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Executive Director S. William Becker December 1, 2014

Environmental Protection Agency EPA Docket Center (EPA/DC), Mail code 28221T Attn: Docket ID No. EPA-HQ-OAR-2013-0602 1200 Pennsylvania Avenue, NW Washington, DC 20460

Dear Sir/Madam:

On behalf of the National Association of Clean Air Agencies (NACAA), thank you for the opportunity to comment on the proposed *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, also called the Clean Power Plan, which was published in the *Federal Register* on June 18, 2014 (79 Fed. Reg. 34830). Though the Clean Power Plan involves many important stakeholder groups, Section 111(d) of the Clean Air Act vests NACAA's members with the ultimate responsibility to develop and submit state plans implementing the proposed rule.

NACAA is a national, non-partisan, non-profit association of air pollution control agencies in 41 states, the District of Columbia, four territories and 116 metropolitan areas. The air quality professionals in our member agencies have vast experience dedicated to improving air quality in the United States. These comments are based upon that experience. The views expressed in this document do not represent the positions of every state and local air pollution control agency in the country.

1. EPA Outreach Efforts

Nearly one year before releasing the Clean Power Plan, EPA conducted an extensive outreach effort to NACAA and other stakeholders. In terms of process, EPA deserves significant credit for this effort, which has truly been unprecedented in duration and scope. The agency sought input from many groups, especially state and local air pollution control agencies. And those conversations remain ongoing. Further, EPA not only engaged in discussion, it listened carefully to what was said.

NACAA recognizes and appreciates the significant amount of resources EPA has directed toward stakeholder outreach during the Clean Power Plan's development. It is equally important for EPA to continue its outreach as agencies move closer to submitting their state plans.

2. Consistency with NACAA 111(d) Principles

In response to EPA's early outreach, NACAA developed a set of Section 111(d) Principles in August 2013, which are attached, to help guide the development of the proposed rule. Though its proposal does not offer everything for everyone, we appreciate that EPA has included much of what NACAA recommended in its Principles.

For example, NACAA asked for emission limits that reflect different state circumstances. EPA's proposal includes state-specific goals based on state and regional factors. The Principles asked for flexibility. The proposed rule incorporates four building blocks for setting the Best System of Emission Reduction, including renewable energy and energy efficiency. The proposal also includes compliance flexibility beyond the four building blocks to credit strategies like fuel switching and new Natural Gas Combined Cycle capacity. The proposal gives states wide latitude to identify their overall compliance strategies in response to their local circumstances. The Principles asked for more time, not only for states to develop plans but also for affected sources to meet their obligations. The proposal offers a one-year extension for all states and an additional year for states that elect to adopt a multi-state approach. Additionally, affected power plants also have a decade to comply with the new standard. In sum, the proposed rule reflects many of the issues NACAA highlighted almost one year before the proposal was released.

The same state and local dialogue that informed EPA's Clean Power Plan proposal must also inform its final rule. Many of NACAA's members have focused their analysis on the numerous issues related to the calculation of individual state goals. Some states have expressed concerns that, due to the stringency of their proposed targets, their compliance flexibility is significantly limited. Further, while we appreciate the extra time EPA is providing to develop state plans, some agencies may still need additional time given their state legislatures' schedules and rulemaking timeframes. Finally, many states are concerned that the proposal does not adequately reward states that took early action. We strongly encourage EPA to address each of these issues in the final rule and are encouraged that the Notice of Data Availability, published in the *Federal Register* on October 30, 2014 (79 Fed. Reg. 64543), requests further comment on several of them.

3. NACAA Cosponsored 111(d) Webinars

One of the most universal reactions to the Clean Power Plan proposal by state and local agencies was a request for technical assistance to better understand the rule. To that end, earlier this fall, NACAA partnered with two other state associations, the Association of Air Pollution Control Agencies (AAPCA) and the Environmental Council of States (ECOS), to host a series of Clean Power Plan webinars on discrete topics. All three organizations collected questions from their members before submitting them to EPA for responses. The topics included building blocks two and three, crediting avoided or reduced emissions, multistate issues, enforceability of state plans and rate-to-mass conversion.

NACAA appreciates EPA's commitment to staff the calls and provide responses to the questions submitted. While many of the questions helped clarify what EPA included in the proposal, others also identified issues that EPA left unresolved. We have attached copies of the questions raised by state and local air pollution control officials and strongly urge that EPA resolve them, especially as they help to identify areas where EPA should provide agencies with more detailed implementation tools and guidance.

4. Funding for State Plan Development

Though not strictly part of the proposal, it is essential that EPA provide state and local agencies with the significant additional resources needed to make the Clean Power Plan a success. The planning and analysis necessary to meet EPA's targets are substantial and require additional support. The President recognized this challenge in his proposed FY 2015 budget when he asked for a nearly \$20-million increase to support Section 111(d) state plan development. NACAA reiterates its strong support for these additional resources but cautions against this funding coming at the expense of state and local air agencies' core programs. Further, we urge EPA to build upon its strong foundation of pre-proposal dialogue to develop resources to facilitate states' abilities to conduct their Section 111(d) planning.

5. Conclusion

As we move closer to the Clean Power Plan's implementation deadlines, NACAA will continue to examine the practical and technical challenges faced by state and local air pollution control agencies. We fully expect that the outreach and dialogue offered during the pre-proposal and comment periods will continue. We look forward to a continued conversation with EPA.

If you have any questions, feel free to contact either of us or Phil Assmus, Senior Staff Associate at NACAA.

Sincerely,

Stu Clark

Washington

Co-Chair

NACAA Global Warming Committee

Larry Greene

Sacramento, California

Co-Chair

NACAA Global Warming Committee

Attachments



August 21, 2013

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Executive Director

S. William Becker

Regina McCarthy Administrator U.S. Environmental Protection Agency 1200 Pennsylvania Avenue, N.W. Washington, DC 20460

Dear Ms. McCarthy:

On June 25, 2013, President Obama unveiled his Climate Action Plan, which included directing EPA to issue carbon pollution standards for both new and existing power plants. Pursuant to that plan, the President issued a memorandum to the EPA Administrator setting out a timeline for issuing standards for new and existing power plants under Clean Air Act sections 111(b) and (d). With regard to modified, reconstructed and existing power plants, the President directed EPA to issue proposed carbon pollution standards by June 1, 2014; finalize these standards by June 1, 2015; and include a requirement that states submit implementation plans required under section 111(d) of the Clean Air Act by June 30, 2016. The President also directed EPA to "[1]aunch this effort through direct engagement with States, as they will play a central role in establishing and implementing standards for existing power plants."

As a follow up to the President's announcement, and in anticipation of engaging with EPA more directly and fully in the near future, NACAA¹ offers the initial principles below to guide the agency in drafting standards and guidelines under section 111(d);

¹ NACAA is a national, non-partisan, non-profit association of air pollution control agencies in 43 states, the District of Columbia, four territories and 116 metropolitan areas. The air quality professionals in our member agencies have vast experience dedicated to improving air quality in the U.S. The views expressed in these comments do not necessarily represent the positions of every state and local air pollution control agency in the country.

- As directed in the President's memorandum, EPA should work closely with state and local air agencies in developing the emissions guidelines under section 111(d).
- Section 111(d) provides that EPA establish the "best system of emissions reductions" taking into account costs. EPA should establish a flexible program that recognizes that end-use energy efficiency and renewable energy investments, policies and programs ("programs") and shifting utilization towards lower emitting power plants reduce GHG emissions from the electrical system as a whole. EPA should set emissions standards that take into consideration the flexibility provided by such a proposal.
- State and local energy efficiency and renewable energy programs implemented after a
 designated baseline period should be recognized for their GHG reduction benefits.
 Furthermore, appropriate credit should be provided to existing programs to recognize
 state leadership, and appropriate incentives should also be provided to strengthen these
 programs.
- The emissions guidelines should take into account the different makeup of existing fossil fuel generation in each state and provide compliance pathways or mechanisms that recognize such state variations and the different levels of effort that may be required, while maintaining the overall stringency of the emissions guidelines.
- Evaluation, measurement and verification (EM&V) are important components of any program for quantifying end-use energy efficiency and renewable energy GHG reduction benefits. Methodological consistency and minimum standards are critical to ensuring program integrity and stringency. However, EM&V programs can be resource-intensive and air pollution control agencies may not have the appropriate staffing or expertise to "certify" energy efficiency reduction credits. EPA should provide flexibility and resources to assist state and local agencies in quantifying the benefits of end-use energy efficiency and renewables, while ensuring that methods for quantifying benefits are consistent across the country.
- Given the highly complex nature of the issue, EPA should provide ample time for comment on its proposed emissions guidelines.
- EPA should allow states or groups of states (for example, California's AB32 and the Northeast and Mid-Atlantic states' Regional Greenhouse Gas Initiative (RGGI)) to demonstrate that their GHG reduction programs achieve equivalent or greater GHG reductions from the power sector than if they had implemented EPA's proposal.
- EPA should ensure that states that choose to meet federal emissions standards through an existing or new cap-and-trade program maintain authority over GHG allowance auction proceeds. This source of funding is supporting highly successful state efforts to increase end-use energy efficiency and renewable measures, which are key to achieving our national climate goals.

We plan to provide additional details regarding these principles and look forward to working with the agency in this effort so that we can achieve a flexible, cost-effective program that reduces emissions of greenhouse gases and other air pollutants and is easily administered by state and local air pollution control agencies.

Please feel free to contact either of us or Bill Becker, Executive Director, at 202-624-7864. We look forward to working with you.

Sincerely,

Stuart A. Clark Washington

Co-Chair

NACAA Global Warming Committee

Larry F. Greene

Sacramento, CA

Co-Chair

NACAA Global Warming Committee

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Building Block Three Questions September 4, 2014

GENERAL METHODOLOGY

- 1. In calculating the state goals, EPA used average regional renewable energy targets. What is the EPA's justification for using average regional targets instead of a state by state approach in determining the contribution of renewable energy growth in calculating the state goals?
- 2. Why are states' renewable energy growth rates affected by historical 2012 Renewable Energy generation from other states? Shouldn't the growth rate for each state be based on the needed rate of progress for that state to achieve its state-level renewable energy target rather than the rate of progress needed for the region to achieve its regional renewable energy target?
- 3. How closely did EPA look at each state's RPS? For example, Nevada's RPS only applies to certain energy providers above a certain threshold, which is about 60% of generation in the state. So the actual statewide RE is only 13% compared to the 22% that EPA used for its calculations. Has EPA considered situations like this occurring with other states and the effect on development of the RE goals?
- 4. In the GHG Abatement Measures TSD, EPA states that they "added together each state's tiers, as standardized by DSIRE, to determine states' effective RE levels for 2020, but excluded tiers, other than main tiers, that include energy efficiency or any fossil fuel" (p. 84). Is it EPA's intention to include RPS "main tiers" even if they count EE or fossil fuel (i.e. CHP) for the target-setting?
- 5. Building block 3 (RE) is calculated based on 2012 electricity demand but does not account for load growth. In some states, if load were to grow, they would basically need to add more renewables than natural gas in order to reach/maintain the goal (because the goal is significantly less than the new source performance standard for new or modified NGCC plants). Has EPA considered adding load growth to its equation, and if so, what growth percentage does it believe is reasonable?
- 6. Non-Affected EGUs are not included in the numerator of the rate goal calculation. However, they are included in the denominator of the RE calculation. Why is this inconsistent approach used when performing the RE calculations vs. the rate efficiency calculations?

ALTERNATIVE PROPOSED APPROACH

7. Please discuss in more detail the Potential Alternative Method Using Technical and Economic Potential briefly described on page 7 of the "Alternate RE Approach

- TSD". Please provide data as to what the building block 3 renewable targets would look like for each state under this approach.
- 8. The Alternate Proposed Approach appears to establish benchmark renewable development rates based on development to date in the top 16 states. Is this correct? Are those states sufficiently representative or are they likely to have the greatest renewable potential for a given renewable resource? If the latter, how is the fact that the other states may not have sufficient resource potential and/or ability to deliver the energy at a given penetration level to achieve the benchmark development rate been addressed in this approach?
- 9. The RE targets derived from the Primary and Alternative RE approaches are based on a different (though partially overlapping set) of technologies, which are listed in the GHG Abatement Measures and Alternative RE Approach TSDs. Are the Primary and Alternative RE target levels (in GWh) directly comparable despite the technology differences?
- 10. Please discuss in more detail the reasons for using the full technical potential for hydropower in the Alternate RE Approach when a benchmarking method is used for the other forms of renewable energy.
- 11. The "potential alternative method using technical and economic potential," under the alternative RE approach, relies on energy cost calculations that include avoided costs for environmental externalities. Given the difficulties in quantification for some, do these need to be calculated in all cases? Does EPA intend to issue further guidance?

HYDROPOWER

- 12. Please discuss in more detail the reasons for excluding hydropower from the proposed approach, including barriers to hydropower expansion (environmental and navigation effects of dams). Please discuss why the proposed block 3 approach excludes hydropower, but the alternate renewables approach (as described in the "Alternate RE Approach" TSD) seems to favor inclusion of hydropower, although numbers are given for a scenario where hydropower is excluded.
- 13. Why did EPA use all generation, including existing Hydropower, to calculate the renewable energy cap while at the same time excluding existing Hydropower from the 2012 existing renewable baseline amount?

REGIONAL ISSUES

- 14. While the proposal indicates that "EPA does not include targets that were capacity-based," it appears that it did exactly that in the South Central region. Why? And does EPA plan to examine this issue further? Have you analyzed the different targets that would have resulted from a regional generation-based target?
- 15. In the East Central region, the renewable target was inflated by including the relatively high RPS's of Delaware and DC, which only produce 3 percent of the region's renewable energy. Has EPA considered basing its target on a generation-weighted basis?

16. In the South East Region, EPA set targets based on North Carolina's RPS but many of the other states do not have the same wind capacity. EPA's GHG abatement measures TSD, citing an NREL study, claims that states in each region exhibit similar RE potential. But other SE states lack onshore wind potential, and it is the only renewable option close in terms of cost to sources it would be replacing. What renewable resource(s) does EPA expect these states to deploy? How does the Agency account for potentially mandating renewables for states in which RE generation (i.e. offshore instead of onshore) could be significantly more expensive?

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Building Block Four Questions September 9, 2014

- 1. Can USEPA please explain how EE costs were incorporated into their IPM modeling for the proposal (e.g., a single cost in cents/KWh), what costs associated with EE were used in their IPM modeling (e.g., cents/KWh), how such EE costs were determined including the method used, the rationale for the method used, pertinent assumptions used (e.g., availability of EE is equal everywhere?), why the costs used are believed to representative of EE costs across the nation, and how different modeling inputs on EE costs affects (or is expected to affect) modeling results?
- 2. EPA is using information reported in particular fields of EIA form 861 to set the baseline for state EE programs. Which particular "Schedule," "Part," and "Question Number" on Form 861 are used for EE baselines? It appears that EPA only intends to count strictly EE programs (i.e., Schedule 6, Part A. EE Programs), while other DSM programs like demand response (Schedule 6, Part B. Demand Response Programs) and other customer focused behavioral programs (i.e. Schedule 6, Part C. Dynamic Pricing Programs and Schedule 6, Part D. Advanced Metering and Customer Communications) may not be included. The reporting form instructions do not clearly distinguish how to separately report these programs, and the EPA proposal does not clearly outline what has been included/ excluded from the baseline number used in goal setting. Can EPA please tell us exactly how they got to the EE baseline number? If information included in Form 861 is self-reported, is there ever a circumstance where EIA revises or modifies information reported by a respondent?
- 3. The proposal recognizes that levels of EE performance have not always been sustained, and that a 1.5 percent annual increase and the projected cumulative EE savings rate are larger than the average savings that most states have achieved. What basis does EPA cite to use the experience of a subset of states to determine a national annual incremental savings rate for all EE programs in all states?
- 4. For determining the energy savings from EE measures, does the expected lifetime of each EE measure have to be accounted for, or is some default program lifetime assigned to all EE programs?
- 5. Are EE programs, and their associated electrical generation savings rates, expected to be maintained after the final goal year of 2029? Similarly, why does EPA expect the top performing states to maintain 1.5 percent annual EE savings for more than 10 years (GHG Abatement TSD states "For states currently at or above the best practices level of performance, this reflects an ability to sustain the target level for thirteen years")? To what extent has the Agency considered literature that suggests that the pace of incremental EE savings slows over time and the largest gains come earliest?
- 6. How did EPA take into account the impact of the timing of EE efforts? Much of the analysis used to justify the 1.5 percent rate occurred during times of slower economic growth. How would this rate hold up with higher economic growth?

- 7. EPA assumed a 7.51% transmission and distribution loss for a scaling factor nationally, but EIA indicates great variability in state-by-state T&D losses between 1990-2012 (http://www.eia.gov/tools/faqs/faq.cfm?id=105&t=3). How did EPA arrive at 7.51%? Why did EPA use a national loss rate?
- 8. Can EPA provide additional information regarding the treatment of EE in the proposal with respect to the distinction between net and gross savings? It appears that net savings was used for the proposal but gross savings (after adjustment for EM&V as appropriate) may be a better capture the full benefit of EE programs.
- 9. What evidence would EPA want in order for a state to demonstrate that the proposed EE trajectory is unreasonable for their circumstances? What evidence should be submitted if a party wanted to demonstrate that a higher or lower annual EE reduction is feasible?

CROSS STATE ACCOUNTING ISSUES

- 10. On the issue of adjusting energy efficiency savings (Step 5) by the amount of imports but not giving credit to export states, is one option for EPA to apportion a state's excluded EE savings to the exporting states? Is another for states to reach bilateral or multi-state agreements on this apportionment?
- 11. EPA proposes that states only include in-state effects of EE programs and would have to discount EE savings to reflect the amount of power imported. Can you explain how EPA determined the level of each state's electricity imports/exports and which sales year they used? What if these levels change over time?

ENFORCEABILITY

- 12. Why is it appropriate for EPA to use these EE programs in setting state-specific EE savings goals, given that responsible officials and affected EGUs do not necessarily have control over these programs? EPA's GHG Abatement TSD indicates that: "EE programs are administered by a variety of entities" including utilities, nonprofit and for-profit third parties, and state and local government agencies as well as that "Most EE programs... are overseen by state utility commissions..." Which EE programs are not overseen by PUCs?
- 13. How did EPA analyze or what are EPA's thoughts on issues of permanence (or enforceability) in determining the target for EE? Does EPA anticipate issuing guidance based on the robust efforts of utility programs to monitor and verify EE implementation or to work with local governments or utilities to develop more robust assistance and verification programs?
- 14. What mechanisms does EPA envision will be acceptable for states to propose in their plans to make energy efficiency projections and measures federally enforceable in states where deregulation has decoupled generation from distribution and delivery and the state has no existing statutory authority to enforce energy efficiency programs?

IMPLEMENTATION (Note: will be addressed more fully on 9/18)

- 15. Please provide information on a best practice example of EM&V for a program. Will EPA allow states to tailor their EM&V across programs in a way that compliments existing processes?
- 16. What additional resources is EPA planning to provide when the rule is finalized to ensure the integrity of EE accounting, and also ensure that states have what they need to move forward with creditable EE programs?

TECHNOLOGY-SPECIFIC

- 17. Can EPA describe its treatment of the following EE options within Building Block 4 and state targets:
 - Programs like Volt Var Optimization to reduce energy on transmission and distribution circuits;
 - o Solar thermal programs;
 - o Waste heat recovery;
 - o Participation in energy imbalance markets like the one operated by CA ISO.
- 18. Are there ways that this rule could stimulate or encourage new technologies such as solid state lighting that requires installation by weighting these and other more permanent projects such as combined heat and power systems and allow states to use this to justify a higher target (say 2%).

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Crediting Reduced or Avoided Emissions Questions September 18, 2014

GENERAL CREDITING

- 1. The electric grid is supplied by a wide variety of generating sources such as coal-fired EGUs, natural gas-fired EGUs and CCTs, nuclear, renewable energy (including hydro and pumped storage), and other generation (waste gases, petroleum, and storage). What is the procedure to estimate the avoided emissions for the credit? Since the avoided power consumption could come from any one of the sources of generation, how do we identify the source of the electrons that provide the electric energy avoided by an energy efficiency project?
- 2. In general, the proposal provides detailed information about how rate goals were calculated, but is much less explicit with regard to which non-emitting MWh can be counted toward compliance with rate goals. Is the intent to allow states to count any type of non-emitting MWh toward compliance? What about new low-emitting MWh (i.e., fossil with CCS)?
- 3. Is it necessary for a state to provide some type of policy support for EE, RE, and nuclear power to be able to count associated MWh toward compliance with rate goals? Or is the determination regarding which MWh count based entirely on technology type and possibly start date?
- 4. In order to take credit for CO2 emission reductions due to EE/RE, to what extent will state plans need to address:
 - a. How EE affects out-of-state emission reductions (e.g. by affecting dispatch decisions in other states)?
 - b. The degree to which EE/RE avoids the need for new fossil fuel generation capacity and affects transmission or other system planning (i.e. affects operational versus build margin)?
- 5. Is EPA considering allowing EE to go in either the numerator or denominator (meaning that states could choose one or the other)? If so, will the AVERT tool satisfy EPA requirements to converting EE impacts to carbon amounts?
- 6. EPA indicates that EE measures reduce emissions for 10 years, but it is unclear how far into the future the Agency expects other activities to generate reductions for a state plan. Would EPA think that a unit retirement that occurred in 2015 reduced emissions during the interim plan period? How far into the future would activities or measures undertaken before 2019 count for compliance? If this depends on the remaining useful life of a unit, who makes that determination?

7. As states are developing their plans and projecting emissions performance over the compliance period, how might states account for retirements and other changes (keeping in mind that not all states have modeling tools available)?

RENEWABLE GENERATION

- 8. Relative to Renewable Energy Credits, how will unbundled and/or bundled RECs be used in compliance to goals?
- 9. How will renewable resources be treated if those resources are used for RPS requirements in another state and if the RPS is part of the other State's compliance plan (State Plan). Who gets credit and how will double-counting be eliminated? In the case of a multistate power company, does the power company which owns or purchases the renewable energy choose which state receives credit? Where renewables are built on tribal land and purchased by a utility for use beyond tribal land, does that count toward RE? In the context of cross-state crediting for EE and RE has EPA evaluated potential Commerce Clause issues?
- 10. The proposal appears to exclude RE MWh from existing hydro resources from crediting toward compliance with rate goals. Is this exclusion intended to apply to states that count existing hydro toward the RPS targets that were used to set goals?
- 11. Will we be able to count existing renewable sources to calculate our rate? What options exist for net-metering customers' energy savings (from rooftop solar, say) to be credited to the State Plan?

OTHER NEW GENERATION

- 12. There has been increased reliance on simple cycle units within the Southwest Power Pool's integrated marketplace. At least one simple cycle unit in our state is in the process of being converted to NGCC. In addition, our state is seeing the construction of several >100 MW electric generating facilities composed of multiple natural gas-fired reciprocating internal combustion engine (RICE), which will be relied upon for both very fast startup times and low CO₂ emission rates (<1,100 lbs/MW). It is unclear in EPA's proposal how simple cycle units, new NGCC, and RICE might be treated for compliance in a state plan. Could EPA please clarify?
- 13. How will biomass be treated under the rule for compliance purposes? (i.e. Will biomass generation be treated like a zero-emitting energy source, similarly to the way renewable energy generation is treated or will CO2 emissions from biomass generation need to be recorded and included in the compliance determination? Or will it depend on the type of biomass generation (i.e. landfill gas, waste to energy, woodchips/switch grass fuel), as to how the biomass generation and emissions data are treated for compliance purposes?) Will the biomass actually need to be burned/fired at an affected EGU, or will all biomass generation be credited so long as it supplies generation to the grid?

14. How might a state credit the cultivation of anaerobic digestion for purposes of methane recovery? Existing examples of this approach are required to be net metered and sell their power to the grid, and later purchase their needed power back from the utility. Based on the 111(d) proposal, such a system seems similar to a wind turbine or solar array. Given that the source of the energy is a natural, renewable source (biogas), would this energy be considered under Block 3? Or does it fit better under Block 4?

ENERGY EFFICIENCY

- 15. Will EPA issue guidance on EM&V for green building codes?
- 16. Will EPA require states to report net or gross EE savings, or allow both?
- 17. Will EPA allow states to count avoided T&D losses when accounting for EE savings, and if so, should EPA use a standard accounting of T&D losses?
- 18. Some states RPS allow for banking of EE kWh in excess of the allowable EE. Utilities are allowed to use the banked credits in a future year when more EE is needed to meet the requirements. Does EPA address this type of system in its rule?
- 19. Sales from Independently Owned Utilities (IOU) include sales to other entities for resale. This could result in double counting due to resale to municipalities and cooperatives. Has EPA considered this? How would this reselling impact state compliance especially in states where the PUC lacks jurisdiction over retail sales of muni's and co-op's?

ENFORCEABILITY

- 20. The proposed rule requires RE and EE to be enforceable measures in a state plan in order for the state to receive credit under a rate-based approach. If a state has EM&V requirements for verifying generation from RE or avoided generation from EE in its plan, and codified methods for determining the amount of credit to be received from EE/RE measures, but instead of the state actually requiring any specific amount of EE/RE to be achieved by EGUs/other entities, this is just included in the plan as a compliance option so EGUs/other entities can generate credits to lower the adjusted rates of EGUs through EE/RE if they choose to do so, would this meet the enforceability requirements of the rule in order for these types of measures to be creditable under a rate-based approach?
- 21. If the above is allowed, then states may not be able to accurately predict future CO2 emissions and generation from affected EGUs in their plans or the actual amount of RE/EE generation/avoided generation that will be achieved in the future, but rather would only be able to predict the average adjusted rate for EGUs, which could be based on the use of EE/RE credits. Would the prediction of the average adjusted rate for affected EGUs, which could include the use of EE/RE credits, satisfy the emission performance projection requirements of the proposed rule? Or would expected emissions and generation from

affected EGUs need to be projected separately from expected RE/EE generation/avoided generation in the state plan.

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Rate-to-Mass Conversion Questions September 24, 2014

- 1. EPA did not use modeling to calculate rate-based goals, but EPA's "Projecting EGU Emission Performance in State Plans" TSD discusses modeling in the context of mass-based goals. Why?
 - a. Can states use a non-IPM model to project generation by affected EGUs?
 - b. Should states use EPA's IPM base case for the power sector through 2030 in order to develop business-as-usual baseline for mass goal conversion?
- 2. The Projecting EGU CO₂ Emissions Performance in State Plans TSD indicates that firm builds and retirements should be taken into account when converting a rate-based goal to a mass-based goal. It is possible at the time of the conversion that a utility may have announced plans for a unit to retire by a certain date, and the retirement may even be in the utility's integrated resource plan, but there is no legal/enforceable requirement for the unit to actually shutdown by that date (if circumstances change it may not). Is there a trigger that makes an announced/planned retirement "firm" such that it would need to be considered when converting a rate-goal to a mass-goal?
- 3. Can USEPA provide states with CO₂ reduction interim and final goals in terms of mass-based requirements, with detailed calculations showing step by step how the goals were arrived at, all assumptions used, and include supporting information and data used? If not final and interim mass-based goals, will EPA identify a preferred rate to mass conversion methodology? If USEPA is unable to provide states with more guidance on mass-based goals, then why not?
- 4. Can EPA provide clarity in regards to a state using a mass-based rate (cap on tonnage for CO2 emissions) in its plan and the flexibility in this approach to support an increased generation demand (if it should occur during the interim phase)? Page 17 of the "Projecting EGU CO2 Emission Performance in State Plans" TSD suggests that mass-based goals may account for increases in generation at existing affected units projected to occur as a result of load growth. Is this correct?
- 5. One of the provision of the 111(d) proposal (60.5770) attempts to answer the question: "What is the procedure for converting my state rate-based CO2 emission performance goal to a mass-based goal?" and states:
 - (a)(3) The conversion must represent the tons of CO2 emissions that are projected to be emitted, in the absence of emissions standards contained in the plan, if the affected EGUs were to perform at an average lb CO2 /MWh rate equal to the rate-based goal for the state identified in Table 1 of this Subpart.

- a. It does not make sense to apply the average lb CO2 /MWh rate equal to the rate-based goal for the state identified in Table 1 of this Subpart to "affected EGUs" when calculating the mass based goal since the rate-based goal was calculated based on the generation from "affected entities", not "affected EGUs". We feel that "affected entities" should replace "affected EGUs" in the provision above. Did EPA intend to set a mass based goal by having "affected EGUs" perform at an average lb CO2 /MWh rate equal to the rate-based goal for the state identified in Table 1 of this Subpart? If this was EPA's intention, it should be noted that Georgia's rate-based goal is 834 while our coal emissions rate (after HR improvement) and NGCC emissions rate are 2157 and 841 lbs/MWh, respectively. Even if we dropped coal generation to 0, we would be left with an equivalent emissions rate of 841. This would fail the equivalency test in paragraph (a)(3). There are a number of other states in this same circumstance.
- b. What does "in the absence of emission standards contained in the plan" mean? Is EPA saying that, for purposes of the calculation, all predicted electrical demand (i.e., generation) would be assumed to be from affected EGUs?
- 6. There have been reports that EPA staff has endorsed a method for calculating the mass-based goal that involves taking the EPA/IPM Option 1 CPP modeling results and adding up the emissions from the affected units. Is this accurate? If so, could EPA elaborate on how this method relates to the method specified in proposed 60.5770(a)(3)—taking the projected generation of affected units and multiplying it by the rate-based goal?
- 7. If a state were to multiply the interim goal by the total generation of affected sources and "affected entities" in a specific year to calculate the mass-based emission cap, is this method acceptable? (For example, Pennsylvania's interim goal is 1,179 lb/MWh net. If our net generation in 2020 is equal to our 2012 net generation of 150,858,087 MWh, our cap will be 88,930,842 tons. If our net generation in 2020 is equal to EPA's projected net generation in 2020 of 162,699,881 MWh, our cap will be 95,911,580 tons.)
- 8. Can a state use their year-to-year goals used in determining their interim goal (columns AQ to AZ in the 20140602tsd-state-goal-data-computation spreadsheet) to calculate the mass based cap?
 - a. For example, in the attached spreadsheet, 2020-2029 rate based goals are converted by taking the numerator from columns AQ-AZ and setting that equal to the mass based goal. When you do that, the numerator is a constant value for 2020-2029, so the mass based goal is a constant value for 2020-2029 (column BC). Does EPA agree with this approach? If not, how should the calculation be changed?
- 9. The proposal expects a state to estimate 2030 in-state generation in 2015 to determine what the mass limit for the state will be in 2030. Part 60, Subpart B essentially limits the reasons a state may submit a revised plan to actions that make the plan more stringent. One important consideration is that in 2015 we could well have guessed wrong on what the 2030

state generation rate will be. In the interim, there may be new fossil power plants that have been built meeting the NSPS and BACT.

- a. Will EPA revise Subpart B to allow for corrections in the estimated 2030 generation rates and mass rate limit?
- b. In estimating the 2030 generation does the state get to subtract generation from new fossil EGUs which are planned to go on-line after 2020?
- c. How do we address new renewable generation or new incremental hydro generation that is both scheduled to be completed and on-line after 2020 and all of the generation will serve out-of-state load?
- 10. Can a state plan contain both rate and mass-based calculations / requirements to meet a state's overall CO2 emission goal? For example, can a portion of the state plan be based on mass calculations (Ex: Power plants "A" and "B" will emit no more than "X" tons of CO2 per yr) while other portions of the state plan have rate based numbers (Ex: Parent company "C" will limit total CO2 emission rates for all of Power company "C" utilities to "Y" lb CO2/MWh-net) provided the state plan adequately demonstrates an enforceable mechanism to meet the proposed EPA CO2 emission limit in 2030 and beyond plus the interim time frame of 2020-2029?
- 11. For the 7 bulleted variables on page 17 of the <u>Projecting EGU CO2 Emission Performance in State Plans</u>, what sources of these key variables would EPA accept?
 - a. Electricity load growth projections (energy peak and demand) | State PUCs, EIA's AEO?
 - b. Fuel supply, delivery, and pricing assumptions | RTO/ISO, EIA?
 - c. Cost and performance of electric generating technologies | EIA?
 - d. EGU firm builds and retirements (e.g., those scheduled with a RTO/ISO) | RTO/ISO?
 - e. Transmission capability and RTO/ISO transmission expansion plans | RTO/ISO?
 - f. Applicable federal regulations (other than the EPA emission guidelines) | RTO/ISO, NERC, FERC?
 - g. Applicable state regulations and programs (other than those that are included in the state plan) | State where generation occurs, State where demand occurs?
- 12. Could the mass-based goal simply be taken as the CO2 emissions remaining after implementation of BSER Blocks 1 and 2?
- 13. EPA's TSD for "State Plan Considerations" includes a section on "Incorporating End-Use Energy Efficiency and Renewable Energy Programs and Measures under a Rate-Based Approach." In a footnote for that section, EPA states "The EPA is also proposing that RE and demand-side EE measures could be used under a mass-based portfolio approach in an approvable state plan. However, the focus of this section is limited to application of such measures under a rate-based approach." Does the Agency plan to provide similar information for a mass-based approach?

- 14. The "State Plan Considerations" TSD states: "With mass-based emission limits, end-use energy efficiency measures that avoid EGU CO2 emissions could be a major component of a state's overall strategy for cost-effectively reducing EGU CO2 emissions, but would be complementary to the enforceable state plan (i.e., not included as enforceable measures in a state plan)." In a non-portfolio approach, does this mean that states do have to include enforceable EE measures in their state plan (if they intend to pursue BB#4) for a rate-based approach but not for a mass-based approach?
- 15. If a state elects to convert their rate-based goal to a mass-based goal and the effected entities consist only of those that own or operate affected EGUs, how much qualitative and quantitative detail on the various CO2 emission reduction and avoidance mechanisms (e.g., heat rate improvement, re-dispatch to natural gas, renewable energy, energy efficiency) that would be used by the affected entities to meet the mass-based goals needs to be included in the state plan?

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Multistate Issues Questions October 2, 2014

- 1. One way to implement a multi-state plan would be to include a group of states under a cap and trade agreement (e.g. RGGI States) and in this case they could develop a single plan that covers all states. It is less clear how a less comprehensive multistate plan could be structured. For instance, could a multistate "plan" be developed that only includes a single EGU in a nearby state or states? For example, would an agreement that only addresses redispatch from a coal EGU in "State A" to a NGCC EGU in another "State B" be allowed, particularly if the same utility owns both facilities? Could both States A and B submit their own individual state plans but also enter into a "limited" multistate plan agreement that addresses a common goal?
- 2. If a "limited" multistate plan is allowed, what is the incentive to do so? In the example above, suppose State B's NGCC capacity factor had been fixed at a value < 70% and could run at a higher capacity. If the NGCC and coal EGUs had been in the same state, EPA would have already increased the capacity factor of the NGCC in State B and thus its baseline during the goal setting process. Could State B increase its NGCC capacity factor through a "limited" multi-state plan if its NGCC increased utilization was being used to take up dispatch from a coal plant in another state? This would in essence change the baseline for the NGCC in State B.
- 3. If a state decides to pursue a multistate plan and asks for an extension, but then the agreement falls through and has to "go it alone". Is the state penalized?
- 4. Use a 2 state example to address following questions:
 - a. How would 2 state goals be combined to have a joint lb per MWhr goal?
 - b. For a state with a lower than 900 lb CO2 per MWhr goal (lower than the emission rate from a combined cycle gas unit), would a partnership with a high CO2 per MWhr goal state provide an opportunity for new combined cycle units in the low goal state to provide credit for achieving the joint goal for the 2 states? How would the credit be calculated? Would this be different than the credit that would occur if the low emitting state did not join with the high emitting state?
- 5. If states are looking at working together on a multi-state plan, what would EPA use to determine compliance, or conversely failure to meet the goals as set by EPA? Example: 4 states work together on a multi-state plan. Would compliance be based on the average (weighted average?) of the 4 states, or must every state meet its individual number through working with the other states?

- 6. Does the Agency think an approvable multi-state arrangement needs to include an interstate enforcement mechanism? If not, how could states deal with free riders in a potential noncompliance scenario?
- 7. Are there any types of multi-state arrangements that EPA believes would require Congressional consent under the Compact Clause?
- 8. The State Plans Consideration TSD states that multi-state enforceability "would be contingent, in part, on states having comparable enforcement mechanisms." What are "comparable enforcement mechanisms"? In the context of RGGI, is the enactment of legislation implementing a Model Rule sufficient? Are there other examples of "comparable enforcement mechanisms" that are not legislative?
- 9. If modeling is required for potential multi-state targets, should states model the individual state rate targets or a regional target? Should the regional target be weighted by state fossil generation or some other metric? Should it be based on 2012 generation or projected generation?
- 10. For renewable energy developed in one state using that state's tax credits and other incentives, but then exported to another state for consumption, who gets the credit? How would double counting be addressed? How does this differ in a multi-state arrangement?
- 11. Can EPA explain how a multi-state SIP could lay out an environmental dispatch protocol for a regional transmission organization?
- 12. The proposal notes: "The EPA recognizes that state administrative procedures can be lengthy, some states may need new legislative authority, and states planning to join in a multi-state plan will likely need more than thirteen months to get necessary elements in place." Are there any multi-state arrangements that U.S. EPA believes would not require some implementing legislation by participating states?
- 13. How narrow could a multi-state arrangement be to still qualify for the June 2018 deadline?
- 14. The proposed rule states that "For states wishing to participate in a multi-state plan, the EPA is proposing that only one multi-state plan would be submitted on behalf of all participating states." Can EPA provide examples of jointly-submitted SIPs that included binding compliance?
- 15. The proposal frequently mentions RGGI as an example of a multi-state arrangement that could work under the proposal. RGGI's bylaws state that it "shall have no regulatory or enforcement authority... and all such sovereign authority is reserved to each signatory state." Besides the question of rate-to-mass conversion, can EPA describe the steps that RGGI states would need to take satisfy EPA's general criteria for SIPs?

- 16. EPA states at 79 Fed. Reg. 34867 that the production of electricity from hydro generation was not considered in calculating the baseline and thus was not grown out in calculating state goals. EPA also states that incremental generation from existing or later built facilities could be used for compliance. This concept creates an opportunity for a number of questions:
 - a. How is "incremental hydropower generation from existing facilities" calculated?
 - i. Is it the total amount of hydro generation actually produced over the 2012 baseline?
 - ii. Is it the <u>increase in capacity</u> resulting from upgrades to facilities that could <u>potentially</u> boost production depending on demand and dispatching decisions?
 - b. If a hydro generator contracts to sell power generated as a result of increased production at an existing facility, to a distribution entity in a state other than the one where the power is generated, which state can claim credit for the renewable energy? How could a state prevent the loss of this type of compliance mechanism?
 - c. Is it correct in interpreting that under the proposed rule, "existing" hydro power generation, i.e.: the generation that occurred at the 2012 baseline level, does not benefit the state in its future obligations to meet the requirements of 111(d)? But could a distribution entity in another state purchase that "existing" electricity and help the other state meet its compliance obligation?

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Enforceability Issues Questions October 9, 2014

- 1. Does the Agency think an approvable multi-state arrangement needs to include an interstate enforcement mechanism? If not, how could states deal with free riders in a potential noncompliance scenario?
- 2. Could EPA explain when a voluntary plan (e.g., RGGI) becomes federally enforceable how is the liability of the group applied? For example, if one state in the group doesn't achieve its reductions, do the other states face an enforceable action? How does a group plan, adopted by individual legislatures then transform to a group? Does the group entity take over the decision-making currently left for individual states?
- 3. Enforceability of EE measures is a concern to many states, as many programs in place are driven by consumer behavior through education. How does a state show EE programs as enforceable in its SIP? Who is the responsible party for a typical EE program? EPA indicates that a PUC order may be sufficient, but this creates many jurisdictional authority issues.
- 4. What is a federally enforceable plan for RE or EE measures? For example, is an RPS "federally enforceable", or will EPA require that it be named as a third party beneficiary under power purchase agreements in order to enforce them? What if a state RPS allows for EE to satisfy part of the standard?
- 5. Who will be the entity held accountable to EPA for meeting a state's renewable energy standard (RES)? The state? The state utility commission or energy office that administers the RES? The utility? How does variation in this answer between the portfolio and commitment approaches affect how plans might be structured and approved?
- 6. Suppose a state uses a mass-based goal approach and includes enforceable measures that ensure that the mass-based goals are met. Does the plan need to include enforceable measures for the EE, RE, and other measures that will be used to meet the mass-based measures or is compliance with the mass-based goals sufficient?
- 7. If states opt for mass-based plans that put compliance responsibilities entirely on affected EGUs, but demand reductions from RE or EE measures are necessary to support the mass reductions, what happens if those reductions don't materialize? Are the affected EGUs liable? What sort of compliance options do they have in this situation?

- 8. In the situation in the above question, what mechanisms does EPA envision which could allow a state to transfer credit from state-implemented measures to individual EGUs? Who is liable if these credits do not materialize?
- 9. In a portfolio approach, where entities covered by an energy sector measure an RPS, for example are included in a state plan, do these entities have citizen suit liability if they do not comply? Relatedly, if the state wishes to alter an energy policy contained with the plan, what EPA approval process would be applicable?
- 10. In the state commitment approach discussed in the preamble, what sorts of commitments might EPA accept, and for what quantity of emissions? Can EPA provide any guidance on how commitments would be structured and enforced?
- 11. If a commitment does not materialize, what remedies does EPA have to help the state get back on track? What contingencies and backstops should state planners consider?
- 12. Could EPA provide an example of enforceable measures (and state-enforceable measures under the alternative "state commitment approach") for the following activities?
 - Programs like Volt Var Optimization to reduce energy on transmission and distribution circuits;
 - Solar thermal programs;
 - Waste heat recovery;
 - Participation in energy imbalance markets like the one operated by CA ISO;
 - Performance contracting;
 - Building energy codes;
 - Net-metering energy savings;
 - Voluntary RPSs;
 - Re-dispatch (in regulated and non-regulated states).
- 13. In the goal calculation, EPA assumes the re-dispatch of generation to lower-emitting sources. However, re-dispatch of power generation is not under the authority of a state air pollution control agency or, in many cases, any state agency. How does EPA envision making re-dispatch "federally enforceable" in a federal plan?
- 14. Can EPA explain how enforceability might be addressed in the context of entities like cooperatives or municipal utilities that are not currently subject to state jurisdiction? If EPA does not approve the portion of a state plan addressing cooperatives and municipal utilities due to a lack of authority, would EPA consider legally enforceable emission standards and compliance schedules beyond building block 1?
- 15. If a state needs additional time, then it must still submit an initial plan by June 30, 2016. The proposal says that "To be approvable, the initial plan must include specific components, including a description of the plan approach, initial quantification of the level of emission performance that will be achieved in the plan, a commitment to maintain existing measures that limit CO2 emissions, an explanation of the path to completion, and a

summary of the state's response to any significant public comment on the approvability of the initial plan." Does this require a demonstration that the plan will meet the required reductions and be enforceable? Does this mean that any legislation or state agency determinations must be complete in order to receive approval for the initial plan and an extension?

16. When does an "affected unit" become subject to the requirements under CAA section 111(d)? Is it when the EPA releases its final 111(d) rule in June 2015 or when the source is included in an approved state plan (2016 and later)?

NACAA, AAPCA, and ECOS Cosponsored 111(d) Webinar Rate-to-Mass Conversion Questions November 20, 2014

- 1. EPA has discussed the possibility of 111(d) applying to existing and new units. If EPA chooses to include new units in 111(d), will they increase the mass the state is allowed to emit by the amount the new unit would be allowed under NSPS?
- 2. If an NGCC floor is established in the final rule, will EPA recalculate the mass goal for each state and communicate the result before the state plan deadline?
- 3. If the RE/EE fossil offset is established in the final rule, will the resulting numeric goal be less than in the original proposal?
- 4. The existing affected source approach from the rate-to-mass goal translation TSD produces a generation level (and CO2 mass) for GA that is 28% less than the generation (and CO2 mass) used to set the rate-based goal in the original rule proposal (see Table GA-1). How can a translated mass-based goal be equivalent to the rate-based goal if it does not use the same generation level?

<u>Table GA-1.</u> Final generation and CO2 emissions for selected goal calculation approaches

Goal approach/form	2030 generation (MWh)	2030 CO2 emissions (short tons)*	2030 CO2 Rate (lbs/MWh)
Rate-to-mass Goal Translation TSD – Tables 1 & 4; Existing Affected Source	87,753,806	34,843,000	834
Original Goal Computation TSD	122,216,047	50,964,092	834

5. In the original proposal, EPA's goal-setting equation adds incremental RE and EE to the 2012 baseline generation (in the denominator of the formula) but does not affect fossil generation or emissions. In the NODA, EPA proposed two different approaches for revising the goal-setting formula in which incremental RE and EE replace 2012 fossil generation. In the rate-to-mass goal translation TSD, incremental RE and EE generation replace historical fossil generation, which is similar to the NODA approaches. Is EPA's rate-to-mass translation TSD approach intended to be equivalent to the rate-based limits established in the original proposal or is it intended to be equivalent to rate-based limits that would be determined using one or both of the approaches included in the NODA?

6. By using Table 1 of the rate-to-mass goal translation TSD, GA EPD calculates that Georgia fossil generation in 2030 would shrink to 51 % of fossil generation in 2012. By comparison, data from the Annual Energy Outlook 2014 for the SERC-SE region project that 2030 fossil generation will be 123 % of 2012 generation. See Table GA-2. How does EPA account for this very large disparity and is the fossil generation projected by the TSD realistic?

Table GA-2. Comparison of Projected Fossil Generation – TSD versus AEO 2014

Projection Source	2012 fossil generation (10 ⁶ MWh)	2030 fossil generation (10 ⁶ MWh)	Ratio (2030/2012)
Translation TSD Table 1,	78.6	40.2	0.51
(Existing Affected Sources)*			
AEO 2014 SERC-SE Table	188.9	232.8	1.23
86**			
(GA, AL, MS partial, FL			
partial)			

^{*2030} generation = historical fossil – Block 3 incremental – block 4 avoided generation

AEO reference: Released May 7, 2014, Electricity and Renewable Fuels Tables, Table 86, "Generation by Fuel Type" data

- 7. Could EPA choose a specific state and walk through their methodology for the two approaches to translating rate targets to mass targets, including identifying alternative inputs or data sources that states could use?
- 8. Would EPA look to translate a state's rate-based target to a mass-based target in the event that the Agency imposes a federal implementation plan?
- 9. PJM's analysis of its original interpretation of the rule found substantially a higher mass-based regional cap than that reflected in EPA's TSD. Has EPA reviewed that analysis, and can the Agency explain the difference in the approach?
- 10. The proposed regulatory language for the 111(d) rule describes the process for converting a rate-based goal to a mass-based goal at 40 C.F.R. 60.5770. If a state plan incorporates exactly one of the methodologies and mass-based targets from EPA's goal translation TSD, is the state's mass-based goal presumptively "equivalent" to the rate-based goal, as the regulations require? If not, what else would a state need to do to show it has an approvable mass-based goal?

^{**}Calculated as sum of coal and natural gas generation