performance (i.e., the 2012 net renewable generation amount). EPA utilizes EIA state level data for 2012 that is derived from EIA Form 923. TDEC reviewed EIA form 923 data used by EPA in setting the baseline renewable generation for states and it appears that renewable energy projects that were under construction in 2012 and completed thereafter are not reported on the EIA form; therefore, not included within the 2012 current level of performance. Therefore, renewable projects that were under construction during the 2012-2014 time frame that will deliver significant amounts of low-carbon electricity over the compliance period will be used as compliance margin for their home states. Tennessee, Georgia and South Carolina, on the other hand, have little to no compliance margin given the massive value associated with the under construction nuclear units included within their state goals. EPA's arbitrary and inconsistent inclusion and application of technologies within building block 3 creates an overly burdensome result for three states and significantly increases the likelihood that these states will not be able to comply with their state goals. ***TDEC recommends EPA remove under construction nuclear from the proposed BSER and allow for the three states it impacts to use some or all of the value of this zero-emitting generation for compliance.***

As with under-construction nuclear, EPA's inclusion of "at-risk" nuclear disproportionately impacts only certain states with existing nuclear units, although the relative size of the impact is much less than with under-construction nuclear. More importantly, inherent in EPA's inclusion of "at-risk" nuclear in BSER is the belief that by the addition of about 6% existing capacity in mandatory state goals, states and utilities will be incentivized to retain nuclear units that are otherwise not economically viable. This assumes that the value of that capacity would spur further investment in or additional operational capital to operate a nuclear unit that is not currently viable. However, to date, TDEC is unaware, and EPA has not provided evidence, of any state or utility that has actually retained nuclear capacity due to either (1) the projection of carbon regulation or (2) the additional stringency of other, relevant, EPA air regulations. TDEC believes the regulatory environment already exists to incentivize investment in and preservation of nuclear capacity and believes it would have already occurred if the cost was reasonable. EPA relies on a shortfall in covering operating costs as a proxy to determine the cost of including "at-risk" nuclear in BSER, but it may very likely be that other costs, including daunting capital investment costs are also impacting the decisions around certain nuclear units, among other factors. Given the little supporting documentation and thoughtful consideration EPA has provided for the inclusion of "at-risk" nuclear within BSER and its relative cost, TDEC believes this particular strategy has not been adequately demonstrated, nor has EPA proven its cost is reasonable.

Finally, nuclear capacity is not “at-risk” in Tennessee. None of the nuclear facilities in Tennessee are scheduled for retirement within the compliance period. In fact, the retirement year for Tennessee’s oldest unit (Sequoyah 1) is slated for 2041, *nearly a decade after the proposed compliance period*. To suggest that Tennessee’s nuclear units are “at risk” of retirement simply does not align with reality. Furthermore, it is inconsistent to assume that units are “at risk” of retirement in a state that is currently pursuing, and is heavily invested in, construction of a new nuclear unit. *For the foregoing reasons, TDEC recommends EPA remove “at-risk” nuclear from BSER as this strategy has not been adequately demonstrated, the cost may very well not be reasonable, and EPA’s regulation of carbon at affected EGUs will, in-and-of-itself, provide incentive for states and utilities to preserve nuclear capacity if the cost is reasonable.*

Also in building block 3, EPA includes renewable electricity (“RE”) generation as a “lower-carbon generating capacity to produce replacement generation” that is “proven” and available at a “reasonable cost.” The proposed approach to estimating CO₂ emissions from affected EGUs based on increases in RE generation is based on EPA’s development of a “best practices” scenario using renewable portfolio standard (“RPS”) requirements already established by states. This best practices scenario is then applied on a regional basis. EPA also posits an Alternative RE approach which “relies on a state-by-state assessment of RE technical and market potential”. In the proposed guidelines, RE in building block 3 represents 13% of Tennessee’s overall state goal rate.

Generally, TDEC is supportive of RE as a means to reduce carbon emissions. However, TDEC does not support EPA’s proposed methodology for estimating RE’s contribution to reduced carbon emissions, and prefers EPA’s Alternative RE approach. Significant concerns and recommendations that TDEC has regarding the renewable portion of building block 3 include:

- *In setting BSER based on “RPS requirements already established by a majority of states,” EPA makes the assumption that all states have already established an infrastructure capable of tracking, monitoring, and reporting RE generation. This does not reflect reality within Tennessee, which currently has no RPS requirement, nor does it have a traditional PUC or single entity charged with keeping track of RE generation. If Tennessee is to include RE generation within its state compliance plan, this poses significant challenges with respect to reporting, enforcement, and compliance.*
- *The use of RPS requirements established within other states, even if only applied to states within a similar region, is unreasonable for setting BSER for numerous reasons. First, as part of the Southeast region, Tennessee’s BSER is dictated by the only RPS requirement established by a single state within this region: North Carolina. Second, EPA neglects consideration of state-specific resource potential, contexts, and qualifiers that contribute to RPS design and achievability. Third, EPA does not consider whether or not states are on track to meeting existing RPS requirements, only whether or not they are in existence. Last, using RPS requirements to estimate potential RE growth targets is unsound given that oftentimes, such requirements are established without any consideration to resource potential, costs, and feasibility with respect to achievability. These flaws in EPA’s proposed methodology lead TDEC to believe that the proposed RE targets are neither reasonable nor adequately demonstrated.*

- *TDEC acknowledges that hydropower generation in general presents challenges for setting BSER due to its relative availability or unavailability in terms of existing capacity within a state, as well as its variability from one year to the next dependent on rainfall and run-off. Therefore, TDEC encourages EPA to exclude hydropower generation from its establishment of goals, yet allow the inclusion of hydropower expansions for compliance.*
- *Similarly, TDEC acknowledges that EPA is in the process of determining how biomass will be credited within compliance plans. However, because this process is still ongoing and states have yet to receive clear guidance for how RE from this resource is to be valued. EPA must remove biomass from the calculation of state goals to the extent it cannot be included as a compliance measure. In Tennessee this is a significant concern, given that the overwhelming majority of RE included in the baseline as part of its state goal calculation is generated from biomass resources.*
- *TDEC prefers that EPA utilize the alternative RE approach in setting BSER, as it more comprehensively takes into consideration state-specific resource potential, costs, and more realistically portrays likely RE growth rates. It also more effectively aligns with planning strategies that are currently utilized by utilities rather than arbitrarily selecting targets based on decisions made in other states.*

In Building Block 4, EPA sets BSER using a best practices scenario that increases each state's demand-side energy efficiency efforts based on its 2012 annual savings rate as reported to EIA on Form 861 ("current level of performance") to a rate of at least 1.5% of annual incremental electricity savings ("best practices level of performance") in the 2020-2029 period. For states that are not already achieving this level of annual incremental electricity savings, which includes Tennessee, expected energy efficiency savings are increased from 2012 levels at a 0.2% annual incremental electricity savings rate per year beginning in 2017, until the target rate of 1.5% of annual incremental electricity savings is achieved and then maintained through 2029. Tennessee's current level of performance begins at 0.3% and reaches the best practices level of performance in 2023. When applied to Tennessee's overall goal computation, 7,634,031 of demand-side energy efficiency MWh are added to the denominator to represent generation that is offset from demand-side energy efficiency measures within the state. This reduces Tennessee's goal rate by 159 lbs/MWh to an overall emissions rate of 1,163 lbs/MWh. Building Block 4 represents 18.7 percent of Tennessee's overall goal rate.

TDEC believes energy efficiency is a cost effective way to reduce demand and a means to reduce carbon emissions. However, within in the context of energy efficiency, EPA is acting and requiring states to act in a role that is unprecedented. The proposed guidelines will force energy efficiency programs into the realm of traditional environmental regulation under the CAA and require them to deliver in a way they have not historically been held to. How EPA and the states go about doing this will impact the perception of energy efficiency, its relative cost, and usefulness. Given the unique nature of energy efficiency, EPA's approach to crediting energy efficiency programs within state compliance plans poses considerable challenges when considered within the Tennessee context:

- Tennessee has not yet developed a mature, comprehensive energy efficiency program structure nor does it have a PUC specifically charged with managing energy efficiency

program performance within the utility space. The proposed guidelines inappropriately assume states already have a structure for valuing and crediting demand-side energy efficiency programs; Tennessee does not. Therefore, the work that must be done to establish the ability to value and credit these programs for the purposes of a state compliance plan is significant.

- EPA establishes energy efficiency targets on a state-by-state basis. However, electricity and energy efficiency are not bound by state borders – particularly in Tennessee. TVA, the primary electricity provider within Tennessee, plans, generates, and distributes electricity throughout a multi-state system, rather than on a state-by-state basis. Dissecting TVA's energy efficiency programs so that they can be treated and credited on a state-by-state basis will be a cumbersome and complex exercise.
- Demand-side energy efficiency program costs as used in the proposed guidelines do not appear to adequately take into consideration how the vast majority of current utility energy efficiency programs are funded within Tennessee. By law, the TVA Act requires TVA to charge power prices necessary to pay for the electricity system's operations, maintenance, and administration, provided that power is sold at rates as low as are feasible.

TDEC encourages that EPA consider these challenges in finalizing the guidelines and develop guidance and support materials to address some of these concerns as they relate to energy efficiency. Failure to do so would not only discredit energy efficiency measures as a low-cost and environmentally-friendly means of compliance in meeting state goals, but also result in reduced flexibility on the behalf of states to fulfill requirements under the proposed guidelines. TDEC provides the following recommendations related to building block 4:

- *In developing BSER, TDEC recommends EPA employ a national average of energy savings rates achieved over the past three to five years rather than utilizing performance reflective of achievement by a few states. States should then be given the opportunity to demonstrate, in state plans, what is achievable within the state; therefore, the national number, as applied to state goals, should still be presumptive, not mandatory.*
- *TDEC recommends that EPA include TVA's existing EM&V methodology as one that would be acceptable under the proposed guidelines. TDEC also requests that EPA acknowledge and allow for evolving EM&V protocols in state plans as energy efficiency programs may change or their understanding of how best to value and credit them may evolve.*
- *TDEC is aware of potential demand-side energy efficiency compliance tools that might be applicable within the state, including TVA EM&V methodologies, but given the relative variability in this particular area, would recommend that EPA include concrete and specific guidance for the minimal amount of EM&V techniques for standard efficiency measures expected as well as compliance for a breadth of potential programs.*
- *TDEC recommends EPA consider providing, in partnership with other federal agencies such as the Department of Energy, assistance in the form of financial and/or technical support, to develop and implement demand-side energy efficiency EM&V and compliance structures for state plans.*

- *TDEC supports the inclusion of formulaic crediting for any measures or programs EPA believes have straightforward results, similar to how formulaic crediting is used in the context of a Section 110 State Implementation Plan.*

TDEC provides the following other relevant recommendations:

- *In order allow states the necessary time to create and adopt sufficient, effective plans, Tennessee strongly encourages EPA to extend the timelines provided to states in its final guidelines.*

TDEC is committed to working to develop a plan to reduce carbon emissions at power plants that makes sense for Tennessee. TDEC appreciates the outreach that EPA provided throughout the comment period and hopes the agency will continue to engage with states as it works to finalize the guidelines, to the extent possible. TDEC appreciates the opportunity to review and comment on this significant rulemaking and believes our input will be meaningful to EPA's process and the end result as it provides suggestions for an improved approach and delivery surrounding these activities with the potential to impact our state and nation.

ELECTRICITY

Average Price Of Electricity Delivered To Consumers By Sector 2012

<u>State</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>
Alabama	11.40¢	10.63¢	6.22¢
Florida	11.42¢	9.66¢	8.04¢
Georgia	11.17¢	9.58¢	5.98¢
Kentucky	9.43¢	8.73¢	5.35¢
Louisiana	8.37¢	7.75¢	4.76¢
Mississippi	10.26¢	9.33¢	6.24¢
North Carolina	10.91¢	8.66¢	6.42¢
South Carolina	11.77¢	9.63¢	6.02¢
Tennessee	10.10¢	10.31¢	7.08¢
United States	11.88¢	10.09¢	6.67¢

All prices are measured in cents per kilowatt hour. Data taken from U.S. Energy Information Administration "Electric Power Annual 2012" Table 2.10 released December 2013.



Clean Power Plan- 111(d)

John Myers, Director of Environmental Policy & Performance
December 2014

**A POWERPOINT PRESENTATION
SLIDES TO BE PROVIDED
AT THE HEARING**



Tennessee Electric
Cooperative Association

Your Touchstone Energy Partner 

November 28, 2014

U.S. Environmental Protection Agency
EPA Docket Center
Mail Code 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Submitted Electronically to:
Docket ID No. **EPA-HQ-OAR-2013-0602**
Comments on EPA's Proposed Carbon Pollution Emission Guidelines for Existing Sources

Dear Sir or Madam:

On behalf of the 24 member electric systems of the Tennessee Electric Cooperative Association (hereinafter "The Co-ops") and the approximately 2 million people we serve across five states, TECA is pleased to comment on the Environmental Protection Agency's (EPA's) proposal for Carbon Pollution Emission Guidelines for Existing Stationary Sources in the Electric Utility Generating Units category, 79 Fed. Reg. 34,830 (June 18, 2014) (hereinafter the "Proposed Rule").

TECA is a member of the National Rural Electric Cooperative Association (NRECA) and specifically associate ourselves with the comments and recommendations submitted by NRECA in this rulemaking. Further, our comments will reflect the unique position that TECA-member electric cooperatives and their member-owners hold by nature of the relationship between their cooperatives and the Tennessee Valley Authority (hereinafter "TVA").

An overview of this relationship and our comments surrounding the Proposed Rule are below.

Overview:

As part of the Administration's effort to reduce carbon dioxide ("CO₂") emissions, EPA has proposed three rulemakings under the authority of Section 111 of the Clean Air Act. Two of these rules address new sources, or sources that are considered new because they are modified or reconstructed, under the authority of Section 111(b). On June 18, 2014, EPA issued the Section 111(d) existing source rule, which poses the greatest risk of imposing harmful costs and requirements on The Co-ops. EPA's aggressive approach in interpreting both the statute and its own longstanding regulations make the rule illegal and unachievable for numerous legal and technical reasons.

The electric utilities represented by TECA are unique among distribution utilities across America, by virtue of their relationship with TVA, an independent agency of the United States government, which derives its existence and powers from the Tennessee Valley Authority Act of 1933. The Co-ops receive wholesale electric energy and energy-related services from TVA through an all-requirements power contract. This power contract serves as the primary vehicle for the wholesale rate, terms, and conditions of energy sales to The Co-ops, as well as the regulatory powers granted to TVA, which include the oversight of the retail rate(s) charged by The Co-ops and their service practice standards.

Although a Federal agency, TVA does not receive appropriations nor does it receive any other type of direct taxpayer support. Therefore, all of TVA's activities are funded through its energy sales to its customers, which consist of approximately 150 cooperative and municipal electric systems (known as "local power companies" or "distributors") as well as several large industrial facilities that are served directly by TVA. Approximately twenty percent (20%) of TVA's revenue is derived from sales to The Co-ops.

Further, TVA operates its integrated generation and transmission/bulk-energy system across a seven-state region that includes Tennessee, Kentucky, Mississippi, Alabama, Georgia, North Carolina, and Virginia. There is no distinction between energy generated in, or consumed in, any of the seven states. For instance, energy generated at a hydroelectric dam in Tennessee may ultimately be consumed in North Carolina, energy generated at a nuclear plant in Alabama may be consumed in Mississippi, emission reduction expenditures may occur at a coal-fired facility in Kentucky and be realized by customers in Georgia, etc.

As a public power system, TVA and its customers are required by the TVA Act of 1933 to provide power at the lowest feasible cost and without profit. Therefore, any cost increases attributable to regulatory requirements are passed through completely to the end-use customer. In the case of The Co-ops, the end use customer is also the owner of the utility, by virtue of the cooperative business model.

Most electric cooperatives across the United States are regulated through one of three methods: state statute, a state Public Service Commission, or state-enabled self-regulation. The regulatory environment is decidedly different for The Co-ops. TVA's regulatory authority rests in Federal law and generally pre-empts state statute. Therefore, Federal law generally regulates The Co-ops and limits the ability of a state body to compel action from The Co-ops. The Co-ops are unique among their peers in that their power supplier and regulator are the same entity.

For the reasons outlined below, and by reference in the detailed comments submitted by NRECA, we urge EPA either to abandon the Proposed Rule as beyond its legal authority or to substantially revise it to comply with the law recognizing the numerous technical and policy limitations.

Comments on the Statute and the Proposed Section 111(d) Existing Source Emission Guidelines:

Section 111 of the Clean Air Act requires that "standards of performance" be set for stationary sources of certain non-hazardous air pollutants. Such standards are to be based on the best system of emission reduction ("BSER") which must be adequately demonstrated and take into account the cost of achieving such reduction and any non-air quality health and environmental impact and energy requirements. Unlike new sources where EPA sets the standards of performance itself, the requirement for existing sources limits EPA to establishing the "procedures" under which *the individual States* (1) submit plans that establish standards of performance for existing sources within the State; and (2) apply those standards of performance to specific sources after taking into consideration "among other factors, the remaining useful life of the existing source...." Under longstanding EPA regulations, these factors include (1) unreasonable cost of control resulting from plant age, location, or basic process design; (2) physical impossibility of installing necessary control equipment; and (3) other factors specific to the facility or class of facilities that make application of a

less stringent standard or final compliance time significantly more reasonable. EPA failed to follow this approach and leaves states with little choice but to adhere strictly to EPA's proposed guidance if they hope to comply.

1. EPA lacks statutory authority to issue the rule.

First, the statutory language of Section 111(d) is a product of differing House and Senate versions. Under the Senate version, unless a particular air pollutant emitted by existing sources was regulated by one of several other listed Clean Air Act provisions, existing sources emitting that pollutant could be regulated under Section 111(d). In contrast, the House version prohibits existing sources from being regulated under Section 111(d) if the existing sources are regulated under Section 112.

Under prevailing rules of legislative construction and case law regarding harmonization of conflicting statutory provisions, the House provision controls. Effective in 2012, EPA already regulates coal-fired power plants under Section 112. Therefore, EPA has no authority to regulate existing coal-fired power plants a second time under Section 111(d).

Second, Section 111(d) requires EPA to issue a valid *new source performance standard* under Section 111(b) before issuing an existing source standard. Based on flaws in the proposed NSPS and modified/reconstructed source standard, it is doubtful that either of the provisions will be lawfully finalized. Therefore, EPA has not satisfied this prerequisite to issue the Section 111(d) rule.

2. EPA has overstepped its legal authority in the joint federal-state process for establishing existing source standards of performance.

EPA has no statutory authority to define the best system of emission reduction ("BSER") in a way that goes "outside the fence" of a generating unit, beyond the technological or operational improvements that can be made at that individual source. For decades, EPA has acknowledged and abided by this interpretation of BSER in its longstanding regulations and prior standards. By requiring utilities to employ measures such as re-dispatch to other types of generation, adopting renewable energy sources, and requiring consumers to reduce their demand for electricity through energy efficiency measures, EPA has far exceeded its statutory authority.

Second, regardless of its apparent disregard for the definition of BSER, EPA's authority under Section 111(d) is limited to determining what systems of emission reduction have been adequately

demonstrated. The States have the primary role of establishing, based on EPA-determined BSER guidance, the actual standards of performance that will apply to individual sources in their borders. In each of these case-by-case decisions the state must consider source-specific factors, including the remaining useful life of each source, the reasonableness of the associated costs, and physical and technical feasibility of control. This process is consistent with the plain language of the statute and the EPA's own longstanding regulations. Again, EPA's proposal ignores the statute by setting fixed limits for the States rather than limiting their involvement to that of reviewing State plans to ensure they comply with the Act.

3. The emission reduction targets EPA has set are unattainable.

There are significant policy and technical impediments that make implementation of this proposal impractical and likely impossible. Starting with the exclusive role of the Federal Energy Regulatory Commission (FERC) in determining how energy is dispatched, the proposed rule impermissibly requires States to regulate dispatch in contravention of FERC authority. Next is the inability of the States to regulate based upon environmental rather than economic dispatch when such decisions are controlled by regional transmission organizations and independent system operators whose boundaries are not contiguous with state borders. Further, there is the potential impact of the rule on the reliability of the supply of electricity. There are numerous faulty assumptions on which EPA bases its version of BSER, known in the Proposed Rule as the building blocks. These faulty assumptions include such critical issues as limitations on source efficiency improvements, natural gas availability and existing natural gas generation capacity, shortages of transmission infrastructure for required additional renewable generation, arbitrary treatment of nuclear power, and the unrealistic assumptions regarding future potential reduction in electricity demand based on energy efficiency programs.

The Co-ops understand that the Tennessee Valley Authority will be submitting detailed comments on the Proposed Rule that address their particular concerns with the technical assumptions made by EPA in the building block approach to BSER – as their comments will apply specifically to TVA's integrated generation and transmission system, a system on which The Co-ops depend fully for 100% of our energy requirements. We affirm TVA's comments, specifically as they pertain to TVA's future ability to comply. TVA's numerous actions to reduce carbon emissions have resulted in a more than 20% reduction since 2005 and should be commended: however, the

Proposed Rule's inconsistencies and technicalities leave TVA with a limited range of feasible actions to achieve compliance because of those same early actions.

Having borne the cost of these proactive actions to reduce TVA's carbon footprint, The Co-ops and their member-owners should not now be penalized with additional cost(s) they would not otherwise be required to bear if these early actions had not been taken – simply because the rule fails to credit such early actions towards compliance. This is especially true as it pertains to the Proposed Rule's treatment of under-construction nuclear generation, a topic on which we provide additional comment below.

Lastly, the emission rates are unachievable because the Proposed Rule arbitrarily excludes hydropower, a zero-carbon resource, from inclusion in its calculation of a state's existing emissions rate, thereby unfairly denying the State the option of counting that zero-carbon generation resource toward compliance with the Proposed Rule's requirements (the existing hydropower generation is not included in the denominator of the emission rate calculation). It has been stated that the rationale for this method was to encourage future behavior, rather than reward past behavior.

The exclusion is inexplicable, as other existing zero-carbon resources (such as wind and solar) are included in the calculation. This inconsistency unfairly punishes The Co-ops based on a preference for certain sources of carbon-free generation. Existing hydropower supplies as much as 10% of our energy needs, while our state's capacity for wind generation is practically non-existent, and the capacity for solar in Tennessee is severely limited. Therefore, the rule favors generation methods that are impracticable for The Co-ops and ignores methods that would ease their compliance burden. The practical application of the calculation is to de-incentivize maintenance and expansion of existing hydropower facilities in favor of constructing new and much more expensive and limited forms of generation in lieu of the hydropower, thereby saddling The Co-ops and their member-owners with additional costs that do nothing to reduce carbon emissions.

4. The rule's treatment of under-construction nuclear units is unacceptable.

In the Proposed Rule, EPA specifically solicits comments on "whether it is appropriate to reflect [the five nuclear units in the United States that are currently under construction] in the state goals and on alternative ways of considering these units when setting state goals" (79 Fed. Reg. at 34, 870). The position of The Co-ops is simple. The Co-ops strongly and unequivocally oppose the inclusion of nuclear units under construction in the calculation of state goals. The inclusion of

nuclear units under construction into the existing carbon emissions rate, much like the exclusion of hydropower (but opposite in the mathematical calculation), is arbitrary in its application and creates perverse incentives that discourage the development of carbon-free nuclear electricity generation.

By including the output of nuclear units that are assumed to be completed at some date in the future in the calculation of a State(s) existing carbon/MWh rate (the output of the units under construction is imbedded in the denominator of the fraction), the EPA has artificially changed the rate and made compliance with the goal exponentially more difficult. This has been done despite these units having never produced the first electron of energy, or even having received an operating license to begin production. *No other energy source that does not currently exist* is included in the Proposed Rule's calculation of the emission rate.

In the electric utility industry, the most difficult decisions concern which types of generation resources to invest limited capital investment dollars. Because of the great expense of constructing a central-station power plant (especially considering the high fixed costs of nuclear construction), which typically comes in the form of long-term debt, each generation source decision is the most impactful action an electric utility will undertake.

These decisions require the evaluation of hundreds of variables to arrive at a conclusion, and regulatory certainty is a large "piece of the puzzle." It is evident to The Co-ops that if EPA's unexplainable logic were allowed to survive the final version of this Rule, most electric utilities would find the resulting implied regulatory risk too unbearable to allow for construction of any new nuclear units in the future. This result is 180 degrees out of phase with what the The Co-ops believe the intent of the Proposed Rule to be, the reduction of carbon dioxide emissions into the atmosphere by the electric generation sector.

In the present, the practical application of this illogical calculation method is to penalize states that contain new nuclear units under construction. Tennessee is one of these states due to the construction of TVA's Watts Bar Unit 2, which could potentially account for more than 10% of Tennessee's total electricity generation. The Co-ops have borne (and will continue to bear, through the repayment of TVA's debt) a significant portion of the cost of this construction and ongoing operation. The Co-ops will be irreparably harmed if the calculation is not altered.

In preparing a final rule, the EPA should exclude the output of all nuclear units currently under construction (Watts Bar 2, Tennessee; Plant Vogtle, Georgia; Sumner Nuclear Station, South

Carolina) from the calculation of a state's carbon intensity rate. The Co-ops further affirm the extensive comments of the Tennessee Valley Authority as it relates to this topic.

5. The rule does not provide the promised flexibility in performance.

EPA has stated publicly that each state has flexibility in how it develops its plan to meet the target, but The Co-ops find this assertion to be without merit. Given the building block approach employed by EPA, this imaginary flexibility is akin to telling a person to drive a car from point A to point B, using whatever route the person so chooses, as long as the person only uses the amount of gasoline required for a single, pre-prescribed route. TVA's analysis of the four building blocks, as communicated to The Co-ops, shows virtually no compliance flexibility due to actions previously completed but not recognized, infeasible/impracticable assumptions, or outright errors in EPA's calculations.

6. The rule is unworkable for The Co-ops due to insurmountable jurisdictional conflicts.

As the primary enforcement mechanism of the Proposed Rule, EPA delegates the development of performance standards to the States through a requirement that each state develop a State Implementation Plan ("SIP") that details the actions that will be required to meet the emission rate targets set by the rule. Therefore, to achieve compliance with the Proposed Rule, the State(s) in which The Co-ops operate would be required to develop enforceable requirements on a Federal agency. This raises significant questions about federalism and a State's authority to issue such requirements.

While TVA's generation facilities are currently required to possess air quality permits that are issued by State environmental officials (an authority delegated by EPA to the State), the State does not have the authority to enforce energy efficiency mandates, renewable portfolio standards, or dispatch requirements. Therefore, the existing precedent of delegated EPA authority over TVA is only analogous to building block number one of the Proposed Rule.

The Co-ops find it unlikely that EPA possesses the authority to require a State(s) (through a SIP) to compel TVA to undertake activities that are "outside the fence" of the power plant, and therefore creates the significant risk that Tennessee's compliance with the Proposed Rule could only be achieved through heat rate improvements to existing generation units (building block one). This is

not technically feasible, and would leave Tennessee completely unable to comply with the Proposed Rule.

Second, The Co-ops find it unlikely that under existing law EPA possesses the authority to require a State(s) (through a SIP) to compel TVA to mandate activities among its regulated entities. Such a scenario would create of situation for The Co-ops of concurrent Federal jurisdiction, and the The Co-ops believe that the prevailing authority is that of the TVA.

Third, if as a part of its SIP the State(s) were to consider requirements to be imposed directly upon The Co-ops (primarily envisioned as building block four, i.e. energy efficiency requirements, but others are conceivable), such a requirement would not be feasible as the States are pre-empted from and lack the regulatory authority to issue such requirements. The State(s) would have to take legislative action to empower their public utility commissions the authority to enforce the new requirements. Any such legislation would almost certainly spawn litigation to resolve whether the State(s) possesses such authority, and The Co-ops believe such litigation would likely conclude that the Clean Air Act does not alter the exclusive powers granted to TVA in the TVA Act of 1933 as the exclusive regulator of The Co-ops.

Fourth, the Proposed Rule does not address how a multi-state integrated electric system, such as TVA's, would allocate or assign variables of compliance among States participating in a joint SIP. Further, it is unclear how the seven states served by TVA could, either individually or jointly, develop SIPs that could simultaneously address the requirements of the Proposed Rule on the TVA power system and the other electric utilities that operate in each the seven states.

7. The rule is unworkable, given the timeframe EPA proposes.

Even if all the other issues are resolved in EPA's favor, the rule is unworkable given the timeframes that EPA has set for compliance. First, the timeframes EPA proposes are absurdly short, particularly given the complexity of the tasks EPA has assigned the States. Recognizing this complexity, EPA should give the States at least five years to develop a state implementation plan ("SIP") for a single State and seven years to develop a multi-state SIP, rather than the maximum of two and three years, respectively, that EPA has proposed. The Agency should also provide an extra three years for developing any SIP upon a demonstration of reasonable progress toward development of such a SIP. Second, EPA should allow the States to adopt compliance deadlines that are based on the remaining useful lives of each of the designated existing facilities. Third, given the

extensive legal, regulatory, and physical changes that must occur first, EPA should give the States until 2035 to achieve compliance with any emission reduction targets, and EPA must abandon the interim targets it has proposed, as it will be impossible for States to meet those targets.

8. EPA should provide an exemption from New Source Review.

To the extent the rule requires units to undertake heat-rate improvements, those projects should be exempt from additional review under the statute's New Source Review (NSR) program. It makes little sense to require such review where the very purpose of the heat-rate improvement is to *reduce* emissions.

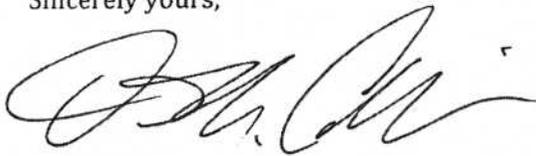
9. The Proposed Rule would constitute a regulatory taking for which compensation would be required.

Finally, because the proposal as it stands would likely result in the premature closure of existing power plants, the proposal's requirements amount to a regulatory taking requiring compensation because of the premature closures and uneconomic curtailment it will require.

Conclusion:

We appreciate this opportunity to comment. We urge EPA either to abandon the rule as beyond its legal authority or to substantially revise it to comply with the law recognizing the technical and policy limitations.

Sincerely yours,



David Callis
Executive Vice President and General Manager

DC:mk