

November 24, 2014

Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
Attention Docket ID No. EPA-HQ-OAR-2013-0602
Mail Code 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Via <http://www.regulations.gov>
Attention Docket ID No. EPA-HQ-OAR-2013-0602

Re: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, EPA-HQ-OAR-2013-0602, 79 Fed. Reg. 34830 (June 18, 2014)

Dear Administrator McCarthy:

The Alliance to Save Energy (Alliance) appreciates the opportunity to comment on the Clean Power Plan (CPP) proposal. Further, we thank the EPA for an open process of stakeholder engagement during the period leading up to this proposal as well as during the public comment period.

The Alliance is a nonprofit coalition of business, government, environmental and consumer leaders that supports energy efficiency (EE) as a cost-effective energy resource and advocates energy-efficiency policies that minimize costs to society and individual consumers, enhance energy security and lessen negative environmental impacts. The Alliance has worked extensively with energy utilities, commercial and industrial firms, public agencies, consumer and environmental organizations and others to promote EE as a means to mitigate the environmental impacts of energy use as well as to achieve other benefits.

The Alliance's focus is on EE, so we offer no comment on what may be appropriate emissions limits and stringency. Rather, when air quality regulatory measures are developed and implemented, **we support recognition, crediting and encouragement of EE as an emissions reduction strategy**. As the EPA has acknowledged at various times, including in this proposal, more efficient use of energy reduces the amount of fuel required to provide energy services and, thus, the emissions and other negative environmental impacts associated with fuel use. In the context of the CPP, EE measures taken throughout the electrical system—at generating plants (electrical generating units [EGUs]), in transmission and distribution (T&D) and in energy end-use—can provide cost-effective emissions reduction and avoidance.

The Alliance appreciates and encourages the EPA's attention to EE as an emission reduction and compliance approach, and appreciates EPA's recognition of EE as a means to reduce compliance costs and support electric system reliability. **We especially applaud EPA's inclusion of EE measures as compliance options, including allowing and encouraging states to include end-use EE in their compliance plans**. Further, we commend EPA for allowing a large degree of state flexibility to craft compliance solutions that best match their particular contexts.

As EPA itself notes in the CPP proposal and its associated technical support documents (TSDs), there remain numerous questions and areas where further clarity and guidance are needed to allow states and other entities (such as electric utilities, EGU operators, energy service companies [ESCOs] and other providers of energy services) to effectively and cost-effectively use EE for CPP compliance. To that end the Alliance offers the comments that follow.

Our comments build on comments we jointly submitted with American Council for an Energy-Efficient Economy (ACEEE) on December 5, 2013 and Alliance oral testimony delivered at the EPA Clean Power Plan Public Hearing on July 30, 2014 in Washington, DC.^{1, 2}

The Alliance continues to endorse the “Principles for Including Energy Efficiency in 111(d) of the Clean Air Act” developed by the “3Ns” (National Association of Clean Air Agencies, National Association of Regulatory Utility Commissioners and National Association of State Energy Officials), with whom the Alliance has collaborated.³ Also, as cited below, a number of our comments here comport with those appearing in several joint comment letters and in principles developed jointly with other stakeholders.

Our comments center on several important areas where the CPP proposal (including the rule, rule preamble, TSDs and other guidance) can be clarified and strengthened. These topics include:

- EPA should explain implications for states of choosing mass- over rate-based targets.
- States and other entities need clarification and guidance on including non-utility ratepayer-funded EE programs, policies and measures in state compliance plans.
- States need clearer guidance on a number of issues related to evaluation, measurement and verification (EM&V) of energy savings.
- Interactions of EM&V, quantification and enforceability issues for EE.
- Inter- and multistate issues concerning crediting of EE.
- Early action crediting issues.
- Several ways to strengthen the opportunity and benefits of combined heat and power (CHP) and waste heat to power (WHP) in the context of the CPP.

EPA should explain implications for states of choosing mass- over rate-based targets.

In the rule preamble, TSDs and any guidance to be developed on state compliance plan requirements, EPA should clearly emphasize the distinctions between rate- and mass-based targets for developing EPA-approvable compliance plans and for tracking compliance. This can have implications for how states determine their EE and other compliance strategies and policies. For example, in a mass-based system the details of EE programs and policies, EM&V and enforcement provisions may be regarded as non-federally enforceable “complementary” elements in state compliance plans subject to a lower degree of EPA scrutiny than in states applying rate-based targets. This is because under a mass-based system compliance is determined by measuring carbon dioxide (CO₂) emissions at affected EGUs without the need for EPA to review how the necessary reductions were made. In contrast, under a rate-based system electricity savings have to be estimated and then averaged or blended into the covered generation base as

¹ Alliance to Save Energy and American Council for an Energy-Efficient Economy “Response to EPA: Considerations in the Design of a Program to Reduce Carbon Pollution from Existing Power Plants,” December 5, 2013. http://www.ase.org/sites/ase.org/files/resources/Media%20browser/ase_aceee_comments_on_111d_-_12-5-13.pdf

² Alliance to Save Energy, Statement of Rodney Sobin, Director of Research and Regulatory Affairs, Clean Power Plan Proposed Rule Public Hearing, EPA-HQ-OAR-2013-0602, July 30, 2014. http://www.ase.org/sites/ase.org/files/resources/Media%20browser/alliance_statement_for_epa_clean_power_plan_public_hrg_july_30_2014.pdf

³NACAA, NASEO, NARUC, “Principles for Including Energy Efficiency in 111(d) of the Clean Air Act” <http://naruc.org/Publications/Energy-Efficiency-Principles.pdf>

0 lbs CO₂ per MWh resource.⁴ This requires greater attention to assure that energy savings are real and accurately quantified.

States and other entities need clarification and guidance on including non-utility ratepayer-funded energy efficiency programs, policies and measures in state compliance plans.

The CPP proposal offers states broad flexibility in the types of EE programs, policies and measures that may be included in state compliance plans and used for CPP compliance. However, the CPP and associated documents, such as the State Plan Consideration TSD, appear focused on utility ratepayer-funded EE programs such as those required under energy efficiency resource standards (EERS) and similar policies.

While electric utility ratepayer programs, which budgeted about \$7 billion for EE and demand response investments in 2013,⁵ are very important for achieving greater efficiency and emissions reductions in the electricity sector, they amount to less than half of the nation's EE investments. The majority of such investments are delivered through non-ratepayer-funded channels, manifested as policies, programs and individual projects. These include Energy Savings Performance Contracting (ESPCs—about \$6 billion industry in 2013);⁶ building energy efficiency code implementation; state-level appliance efficiency standards; state and locally run efficiency programs; and energy efficiency projects privately contracted or self-implemented by homeowners and building and industrial facility owners.

It is important for EPA to state expressly that privately or other non-utility delivered EE can be included in state compliance plans. EPA should provide pertinent guidance to states, addressing such issues as energy savings crediting, enforceability, EM&V and other quantification matters with respect to the non-utility programs.

A brief description of a number of non-ratepayer EE programs and mechanisms follows. EPA should recognize the characteristics of these different EE resources and fashion the CPP rule and guidance to enable each to contribute fully to CPP compliance.

- **Building Energy Codes** are enacted by state and local governments. Building energy codes are enforceable under state and local laws, with non-compliance penalized through fines, denial of building occupancy permits and/or orders to demolish the building. (Additional comments centering on building energy codes appear below.) EPA recognizes the significant role such building energy codes can play in the proposed rule.

⁴ In the CPP proposal EPA suggested two approaches for including EE under the rate-based system. One approach, which the Alliance supports for reasons of simplicity, is to add MWh savings to the denominator of the lbs/MWh CO₂ emissions rate. The alternative approach, which is more complicated and offers more opportunity for error, is to assess electricity savings, then calculate avoided emissions from those savings, followed by subtracting those emissions from the numerator in calculating the lbs/MWh CO₂ emissions rate.

⁵ Consortium for Energy Efficiency, "Efficiency Program Industry by State and Region Appendices, 2013," Table 4. US Electric Program Budgets by State, 2013

http://library.cee1.org/sites/default/files/library/11385/CEE_AIR_Tables_April_04_2014.pdf

⁶ Stuart, Elizabeth, Peter H. Larsen, Charles A. Goldman, and Donald Gilligan, *Current Size and Remaining Market Potential of the U.S. Energy Service Company Industry*, Lawrence Berkeley National Laboratory, 2013.

- **Energy Savings Performance Contracts (ESPCs)** are delivered by energy service companies (ESCOs). ESCOs provide energy savings guarantees to their clients. Project performance is monitored and verified in accordance with well-recognized protocols such as the International Performance Measurement and Verification Protocol (IPMVP) and the Federal Energy Management Program (FEMP) M&V Protocol. The contractual energy savings guarantee requires ESCOs to provide additional equipment or services to make up for any savings shortfalls. (Additional comments centering on ESPCs appear below.)
- **Privately-Owned Commercial and Industrial (C&I) Retrofit Projects** primarily include retrofits with short payback periods. Project energy savings can be verified using the IPMVP, including via energy bill analyses, and can be certified by either the local utility or third-party experts.
- **Building Efficiency Rating Systems** include U.S. EPA ENERGY STAR, the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) and other rating system certifications. Energy savings due to superior design and construction in new and renovated buildings and through ongoing operations and maintenance can be documented and verified by third-party licensed architects and engineers, who are legally accountable for their work.
- **Residential Retrofit Projects Delivered by States, Non-Profit Organizations, Contractors and Aggregators** aim to provide home performance upgrades through incentive and labeling programs with predictable and verifiable energy savings. These savings can be verified through established EM&V methods by third-party evaluators utilizing energy usage data that are weather-normalized and compared to baseline data and control groups. State-supported and non-profit organization-delivered low-income residential weatherization programs also can be included in this category.
- **State programs and projects** can use policy levers ranging from requirements to incentives for achieving energy savings.

Utility regulators and state energy officials in the states can keep track of the attribution of savings between utility ratepayer programs (which sometimes provide partial support of the above mechanisms through rebates and other incentives) and non-utility entities providing energy services and project delivery in order to prevent double counting of energy savings. Either a public or private-sector registry may be useful to document EE projects and their attributes (such as the amount of savings delivered, EM&V protocols used and ownership of energy savings or carbon credits, where applicable).⁷

Regarding Building Energy Codes:

Building energy codes and standards, which are applicable to new construction and major renovations, are developed, adopted and enforced by states and local jurisdictions; in some cases localities can adopt codes more stringent than the state code. The commercial and residential buildings subject to code regulations consume 71 percent of U.S. electricity and account for 39 percent of U.S. carbon emissions. Buildings initially constructed to more efficient codes have long-lasting demand reduction potential because many efficiency measures can perform throughout a building's life, which can be 100 years. In the past three triennial cycles for national model energy codes, efficiency has been boosted by 38 to 54 percent for

⁷ A registry can also facilitate intrastate and, as applicable, interstate trading of energy savings credits or certificates. The Climate Registry has proposed an EE registry. The Climate Registry, "Statement: Establishing an energy efficiency registry as a tool for state compliance under U.S. EPA's Clean Power Plan," September 22, 2014, http://www.theclimateregistry.org/downloads/2014/09/TCR_An-EE-Registry.pdf.

residential and 30+ percent for commercial buildings. In addition, governmental building efficiency policies and measures have been implemented at the federal level as well as by many state and local jurisdictions.

With limited exceptions, codes are locally enforced and should remain that way. Additional code-related energy savings can be achieved through three mechanisms: (1) adoption of more stringent code, (2) increased code-enforcement and (3) code compliance training, education and incentive programs.

States should use as their baseline code conditions the building energy code in force and rate of compliance with code at the time of the CPP proposal. States can perform studies of code compliance, use historic compliance rate data or use conservative assumptions of current compliance as baseline compliance conditions against which to establish energy savings. States that opt to include building energy codes in their compliance plan could be required to perform periodic evaluations to establish compliance rates and energy savings.⁸

EPA should modify wording of the proposed rule at §60.5750 (“Can I include existing requirements, programs, and measures in my state plan?”) to clarify that for building energy codes the baseline or “business-as-usual” condition is meant to be the code in force and its compliance rate at the time of the CPP proposal. This section states that emissions reduction “actions taken” after the date of rule proposal pursuant to existing “requirements, programs and measures” can be counted for rule compliance.⁹ This is an important and beneficial section that would allow projects and actions taken under an existing EERS, ESPC authority or other policy or program to be credited for savings that are achieved during the compliance period.¹⁰ However, a particular concern with respect to building energy codes is that construction or renovation of a building under an existing (and perhaps old code) could be construed as an “action taken” pursuant to an existing “requirement.” In other words, the current wording of §60.5750 can be interpreted as allowing a state with a weak building energy code now on the books to count energy savings from building to that weak code as compared to building to an even weaker earlier code or no code at all. EPA should modify wording of the rule to assure that states should only be able to count code savings that come about from improving code compliance and/or increasing code stringency over baseline code compliance and stringency at the time of the CPP proposal.

Regarding ESPCs:¹¹

ESPC projects provide economic and energy benefits along with cost-effective emission reductions. However states will hesitate to pursue these options without clear EPA guidance regarding approvable methods for incorporating ESPC measures into CPP compliance plans. EPA guidance should provide states with needed clarity on the following items:

1. Approvable Approaches for States to Use ESPC Authority and Programs for Compliance – Without limiting state flexibility, EPA can offer clarifying guidance to enable states to include ESPC project-related emission reductions in their CPP compliance activities.

⁸ The U.S. Department of Energy, Building Energy Code Program provides resources to help states and local jurisdictions evaluate code compliance <https://www.energycodes.gov/compliance-evaluation>

⁹ Clean Power Plan proposed rule, § 60.5750 “Can I include existing requirements, programs, and measures in my state plan?”

¹⁰ However, as noted in a later section, we support an early-action credit to recognize savings and emissions reductions that occur after the date of proposal but before compliance period commencement.

¹¹ The section draws significantly from a portion of a whitepaper and proposed comments developed by a consortium of ESCOs with whom the Alliance has collaborated. The Alliance agrees with many but not all of the points the ESCO group is expected to offer.

a. Existing and prospective programs and policies— EPA should acknowledge, as it did with EERS and other ratepayer programs, that actions taken pursuant to existing state ESPC policies and programs provide a potentially substantial contribution for CPP compliance. It should also delineate what types of legal and policy tools will be viewed as sufficiently enforceable for purposes of including ESPCs in compliance plans and by whom. For example, laws, regulations or executive orders requiring public building efficiency enhancements in a state should be deemed as sufficient for credibly projecting ESPC and broader public building energy savings. Inclusion of ESPCs under the umbrella of an EERS or other utility requirement or target may also be viewed in this way.

b. Identification of affected entities – EPA should clarify how this state compliance plan element requirement applies to ESPC projects. We recommend that the states only be required to identify building or facility types (e.g., state-owned buildings, hospitals, universities, etc.) targeted for ESPCs and to provide a reasonable estimate (developed by the state or a qualified third party) of savings to be achieved from anticipated ESPC projects.

c. Aggregation of ESPC-created emission reductions – EPA should describe approvable approaches for aggregating ESPC project-related EE for use in CPP compliance. For example, State Energy Offices (or other state-designated entities) can collect (directly or via a third party) data from all ESPC projects in the state and determine the avoided emissions achieved. State- or utility-administered EE programs can collect ESPC project data from projects that are independently directed, directed by the program or bid into an EERS.

2. Clarify Approvable Approaches for Key Compliance Criteria – EPA can assist states by identifying approvable approaches for key compliance criteria that will facilitate inclusion of ESPC project-related emission reductions.

a. EM&V (also discussed in a separate EM&V section) – EPA, possibly in consultation with DOE, should identify acceptable EM&V protocols (e.g., IPMVP, FEMP M&V Protocol, etc.) for use on EE projects and create a process for accepting additional protocols and methods.

b. Auditing – EPA, possibly in consultation with DOE, should describe model approaches for audits to ensure EM&V is properly employed. For project-level audits, EPA should encourage states to identify types and formats for project data subject to audit to maximize ease and consistency of project audits. EPA should also suggest an appropriate approach for frequency and sample size of audits to ensure a balance of rigor with costs. For program-level auditing, EPA should advise states on obligations to audit data collection and aggregation processes.

c. Corrective measures— EPA should clarify that contractual requirements for ESPC projects to guarantee equipment performance—such as are commonly included in ESPC projects—could be satisfactory and appropriate corrective measures for CPP purposes.

3. Equal treatment for ESPC with regard to compliance value – EPA should clarify that ESPC project-related emission reductions will be treated the same way as reductions achieved through utility ratepayer program EE activities.

a. Contributions to Future Avoided Emissions – All avoided electricity consumption from ESPC projects should be allowed to count toward CPP compliance. Some have argued that building EE improves at a steady rate due to normal replacement of equipment, thus a discount rate should apply to building EE projects. We believe that such assumptions are not necessarily sound.

Regardless of how EPA considers this issue, it should apply the same approach to measuring EE contributions from ESPC projects as for ratepayer-funded programs.

States need clearer guidance on a number of issues related to evaluation, measurement and verification (EM&V) of energy savings.

EM&V is critical for determining the effectiveness of EE policies, programs and measures. It is needed to assure that EE savings are real. However, EPA should recognize that accuracy and rigor of EM&V have a cost in money, effort and time. There needs to be a balance between rigor and cost on the one hand and ease and timeliness on the other. Credible savings data are required but not at too high a cost or over too long a period (rigorous evaluations may require years of data) so as to dissuade use of EE as a cost-effective CPP compliance tool.

Most states have some form of EM&V process in place for evaluating utility ratepayer-funded EE programs under public utility commission (PUC) jurisdiction. However, there is a diversity of experience among the states. Some states have had longstanding robust EE programs and EM&V while others are new to it. Further, most state-approved EM&V still occurs in the context of PUC-approved ratepayer EE *programs*, although, as previously discussed, some privately-delivered EE (such as ESPCs) undergo rigorous *project* level M&V. We make suggestions further below on development of guidance, including assistance that can help less experienced states.

Further, while concerns about attribution of savings to particular programs may be important for some PUC-jurisdiction programs (e.g., for utility rate recovery, awarding incentive payments or ascertaining utility compliance with an EERS) and ESCO demonstration of guaranteed savings' achievement, they are less directly pertinent for demonstrating state compliance with emissions objectives. EPA should not be particularly concerned about attribution of energy savings or emission reduction credits to specific entities, programs or activities. Ultimate "true up" for demonstrating CPP compliance remains with emissions and the emissions performance of the covered EGUs. Still, especially with rate-based standards, it is vital that energy savings be credible and real. Indeed, as recommended previously, EPA should highlight how rate- and mass-based target approaches differ, including requirements for and scrutiny of EM&V.

EPA should provide guidance to states on approvable EM&V plans, methodologies and protocols, and on implementation expectations, recognizing the diversity of state approaches and experience. The Alliance urges EPA to develop CPP EM&V guidance consistent with the points that follow, which largely comport with views of a variety of EE EM&V experts and stakeholders developed through a process facilitated by the Northeast Energy Efficiency Partnerships (NEEP) EM&V Forum. This Forum and the Regional Technical Forum (RTF) of the Northwest Power & Conservation Council are leaders in advancing regional interstate collaboration in developing high quality and more consistent EM&V approaches and practices. We recommend that EPA and, where pertinent, the DOE encourage their efforts and other regional initiatives for advancing consistent, quality EM&V.¹²

The Alliance suggests that EPA guidance, technical assistance and activities supporting EM&V should:¹³

¹² We note DOE and EPA support of the State and Local Energy Efficiency (SEE) Action Network and its EM&V work group, which provides EM&V resources. Also DOE supports the Uniform Methods Project that is developing protocols for various types of EE program measures.

¹³ The Alliance acknowledges Julie Michals of NEEP for facilitating an EE stakeholders' process that assembled a list of EM&V-related recommendations from which this list draws extensively but with which it is not identical.

1. **Support the inclusion in state compliance plans of a broad range of EE program types such as:**
 - a. Common and emerging programs,
 - b. ESPCs and other privately-delivered EE investments,
 - c. Building energy codes and code compliance programs,
 - d. State-established appliance and equipment efficiency standards,
 - e. Weatherization and other non-ratepayer supported building retrofit and upgrade programs,
 - f. Economic development programs supporting industrial EE and CHP.

2. **Provide for transparent and comparable definitions and documentation of EE impacts and supporting EM&V practices across states.**
 - a. EPA should refer to the SEE Action Network Energy Efficiency Program Impact Evaluation Guide¹⁴ glossary as a guiding source of definitions,
 - b. EPA should create or build on existing standardized EE reporting platforms (e.g., Regional Energy Efficiency Database (REED)¹⁵, EIA’s Form 860 Schedule D, Consortium for Energy Efficiency Annual Industry Report), to encourage greater consistency in EE impact reporting,
 - c. EPA should build on existing EM&V methods reporting (e.g., recent development of NEEP EM&V Forum Standardized EM&V Reporting Forms¹⁶),
 - d. EPA should consider supporting the development of a national EE registry (e.g., The Climate Registry proposed EE registry¹⁷) that can support state documentation in standardized formats of EE savings, underlying EM&V methods used and associated avoided emissions; such a registry could help support the exchange of tradable efficiency credits in and among states that opt to employ tradable credit mechanisms.

3. **EPA should, in consultation with DOE, provide an initial list of acceptable EM&V protocols and methods as soon as feasible but no later than the publication of the final CPP rule so that states can better understand EM&V expectations for preparing their compliance plans.¹⁸ EPA should also ask DOE to work in collaboration with EPA to convene an EM&V protocol process for establishing criteria for vetting additional protocols and methods (such as may be proposed by states or other parties) and accepting qualifying protocols and methods. This effort can facilitate development of new or modified protocols where there are gaps.**

4. **Recognize specific needs of states just beginning to implement large scale EE programs. EPA should:**

¹⁴ State and Local Energy Efficiency (SEE) Action Network, “Energy Efficiency Program Impact Evaluation Guide: Evaluation, Measurement, and Verification Working Group,” December 2012

https://www4.eere.energy.gov/seeaction/sites/default/files/pdfs/emv_ee_program_impact_guide_1.pdf

¹⁵ Northeast Energy Efficiency Partnerships, “Regional Energy Efficiency Database (REED),”

<http://www.neep.org/initiatives/emv-forum/regional-energy-efficiency-database>

¹⁶ Northeast Energy Efficiency Partnerships, “Model EM&V Methods Standardized Reporting Forms,”

<http://www.neep.org/initiatives/emv-forum/model-emv-methods-standardized-reporting-forms>

¹⁷ The Climate Registry, “Statement: Establishing an energy efficiency registry as a tool for state compliance under U.S. EPA’s Clean Power Plan,” September 22, 2014,

http://www.theclimateregistry.org/downloads/2014/09/TCR_An-EE-Registry.pdf

¹⁸ The Alliance supports an initial list based on documents listed in EPA, Technical Support Document, State Plan Considerations, p. 43.

- a. Support the use of preliminary planning or deemed savings estimates based on EM&V studies conducted on the same measures and program design but in other geographic areas,¹⁹
 - b. Support the development of regional and national baseline and measure life assumptions for states that do not currently have well-developed Technical Reference Manuals (TRMs), using savings assumptions from existing TRMs (regional for climate- and other regionally-sensitive measures, national for measures where available data do not indicate substantial variation between regions),
 - c. Recommend that DOE (or another designated entity) develop region-specific savings assumption database(s) where needed; savings assumptions should focus on unit-savings estimates, measure life and baselines,
 - d. Recognize that for states with limited EE program and evaluation experience, an initial ramp up period (2016-2019) may be needed to implement large scale efficiency programs and conduct supporting evaluation activities. As such, EPA should allow such states to use deemed savings values borrowed from other states or regions to quantify savings for measures/programs installed during 2016-2019, where savings from such measures persist into the compliance period and for which the state seeks credit for associated avoided emissions.
- 5. Define baselines as “business as usual,” consistent with baseline definitions provided in the SEE Action Network Energy Efficiency Program Impact Evaluation Guide. Energy efficiency savings estimates should be based on “savings *beyond business as usual*.”**
- a. For purposes of the CPP, attribution of EE savings should not be of issue to EPA. Rather, EPA should require states to plan and report on “savings beyond BAU” (sometimes referred to as “adjusted gross savings”). EPA should ensure no double counting of EE savings across different program activities (e.g., ratepayer funded programs, ESCOs, and municipalities should not count the same savings from, say, a local government building upgrade.),
 - b. Savings beyond BAU should include adjustments from impact evaluations such as through verification of installations, adjustment for measure persistence and actual savings achieved as determined through billing analyses and corrections to account for data quality control.
- 6. Provide an EM&V Plan template with specific plan components to help guide states on what needs to be in plans.**
- 7. Allow states to use their own T&D loss factors where they exist.**
- 8. EPA should provide guidance on reporting, including interim reporting, of EM&V plan implementation and the results of EM&V.** We recommend collaboration with DOE on developing reporting templates.
- 9. EPA should offer to review state EM&V plans prior to submission and provide comments so that states have greater assurance that their plans will be accepted.**
- 10. EPA should not focus initially on issues of time-differentiated EE savings and should allow use of non-time-differentiated savings (MWh/year) at least during early compliance years.**
- a. States that choose to use time-differentiated savings should be allowed to do so.
 - b. EPA should ask DOE to review and report on the availability (and rigor) of load shape data across the states and determine options for state access to and use of such data.

¹⁹ With similar climate if the performance is weather dependent.

Interactions of EM&V, quantification and enforceability issues for EE.

Avoiding cumbersome processes for EE inclusion in state plans and strategy

While it is certainly important for state compliance plans to show credible paths for EE and other approaches to reach state emission targets and for energy savings and their emissions impacts to be accurately documented, EPA should not impose cumbersome requirements.

There is experience with EE measures as a means to reduce criteria air pollutants in Section 110 National Ambient Air Quality Standards (NAAQS) State Implementation Plans (SIPs). In 2004, EPA issued guidance to states for EE and renewable energy (RE) inclusion in SIPs.²⁰ A number of states authorized nitrogen oxides (NO_x) allowance “set-asides” for EE/RE measures under this guidance, but in most of these states use of the provision was modest. Our understanding from discussions with various stakeholders (and EPA staff working at that time) was that, at least in part, the process for documenting avoided emissions from EE measures was seen as cumbersome and therefore not worth pursuing.

EPA understood this when it published the “Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans” in 2012.²¹ The Roadmap describes four “pathways” to clarify and streamline EE/RE incorporation in NAAQS SIPs. EPA also offers the Avoided Emissions and Generation Tool (AVERT) to help quantify emissions avoided through EE and RE programs.²² EPA noted the Roadmap as useful for CPP state compliance plan development and cited AVERT as an emissions avoidance/reduction quantification tool for CO₂. We urge EPA to emphasize the applicability of these resources and to provide pertinent training and technical assistance to facilitate inclusion of EE in state CPP compliance.²³

Emissions factors and quantification

After quantifying electricity savings, states should quantify emissions avoidance.²⁴ States should employ marginal generation and emissions calculators or dispatch models for this purpose. The aforementioned AVERT, though it has some limitations, is an easy-to-use tool that can provide adequate calculations of avoided emissions. Dispatch models are often proprietary and complex. EPA should allow states to use AVERT or similar tools as acceptable methods while also allowing states to use more precise models such as NE-MARKAL,²⁵ Integrated Planning Model (IPM) and proprietary tools used by utilities and regional transmission organizations. EPA should set clear and flexible guidelines for the use of modeling and calculator tools, while reserving the right to reject the use of tools that do not meet guidelines.

²⁰ EPA, [Guidance on State Implementation Plan \(SIP\) Credits for Emission Reductions from Electric-Sector Energy Efficiency and Renewable Energy Measures](#), August 2004

²¹ EPA, Roadmap for Incorporating Energy Efficiency/Renewable Energy Policies and Programs into State and Tribal Implementation Plans, <http://epa.gov/airquality/eere/manual.html>.

²² AVoided Emissions and geneRation Tool (AVERT) <http://epa.gov/avert/>

²³ We note and urge EPA to clarify that Sec. 111(d) state compliance plans are not Sec. 110 NAAQS SIPs, so procedural and substantive requirements for those plans are not identical. However, there are analogous aspects of the two types of plans.

²⁴ The need to translate particular energy savings into emissions avoidance may vary with the compliance system devised by the state. As noted, under a mass-based system compliance is measured as actual EGU emissions; evaluation of energy savings and their emissions impacts would be viewed as non-federally enforceable “complementary” elements that may be important for state evaluation of program and policy efficacy. In a rate-based program, EPA allows (and the Alliance supports) the option for states to add zero-emission energy savings (as MWh) to the denominator in an emissions rate calculation. Here too translating savings to avoided emissions may be important for program and policy evaluation. Further, marginal emissions tools and dispatch models may be important for allotting savings and avoided emissions between Sec. 111(d) covered EGUs and non-covered EGUs.

²⁵ Northeast States for Coordinated Air Use Management (NESCAUM), NE-MARKAL Model, <http://www.nescaum.org/topics/ne-markal-model>

EE analogy to transportation emissions controls in SIPs and transportation conformity

EPA should recognize that smaller, dispersed EE measures are analogous to transportation emission reduction measures (many of which are, indeed, transportation EE). EPA should consider viewing them in a manner similar to how transportation measures are treated in NAAQS SIPs and for transportation conformity.

EPA allows and provides guidance for the use of various transportation-related emissions control and prevention approaches, including vehicle inspection and maintenance (I&M) programs, traffic signal timing, high occupancy vehicle (HOV) lanes, land use policies, public transit, intelligent transportation and congestion pricing programs, and vehicle retrofit and accelerated scrappage programs in SIPs and transportation conformity.²⁶ Unlike stationary source permit conditions or technical requirements at area sources (e.g., volatile organic compound [VOC] limits, paint booth standards and reporting requirements for auto collision repair shops,) these measures are not subject to strict interpretations of enforceability. For instance, I&M programs take dirty vehicles off the road but do not control the number and models of vehicles used, miles driven or driver behavior, so they cannot provide an iron-clad guarantee of emissions avoided or reduced. Traffic signal timing improvements reduce congestion and fuel use but do not establish legally enforceable numerical emissions reductions for those specific measures. As another example, public transit improvements or HOV lanes do not obligate drivers to undertake certain behavior nor do they create permit-type NO_x and VOC emissions limits. Nonetheless, the impacts of these types of measures can be credibly modeled and do deliver significant emissions reductions and air quality benefits. Modeling results can be compared with selective sampling and monitoring to verify progress. States are afforded the opportunity to make up for shortfalls that occur despite good faith efforts and can modify their plans, models, programs and measures accordingly.

EPA voluntary mobile source emission reduction programs (VMEPs) guidance discusses enforceability of such measures:

“Enforceable - A State’s obligations with respect to VMEPs must be enforceable at the State and Federal levels. Under this policy, the State is not responsible, necessarily, for implementing a program dependent on voluntary actions. However, the State is obligated to monitor, assess and report on the implementation of voluntary actions and the emission reductions achieved from the voluntary actions and to remedy in a timely manner emission reduction shortfalls should the voluntary measure not achieve projected emission reductions. As stated earlier, EPA anticipates that the State will take the steps it determines to be necessary to assure that the voluntary program is implemented and that emission reductions are achieved so that corrective SIP actions are not required. For example, the State may want to sign a Memorandum Of Understanding (MOU) with the VMEP sponsors.

“Any uncertainty in the emission reductions projected to be achieved by the VMEP must be estimated and reflected in the emission reduction credits claimed in the SIP. As part of this submission, the State must commit to conducting program evaluations within an appropriate time-frame. The State must also report the resulting information to EPA within an appropriate time-frame in order to document whether the program is being carried out, and emission reductions are being achieved as described in the SIP submittal. Through the program evaluation provisions contained in this policy EPA anticipates that States will discover any potential emission reduction shortfall in a timely manner and appropriately account for such shortfall either by changing the program to address the shortfall, adopting a new measure, or revising the

²⁶ U.S. EPA, Transportation-Related Documents, http://www.epa.gov/oms/stateresources/policy/pag_transp.htm

VMEP's emission credits to reflect actual emission reductions achieved, provided overall SIP commitments are met."²⁷

There is similar discussion in EPA voluntary stationary source emission reduction program guidance: "Enforceable - While we have already stated that voluntary measures are not enforceable against the source, the State would be responsible for assuring that the emission reductions credited in the SIP occur. The State would make an enforceable commitment to monitor, assess and report on the emission reductions resulting from the voluntary measures and to remedy any shortfalls from forecasted emission reductions in a timely manner as discussed below."²⁸

Current NAAQS SIP guidance for voluntary programs and measures allows only limited levels of credit for such measures in SIPs but includes provisions for EPA to raise those levels on demonstration of efficacy of measures:

"EPA acknowledges that it may be possible to demonstrate that voluntary measures may achieve credible reductions higher than the three percent cap. In that case, EPA will re-evaluate that cap on a case-by-case basis and allow the cap to be exceeded if the cap hinders the implementation of effective voluntary control measures, subject to notice and comment during SIP approval...."^{29, 30}

EPA and state air regulators accept and use transportation measures in state Sec. 110 plans for addressing NO_x, VOCs, ozone and particulate matter, even with the complexities of atmospheric chemistry and uncertainty of weather and other factors. It seems highly likely that crediting EE measures for EGU CO₂ reductions under Section 111(d) is a significantly more straightforward and tractable exercise.

Inter- and multistate issues concerning crediting EE.

Credit for EE savings when electricity crosses state boundaries

Clarity is needed on how to credit EE measures when there is interstate electricity trade. EPA's State Plan Considerations TSD suggests an asymmetric approach to EE as compared to renewable energy. The TSD suggests that for renewable energy, the state that implements the measure (under a renewable portfolio standard) should be able to take credit for emissions reductions regardless of whether the reductions occur in the state taking the measure or another state. However, the same TSD suggests that states implementing EE should only be credited for EGU emissions avoided within the state. Further, in developing individual state goals, EPA proposed discounting energy savings achievable in a state based on the proportion of electricity imported by the state. If this principle is applied to compliance, this would penalize EE and leave emissions reductions unaccounted for. For instance, if a state imports 25 percent of its electricity, a savings of 100,000 MWh would only be credited as 75,000 MWh. This would leave emissions reductions from 25,000 MWh savings unclaimed and effectively raise the cost of each MWh saved, perhaps by a third, by the EE-implementing state.

²⁷ Richard D. Wilson, "Memorandum: Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans," October 24, 1997

<http://www.epa.gov/otaq/stateresources/policy/general/vmep-gud.pdf>

²⁸ John Seitz, "Incorporating Voluntary Stationary Source Emission Reduction Programs Into State Implementation Plans—Final Policy," no date, <http://www.epa.gov/ttn/oarpg/t1/memoranda/coverpol.pdf>

²⁹ "Commuter Programs: Quantifying and Using Their Emission Benefits in SIPs and Conformity," EPA-420-B-14-004, February 2014, footnote 4. <http://www.epa.gov/oms/stateresources/policy/transp/commuter/420b14004.pdf>

³⁰ We remind EPA that a Sec. 111(d) compliance plan is not a Sec. 110 NAAQS SIP although they have analogous elements and some commonalities. So the percentage cap for voluntary emission reductions in NAAQS SIPs need not and ought not apply under the CPP.

We suggest that EE and renewable energy be treated in similar fashion with respect to interstate accounting and that there be no discounting based on power imports. EPA should provide guidance for allowing states to take full credit for both EE and renewable or other low- and zero-carbon power resulting in interstate emissions avoidance. Such guidance could suggest that such full crediting may be permitted if the importing and exporting states both have rate-based targets, if they have a memorandum of understanding to avoid multiple states counting the same savings or if the energy savings are included in a registry that includes guards against double counting.

Encouraging multistate trading and multistate compliance strategies

The CPP proposal and accompanying TSDs offer and encourage (including by allowing a longer period for state compliance plan development) the option for states to voluntarily enter into multistate compliance and credit trading or allocation arrangements. Multistate and regional CPP collaboration offers multiple advantages that may facilitate the use of EE as a compliance strategy. These can include lowering compliance costs and reducing complications of accounting for interstate generation and emission impacts (such as the risk of double counting if electricity importing and exporting states count the same emission reduction).

EPA should offer guidance on interstate and multistate collaboration and credit trading.

One area that would benefit from guidance would be clarification of what degree of formality would be required for EPA to recognize and approve of a multistate agreement or arrangement, and what parameters must be included in a multistate memorandum of understanding (MOU) or other agreement. TSD discussion leaves this topic vague. For example, must collaborating states submit joint CPP compliance plans or can they submit separate plans that describe the multistate arrangement? Must the states be adjacent or in the same region, or may they be far from each other? Must the agreement among the participating states be as detailed as with the Regional Greenhouse Gas Initiative (RGGI) or can a simpler MOU suffice? May a state using a rate-based target enter into a trading or averaging agreement with a state opting for a mass-based target?

We do not have definitive answers to these questions but suggest the following:

- Collaborating states should not be required to submit joint CPP compliance plans but each state's plan should list the collaborating states and describe the nature, mode and mechanisms of their agreement (e.g., will states or EGUs and/or some other entity trade credits on a market or will some other averaging or allocation approach be used?).
- States should be able to apply a range of multistate arrangements short of RGGI-level formality.
- States that opt for the same target basis (rate or mass) using compatible EM&V should be able to trade or average their emissions or emissions rates based on MOU. However, when the agreeing states use rate-bases, their averaging or trading should be based on joint or blended (covered-) generation-weighted rate targets to avoid gaming when the states have different target rates.
- Allow trading among non-adjacent and even distant states since ambient air quality or other location-specific considerations do not apply for CO₂.
- EPA should provide guidance on how credit trading programs among states participating in a regional program might include credits from EE, renewable energy and other approaches.

Early action crediting issues.

Section 60.5750 of the proposed rule allows “actions taken” (pursuant to existing “requirements, programs and measures”) after the date of the rule’s proposal to count toward CPP compliance starting in

2020, assuming that emissions reductions due to the “action” continue to persist into the compliance period.

However, the Alliance is aware that numerous stakeholders have raised concerns about the lack of “early action” credit for emissions reductions achieved prior to commencement of the interim target compliance period in 2020. For instance, an EE measure installed in 2016 that provides 10 years of energy savings (and concomitant emissions reductions) would be counted during the 2020-2026 period but savings realized before 2020 would not be counted.³¹

Lack of early action recognition or credit may delay or discourage the implementation of EE and perhaps other emissions reduction approaches. States, utilities and other entities may perceive that delaying EE measures until closer to the compliance period could deliver them greater value. The Alliance believes such a rationale for delays or temporary roll-backs in EE policies is misguided. However, delays or roll-backs (even if short-term) of EE policies and programs that could result from lack of early-action recognition and credit would result in forgone emissions reductions and lost cost savings. Further, providers of EE products and services would be harmed. EPA should provide early-action recognition, such as by allowing banking of pre-compliance period savings for application during the compliance period, as an incentive for implementing emission-reducing actions prior to 2020 that lead to real reductions and help states meet their targets in a timely manner.

Several ways to strengthen the opportunity and benefits of combined heat and power (CHP) and waste heat to power (WHP) in the context of the CPP.

The Alliance views combined heat and power (CHP) and waste heat to power (WHP) as valuable tools to enhance EE while helping meet the objectives of the CPP. By producing both heat and power from a single fuel source (CHP) and by capturing otherwise wasted heat from industrial processes to generate additional electricity (WHP), these processes are significantly more efficient than “separate heat and power,” i.e., operating a boiler or furnace to meet onsite thermal needs while buying centrally generated grid electricity. As recognized by the EPA through its CHP Partnership, CHP and WHP are proven ways, in many contexts, to lower emissions, enhance industrial competitiveness and improve energy reliability.³² We offer three recommendations to strengthen and improve the opportunity for CHP and WHP to help achieve CPP objectives:³³

- EPA should clarify that CHP and WHP at unaffected units (i.e., those not classified as utility EGUs under the rule) are eligible compliance strategies,
- Several modest changes are needed to ensure the rule recognizes CHP and WHP benefits for affected units (i.e., facilities classified as utility EGUs under the rule),
- EPA should provide guidance to states to enable them to most effectively incorporate CHP and WHP into their compliance plans to reduce emissions from unaffected units.

³¹ This issue may not be relevant in a state opting for mass-based targets since in that state CPP compliance is determined by measured CO₂ emissions from covered EGUs.

³² There can be some circumstances of high grid penetration of very low-emission electric generation where CHP emissions benefits may be countered.

³³ This section draws from a separate letter submitted to EPA on October 24, 2014 (Advanced Energy Economy, et al.) signed by the Alliance and eight other energy, environmental, industrial, R&D, and labor organizations.

1. EPA Should Clarify that CHP and WHP at Unaffected Units Are Eligible Compliance Strategies

EPA should clarify that CHP qualifies as an EE resource in the proposed rule. EPA should also clarify that WHP produces no incremental carbon emissions. There is a single mention of CHP as an example of “demand-side energy efficiency”³⁴ and no mention of WHP. The rule should explicitly acknowledge that the use of these technologies at unaffected units is an eligible compliance approach that states may include in their compliance plans. The rule’s preamble and any relevant TSDs or guidance should elaborate on CHP and WHP’s environmental, economic and reliability benefits. Explicit recognition of these techniques will send a signal to states that they can and should include these technologies in their compliance plans. Absent this, various states are unlikely to look beyond the policies explicitly included in the building blocks.

2. Several Modest Changes Are Needed to Ensure the Rule Recognizes CHP and WHP’s Benefits

a. EPA Should Provide a Full Thermal Credit for Affected CHP Units:

CHP’s chief benefit is that it can produce heat and electricity from a single fuel source.

The proposed rule would credit all of the electricity produced from a CHP system, but only 75 percent of the useful thermal output. EPA invited comment on “a range of two-thirds to 100 percent credit for useful thermal output in the final rule to better align incentives with avoided emissions.”³⁵ To fully account for the benefits of CHP’s EE, the rule should credit 100 percent of an affected facility’s productively used CHP thermal output.

There is precedent supporting a 100-percent thermal credit. For instance, EPA has recognized 100 percent of useful thermal output in the New Source Performance Standard (NSPS) for Stationary Combustion Turbines.³⁶ A 100-percent credit has likewise been applied in several states.³⁷ Notably, the Proposed Stationary Combustion Turbine Rule favorably cites Texas’ permit-by-rule regulation, which gives facilities 100-percent credit for steam generation thermal output.³⁸

We understand that it may be appropriate to discount thermal output where there are concerns that the thermal energy is not being accurately measured or properly used. Such concerns do not exist here. The proposed rule includes strict monitoring requirements for CHP systems.³⁹ These requirements should alleviate any concerns about so-called “sham” CHP projects.

This matter has important implications for state compliance plans. While only a handful of existing CHP and WHP systems are large enough to be directly affected by the CPP, the proposed rule offers states the flexibility to credit emission reductions from smaller units in their state plans. States will look to EPA’s treatment of thermal output from affected units as a guide for the appropriate treatment

³⁴ U.S. EPA, June 2, 2014, 79 Fed. Reg. 34830, 34888, “Proposed Rule: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units” (“large energy users might independently see additional energy efficiency opportunities or opportunities for self-generation using options such as combined heat and power, solar, or power purchase agreements...”).

³⁵ 79 Fed. Reg. at 34914.

³⁶ See New Source Performance Standard (NSPS) for Stationary Combustion Turbines (40 CFR Part 60, Subpart KKKK) (crediting 100 percent of thermal output); New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units (40 CFR Part 60, Subpart Da) (crediting 75 percent of thermal output from CHP systems).

³⁷ See U.S. EPA, CHP Partnership, Feb. 2013, *Accounting for CHP in Output-Based Regulations*, at 7-9 (citing California’s multi-pollutant regulations and Texas permit by rule and standard permitting program) (<http://www.epa.gov/chp/documents/accounting.pdf>).

³⁸ 70 Fed. Reg. 8314, at 8318 (Feb. 18, 2005).

³⁹ See, e.g., 79 Fed. Reg. at 34955 (§ 60.5805); 79 Fed. Reg. at 34913.

of these systems in their compliance plans and underlying policies (e.g., portfolio standards). Absent proper consideration of their thermal output, states will underestimate the emissions benefits of CHP units.

b. The Line-Loss Credit Should Better Reflect Actual Avoided Line Losses

By producing electricity onsite, CHP and WHP reduce the burden on transmission and distribution lines used to transport power from a central generator. EPA appears to recognize this benefit and includes a five-percent line-loss credit for affected CHP systems. For CHP facilities, net energy output is defined as “the net electric or mechanical output from the affected facility divided by 0.95, plus 75 percent of the useful thermal output.”⁴⁰ There is no explanation for why output is “divided by 0.95”; however, the Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units (Sec. 111(b) proposed rule) explicitly provided a 5 percent “line loss credit” for CHP systems “to account for a five percent avoided energy loss in the transmission of electricity.”⁴¹

We agree that a discount for avoided electricity losses through T&D is warranted; however, we believe that the proposed credit is inadequate. T&D losses are, on average, upwards of 6 percent nationally.⁴² Thus, if EPA includes CHP and WHP in the final rule, we urge it to increase the discount factor from 5 percent to at least 6 percent to reflect average avoided line losses from these systems. As recommended in the earlier EM&V section, we suggest that states should be able to use their own T&D factors, as available.

We also urge EPA to eliminate any ambiguity surrounding the line-loss credit. As written, this credit only applies to a subset of existing CHP systems that are directly affected by the rule. States will consider EPA’s approach, however, when determining how to account for output from CHP and WHP systems in their compliance plans. For this reason, EPA should elaborate on CHP and WHP’s T&D benefits and encourage states to apply a similar line-loss credit when accounting for CHP and WHP installations at unaffected units that the states may rely on to meet the CPP. These benefits are consistent with EPA’s stated interest in “ensur[ing] electric system reliability.”⁴³

c. EPA Should Provide Assurances to CHP and WHP Hosts.

If the final rule continues to apply a system-wide approach, states will seek to achieve their emission targets through off-site (meaning beyond EGU fence lines) EE investments. Under such an approach, hospitals, universities, manufacturing facilities and others could help reduce emissions throughout the electricity system and the nation by installing CHP and WHP systems. While these investments will reduce regional and national emissions, on-site emissions at CHP-operating facilities may modestly increase. To encourage these investments, EPA should find a way to assure hosts that actions taken by facilities that are not directly covered by the rule to help states comply with the CPP will not adversely affect them under any potential future carbon pollution NSPS for another sector.

⁴⁰ 79 Fed. Reg. at 34956-57.

⁴¹ U.S. EPA, Jan. 8, 2014, 79 Fed. Reg. 1430, 1448, “Proposed Rule: Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units.”

⁴² U.S. Energy Information Administration, Frequently Asked Questions: How much electricity is lost in transmission and distribution in the United States? (reporting “about 6%”) (<http://www.eia.gov/tools/faqs/faq.cfm?id=105&t=3>) (visited May 9, 2014); the EPA State Plan Considerations TSD notes EIA indicating T&D losses at 7 percent (Sec. 4.2.2, p. 50).

⁴³ 79 Fed. Reg. at 34833.

3. EPA Should Provide Guidance to States to Enable them to Most Effectively Incorporate CHP and WHP into their Compliance Plans.

The proposed rule sets emissions targets, but allows states to determine the best way to achieve them. While EPA has said that states can go beyond the building blocks to achieve their targets, it does not explain how CHP and WHP at unaffected units might fit into a state plan. To the contrary, some of EPA's public materials on the CPP do not even list CHP or WHP as an example of a potential state compliance measure.⁴⁴ EPA should ensure that states are aware that CHP and WHP can be valuable compliance tools and provide appropriate guidance for states to include policies that support their appropriate deployment in their compliance plans. EPA acknowledges that it "intends to develop guidance for evaluation, monitoring, and verification (EM&V) of renewable energy and demand-side EE programs and measures incorporated in state plans."⁴⁵ It is not clear whether this commitment includes attention to CHP and WHP. In particular, states will need models detailing the best way to include CHP and WHP in renewable portfolio and EE standards, and guidance on appropriately crediting CHP output and emission impacts. These written materials can be supplemented with a CHP and WHP conference for states and other stakeholders involved in developing compliance plans.

Again, the Alliance applauds EPA for its recognition and encouragement of EE as a key emissions reduction strategy, one that offers cost and energy reliability as well as environmental benefits. We thank you for the opportunity to comment on this rule and for EPA's open stakeholder engagement process. We hope that these comments are useful. Should there be any questions about these comments, please contact the undersigned at 202-530-2234 or rsobin@ase.org.

Sincerely,



Rodney Sobin
Director of Research and Regulatory Affairs
Alliance to Save Energy

⁴⁴ See, e.g., U.S. EPA, "EPA Fact Sheet: Clean Power Plan, National Framework for States" <http://www2.epa.gov/sites/production/files/2014-05/documents/20140602fs-setting-goals.pdf>

⁴⁵ 79 Fed. Reg. at 34909.