November 26, 2014

Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Dear Administrator McCarthy,

On behalf of the Midwest Energy Efficiency Alliance, Southeast Energy Efficiency Alliance, and South-central Partnership for Energy Efficiency as a Resource (MEEA, SEEA, and SPEER, respectively), we are pleased to submit to the U.S. Environmental Protection Agency (EPA) the enclosed comments regarding the treatment of energy efficiency in the proposed Clean Power Plan. All of the comments pertain to either the assumptions about energy efficiency that were used to establish states' goals or how it is treated as a compliance pathway. These comments reflect the views of the signatories of this letter – MEEA, SEEA, and SPEER, each Regional Energy Efficiency Organizations as designated by the U.S. Department of Energy – and not the organizations' members or individual entities represented on our board of directors.

We believe that energy efficiency should be included as a pathway for reducing states' carbon emissions and have worked together to expound the ways in which we believe it should be treated in the final rule. Together our organizations cover 25 of the 50 states, and these comments represent a set of principles upon which we have achieved consensus.

The Midwest Energy Efficiency Alliance (MEEA) is a membership organization of state and local governments, energy utilities, research institutes, manufacturers, energy service providers, and advocacy organizations working to advance energy efficiency in North Dakota, South Dakota, Kansas, Nebraska, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, Ohio, and Kentucky. MEEA has worked collaboratively with all stakeholders to support programs, policies, education and training initiatives, and emerging technologies that have produced significant energy efficiency investment, energy and cost savings, economic growth, and enhanced environmental preservation across the region.

The Southeast Energy Efficiency Alliance (SEEA) is a 501(c)(3) nonprofit organization headquartered in Atlanta, Georgia. Established in 2007, SEEA is a nonpartisan organization with a sound commitment to forging productive partnerships between stakeholders. As the only Regional Energy Efficiency Organization (REEO) serving the southeastern United States, SEEA represents the 11-state territory of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. By convening partners,

strengthening enabling policies and strategic programs, and educating stakeholders through technical advisory services, SEEA has established a strong track record of leveraging its extensive network to promote energy efficiency market transformation across the region.

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.

Together, the regions represented by MEEA, SEEA, and SPEER have shown increased enthusiasm for energy efficiency as a driver of job growth, greater economic prosperity, and resilience. We recognize energy efficiency as the least-cost energy resource available for meeting states' energy and environmental needs, and understand that there remain sizable benefits to be reaped from further investment in this resource. Our regions have demonstrated leadership in the adoption of policies and programs to further drive investment in energy efficiency, and we look forward to leveraging our current investments to facilitate cost-effective compliance with EPA's proposed regulations.

Please let us know how we can be of further assistance as you move forward with the rulemaking.

Respectfully submitted,

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Southeast Energy Efficiency Alliance

Doug Lewin
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Joint Comments by the Midwest Energy Efficiency Alliance, the Southeast Energy Efficiency Alliance, and the South-central Partnership for Energy Efficiency as a Resource on the U.S. Environmental Protection Agency's Proposed Clean Power Plan

I. General (pp. 34855-58):

The Midwest Energy Efficiency Alliance, Southeast Energy Efficiency Alliance, and South-central Partnership for Energy Efficiency as a Resource (MEEA, SEEA, and SPEER, respectively) support the general approach of including energy efficiency in the best system of emission reduction (BSER), and allowing flexibility in state compliance plans to include all types of end-use efficiency policies and programs. This approach is critical for cutting power plant CO_2 emissions at least cost. The U.S. Environmental Protection Agency (EPA) should work with states to include energy efficiency as a "first fuel" to reduce carbon emissions in their compliance plans. Energy efficiency should be optimized in state implementation plans, as it is the least-cost energy resource with a national average of approximately 2 cents/kWh.[1]

Many states in the South, Southeast, and Midwest have lagged behind the rest of the country in energy efficiency activity, due to localized factors such as historically low energy prices. However, in recent years, these regions have shown increased enthusiasm for energy efficiency as a driver of job growth, greater economic prosperity, and resilience, and have demonstrated leadership in the adoption of policies and programs to further drive investment in energy efficiency. Within the territory of MEEA, SEEA, and SPEER, a total of 9 states have a dedicated energy efficiency resource standard in place requiring energy savings from utilities, and many others have adopted energy efficiency rules that follow the *National Action Plan for Energy Efficiency: Vision for 2030* recommendations. These policies and others have driven significant investment in energy efficiency. In the Midwest alone, $1.67 billion of ratepayer funds were invested in energy efficiency in 2013. As a result, the 25 states covered by MEEA, SEEA, and SPEER are well-positioned to leverage their current energy efficiency momentum to facilitate more cost-effective compliance with EPA's proposed regulations.

By and large, within most of this geography, energy efficiency has only recently been tapped, and there remain sizable benefits to be reaped from further investment, with significant opportunities to learn from the experience of a few states within these regions that have more extensive energy efficiency program experience. While many of these states are newer to energy efficiency, they have much to gain from its expansion within their borders, and are ideally positioned to "leapfrog" in their implementation of energy efficiency, based on best practices and lessons learned from neighboring states and other jurisdictions.

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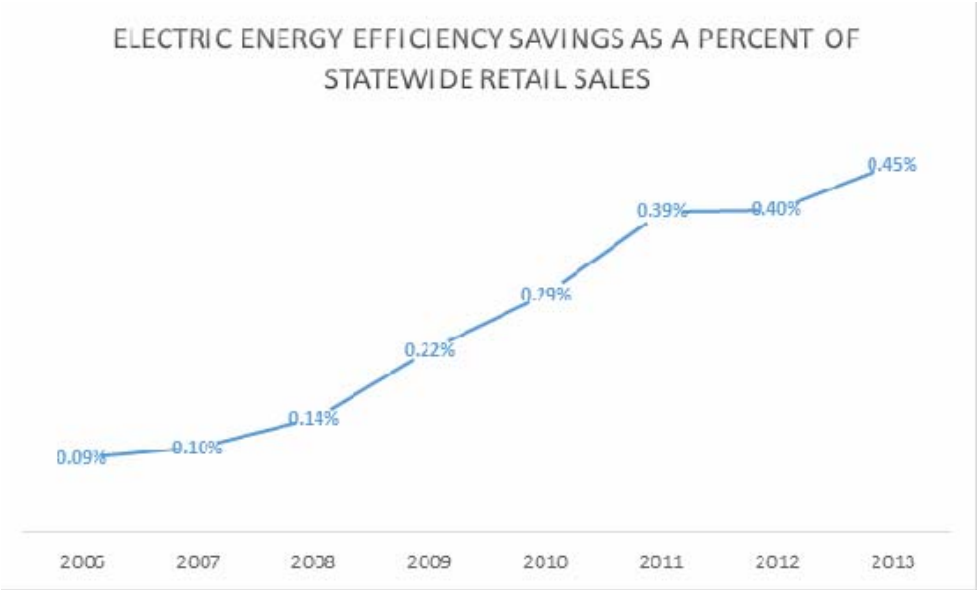
[1] Molina, Maggie. *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs.* American Council for an Energy-Efficient Economy. Mar. 25, 2014. http://aceee.org/research-report/u1402.
M. A. Billingsley et al. *The Program Administrator Cost of Energy Saved for Utility Customer-Funded Energy Efficiency Programs.* Ernest Orlando Lawrence Berkeley National Laboratory. Mar. 2014. http://emp.lbl.gov/sites/all/files/lbnl-6595e.pdf.

The graph below, derived from historical data compiled by the American Council for an Energy-Efficient Economy (ACEEE), shows average utility energy efficiency program savings as a percent of electric sales for the 25 states within MEEA, SEEA, and SPEER's footprints. While absolute savings may lag behind the nation's highest performers, the past several years have demonstrated a distinct, upward trajectory, indicating substantial expansion of energy efficiency.



Source: ACEEE, State Energy Efficiency Scorecards, 2006-2014

Within our regions, there are several models of successful energy efficiency implementation. One model is energy efficiency resource standard (EERS) policies that have achieved significant energy savings. Illinois and Minnesota adopted EERS policies that require 2.0% and 1.5% electric savings, respectively, and 1.5% in annual savings from gas utilities. Energy efficiency has also received longstanding support in Texas, the first state to establish an EERS in 1999, and in Iowa where energy efficiency programs have been saving customers energy and money off their electric bills since 1991. The southeastern region has also seen a significant upward trend in utility commission adoption of energy efficiency rules, as another model to support energy efficiency program implementation. For example, since the adoption of its energy efficiency rules, Arkansas has generated more than 9,000 jobs and $1 billion in sales per year by companies doing business in the energy efficiency sector, according to the Arkansas Advanced Energy Foundation.[2] Based on these results and notable in-state leadership, Mississippi and Louisiana have also recently adopted comparable energy efficiency rules. Similarly, in Oklahoma, utilities have ramped up their energy efficiency programs from 0% of retail sales in 2008 to nearly 0.3% in 2013, and continued increases are forecasted in the coming years. In addition to this marked progress in utility-administered energy efficiency programs, a significant amount of the activity in the South, Southeast, and Midwest occurs outside of utility programs in areas like energy savings performance contracting (ESPC), building energy code adoption and compliance, state

[2] HISTECON Associates, Inc. *The Economic Impact of Energy Efficiency Programs in Arkansas: A Survey of Contractor Activity in 2013*. Arkansas Advanced Energy Foundation: Little Rock, AR. Sept. 2014. http://www.arkansasadvancedenergy.com/files/dmfile/TheEconomicImpactofEnergyEfficiencyProgramsinArkansas.FINAL.pdf.

lead-by-example programs, and various local initiatives. In fact, states with modest utility energy efficiency programs, like Alabama and Virginia, often achieve robust non-utility savings through non-utility efforts. As discussed further below, it is critical that the EPA provides channels to capture and credit these savings within the context of compliance with the Clean Power Plan.

II. Levelized Cost of Saved Energy (pp. 34874; GHG Abatement Measures TSD):

The proposed Clean Power Plan and the Technical Support Documents (TSDs) assumed a levelized cost of saved energy (LCSE) to be $85-90/MWh, which MEEA, SEEA, and SPEER believe is too high. Both ACEEE and Lawrence Berkeley National Laboratory (LBNL) have studied the cost of saved energy from programs across the country as of 2009-2011 (LBNL) and 2009-2012 (ACEEE). LBNL reported an average LCSE of $21 per MWh saved, considering program administrator costs only (i.e., not including participant costs).[3] ACEEE reported an average levelized cost of $28 per MWh and a median cost of $26 per MWh, again only considering program costs.[4] Based on limited data from seven states, ACEEE reported an average total levelized cost of $54 per kWh saved. LBNL examined the total cost for programs in 11 states and concluded that total costs are typically double program administrator costs, suggesting a total levelized cost of about $42 per MWh.

While the national values of the levelized cost of saved energy are low, some states in MEEA, SEEA, and SPEER's territories are even lower than the national average. A recent report by the Public Utility Commission of Texas cited lifetime evaluated savings statewide was $0.016 per kWh and $12.77 per kW.[5] According to the LBNL report, the LCSE in Ohio and Indiana is $0.014 per kWh. These comments are not meant to suggest a specific number to be used for the levelized cost of energy, but rather point out that the assumption used by the EPA is too high.

Based on ACEEE's tracking of program administrator costs over time, there is no evidence that the average cost of saving energy was rising in the 2009-2012 time period. In addition, ACEEE found a weak correlation (r value of 0.27) between cost of saved energy and level of energy savings achievement.

III. Lifetime of Energy Efficiency Measures (GHG Abatement Measures TSD):

The Greenhouse Gas (GHG) Abatement Measures TSD explains in detail the assumptions made by the EPA regarding the lifetime of energy efficiency measures, which in turn is used for determining the energy efficiency component of the state CO_2 emissions rate targets, as shown in Table 7 (p. 34873). This methodology assumes that energy savings start to decline immediately after installation of efficiency measures, and continue to decline in a linear manner due to efficiency measures "burning out" on a steady, linear basis. Annual energy savings decline

[3] M.A. Billingsley et al. *The Program Administrator Cost of Saved Energy for Utility Customer-Funded Energy Efficiency Programs.* Ernest Orlando Lawrence Berkeley National Laboratory: Berkeley, CA. March 2014. http://emp.lbl.gov/sites/all/files/lbnl-6595e.pdf.

[4] M. Molina. *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs.* American Council for an Energy-Efficient Economy: Washington, DC. March 2014. http://www.aceee.org/research-report/u1402.

[5] Annual Statewide Portfolio Report for Program Year 2013—Volume I (Draft). Public Utility Commission of Texas. September 2014.

steadily over time and reach zero at some point, as shown on pages 5-42 of the GHG Abatement Measures TSD.

This assumption that there is a steady, linear burnout of an energy efficiency measure is not reasonable to MEEA, SEEA, and SPEER. We recommend that the EPA recognize that many energy efficiency measures, such as ENERGY STAR lighting measures, are designed to last a minimum number of hours and while some products may fail early, the vast majority do not (i.e., there is a relatively narrow band of lifetimes around an average lifetime value, with a few outliers). For example, a study of the measure life and persistence of commercial lighting measures in the Northeast found the values shown in the table below.[6] The variation in lifetime is due in part to varying levels of usage (hours on per year), not just differing failure rates.

Effective Useful Lifetime of Lighting Efficiency Measures in Commercial Buildings in Efficiency Programs Implemented in Northeast States

	CFLs	CFL Fixtures	HID lights	LED Exit Signs	T8 Fixtures
Average Lifetime (years)	5.1	7.0	9.1	21.9	16.2
90% Confidence Interval (years)	4.1-6.3	6.2-7.9	8.0-10.3	11.1-43.1	12.0-22.0

MEEA, SEEA, and SPEER recommend that the EPA use lifetime measure values with savings remaining constant over the average lifetime, rather than steadily declining from year one. Likewise, the EPA should accept state use of this same methodology in their implementation plans, or defer to states' adopted statewide technical reference manuals (TRMs) or deemed savings databases.

MEEA, SEEA, and SPEER also have comments on the average life of efficiency measures used by EPA in its Building Block 4 assumptions, an issue discussed on pages 5-36 of the GHG Abatement Measures TSD. The EPA notes that ACEEE has estimated an average measure lifetime of 10.6 years based on data from electric energy efficiency programs in twelve states, with an average measure life of 8.1 years for residential programs and 12.5 years for commercial/business programs. The data used by ACEEE is from energy efficiency programs implemented in 2009-2012. Based on this study, the EPA chose to use an average measure life of 10 years, which it notes is a conservative assumption. As seen in the table above, some commercial lighting measures have lifetimes well beyond the averaged 10.6 years.

Moreover, we want to point out that residential efficiency programs in the 2009-2012 time period relied heavily on compact fluorescent lamps (CFLs), a measure with a relatively short life. However, energy efficiency programs are shifting away from CFLs to LED lamps, which have a much longer life compared to CFLs (LED lifetimes in residential applications are 20 years or

[6] *C&I Lighting Measure Life and Persistence Project*. Final Report. Report prepared by KEMA, Inc. for the Regional Evaluation, Measurement and Verification Forum. Northeast Energy Efficiency Partnership: Lexington, MA. June 2011. http://www.neep.org/initiatives/emv-forum/forum-products#Measured Life Research.

longer). In the 2020-2030 time period, utilities and other program implementers are not likely to be promoting CFLs at all, while LEDs are expected to contribute large amounts of energy savings in all sectors.[7] Again, this makes the EPA's average lifetime of 10.6 years for an energy efficiency measure a very conservative estimate. For these reasons, in the planning and implementation phases, the EPA should direct states, utilities, and other program implementers to use average measure lifetimes that are appropriate for individual efficiency programs.

The EPA should also recognize that many states already have, or are seeking to develop, statewide TRMs or deemed savings databases that are acceptable to energy efficiency policymakers, utilities, and stakeholders in a particular state and reflective of individual state conditions (climate, for example). One example of a deemed savings database is the Michigan Efficiency Measures Database (MEMD). An analysis of the Michigan Efficiency Measures Database shows that 330 of the 482 commercial measures included in the MEMD have a lifetime of more than ten years.[8] Again, this goes to demonstrate that the assumed average lifetime of an energy efficiency measure used in the draft rule is too conservative.

These processes for adopting TRMs and the like are rigorous and provide greater accuracy than a single assumed lifetime value for all measures. While the EPA should allow states to use the assumptions in these statewide, state-adopted TRMs, it should recognize that TRMs vary from state to state and assumptions made in the TRMs will need to be evaluated for acceptance into a state's implementation plan.

For those states without TRMs or other such tools, or for those states seeking greater certainty, uniformity, and simplicity surrounding savings calculations, we recommend that the EPA use average lifetime values that vary depending on the program or measure type and more accurately reflect the fact that many efficiency measures last beyond 10 years.

IV. Multiple Benefits of Energy Efficiency and Demand-Side Management (p. 34884):

MEEA, SEEA, and SPEER would like to note that there are other benefits of energy efficiency improvements not mentioned by EPA in the proposed rules including higher productivity in the workplace, job creation and economic development, reduced water consumption, and risk reduction.[9] For example, under the proposed Clean Power Plan, water consumption by the Texas power sector could be cut by more than 20 percent compared with water consumed in 2012. This

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[7] *Energy Savings Potential of Solid-State Lighting in General Illumination Applications*. Report prepared by Navigant Consulting, Inc. for the U.S. Department of Energy, Jan. 2012. http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/ssl_energy-savings-report_jan-2012.pdf.

[8] Michigan Public Service Commission. *Michigan Energy Measures Database.* Database supplied by Morgan Marketing Partners. Accessed November 25, 2014. http://www.michigan.gov/mpsc/0,4639,7-159-52495_55129---,00.html.

[9] *See* Geller et al., Note 1, pages 132-134. Also, *see* J. Lazar and K. Colburn. *Recognizing the Full Value of Energy Efficiency*. Regulatory Assistance Project: Montpelier, VT. Sept. 2013. http://www.raponline.org/document/download/id/6739.
SERA (2010). Skumatz Economic Research Associates, Inc., "Non-Energy Benefits: Status, Findings, Next Steps, and Implications for Low-Income Program Analyses in California," Prepared for Sempra Utilities, Revised Report, May 11, 2010.

is about 66,000 acre-feet per year.[10] The EPA should provide flexibility to states to use their state planning processes to include non-energy benefits that they would like counted toward a state's emissions reduction target.

For example, some states utilize adders to establish a conservative estimate of the value of non-energy benefits. Colorado, Iowa, Oregon, and Washington utilize a 10% adder for energy efficiency programs. Vermont uses a 15% adder and allows for this number to be revised upwards should additional data justify doing so.[11] Other states use exact quantification, through means such as reduced water consumption. As mentioned these are conservative estimates, but the point is that there are multiple approaches, whether adders or exact quantification, to estimate the non-energy benefits of energy efficiency; the EPA should do more than assigning a value of zero to these benefits. Significant research has been conducted into the application of various cost-benefit tests and the inclusion of non-energy benefits.[12]

Accounting for non-energy benefits in cost-effectiveness will unlock significant energy efficiency potential across the country, affording states increased flexibility to meet their Clean Power Plan targets in the least-cost manner. Having the EPA recognize the non-energy benefits of energy efficiency also provides states with greater certainty as to the types of measures and programs that will be acceptable to include in their state implementation plan.

V. Concern About Municipal Utilities and Rural Cooperatives (p. 34884):

There are numerous examples of municipal utilities and rural electric cooperatives (electric co-ops) with outstanding energy efficiency programs that are achieving high levels of energy savings, and doing so cost effectively.

In a number of states, municipal utilities or rural electric cooperatives are served by wholesale power providers that assist in planning, funding and implementing energy efficiency programs. For example, this is the case with the Iowa Association of Electric Cooperatives which consists of 35 electric co-ops in Iowa, and with Hoosier Energy which supplies power to 18 electric co-ops in Indiana. In Iowa, rural electric cooperatives were planning to save 1.2% of electricity sales through energy efficiency programs implemented in 2012,[13] while most municipal utilities were planning to save 1.1% of sales.[14]

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[10] Faeth, Paul. *Texas and the EPA's Clean Power Plan: Water CO_2 Emissions, and Costs*. CAN Analysis & Solutions: Arlington, VA. Nov. 2014. http://www.cna.org/sites/default/files/research/INL-2014-U-009213.pdf.

[11] Stanfield, Becky. *Let's Do Better Cost-Effectiveness Analysis.* Natural Resources Defense Council. http://www.mwalliance.org/sites/default/files/uploads/meeaconference/MES-2013_presentations_Stanfield.pdf.

[12] Lazar, Jim and Colburn, Ken. Recognizing the Full Value of Energy Efficiency. September 2013. http://www.raponline.org/event/recognizing-the-full-value-of-efficiency-theres-more-layers-in-the-layer-cake-than-many-account.

[13] K. Freischlag. Review of Leading Rural Electric Cooperative Energy Efficiency Programs. Southwest Energy Efficiency Project: Boulder, CO. June 2011.

[14] *Iowa's Municipal Electric and Gas Utilities Joint Report to the Iowa Utilities Board. 2010 Energy Efficiency Program Results and 2012-2013 Energy Efficiency Goals*. Iowa Association of Municipal Utilities. Dec. 30, 2012. http://archive.iamu.org/documents/EE/2012%20Municipal%20EE%20Report.pdf.

In other states such as Oregon and Minnesota, electric co-ops implement very effective energy efficiency programs either on their own or through aggregators such as Great River Energy in Minnesota. Overall, municipal utilities and electric co-ops in Minnesota saved 315,000 MWh per year or 1.4% of electricity sales through energy efficiency programs implemented in 2010.[15] For comparison, investor-owned utilities (IOUs) in Minnesota achieved 511,000 MWh per year of electricity savings through programs implemented in 2010, also 1.4% of electricity sales (savings on measured on a gross savings basis). On average, there was no difference in the level of savings in percentage terms between the larger IOUs and smaller municipal utilities and rural electric cooperatives.

While we do not suggest that any adjustments in the proposed standards are warranted, we acknowledge that the range of opportunity for emissions reductions may be more limited for rural electric cooperative utilities. This may, in turn, impact compliance costs, which is of particular concern for rural electric cooperatives that tend to serve lower income residential customers. For this reason, it is critical that electric cooperatives are able to realize the opportunity of energy efficiency as a least-cost compliance pathway. The EPA should seek opportunities to provide technical assistance to electric cooperatives to facilitate implementation of energy efficiency programs, or connect electric cooperatives with financing resources available from the U.S. Department of Agriculture (USDA)- through initiatives such as their Rural Utilities Service (RUS) Energy Efficiency and Conservation Loan Program (EECLP), and other agencies that can serve as the foundation for effective, accessible programs- helping rural electric cooperatives to meet their savings goals while promoting more affordable, more comfortable homes for their membership.

The Electric Cooperatives of South Carolina have leveraged on-bill financing to create one of the most successful cooperative energy efficiency programs in the Southeast, the Help My House Program. During this program pilot, the average participating home cut electricity use by 34 percent – nearly 11,000 kWh per year – with an average simple payback of just over six-and-a-half years. After these loans are paid off, program administrators predict that annual savings for an average home will increase to more than $1,100 per year, producing a net cumulative savings after 15 years of more than $8,500.[16]

MEEA, SEEA, and SPEER recommend that municipal and electric cooperative energy efficiency programs that are included in state implementation plans include third-party verification of savings as approved by the state and in line with standards suggested/required by EPA. Please reference the language on registries within section “XI. Quantification, Monitoring and Verification of Energy Efficiency Measures” on page 17 of these comments for one potential means of verifying savings.

[15] Minnesota Conservation Improvement Program Energy and Carbon Dioxide Savings Report for 2010-11. Minnesota Department of Commerce, Division of Energy Resources. Oct. 1, 2013. http://archive.leg.state.mn.us/docs/2013/mandated/131112.pdf.

[16] Electric Cooperatives of South Carolina. *Help My House Loan Pilot Program: Program Design and Results*. June 2013. http://www.cepci.org/assets/HelpMyHouseBrochure_June2013.pdf.

VI. Computation of Energy Savings for Compliance Credit (pp. 34895-97):

MEEA, SEEA, and SPEER support the proposed approach of adding energy efficiency savings to the denominator if a state chooses to comply through the rate based approach. This approach is simpler and likely to be more accurate than estimating the CO_2 emission reductions from energy efficiency policies and programs and subtracting this from the numerator, given the uncertainties regarding the actual time of energy savings and defining which specific power plants cut their generation as a result of end-use energy savings.

It is essential that the EPA define whether utilities and other energy efficiency program implementers are supposed to use either gross energy savings or net energy savings in determining energy savings. Without such direction, there will be confusion about which type of savings to use among states and utilities and a lack of consistency among states. The EPA has proposed using net savings to calculate credit toward state emissions rate targets. Net savings include estimates of and adjustments for free riders and in some cases spillover effects; gross savings exclude these factors. Gross savings are simpler to calculate and are a more appropriate methodology for both setting state goals and determining credit toward the realization of those goals. MEEA, SEEA, and SPEER strongly recommend that the EPA base the computation and credit on gross energy savings rather than net energy savings for the following reasons:

- Actual CO_2 emission reductions result from gross energy savings, not net savings. The attribution of savings is not relevant to the issue of providing fair credit to energy efficiency measures for the role they play in reducing emissions, when the emissions rate-based approach is used. States and utilities will benefit from the CO_2 emissions reductions due to gross energy savings under a mass-based approach, and the same basis for savings should be used under a rate-based approach.
- Net-to-gross savings ratios are imprecise and not consistent from utility-to-utility. Furthermore, net-to-gross savings ratios are rarely estimated or applied to non-utility efficiency policies and programs including building energy codes, state appliance standards, or public sector energy efficiency programs.
- Gross savings are easier to determine than net savings and will facilitate states enacting, and receiving credit for, a wide range of energy efficiency policies and programs in their implementation efforts. States will not have to deal with the challenging question of estimating net savings resulting from building codes, state financing or financial incentive programs, public sector energy efficiency programs, and the like. Requiring states to estimate and report net savings from non-utility programs would increase evaluation, measurement, and verification (EM&V) costs and lead to greater uncertainty and inconsistency in verifying savings.
- If states and utilities are provided energy savings based on net rather than gross savings, they have the opportunity to claim substantial “spillover effects” (i.e., energy savings stimulated by a policy or program outside of direct participation in the policy or program) that may be uncertain or of questionable validity. By definition spillover effects are excluded from the determination of gross energy savings.

In calculating gross energy savings, the EPA should clarify that states and utilities are not allowed to count savings from and receive compliance credit for efficiency measures installed outside of participation in those energy efficiency policies and programs included in state plans, except in the specific case of market transformation programs. Market transformation programs are by definition designed to have broad market impacts by increasing the availability of certain energy efficiency measures, educating consumers, influencing codes and standards, and other techniques such as those practiced by the Northwest Energy Efficiency Alliance (NEEA).[17] The impacts of market transformation programs often extend in time beyond the program implementation period. The EPA should allow states to implement and receive energy savings compliance credit for market transformation programs, and should rely on the developed protocol within state or regionally based TRMs where market transformation programs are addressed, or when no state or regional TRM exists or market transformation programs are not addressed, then the EPA should issue a specific protocol for evaluating the energy savings impacts of such efforts. This protocol can and should be based on existing impact evaluation methodologies, such as those used by NEEA.

It is also important for utilities, other program implementers, and those conducting energy efficiency program evaluations to establish an accurate baseline to measure savings against. The EPA should ensure that states and utilities utilize best practices in determining baselines. State or regional TRMs and the State and Local Energy Efficiency (SEE) Action Network's Energy Efficiency Program Impact Evaluation Guide can be resources to the EPA and states in this regard.[18] As part of its guidance, the EPA should also direct states, utilities, and other program administrators to exclude naturally occurring energy savings from the savings that qualify for compliance credit.

VII. Net importing States (pp. 34896-97, 34921-34922):

The EPA is proposing an adjustment of electricity savings downwards in net electricity importing states because some of the CO_2 emissions reductions are likely to occur out of state. However, the EPA is not proposing a comparable upwards adjustment in savings in net exporting states. The EPA has requested comments on this proposal.

MEEA, SEEA, and SPEER recommend that there be no adjustment as long as both the importing and exporting state select rate-based goals, meaning that the state where the electricity savings occurs should get full credit for the energy savings in that state. This convention should be used in both determining state goals and in compliance with goals under a rate-based approach.

We believe this is reasonable because while some emissions reductions might occur out of state, the average emissions rate of the exporting state does not necessarily decline due to energy efficiency improvements made within the importing state.

[17] *NEEA's Definition of Market Transformation*. Northwest Energy Efficiency Alliance: Portland, OR. http://neea.org/docs/marketing-tookits/neea_definition_of_markettransformation.pdf?sfvrsn=0.
[18] *Energy Efficiency Program Impact Evaluation Guide*. SEE Action Network: Washington, DC. Dec. 2012. https://www4.eere.energy.gov/seeaction/publication/energy-efficiency-program-impact-evaluation-guide.

Furthermore, reducing the savings asymmetrically as EPA proposes may diminish the motivation to implement energy efficiency measures which, as EPA notes, is the most cost-effective compliance option. If the EPA rejects the proposal in the previous paragraph, we urge the EPA to allow the adjustment to be made symmetrically (i.e., the energy exporting state would receive any compliance credit that the importing state loses).

There is a legitimate concern of double counting; however, if a state chooses a rate-based approach and gets full credit for energy savings achieved in the state, but then imports a significant amount of electricity from a state that chooses a mass-based approach. This in effect would double count the portion of the energy savings (and the emissions reductions resulting from the savings) that results in reduced generation out of state. It would be reasonable for the EPA to require an energy savings adjustment within the state where the savings occurs in this case. The EPA could set a threshold for applying an adjustment factor during the implementation phase (e.g., it is required if a state that chooses the rate-based approach imports more than 5% of its electricity from a state that chooses the mass-based approach in any particular year).

It should also be noted that this is not an issue if an importing state chooses the mass-based approach for compliance. In this case, emissions reductions will occur where they occur and compliance will be based on actual emissions, not on a computation of emissions. If a state chooses a mass-based approach for compliance then no adjustment for electricity import/export in necessary.

VIII. Combined Heat and Power (pp. 34924; 34956-57):

The proposed Clean Power Plan mentions that smaller, unaffected combined heat and power (CHP) units could be a type of energy efficiency measure included in Building Block 4, and invites comments on whether CHP should be allowed as a potential emission reduction option. MEEA, SEEA, and SPEER recommend the EPA allow CHP and waste heat recovery to be eligible as compliance measures, leaving it to the discretion of the states. CHP is considered by some states to be a renewable energy resource under certain circumstances and an energy efficiency resource in others.[19] There are accepted methods for calculating the net CO_2 emissions reductions from CHP systems,[20] and 13 states currently permit electricity savings from CHP systems to contribute to achievement of energy efficiency resource standards in some manner.

IX. State Plans (pp. 34901-09, 34923):

MEEA, SEEA, and SPEER support the proposed portfolio approach for state implementation plans, whereby states have the ability to select, adopt, and enforce energy efficiency policies and programs, rather than the EPA enforcing them. This will generate significant flexibility for the states, allowing for a broad range of efficiency programs to be considered for a state's implementation plan.

[19] "Portfolio Standards and the Promotion of Combined Heat and Power." U.S. EPA. March 5, 2013. http://www.epa.gov/chp/documents/ps_paper.pdf.
[20] For example by using the EPA CHP Partnership's, "CHP Emissions Calculator," *available at* http://www.epa.gov/chp/basic/calculator.html.

Utilities are already implementing energy efficiency programs for their customers in a wide range of policy contexts—some states have adopted formal energy savings requirements (e.g., an energy efficiency resource standard, or EERS), some have set energy savings goals, some have adopted energy efficiency rules, some allow energy efficiency program funding and savings levels to be driven by integrated resource plans (IRPs), and some undertake energy efficiency program review and approval on an annual, biennial, or triennial basis, without any formal energy savings standards or goals. All are valid approaches to utility energy efficiency policy and program implementation. The EPA should allow all approaches to be included in state plans, and then used during the implementation phase. Non-utility energy efficiency programs have a proven track record of achieving energy savings in many states and provide a strong complement to utility programs.

As proposed, the Clean Power Plan allows both utility and non-utility programs to receive compliance credit for energy savings. However, some aspects of the proposal should be clarified in this regard, including indicating which types of programs are eligible for inclusion in state implementation plans for compliance with the proposed Clean Power Plan, and which are not. These programs should be considered for compliance purposes, and do not impact the existing goals established for states. MEEA, SEEA, and SPEER propose the following:

- The EPA should allow states and utilities to receive compliance credit for a wide variety of utility programs, including but not limited to: measure-based incentives, behavior change programs, transmission and distribution system upgrades, financing programs, building code support programs, and incentives for CHP. This applies to IOUs, municipal utilities, and rural electric cooperatives.
- Non-utility state and private sector energy efficiency policies and programs should be eligible for compliance credit and may include: building energy codes, lead-by-example programs, energy retrofit ordinances, tax incentives, financing programs, public sector energy efficiency improvement policies or programs, programs to spur market transformation, state-based appliance efficiency standards, state policies or programs to foster adoption of CHP systems, and state programs to improve industrial or agricultural efficiency. In particular, the private sector plays an essential role in achieving higher efficiency standards through the innovation of technology and new products, also serving as a significant platform for economic development and job creation. Policies or programs adopted and/or implemented by local governments should be eligible for compliance credit if they are included in state implementation plans.
- The EPA should recognize that the same type of energy savings may be considered as a utility program in one state and a non-utility energy efficiency program in another state. On the topic of claiming the energy savings from building energy code compliance, in Massachusetts, Rhode Island, and California utilities are managing code compliance enhancement programs. In Illinois, as part of work showing the cost-effectiveness of such an initiative, it was calculated that improving code compliance to 100% (based on a 70% compliance rate) would save 2,000,000 therms and 38,000 megawatt-hours per year. Program design and pilot studies are also being done in Nebraska and Michigan to tailor code compliance enhancement programs in those states.
- Compliance credit should be awarded for energy efficiency improvements within utility T&D systems, including Conservation Voltage Reduction (CVR). CVR provides energy savings for end-use consumers as well as some reduction in distribution system losses.

- Compliance credit should be awarded for states that adopt minimum efficiency standards on products not regulated by the federal government under the National Appliance Energy Conservation Act (NAECA) legislation. California and other states have adopted state efficiency standards in recent years on televisions, battery chargers, and other electronic products. According to the Appliance Standards Awareness Project (ASAP), twelve states currently have state appliance efficiency standards in effect.[21] ASAP suggests that there are twelve products including televisions, set-top boxes, battery chargers, commercial and industrial fans, and pumps that states could adopt efficiency standards for, and that doing so would provide substantial net economic benefits for consumers and businesses. ASAP has estimated the energy savings potential state-by-state in 2025 and 2035, assuming that state standards on these twelve products are adopted in 2014.[22]

Energy savings from utility and non-utility programs alike should be properly measured and verified according to state and EPA approved procedures and protocols. Certain energy efficiency policies should not be eligible for compliance with the Clean Power Plan. Compliance credit should not be given for energy savings that result from federal appliance and equipment efficiency standards or other federal mandates, for the following reasons:

- ACEEE and ASAP estimate that national electricity usage in 2010 was reduced by an estimated 7.2%, saving about 278 TWh per year, by federal energy efficiency standards adopted through that year, and that the savings from these existing standards will increase to 682 TWh per year by 2025, 15.6% of projected national electricity use that year according to the U.S. Energy Information Administration (EIA)'s most recent Annual Energy Outlook.[23]
- Calculating the impact of federal standards within each state can be complicated. Factors influencing the impact on each state include considerations such as the market penetration of a particular piece of equipment or appliance and the climactic zones within the state. Rather than allowing states to receive compliance credit for energy savings resulting from the standards, and attempt to address all the uncertainties that doing so would entail, it is far simpler and more accurate to leave the standards out of the Building Block 4 assumptions (as the EPA has done in the proposed Clean Power Plan) and likewise not allow states to receive compliance credit for energy savings resulting from the federal standards.
- The federal efficiency standards will reduce electricity use in all states and thereby lower CO_2 emissions, helping those states which choose mass-based targets to meet their targets. However, it is reasonable to assume that the EPA will base the determination of mass-based goals (or give states a methodology to do the calculation) that takes into account projected load growth out to 2030.

[21] State Adoption of Energy Efficiency Standards. Appliance Standards Awareness Project: Boston, MA. http://www.appliance-standards.org/states.
[22] *State Benefits from State Appliance Standards*. Boston, MA: Appliance Standards Awareness Project. http://www.appliance-standards.org/map/benefits-from-state.

In addition, MEEA, SEEA, and SPEER recommend that stand alone pricing-based policies, such as inverted block rates or time-of-use rates, not be allowed in state implementation plans or credited because the energy savings impacts of these policies are uncertain and inherently difficult to evaluate with accuracy. However, pricing policies that are implemented along with enabling technologies, such as time-of-use rates or prepay meters implemented in conjunction with in-home energy information displays, should be eligible for inclusion in a state implementation plan for compliance purposes.

While energy efficiency efforts are a tried and true least cost means to achieve proposed Clean Power Plan goals, their inclusion in state implementation plans should be facilitated and the EPA requirements clarified as explained below:

- The proposed portfolio approach is wise in that it allows efficiency measures to be considered "implementing measures" that are complementary to electric generating unit (EGU) limits, but not directly enforceable, while allowing states to adopt and enforce as appropriate (pp. 34901-03).
- States should be able to modify the energy efficiency policies and programs contained in state plans during the implementation phase. This helps to ensure that new technologies can be incorporated, results from EM&V work can be acted upon, and otherwise supports best energy efficiency practices as they evolve over time. Energy efficiency policies and programs change over time; they are not set in place and left unchanged for 10 or 15 years. This flexibility allows states to make up for any emissions reduction shortfall if energy efficiency policies and programs are not as effective as expected, and allows for other adjustments if energy efficiency policies and programs turn out to be more effective than expected in the initial state implementation plans.
- States should be required to include provisions in their state implementation plans to avoid double counting of energy savings among the various energy efficiency policies and programs included in the plans (e.g., for projects that participate in both utility and non-utility programs). States should be given the flexibility to determine which program receives the compliance credit and detail how double counting will be avoided in the state implementation plan. See language on registries on page 17 in section "XI. Quantification, Monitoring and Verification of Energy Efficiency Measures" of these comments for one potential means for integrating non-utility programs into state implementation plans.

If states adopt mass-based targets, EM&V protocols for the sake of compliance do not need to be applied because compliance is measured directly through statewide CO_2 emissions levels.

X. Reporting and Corrective Measures (pp. 34907-09):

MEEA, SEEA, and SPEER support EPA's proposal that a report and corrective measures would be required if actual emissions (or emissions rates) fall short of planned levels by more than 10 percent starting in 2022. Also, if a state fails to meet its goals, either in the interim period or final goal, we support requiring additional actions and a modified compliance plan to make up for the emissions performance deficiency. Similarly, MEEA, SEEA, and SPEER support the proposal that state implementation plans include contingencies if the enforceable emissions limits on EGUs in and of themselves do not achieve the required emissions performance level (p. 34909).

XI. Quantification, Monitoring and Verification of Energy Efficiency Measures (pp. 34920-21):

MEEA, SEEA, and SPEER provide the following comments on a number of issues related to energy efficiency EM&V. First, the Final Clean Power Plan should confirm that EM&V of energy efficiency programs, and reporting of energy savings results, is only required in states that choose to comply through a rate-based approach. This is necessary for determining the amount of energy savings that gets added to the denominator in 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 EGUs. Thus, EM&V for energy efficiency programs is not required under a mass-based approach.

Second, EM&V requirements for Clean Power Plan compliance should be limited to energy savings impacts (MWh per year), as this is the value that is factored into CO_2 emissions rates by addition to the denominator. There should be no requirements for estimating time-differentiated energy savings or peak demand reductions, at least under the proposed Clean Power Plan.

Third, for states that choose the emissions rate approach, we encourage the EPA to provide guidance to states and utilities on appropriate EM&V protocols, as stated in the proposed Clean Power Plan. The EPA should identify and approve EM&V protocols, such as the International Performance Measurement and Verification Protocol (IPMVP), the DOE Uniform Methods Project Protocols, SEE Action Network Evaluation guides, and other protocols that were developed by EM&V experts and are generally accepted and used within the energy efficiency field. For example, while the EPA has noted concerns regarding EM&V for behavioral programs, the SEE Action Network has evaluated various protocols and determined that Randomized Controlled Trials (RCTs) represent an appropriate standard for behavioral program EM&V. In addition, the EPA (preferably with the help of the DOE) should develop and approve additional EM&V protocols to fill gaps that exist, such as protocols for evaluating the energy savings from building energy codes (recognizing DOE's current efforts in this area), financing programs, market transformation program, and CHP support programs. These protocols are critical for ensuring that EM&V is high quality, accurate, and consistent across states. In addition, these protocols will clarify what procedures states, utilities, and their program evaluators need to follow in order to claim compliance credit in a manner that is acceptable to the EPA. Such guidance will encourage greater consistency of EM&V practices within and across states without requiring standardization of protocols. In addition, the EM&V protocols should be revised and updated periodically as experience is gained and EM&V practices evolve.

MEEA, SEEA, and SPEER provide the following recommendations regarding EM&V based in large part on our knowledge of the EM&V practices:

- The EPA should recognize and respect existing state approaches to EM&V of utility and non-utility energy efficiency programs, while requiring that any entity or activity included in a state implementation plan include third-party EM&V.
- The EPA should also recognize that the EM&V industry is moving toward more real-time measurement and verification as a means to improve efficiency program design and implementation, and more cost-effectively meet energy savings targets. That said, the

EPA should require third party EM&V of the total first year energy savings (MWh/yr) of every energy efficiency program that is included in a state implementation plan at least once every three years, using EPA-approved EM&V protocols for different types of programs. Many utilities perform third party EM&V more frequently. By requiring that it be done for all programs at least once every three years, the EPA will limit the burden and cost of EM&V for those states/utilities that want to limit the burden/cost.

- For states that include both utility and non-utility energy efficiency policies and programs in their implementation plans, the EPA should require states to identify the procedures that will be used to avoid double counting of savings across policy or program types. For example, there will be a need to avoid double counting of savings from energy efficiency projects that participate in both a utility energy efficiency program and a state program, such as a state financing or financial incentives program, or a program focused on energy savings in the public sector.

As noted in section "IX. State Plans" on page 13 of these comments, there are many strategies that can be used to achieve end use energy efficiency that fall outside of utility programs. We have previously commented on appropriate EM&V for utility programs, but we suggest that the EPA clarify how non-utility projects and measures should be counted. One way would be for states to establish energy efficiency registries, or where no state or regionally agreed upon energy efficiency registry is created, then the EPA should establish regional or national registries that a state can chose to opt into on a discretionary basis. Many others have suggested this and we add our support for this concept.

Some examples of projects that could be included in a registry (there would certainly be others):

- Locally driven initiatives
    - Local government building efficiency improvements
    - Private building efficiency driven by local policies and programs (e.g., disclosure ordinances, Better Buildings Challenges, 2030 Districts, etc.)
- Financing programs
    - Federal government loan programs, such as the USDA Efficiency Loans
    - Property Assessed Clean Energy (PACE) programs
    - Energy savings performance contracts for governmental entities
    - Revolving loan funds
- Savings delivered from retail electric providers (REPs, as electric service providers are called in some places) and third party energy management companies
    - In competitive markets, many energy efficiency service offerings provide significant efficiency results for end users, sometimes without utility incentives.
- Savings from municipal owned utilities and electric cooperatives
    - Municipally owned utilities and rural electric cooperatives often have efficiency programs unregulated by utility commissions; registries would be one way to count these savings.
- Savings from industrial and large energy consumer energy efficiency projects (that are not included as a part of utility portfolios)

    - Such an initiative could build on EPA's industrial energy efficiency recognition program, and could target criteria such as the following: (1) national and global financial criteria that may be appropriate for an inter-state registry approach; (2) the largest customers that sometimes are not a part of utility energy efficiency program accounting; and (3) industries that are particularly vital to the South, Southeast and Midwest, such as agriculture and manufacturing. The EPA, in partnership with DOE's Advanced Manufacturing Office and especially their Better Buildings, Better Plants Program Partners, could establish an alternative pathway for counting such savings.
- Private sector energy efficiency improvements driven by internal sustainability plans, triple bottom line initiatives, and capital improvements to increase competitiveness.

It is important to avoid double counting as portions of non-utility energy efficiency projects may take advantage of utility rebates and incentives. To avoid double counting, the registry should ask of a submitter whether the project or any measure(s) included in the project received a utility incentive. If so, any applicable project or measures should not be entered into the registry, as it would already be counted as a part of the state's compliance plan as a part of a regulated utility program. If not, the project or measure(s) not included in the state's compliance plan as a part of a regulated utility program could be submitted, so long as there is appropriate measurement and verification. Wherever possible, verification should happen from weather normalized energy usage data and should be reported at least annually throughout the compliance period to confirm the persistence of savings.

This approach has many advantages. Regulated utility programs are an excellent way to reach a state goal, but they are a means to the end, not the end itself. Some states may want to use a variety of methods to achieve the proposed targets within this Building Block. These states may also want to more fully utilize other efficiency means to meet or exceed their needs, since there is a latent reservoir of available energy efficiency savings that represents lower compliance costs than other available choices. So long as the savings data is collected, measured, verified, and reported in a manner that is acceptable to the state, non-utility energy efficiency should count toward state compliance. This is in keeping with the spirit of flexibility espoused by EPA throughout the proposed Clean Power Plan.