November 26, 2014

VIA EMAIL
Environmental Protection Agency
EPA Docket Center (EPA/DC), Mail code 28221T
Attn: Docket ID No. EPA-HQ-OAR-2013-0602
1200 Pennsylvania Ave. NW
Washington, DC 20460
A-and-R-Docket@epa.gov

Re: Docket ID No. EPA-HQ-OAR-2013-0602 – *Joint Energy Efficiency Stakeholder Comments on Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 FR 34830 (June 18, 2014)* – Concerning Evaluation, Measurement and Verification, Reporting Requirements and Guidelines for Energy Efficiency

Dear Administrator McCarthy:

These joint comments are provided to the U.S. Environmental Protection Agency (EPA) regarding the evaluation, measurement and verification (EM&V) requirements and guidelines for energy efficiency (EE) under EPA's proposed Building Block 4 of the Clean Power Plan (CPP). These comments are supported by the following signatories to these comments, herein after referred to as the "Joint EE Stakeholders." [1]

Acadia Center
Alliance to Save Energy
American Council for an Energy Efficient Economy
Connecticut Department of Energy and Environmental Protection
Conservation Services Group
Home Performance Coalition
Massachusetts Executive Office of Energy and Environmental Affairs
Natural Resources Defense Council
Northeast Energy Efficiency Partnerships
Northwest Regional Technical Forum
Rhode Island Office of Energy Resources
Southeast Energy Efficiency Alliance
South-central Partnership for Energy Efficiency as a Resource
Southern Alliance for Clean Energy
Vermont Energy Investment Corporation

[1] These comments reflect the position of the signatories and do not necessarily represent the positions of the signatories' members, sponsors, or Board members.

Some of these signatories may also provide separate or supplemental comments to EPA addressing other issues regarding the proposed CPP, and/or more detailed comments on certain EM&V issues. Questions regarding these comments should be directed to: Julie Michals at Northeast Energy Efficiency Partnerships (NEEP) (jmichals@NEEP.org) or Steven Nadel at the American Council for an Energy Efficient Economy (ACEEE) (snadel@aceee.org).

INTRODUCTION

The Joint EE Stakeholders applaud the EPA for including EE programs and significant levels of energy savings in the determination of each state's emissions rate reduction goals. Furthermore, the Joint EE Stakeholders appreciate that EPA documented important background information and recognized key considerations with regard to EM&V and reporting of EE impacts in its proposed rule and supporting Technical Support Document (TSD) – State Plan Considerations. The comments herein respond to both relevant sections of the proposed rule and the more detailed considerations set forth in the TSD, and provide specific recommendations that can assist EPA in its effective and manageable development and implementation of EM&V requirements and guidance for states so as to ensure states can readily include EE as a viable strategy in their State Plans to meet their carbon reduction goals.

Acadia Center is a non-profit, research and advocacy organization committed to advancing the clean energy future. Acadia Center is at the forefront of efforts to build clean, low carbon and consumer friendly economies. Acadia Center's approach is characterized by reliable information, comprehensive advocacy and problem solving through innovation and collaboration.

The Alliance to Save Energy, founded in 1977 by Senators Charles Percy and Hubert Humphrey, is a nonprofit 501(c)(3) coalition of business, government, environmental and consumer leaders that supports energy efficiency 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 energy efficiency as a means to mitigate the environmental impacts of energy use as well as to achieve other benefits.

The American Council for an Energy Efficient Economy is a nonprofit, 501(c)(3) organization that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors, primarily in the U.S., including work at the national, state and local levels. ACEEE conducts in-depth technical and policy analyses, advises policymakers and program managers and works collaboratively with businesses, government officials, public interest groups, and other organizations. ACEEE was founded in 1980 and publishes about 30 reports per year on a wide variety of energy efficiency topics. ACEEE has been involved in program evaluation issues since the 1980's and has written and spoken frequently on the topic.

The Connecticut Department of Energy and Environmental Protection (DEEP) is charged with conserving, improving and protecting the natural resources and the environment of the state of Connecticut as well as making cheaper, cleaner and more reliable energy available for the people and businesses of the state. The agency is committed to playing a positive role in rebuilding Connecticut's economy and creating jobs, and to fostering a sustainable and prosperous economic future for the state.

Conservation Services Group, Inc. (CSG) designs and delivers cost-effective energy efficiency programs to help millions of homeowners save energy. CSG conducts home energy assessments for utilities and energy efficiency organizations nationwide, saving more than 3,473,700 MBTUs on behalf of its clients in 2013 alone. CSG has helped more than 3.1 million people improve energy savings at home, and is working to reach millions more as it helps build a clean energy economy.

The Home Performance Coalition creates energy-efficient, healthy, sustainable homes through education, training, advocacy, and outreach. The Home Performance Coalition unites the many voices of the home performance and weatherization industry, analyzes industry trends and issues, provides education to advance the standards and practices of our industry, and supports collaboration and business development through all sectors. Sponsored by an array of industry leaders, the Home Performance Coalition is committed to a robust industry that makes all of America's homes more resource efficient, healthy, durable, resilient, and affordable.

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) oversees both environmental and energy agencies, including the Department of Environmental Protection, Department of Energy Resources and Department of Public Utilities, and is committed to protecting the environment and pursuing a clean energy future.

The Natural Resources Defense Council (NRDC) is an international nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, our lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and the environment.

Northeast Energy Efficiency Partnerships, Inc. is a non-profit 501(c)(3) organization founded in 1996, which works regionally with key industry players across the Northeast and Mid-Atlantic regions to advance energy efficiency in buildings. NEEP's work includes facilitating the Regional Evaluation, Measurement & Verification (EM&V) Forum, an effort involving nine states across the Northeast and Mid-Atlantic regions to coordinate energy efficiency evaluation research, and to build transparency and greater consistency across states for measuring, evaluating and reporting efficiency program impacts, including informing national EM&V protocols. The Forum is guided by a Steering Committee represented by utility commissioners from each participating jurisdiction, and state energy office and air regulatory representatives.

The Northwest Regional Technical Forum (RTF) was formed in 1999 at the request of Congress to develop "consistent standards and protocols for verification and evaluation of energy savings…" Covering 4 states in the Northwest region, the RTF provides centralized and

unbiased technical review of energy savings data and assumptions, cost-effectiveness methodologies and assumptions, and develops standard protocols and guidelines for savings estimation standard protocols and guidelines for savings estimation.

The Rhode Island Office of Energy Resources works closely with private and public stakeholders to increase the reliability and security of its energy supply, reduce energy costs and mitigate against price volatility, and improve environmental quality. By recommending and implementing smart energy policies - such as those that promote energy efficiency and renewable energy - the OER helps reduce Rhode Island's dependence on out-of-state fuels, advancing its State as a national leader in the new clean energy economy.

The South-central Partnership for Energy Efficiency as a Resource (SPEER) is a non-profit regional energy efficiency organization with a mission to accelerate the adoption of advanced building systems and energy efficient products and services in the South-central US. Its purpose is to create a forum to advance the understanding and adoption of energy efficiency as a low-cost energy resource, and to design, implement, coordinate, and support regional projects to promote high energy performance and clean distributed energy in the built environment.

The Southeast Energy Efficiency Alliance (SEEA) serves 11 states in the southeast United States. SEEA drives market transformation in the Southeast's energy efficiency sector through collaborative public policy, thought leadership, programs and technical advisory services.

Southern Alliance for Clean Energy promotes responsible energy choices that create global warming solutions and ensure clean, safe and healthy communities throughout the Southeast. For over 25 years, SACE has worked as a strong defender of the environment, challenging the status quo and working to minimize the impact of the energy sector on our region's communities, natural resources and economies. SACE is committed to ensuring that communities throughout the Southeast never have to choose between a healthy environment and a stable economy.

The Vermont Energy Investment Corporation (VEIC) reduces the economic and environmental costs of energy use, offering intelligent energy solutions to communities that are moving toward smart energy practices. Founded in 1986, VEIC is internationally recognized for advancing energy efficiency, conservation, and renewable energy. The organization created and operates three comprehensive energy efficiency utilities: Efficiency Vermont, Efficiency Smart in Ohio, and the District of Columbia Sustainable Energy Utility. With this deep practice in urban, suburban, semi-rural, and rural communities, VEIC also undertakes research and policy projects in transportation efficiency. The organization has practice strength in evaluation, measurement, and verification (cost-effectiveness screening of efficiency and renewable measures), and in building codes and standards. VEIC is internationally recognized for its treatment of clients and customers as partners in advancing energy efficiency and renewable energy, and for offering well-informed and critically evaluated program design, planning, and implementation services.

A. Comments on EPA's Proposed CPP Rule on EM&V (pp. 34920-21)

EPA's Final CPP Rule should set forth the following provisions:

1. Differentiate EM&V and reporting requirements between states using mass-based vs rate-based approach

EPA's Final Rule should confirm whether EM&V of EE programs, and reporting of energy savings results, is only required in states that choose to comply through the CO_2 emission rate approach, where this is necessary for determining the energy savings credits that get incorporated into the determination of the CO_2 emissions rates for compliance purposes. In states that choose the mass-based approach, compliance is through measurement of the actual CO_2 emissions of affected electric generating units (EGUs). As such, consistent with EPA's TSD (at p. 34 footnote 48), some parties to these comments opine that the reporting of EE impacts and demonstration of compliance with the CPP Rule EM&V requirements or guidance is not applicable or necessary for mass-based states. Such states, however, may choose to make public information on their EE savings, impacts and underlying EM&V practices in the interest of documenting the outcomes of their programs and sharing with other states. Other parties to these comments opine that there may be a need or benefit to mass-based states making available, at EPA's request, information regarding relevant EE savings data and supporting documents in a format acceptable to EPA, in order to support data needs in the context of accounting for import/export issues,[2] and/or to allow for comparison of state EE activities and impacts across states, regardless of whether states use a rate-based or mass-based approach. EPA should consult key stakeholders on this issue prior to making a final determination in its Final Rule.

2. Identify key principles by which EPA intends to regulate its EM&V requirements for energy efficiency

EPA states in its proposed rule that its goal in developing EM&V guidance is to assure that such guidance is consistent with industry-standard EM&V approaches, leverages EM&V resources and infrastructures already in place in many states, and strikes a reasonable balance between EM&V costs, rigor and value of resulting information. The Joint EE Stakeholders support this goal, which is embodied in the following proposed principles that EPA should include in its Final Rule, whereby it states its intent to:

a) Allow **flexibility for states** to include EE in their state plans, recognizing states have different levels of experience with EE and EM&V;

b) Provide **clear** EM&V requirements that support **fair treatment** across states; and

c) Provide states with **transparency and clarity** in required EM&V and EE savings reporting **documentation**;

d) Support a **streamlined EM&V and reporting review process** for EPA.

[2] These joint comments do not address nor provide any opinion on issues related to treatment of importing or exporting power across states.

These principles are furthermore consistent with a number of EPA's provisions and considerations in its proposed rule and TSD, and can support overall guidance to EPA's formulation of EM&V requirements and guidance as discussed further in these comments.

3. Describe the purpose of EPA's supporting EM&V Guidance, including the development, periodic review and updating process of such EM&V Guidance

EPA's Final Rule should state that the purpose of its EM&V guidance is to describe a process by which a state can produce appropriately accurate and unbiased estimates of savings from EE measures and programs. The details of such guidance, in terms of its scope, applicability and minimum criteria, are addressed below in Section II of these comments.

Importantly, the Joint EE Stakeholders make the process recommendation that the initial development of the EM&V Guidance should occur *prior to* the issuance of the Final Rule, in consultation with EE experts, and whereby EE stakeholders have the opportunity to review and provide comment on the draft EM&V guidance prior to EPA's June 2015 issuance of its Final Rule and supporting EM&V guidance.

The Final Rule should set forth that EPA's EM&V guidance will be periodically reviewed and revised in order to take advantage of experience and lessons learned as states implement and evaluate their energy efficiency programs. Finally, the Final Rule should describe the process for updating the EM&V Guidance, including purpose of such updates, timing relative to State Plan updates or modifications and interim reporting, and process for review and comment of such updates by the states and interested parties.

4. Create standards for state reporting of EM&V plans, EM&V practices, and savings estimates that allow easy comparison across program administrators and states.

EPA's Final Rule should make clear the need for and purpose of standardized reporting for EE to support a streamlined process for EPA to review and approve state EM&V plans and EE savings reports relative to the state plans. Such standardized reporting should be described in EPA's EM&V guidance, accompanied by templates in a format that can readily be used by states. Such templates should build from existing state, regional or national EM&V plans, frameworks and reporting practices so as to avoid duplicative or excessive reporting for states that are often already required to submit more than one annual EE report (e.g., to their state PUC, to EIA DSM Form 861). Section II below provides more specific recommendations in the context of EPA's development of EM&V and reporting guidance.

5. Encourage regional collaboration on EM&V, so that more states use similar analytic methods, assumptions, and data sources, and states can share the burden of developing resource-intensive inputs.

EPA should encourage states to work regionally where possible/applicable to develop common regional assumptions (recognizing variations will exist based on adjustments to account for different climate zones, implementation models, participants types, etc.), and conduct joint

research on key savings assumptions parameters where such data is especially needed. Such economies of scale not only help states to leverage research funds across states, but also lead to greater consistency. Examples of such efforts include the NW Regional Technical Forum (covering 4 states in the northwest), the Regional EM&V Forum (covering 9 states in the Northeast/Mid-Atlantic regions), and the newly formed California Technical Forum (Cal TF), which in part models the NW RTF, and coordinates with the Northwest.

6. Allow states to base their EE Credits on energy savings impacts (MWh per year) and not require time-differentiated savings.

EPA states that "to assess avoided CO2 emissions impacts, time-differentiated (i.e. hourly, seasonal) data may be more useful than MWh/year - necessary for estimation of the marginal avoided CO2 emissions related to electric generation" (at TSD Section V.A.4.2.3). The Joint EE Stakeholders recognize the reasons for which EPA may find time differentiated EE savings values informative to support emissions modeling and impact of EE on the dispatch of EGUs. However, adding this layer of complexity to documenting the timing of savings based on 8760 loadshape curves will present challenges for most states that do not have such information, and where such research is very expensive. Given the many other priority areas for EM&V guidance on which EPA should focus, as covered in these comments, the Joint EE Stakeholders recommend that EM&V requirements for Clean Power Plan EE credits should be based on *energy savings impacts* (MWh per year), as this is the value that is factored into CO_2 emissions rates through adjustments to the denominator. However, where states are able to document that EE savings occur during specific peak hours, and provide greater carbon emission reductions, such states should be able to get such credit. Further, EPA could designate US DOE to review and report to EPA on the status of availability of load shape data across the states and rigor of such data, and based upon DOE's review, determine options for states to access and use such data (e.g., the role of regionally coordinated research, and role of national loadshape research and data compilation/modeling efforts such as by the Electric Power Research Institute).

7. Identify clear roles for key federal agencies and the states in developing and implementing EM&V guidance.

The Final Rule should make clear the relative roles for federal agencies and the states with regard to EM&V plans, acceptable EM&V protocols/practices, and documentation and reporting of EE savings and associated avoided emissions. The scope of the recommended list below is discussed in further detail for some areas later in these comments.

EPA's role should include a) establishing, and revising over time, minimum EM&V standards and approaches states may use to support inclusion of estimated EE savings and associated avoided emissions in state compliance plans; b) developing and updating the supporting CPP EM&V guidance document (with public review and input from interested stakeholders); c) designating an entity to oversee the development, maintenance and updating of a list of acceptable EM&V methods and protocols; and d) reviewing state compliance plans and reports relative to the documentation required in EPA's EM&V guidance.

States role should include a) developing their EM&V plans and EE reports consistent with EPA's EM&V and reporting requirements and guidance; b) identifying procedures for periodic review and revision to EM&V practices to reflect changes in EPA guidance and evolution of state experience and expertise in EM&V practices; and c) establishing state internal filing and EE reporting requirements by relevant entities that comprise the state's EE building block under its State plan. EPA should recognize that each state will determine its own internal process and roles of intra-state agencies and other relevant entities to support EPA's review of state CPP EM&V plans and EE reports.

8. Describe the approval and dispute process for EM&V Plans and EM&V requirements.

The CPP Final Rule should clearly set forth the approval and dispute process available to states to address any differences with EPA's determination of whether a state's EM&V plan and/or reported EE savings and avoided emissions are in compliance with EPA's rule.

9. Set forth a state compliance schedule and requirements for filing an EM&V Plan and documentation of EE savings and supporting EM&V relative to EPA's guidance.

EPA should provide a clear schedule, and/or process for determining such schedule, for states with regard to:

a) A state's submission of its EM&V plan;
b) EPA's review of a state's initial EM&V plan, opportunity and timing for state modifications to the plan and resubmittal of the plan, and EPA approval of such plan;
c) Interim reporting of EE savings and avoided emissions during the period 2020-2030 to EPA on progress towards achieving EE savings and carbon emission goals relative to a State's Plan and supporting EM&V plan (see further comments below on interim reporting);
d) A state's interim modifications to its EM&V plan, as informed by e.g., interim reporting results or changes to planned EM&V activities, and EPA approval of such revised EM&V plans.

B. Comments to EPA on EM&V Guidance for Energy Efficiency

EPA seeks comment on a range of issues regarding the development of EM&V guidance in its proposed rule including:

- The suitability of current EM&V approaches in the context of an approvable state plan, and on whether harmonization of state approaches, or supplemental actions and procedures should be required in an approvable state plan (TSD Section V.A.4 at p.46);
- The appropriate basis for and technical resources used to establish such guidance, including consideration of existing state and utility protocols, as well as existing

international, national and regional consensus standards or protocols (TSD Section V.A.3.1 at p.39);

- The merits of whether guidance should recognize different types of EE measures and programs with respect to implementation history and experience, existence of applicable EM&V protocols and methods, and the nature and type of program oversight (e.g., whether or not subject to PUC oversight), or whether guidance should limit consideration to certain well-established programs (as identified in TSD Section V.A.4.2.1 at p.47);
- The suitability of potential approaches described in the TSD and other appropriate reporting and recordkeeping requirements for affected entities beyond affected EGUs (TSD Section V.A.6 at p.58).

The following comments and recommendations respond to EPA's request for comment in these areas to help EPA establish guidance for acceptable quantification, monitoring and verification of EE for an approvable EM&V plan, including scope, applicability and minimum criteria. The comments herein do not necessarily address each of the above areas independently, but rather are cross-cutting to these areas. Additionally, these comments address additional topical EM&V issues on which EPA seeks comment (e.g., avoided T&D losses).

1. EPA's EM&V guidance should reiterate the key principles provided in Section I of the comments (while also including them in the Final CPP Rule

To begin, the Joint EE Stakeholders commend EPA for recognizing the need to balance the rigor of EE savings and cost, and ensure transparency of savings where it states "*To document and verify that avoided CO_2 emissions from energy efficiency programs and measures are real and persistent,* ***impact evaluation must be rigorous and transparent.*** *Impact assessment should also consider the* ***appropriate balance between certainty of results and the EM&V costs*** *to achieve a specified level of certainty."* (TSD Section V.A.4.1 at p.46)

Consistent with EPA's recognition for balancing rigor of savings with costs, and ensuring transparency of savings, the Joint EE Stakeholders recommend that EPA's EM&V guidance set forth clear principles with regard to how it intends to establish and regulate its EM&V requirements and guidance, by including the recommended principles provided in Section I above (also for inclusion in the Final CPP Rule).

2. EPA should support a balanced and workable approach for broad inclusion of EE in State Plans.

The Joint EE Stakeholders appreciate that EPA does not intend to limit the types of EE measures and programs that can be included in a state plan, where states can have the flexibility to include a wide range of EE policies and programs in their emissions reduction compliance plans such as: common and emerging EE programs; ESCO private sector investments; building codes and code compliance programs; state-established appliance and equipment efficiency standards; and other programs/activities. EPA's guidance, however, should ensure that reported savings results from the range of EE programs or investments in a state's compliance plan should be appropriately

comparable (e.g., where the EM&V methods used to determine savings for different types of EE activities representing a significant portion of savings be based on a similar level of rigor.) See further discussion below on conducting impact evaluations for major programs (#9) and savings rigor (#11).

To facilitate EM&V for very small utilities such as small municipal utilities or rural electric cooperatives, or community programs, we recommend that EPA encourage EM&V to be carried out for multiple utilities jointly in collaboration.

3. EPA should provide for transparent and comparable definitions and documentation of EE impacts and supporting EM&V practices across states.

EPA states that EM&V documentation will be an important component of state plans that incorporate EE, because "transparency and reproducibility increase overall confidence in reported energy savings results" (TSD Section V.A.6. at pgs. 58-59). EPA further states that the following two basic criteria for documentation should be applied to state plans:

- "Energy savings documentation should be provided at a level of detail that allows for recalculation of programs energy savings totals; and
- EM&V information in state plans should be provided in a consistent manner across states to allow for comparison, benchmarking, and more efficient review of plans by the public and the EPA."

The Joint EE Stakeholders support these criteria, and offer the following recommendations to support states' EM&V documentation, and EPA's review of such documentation.

a) EPA should ensure consistent use of EM&V terminology in its guidance, and refer to the State Energy Efficiency (SEE) Action Network Program Impact Evaluation Guide[3] Glossary as the guiding source of definitions, and direct states to use this Glossary in development of their EM&V plans and reporting their EE savings. EPA should also describe the process of maintaining and updating the Glossary.

b) EPA should create a standardized EE reporting form that reports EE savings at the program level, building on existing standardized EE savings reporting templates or platforms (e.g., Regional Energy Efficiency Database (REED)[4], EIA's Form 861 Schedule D, Consortium for Energy Efficiency's Annual Industry Report, LBNL EE reporting database, etc.), where these reporting platforms are already working to develop greater consistency in reporting typology. In order to support EPA's ability to recalculate EE savings should it closely examine a state's detailed calculation, EPA should consider a reporting construct similar to the *Efficiency Power Plant planning tool* developed by the Regulatory Assistance Project (RAP).[5]

c) EPA should develop a standardized form for states to identify the EM&V approaches or methods used to evaluate their programs, building on existing standardized EM&V

[3] See https://www4.eere.energy.gov/seeaction/sites/default/files/pdfs/emv_ee_program_impact_guide_1.pdf
[4] See http://www.neep.org/initiatives/emv-forum/regional-energy-efficiency-database
[5] See http://www.raponline.org/featured-work/cutting-through-the-fog-to-build-energy-efficiency

reporting forms (e.g., the recently developed Standardized EM&V Methods Reporting Forms[6] and on-line format developed by the Regional EM&V Forum).

d) EPA should consider supporting the development of a national EE registry (e.g., The Climate Registry proposed EE Registry[7]) where such a registry can support state documentation of EE savings, underlying EM&V methods used and level of rigor (e.g., confidence/precision level and treatment of systemic error), and associated avoided emissions, using standardized forms. Such a registry could also support the exchange of tradable efficiency credits across states and help avoid double-counting of EE credits.

e) EPA should explore, via the US DOE State Energy Efficiency Action Network (SEE Action)[8] and/or a professional organization such as the International Energy Program Evaluation Conference (IEPEC), the use of certified evaluators by states to report EE savings to help ensure that qualified persons with appropriate training and experience were responsible for managing the state's EM&V activities set forth in their EM&V plan in accordance with EPA's requirements and guidance. As an alternative to certification, or supplement to it, EPA should support training efforts that could be offered to help states new to EM&V to identify and retain qualified practitioners to support their EM&V needs.

The above recommendation '(e)' responds to EPA's consideration that "Options for EM&V requirements and guidance for state plans…. is to prescribe who can conduct EM&V activities and prepare energy savings documentation, and to specify their needed qualifications. This approach is analogous to professional certification requirements in the accounting and engineering fields, in which a minimum level of credibility, rigor, and accountability is imparted to the services provided by qualified individuals and firms. Criteria for eligible evaluators might include a demonstration of independence from those implementing or administering the energy efficiency programs and measures (i.e., identification and mitigation of potential conflicts of interest) and required minimum levels of training, experience, or certification. This approach recognizes that the qualifications, integrity, and independence of those conducting EM&V of energy efficiency programs and measures, and preparing energy savings estimates, is critical to assuring best-practice EM&V. However, such requirements alone may not ensure sufficient evaluation rigor." (TSD Section V.A.5. at p. 56)

Importantly, the Joint EE Stakeholders note that EPA makes several references to the term "certify" or "certification" in its TSD which warrants some clarification in order to avoid confusion with use of the term. For example, EPA states that "energy savings are frequently **certified** by the PUC as compliant with requirements defined in a pre-approved EM&V plan." (TSD Section V.A.3.1. at p. 41 – *bold emphasis added.)* It also makes a similar reference in its illustrative example of an EM&V Plan that includes documenting **"**Name of the state or regional government entity, or non-governmental entity, which will review and **certify** the evaluated savings."

[6] See http://www.neep.org/initiatives/emv-forum/model-emv-methods-standardized-reporting-forms
[7] See http://www.theclimateregistry.org/downloads/2014/09/TCR_An-EE-Registry.pdf
[8] Via the SEE Action EM&V Work Group – see https://www4.eere.energy.gov/seeaction/working-group/evaluation-measurement-and-verification

(TSD Section V.A.6.1. at p. 59 – *bold emphasis added.)* It should be clarified that public utility commissions do not generally 'certify' savings, but rather they 'approve' them. Furthermore, EPA states that information about evaluators should include "Certification that evaluators were selected through a public bid process, and are third-parties unaffiliated with efficiency program administrators or the state government." (TSD Section VI.A. at p. 77). The term 'certify' for energy efficiency evaluation is typically used in the context of a third-party evaluator that 'certifies' the results of an evaluation.

4. EPA should provide an EM&V Plan template with specific plan components to help guide states on what needs to be in their EM&V plan.

EPA should develop a sample EM&V plan template for states to use or refer to in developing their EM&V plan. In addition to comprehensive list of key elements of an EM&V plan that EPA identifies in its TSD (Section V.4.6.1 at p.59), a state's EM&V plan should also include an EM&V Framework that lays out a multi-year evaluation plan (e.g., a 3-year plan), with timing of evaluation efforts and processes including planning, implementation, reporting, and updating of savings assumptions. The EM&V plan should also describe the state's updating process for its planned EM&V activities, given likely changes in program plans, schedules and budgets, as is common practice where states have multi-year planning cycles.

EPA should refer to the SEE Action Network *Impact Evaluation Guide* Chapter 8 as the basis for developing a template EM&V plan, including guidance on elements of an EM&V framework.

Finally, EPA should offer to review state EM&V plans and provide feedback prior to state submission, and provide comments so that states have greater assurance that their plans will ultimately be accepted.

5. EPA should designate US DOE to convene a formal EM&V protocol process to identify a list of industry-accepted EM&V methods and protocols for states to use, including developing new protocols where gaps are identified, and maintaining and updating the protocol list. An initial list of acceptable EM&V protocols/methods should be completed by publication of EPA's final rule so that states know the EM&V rules when they prepare their plans. In reviewing existing protocols, if a protocol is not fully acceptable in its current form, additional information that is needed for the protocol to be approved should be identified.

EPA should designate US DOE to convene an independent entity or task force of EM&V experts as soon as possible (i.e., in early 2015) to develop a list of acceptable EM&V methods and industry-accepted protocols, and identify gaps/needs where protocols need additional information or where protocols do not exist for certain program types or EE activities, priority areas and schedule for development. Such a protocol process should identify appropriate existing and/or new EM&V methods protocols for determining baselines, verification of installations, and estimating EE savings and measure persistence, and other identified areas for specific program types or projects (e.g., building code programs).

The process for identifying industry-accepted best practices should focus on citing existing protocols that are largely in use by states, or recently developed for the purpose of documenting best practices in EM&V. These include, but are not limited to, the national, regional, and state EM&V protocols or guidelines in the table below. These documents vary in their EM&V focus and level of detailed guidance (some are at a general, framework level, while others are program or measure-type specific). Further, these documents have been developed over the years and in some cases updated on a periodic basis, and are expert-developed and peer-reviewed. Given the differences between these protocols, EPA may need to specify the types of energy efficiency requirements, programs or measures for which each pre-approved EM&V protocol is appropriate and whether any additional clarifying information needs to be provided when using a specific protocol.

Example List of Existing EM&V Protocols and Guidelines*
National Protocols
U.S. DOE Uniform Methods Project (UMP) Protocols (link)
International Performance Measurement and Verification Protocol® (IPMVP) (link)
Federal Energy Management Program (FEMP) M&V Guidelines (link)
ASHRAE Guideline 14, Measurement of Energy and Demand Savings (link)
NAESB Wholesale/Retail Electric Quadrant Energy Efficiency M&V Standards (contact NAESB)
SEE Action Energy Efficiency Program Impact Evaluation Guide (link)
U.S. DOE Superior Energy Performance (SEP) Measurement and Verification Protocol for Industry (link)
Regional or State-Specific Protocols
Northwest Regional Technical Forum (RTF) Operative Guidelines (link)
NEEP Regional EM&V Methods and Savings Assumptions Guidelines (link)
ISO New England Manual for M&V of Demand Reduction Value from Demand Resources (link)
PJM Manual 18B: Energy Efficiency Measurement & Verification (link)
California Evaluation Protocols (link)

**The above list is not exhaustive and does not include all existing state EM&V protocols or guidelines*

In addition to developing a list of acceptable EM&V methods and protocols, the proposed protocol process should consider a 'rigor' protocol that identifies variations in level of rigor of the protocols, including criteria for use of deemed savings values, so as to allow for reasonable comparability of savings rigor across states. See further comments and recommendations under # 11 below.

6. EPA should recognize the specific needs for states just beginning to implement large scale programs and not create unreasonable barriers to inclusion of EE in state plans.

For states that are relatively new to EE program implementation or have not yet developed comprehensive EE program portfolios, EPA should support the use of preliminary planning or deemed savings estimates that are based on EM&V studies conducted on the same measures and program design from other geographic areas[9], and where such studies are based on acceptable EM&V methods or protocols.

Further, EPA should encourage the development of regional and national baseline and measure life assumptions for states to use that do not have well developed Technical Reference Manuals

[9] With similar weather if the performance is weather dependent.

(TRMs), using savings assumptions from existing TRMs (regional for climate- and other regionally-sensitive measures, national for measures that available data indicate do not vary substantially between regions).

EPA should recommend that DOE (or other designated entity) develop region specific savings assumption database(s), where needed, with data for priority measures to support inclusion of EE in states with limited evaluation experience, borrowing from savings assumptions in that region and other regions, as appropriate. Savings assumptions should focus on unit-savings estimates, measure life, and baselines.

EPA should 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 to 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 beyond 2019 into the compliance period and for which the state seeks credit for associated avoided emissions. Such states should describe in their EM&V Plan how they will ramp up their evaluation efforts and conduct EM&V studies of their own starting in 2020.

7. EPA should define baseline as 'business as usual,' consistent with baseline definitions provided in the SEE Action Network Impact Evaluation Guide

Building from existing EM&V guidelines, the Joint EE Stakeholders recommend that EPA make clear in its EM&V guidance the definition for baseline conditions as based on 'business as usual' (BAU), and reference specific categories as follows: existing conditions, codes and standards, or common practice, as illustrated in the following table. Additionally, BAU baselines will need to be defined for particular markets.

Where multiple boxes are checked in the table below, a business-as-usual or current practice baseline will generally be the more stringent baseline (e.g. if current practice goes beyond code, then the current practice baseline should be used). These issues are also discussed extensively in Chapter 17 of the *DOE Uniform Methods Project*, particularly in the section on "Common Practice Baselines" beginning on page 34.[10] It is also recommended that acceptable methods for determining baselines be identified through a formal protocol process led by US DOE.

[10] See http://energy.gov/sites/prod/files/2014/09/f18/Chapter%2017%20--%20Estimating%20Net%20Savings.pdf Section 2.4.

PROGRAM CATEGORY FOR PURPOSES OF BASELINE DETERMINATION	EXISTING CONDITIONS BASELINE	CODES AND STANDARDS BASELINE	COMMON PRACTICE BASELINE
Early replacement or retrofit of functional equipment still within its current useful life Process improvements	X Existing conditions baseline for the remaining life of the replaced equipment or process	X C&S baseline for the time period after the remaining life of the replaced equipment	X Common practice baseline for the time period after the remaining life of the equipment
Replacement of functional equipment beyond its rated useful life		X	X
Unplanned replacement for (of) failed equipment		X	X
New construction and substantial existing building improvements		X	X
Non-equipment based programs (e.g., behavior-based and training programs)			X What people in a control group would be doing in the absence of the program

Source: SEE Action Network, "Energy Efficiency Program Impact Evaluation Guide," (December 2012) Table 7.1 Standard Practices for Selection of Baselines for Common Program Categories, p. 7-3.
https://www4.eere.energy.gov/seeaction/publication/energy-efficiency-program-impact-evaluation-guide

8. Energy efficiency savings estimates should be based on '*savings beyond business as usual.*' Such savings should not account for attribution of EE savings (e.g., free-ridership and spillover effect), since EPA's focus is on total state emission reductions regardless of why the savings happened (although states should demonstrate there is no double-counting of EE efforts within the state plan).

In its TSD, EPA requests comment on whether its EM&V requirements and guidance should require reporting of EE savings on either "gross' and/or "net" basis in order to promote national consistency in measuring the impact of EE measures across state plans (TSD at Section V.4.2.4 at p.53). For purposes of EPA's CPP rule and state efforts to achieve their carbon reduction goals, the relevance of 'savings attribution' where e.g., savings are due to EE investment or program participation by effort X versus effort Y, is simply not applicable, given the overall state goal to reduce total emissions.[11] As such, the Joint EE Stakeholders recommend that EPA direct states to report '*savings beyond BAU*' (sometimes referred to as 'adjusted gross savings' or 'net

[11] This reasoning is similar to ISO New England and PJM Interconnection deference to states bidding adjusted gross savings into the wholesale electric forward capacity markets in those regions.

savings lite.'[12] *Savings beyond BAU* should include adjustments from impact evaluations such as verification of installations, adjusting for measure persistence and actual savings achieved per a billing analysis, and corrections to account for data quality control.

Importantly, EPA should ensure that the EE measurement basis used in the target setting process matches the basis used for compliance. EPA should also ensure there is no double counting of EE savings within a state's EE building block across different EE program activities (e.g., ratepayer funded programs vs ESCOs vs municipal EE efforts) or between states.

9. Require states to periodically conduct impact evaluations on their major programs.

In addition to the development of a list of acceptable EM&V methods and approaches proposed above, EPA's guidance should require that major EE programs be subject to an EM&V impact evaluation study conducted at least once every 3-5 years.[13] "Major" programs are defined here as those that account for at least 5-10% of the total EE savings a state claims in any year. Such programs may be broken down into different end uses, delivery components, or other sub-program elements with each studied in a rotation over several years, such that every year some programs or program elements are studied.[14] Such evaluation cycles will provide an important foundation for adjusting evaluation assumptions and methods going forward for major programs.[15] EPA should carefully consider the appropriateness and application of the value ranges provided above for characterizing impact evaluation cycles and 'major' programs as it develops its EM&V guidance and should invite further input from EM&V experts and other key stakeholders.

10. EPA should allow states to use their own T&D loss factors where they exist.

Since emissions reductions are at the power plant, energy savings should include not only end-use savings but also avoided transmission and distribution (T&D) losses. States should use their own T&D loss factors or regional factors where available.

---

[12] See US DOE's Uniform Methods Project, Chapter 17.

[13] States should also be allowed to justify the use of evaluation studies for major programs with a vintage of more than 5 years (e.g., demonstrating the data or assumptions are still applicable or relevant.) This is acceptable practice, for example, in the ISO New England Forward Capacity Market M-MVDR M&V Manual 6-1-14. See http://www.iso-ne.com/participate/rules-procedures/manuals

[14] A program evaluation cycle may involve every program undertaking some level of impact evaluation activity every three years (often more frequently than that), however, rotation strategies that evaluate specific aspects of a program each year can take up to five years to complete a full rotation. For example, for C&I custom measures, one or two end-uses may be studied each year, rotating through all of the end-uses on roughly a five-year schedule. This allows a program administrator to reach the level of measure specificity that actually improves the accuracy of ex-ante savings estimation. In other cases, studies may be planned to address specific parameters within a program over multiple years. A 3-5 year evaluation cycle supports this type of rotation strategy, and ensures a higher level of study quality.

[15] Useful guidance on evaluation planning can be found in the SEE Action Impact Evaluation Guide, Chapter 8.

11. EPA should consider the development of a rigor protocol, including a rating scheme that allows for flexibility for states to include a range of EE program efforts, recognizing different EM&V techniques for different types of EE programs and/or projects, and ramping up of state efforts to invest in EE as a clean power strategy.

EPA proposes three options for guidance on level of rigor for state plans that incorporate EE requirements, programs, and measures (TSD Section V.A.5 at p. 55):

- Establishing specific EM&V requirements with a level of defined rigor for all energy efficiency programs and measures
- Establish specific EM&V requirements for certain types of widely used energy efficiency programs and measures, while establishing a generalized EM&V approach that states can apply to programs that are relatively new, innovative, or untested
- Establish a set of generalized, process-oriented EM&V requirements that apply to all energy efficiency programs and measures, while providing flexibility to customize EM&V approaches.

The Joint EE Stakeholders recommend that EPA designate US DOE, as part of a formal EM&V protocol process, to review and propose how rigor of EE savings should be addressed, including consideration of the above options or a combination thereof, as well as the structure, applicability and workability of a rigor rating scheme. Given the differences among EE experts on how rigor or certainty of savings should be demonstrated as part of state compliance plans (e.g., one size fits all, rating scheme or something else), the Joint EE Stakeholders recommend that EPA focus its guidance development on the many recommendations provided in these comments prior to issuing its Final Rule in June 2015, and turn to developing additional guidance and requirements on the issue of rigor during the latter part of 2015. This timing should still provide sufficient time for states to characterize their EM&V, which they could provide as an updated EM&V plan prior to 2020.

12. EPA should provide guidance on reporting of EE savings, including interim reporting.

EPA seeks comment on the scope and time frames for reporting EE impacts where states include EE in their state plans. EPA provides a list of commonly reporting practices in states from program administrators to their PUCs, as follows (TSD Section VI at p.76-77):

a. State EM&V guidelines, protocols, and/or framework utilized, where applicable
b. Energy efficiency policy or program information reported to PUCs in annual reports:
    - Short description of the policies or programs implemented
    - Implementation schedules and timeframes
c. Energy-savings impacts reported to PUCs in annual reports:
    - Incremental annual and lifetime MWh savings for reporting (in the case of an energy efficiency program) or compliance years (in the case of utility compliance with a multi-year Energy Efficiency Resource Standard)
    - Peak demand (MW) impacts (reported in many, but not all states)
d. Verification documentation, which shows that installation of energy efficiency measures occurred, and the installed measures are capable of generating energy savings
e. EM&V process followed:

- Date and location of on-site facility visits and field observations
- Description of public process for review of overall EM&V approach, EM&V plan, and EM&V results
- Information about evaluators – such as names of firms and individuals performing EM&V activities, and qualifications; certification that evaluators were selected through a public bid process, and are third-parties unaffiliated with efficiency program administrators or the state government

f. EM&V methods used:
   - Deemed savings values - name, date, and public location of technical reference manual (TRM) used for deemed savings values
   - Direct measurement approaches - description of the measurement approaches and reference to the EM&V protocols, standards, and guidance documents used

g. Other documentation:
   - Data about the quantity of measures/projects on which the full program-level energy savings impacts are based (i.e., information describing the sample size and sampling procedures used)
   - Whether net or gross energy savings are estimated, definitions used for gross and net savings, and the basis for gross to net calculations, if applicable

h. Avoided transmission and distribution (T&D) impacts assumptions, if applied

EPA is correct in noting that the EM&V reporting elements listed above vary from state to state in terms of type and level of documentation, and reports are provided in different formats from state to state. As recommended earlier in Section B.3 of these comments, EPA should designate US DOE to develop a sample template reporting form with the information that EPA requires be documented, which may include some but not necessarily all of the reporting elements listed above.[16] This is necessary in order to streamline EPA's review process of reported EE impacts and associated avoided emissions relative to state plans. Importantly, however, consideration should be given to not creating undue burden to states by developing duplicative reporting, where EE program administrators already report to their PUC, the Energy Information Administration (EIA), and in some cases to regional system planners (ISOs/RTOs) for wholesale capacity market purposes. As such, EPA should carefully consider the scope and detail of its reporting requirements, and build on existing state and regional reporting practices so that reporting is complementary to both state and federal reporting needs, and that such reporting be made readily public and accessible. Not only would this help to streamline EPA's review process, but it would also allow states to more readily benchmark their EE programs and impacts across other states, and inform best practices in program design etc. and allow for greater information sharing.[17]

EPA also considers whether lead state agencies that oversee EE programs should be required to certify reported energy efficiency savings impacts on behalf of the state, potentially including

[16] For example, items d) and g) are too detailed to be required, but states should be prepared to provide such supporting documentation to EPA if requested.

[17] An example of consistent reporting platforms across states include the Regional Energy Efficiency Database (REED), managed by Northeast Energy Efficiency Partnerships, Inc. See http://www.neep.org/initiatives/emv-forum/regional-energy-efficiency-database

certification that the values are appropriate and conservative, and meet their approval. As noted earlier in these comments, EPA should encourage such certification, either by a state PUC or some other state agency, and/or consider the value and role of a national EE registry, such as that proposed by The Climate Registry as aforementioned.

Both in the case of reporting and certification, EPA should recognize that state EE activities will not necessarily be limited to PUC regulated EE programs, but could include other types of state EE activities (municipal, community programs, private ESCO investments.) EPA's state plan and reporting requirements should ensure that states can feasibly incorporate or include the range of EE activities in their plans/reports to EPA.

The Joint EE Stakeholders also recommend the following additional information be reported to EPA with regard to a state's EE activities under their state plans:

- Description of any modifications to program implementation relative to that specified in the compliance plan (i.e., changes in measures or programs);
- If applicable, a description of variations between expected and realized savings caused by either applying the latest EM&V results or on differences in the measures installed; and

Finally, with regard to frequency of reporting, the Joint EE Stakeholders recommend that EPA require interim reporting during the CPP 2020-2030 timeframe, so that states can demonstrate to EPA their progress towards their stated EE goals and associated avoided emissions. Such interim reporting should be on a 3 year basis (e.g., starting 2022, 2025, 2028 and 2030). This reporting cycle is consistent with some state multi-year program planning cycles, and states can also align their program impact evaluation cycles with such reporting as practicable.

13. Sufficient resources will be needed to ensure that EPA staff, and any other federal agency that provides support for EPA's EM&V guidance, can effectively implement the Final Rule and EM&V guidance for energy efficiency.

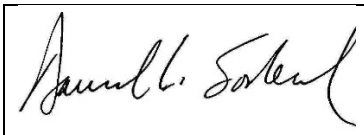
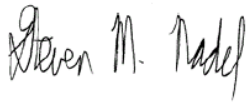
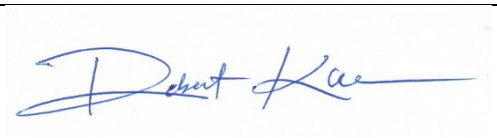
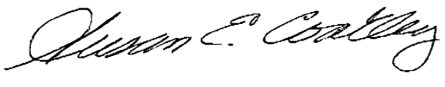
EPA's proposed CPP and inclusion of EE as a major building block provides an important opportunity for states to use the most cost-effective strategy for reducing carbon emissions. The effective implementation of this strategy will depend on the structure of EPA's streamlined review process and its ability to build upon state practices and processes, as discussed throughout these comments, but will also require that EPA has sufficient resources to oversee the review of EM&V plans and ensure compliance with its EM&V requirements, and that other federal agencies providing support for EPA's EM&V guidance likewise have needed resources.

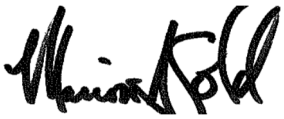
C. CONCLUSION

The Joint EE Stakeholders appreciate this opportunity to comment on EPA's proposed CPP Rule, and are prepared to assist EPA with the development of its EM&V guidance and

supporting tools and resources to help ensure the effective and sustainable implementation of state compliance plans with regard to the inclusion of energy efficiency.

Sincerely,

 Daniel Sosland Executive Director, Acadia Center	 Katerie Callahan President, Alliance to Save Energy
 Steve Nadel Executive Director, American Council for an Energy Efficient Economy	 Commissioner, Connecticut Department of Energy and Environmental Protection
 Patricia Stanton Conservation Services Group	 Brian Castelli President, Home Performance Coalition
 Mark Silvia Secretary, Massachusetts Executive Office of Energy and the Environmental Affairs	 Dylan Sullivan Staff Scientist, Natural Resources Defense Council
 Susan E. Coakley Executive Director, Northeast Energy Efficiency Partnerships	 Tom Eckman Chair, Northwest Regional Technical Forum

 Marion S. Gold, Ph.D. Commissioner, Rhode Island Office of Energy Resources	 Mandy Mahoney President, Southeast Energy Efficiency Alliance
 Doug Lewin Executive Director, The South-central Partnership for Energy Efficiency as a Resource	 Stephen Smith Executive Director, Southern Alliance for Clean Energy
 Scott Johnstone Executive Director, Vermont Energy Investment Corporation	