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January 10, 2018

BY EMAIL
U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
EPA WJC West Building, Room 3334
1301 Constitution Ave., NW
Washington, DC

Re: Advanced Energy Management Alliance ("AEMA") Comments in Docket ID No. EPA-HQ-OAR-2017-0355

Dear Administrator Pruitt:

The Advanced Energy Management Alliance ("AEMA")[1] greatly appreciates the opportunity to submit comments to the United States Environmental Protection Agency ("EPA") regarding EPA's Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units.

AEMA is a trade association under Section 501(c)(6) of the Federal tax code whose members include national distributed energy resource companies and advanced energy management service and technology providers, including demand response ("DR") providers, as well as some of the nation's largest demand response and distributed energy resources. AEMA members support the incorporation of distributed

[1] See AEMA website for additional information: http://aem-alliance.org

energy resources ("DER" or "DERs"), including advanced energy management solutions, to achieve electricity cost savings for consumers, contribute to reliability and resilience, and provide sustainable solutions for a modern electric grid. This filing represents the collective consensus of AEMA as an organization, although it does not necessarily represent the individual positions of the full diversity of AEMA member companies.

On November 26, 2014, AEMA filed comments, Attachment A, in the Proposed Rule of Carbon Pollution Emission Guidelines for Existing Station Sources: Electric Utility Generating Units. Our focus was on the significant carbon reduction benefits from demand response applications.[2] Our analysis showed that these carbon reductions from demand response would be quantifiable, verifiable, and permanent. We recommended that demand response be included as an option for every state's greenhouse gas ("GHG") reduction strategy. As a result of our comments, the Final Rule included demand response within its building block structure as a key component for states to reduce GHG emissions while increasing reliability.

AEMA stands by its original comments that demand response should be included in any rule to mitigate GHG emissions and that consumers should be allowed to directly benefit—in cost savings, increased reliability, and cleaner air—from the implementation of demand response in any GHG reduction rule.

We appreciate the EPA's consideration of these comments; AEMA remains ready to serve as a resource to the EPA as consideration continues on GHG emission reduction.

[2] At that time, our organization was singularly focused on demand response; in 2016 AEMA's mission expanded to encompass distributed energy resources more holistically.

Respectfully submitted,

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Attachment A

BY EMAIL
U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Docket ID No. OAR-2013-0602, Mailcode 28221T
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: Advanced Energy Management Alliance ("AEMA") Comments in Docket ID No. EPA-HQ-OAR-2013-0602

Dear Administrator McCarthy:

The Advanced Energy Management Alliance ("AEMA") greatly appreciates the opportunity to present Comments to the United States Environmental Protection Agency ("EPA") regarding EPA's Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (the "Proposed Rule").

I. INTRODUCTION AND SUMMARY OF POSITION

AEMA is a trade association under Section 501(c)(6) of the Federal tax code whose members include national demand response service providers, Comverge, EnerNOC, Johnson Controls, Landis+Gyr, MelRok, Opower and Viridity Energy, as well as demand response technology providers IPKeys, First Fuel, and Consert. AEMA's members also include some of the nation's largest demand response resources, Walmart, Alcoa and Century Aluminum, who support demand response due to the large electricity costs savings it provides to their companies.[3] This filing represents the opinions of AEMA rather than those of individual association members.

AEMA urges the EPA to clarify in its Final Rule in this docket that demand response is included in EPA's building blocks for carbon emissions reduction. Specifically, EPA should state that demand response is included in the fourth building block ("Building Block 4").

In the Proposed Rule, Building Block 4 is defined as: "Reducing emissions from existing EGUs in the amount that results from the use of demand-side energy efficiency that reduces the amount of generation required."[4] To eliminate any ambiguity regarding whether demand response is included, the last phrase of the Building Block 4 definition should be revised as follows: "demand-side energy efficiency, *demand response and load management* that reduce the amount of generation required."

Inclusion of demand response in Building Block 4 is necessary to achieve the Best System of Emissions Reductions ("BSER"), which the EPA is required to establish by Section 111 of the Clean Air Act when it regulates emissions from existing fossil-fueled generating units ("fossil-fueled EGUs").[5] The Clean Air Act and applicable case law identify five factors EPA must consider in its BSER determination. These factors include size of emissions reductions, reasonableness of cost, technical feasibility, and

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[3] See AEMA website at http://aem-alliance.org for more details about the organization.
[4] Fed. Reg. Vol. 79, No. 117, at 34836.
[5] 42 U.S.C. § 7411.

effect on development of technology and energy impacts.[6] As demonstrated below, demand response satisfies all five of the factors EPA must consider in its BSER determination.

Briefly, demand response programs:

•Reduce emissions from fossil-fueled EGUs by an estimated 2% as detailed in the study by Navigant Consulting attached as Attachment A to AEMA's Comments;[7]

•Can be delivered at very low cost, especially relative to other technologies being considered, and will make the economics of EPA's Clean Power Plan more attractive by placing downward pressure on overall energy costs.;

•Have proven technical feasibilities, as evidenced by the greater than 28,000 megawatts participating in wholesale electricity markets in 2012;[8]

•Facilitate the implementation of renewable energy technologies such as solar and wind energy critical to EPA's Clean Power Plan; and

•Impact energy usage during periods when the electricity grid is most constrained.

Since demand response meets all of the five criteria for the BSER for carbon emissions, it is critical that EPA clarify in its Final Rule that demand response is included in Building Block 4. Fortunately, demand response is well-positioned to be included in EPA's BSER for carbon emissions because states, regional transmission organizations ("RTOs") and Independent System Operators ("ISOs") have proven evaluation, measurement and verification ("EM&V") protocols for demand response that have

[6] EPA Legal Memorandum Supporting Proposed Rule, at 37-38: http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf.
[7] Navigant Consulting Study of Carbon Dioxide Reductions from Demand Response ("Navigant Study"), Attachment A to the AEMA's Comments, at 17.
[8] 2013 Assessment of Demand Response and Advanced Metering, Federal Energy Regulatory Commission, Staff Report, October 2013: http://www.ferc.gov/legal/staff-reports/2013/oct-demand-response.pdf.

calculated, among other things, energy use reductions from demand response programs. These proven EM&V protocols can be used by EPA, states and multi-state regions in their implementation plans, as the basis for calculating carbon emissions reductions from demand response.

These facts demonstrate that demand response programs, with reasonable costs, can provide significant carbon emissions reductions which not only are quantifiable and verifiable but also "permanent" due to the long useful lives of demand response programs. As with energy efficiency, demand response potential has already been calculated for every state.[9] Therefore, it is essential that EPA clarify that demand response is included in Building Block 4 in the Final Rule so that states have a mandate to take full advantage of demand response's potential and its corresponding carbon emissions reductions and electricity cost savings.

II. EPA SHOULD CLARIFY IN THE FINAL RULE THAT DEMAND RESPONSE IS INCLUDED IN THE BUILDING BLOCKS FOR REDUCTIONS OF CARBON EMISSIONS

EPA has proposed a suite of four strategies (the "Building Blocks") for states to use in meeting the requirements for carbon emissions reductions for each state set forth in EPA's Proposed Rule. In the event that EPA's regulation of carbon emissions from

[9] The assessment of demand response potential for every state can be found in A National Assessment of Demand Response Potential, Federal Energy Regulatory Commission, Staff Report, June 2009, Appendix A: http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf.

fossil-fueled EGUs proceeds, AEMA fully supports EPA's approach of a variety of methods to reduce carbon emissions from these power plants.

The first three Building Blocks proposed by EPA are generation-centric approaches, including heat rate improvements, re-dispatch and low-carbon and no-carbon alternative generation. Building Block 4 is focused on demand-side changes to achieve carbon emissions reductions and is defined in the Proposed Rule as: "Reducing emissions from affected EGUs in the amount that results from the use of demand-side energy efficiency that reduces the amount of generation required."[10]

In the Proposed Rule's discussion of Building Block 4 implementation, EPA highlights California's demand-side energy efficiency programs as a paragon for reduction of carbon emissions.[11] Specifically, EPA points out that California's utility run demand-side energy efficiency programs, which require utilities to meet electricity load through all available energy efficiency and *demand reduction* resources that are cost-effective, reliable and feasible, "are the bedrock upon which climate policies are built." [12] In other words, EPA's most prominent example of demand-side energy efficiency programs includes demand response as part of its carbon emissions reductions strategy. Moreover, EPA also mentions in its discussion of Building Block 4 implementation that Arizona utilities can meet the state's energy savings requirements "through a variety of

[10] Fed. Reg. Vol. 79, No. 117, at 34836.
[11] Fed. Reg. Vol. 79, No. 117, at 34850.
[12] *Ibid*, quoting December 27, 2013 Letter from California Air Resources Board Chairman Mary D. Nichols to EPA Administrator Gina McCarthy.

means, including cost-effective energy efficiency programs, as well as load management and demand response programs." [13]

In light of the fact that the Proposed Rule's examples of Building Block 4 implementation include demand response, the Proposed Rule clearly could be construed to include demand response in Building Block 4. However, in order to eliminate any ambiguity, AEMA urges EPA to modify the last phrase of the Building Block 4 definition to specifically include demand response, as follows: "energy efficiency, *demand response and load management* that reduce the amount of generation required."

III. DEMAND RESPONSE CAN AND SHOULD PLAY A STRATEGIC ROLE IN EVERY STATE'S CARBON EMISSIONS REDUCTION STRATEGY

It is critical that ambiguity in the definition of Building Block 4 be addressed by EPA; demand response should play a strategically important role in every state's carbon emission reductions strategy.

A. Demand Response is a Significant Resource that has a Long Tradition of Providing Reliable Load Drop, thereby Reducing Generation from Fossil-Fueled Peaking Plants.

Demand response resources have a long tradition of providing reliable reduction of electricity load ("peak load reduction" or "load drop") when needed to help maintain system reliability. In wholesale markets alone, there were over 28,000 MW of demand

[13] Fed. Reg. Vol. 79, No. 117, at 34850.

response in 2012.[14] The practice of demand response has been present in the utility industry for decades. Traditionally, demand response has been viewed as simple load drop, relieving stress on the electricity network during potential electricity system emergencies. Demand response has proven to be a reliable resource, providing service when called upon and thereby allowing the grid to stay in balance.[15]

The alternative to maintaining system reliability in an electricity emergency with demand response is to rely on fossil-fueled peaking generation. Increased utilization of fossil-fueled peaking generation results in additional carbon and other emissions. Therefore, at its most elementary level, demand response results in carbon emissions reductions at times of peak electricity usage when used as an alternative to fossil-fueled peaking plants.

In recent years, as demand response technologies have improved and the services provided by demand response resources have expanded significantly. Demand response resources now provide not only load drop but also sophisticated and flexible ancillary services such as spinning reserve and frequency regulation. These demand response ancillary services are used to balance the electricity grid all of the time rather than merely during potential emergencies.

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[14] 2013 Assessment of Demand Response and Advanced Metering, Federal Energy Regulatory Commission, Staff Report, October 2013, at 11: http://www.ferc.gov/legal/staff-reports/2013/oct-demand-response.pdf.

[15] See, e.g., PJM Analysis of Operation Events and Market Impacts During the January 2014 Cold Weather Events, May 18, 2014, at 20: http://www.pjm.com/~/media/documents/reports/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.ashx.

When demand response provides these ancillary services, it directly and permanently offsets carbon emissions from fossil-fueled peaking plants. For example, if a demand response resource is providing spinning reserve by curtailing load within a few minutes when called upon, demand response is serving as a real-time service to the grid operator that can displace a spinning generation resource on a megawatt-to-megawatt basis. Generation spinning reserves are required for system stability in all hours of the year. Demand response spinning services can now be available at any time. Therefore, these demand response resources reduce carbon emissions by reducing use of generation spinning reserves in all hours of the year and not just summer peak times. Moreover, these resources have proven to be cost-effective.[16]

As a result of the development of demand response as a more robust system tool, the resource has become even more reliable in providing electricity load reduction. The more refined ancillary services of spinning reserve and frequency regulation are rapid response tools. Frequency regulation is a service where utility system operators expect a response within seconds. Spinning reserve is a service that is typically responsive within minutes. These parameters hold whether the service is provided by demand response resources or by traditional generation resources. Since the required response times are so rapid, those resources have become more automated. The net result of the improved

[16] In the PJM RTO during the 9.5% of the hours in 2013 when only demand response was utilized for spinning reserve the weighted average SRMCP of synchronized reserve was only $1.21/MW. In contrast, the weighted average cost of spinning reserve in PJM for all hours in 2013 was $6.98/MW. State of the PJM Market 2013, Monitoring Analytics, at 310: http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2013/2013-som-pjm-volume2-sec10.pdf.

technologies is that demand response resources are now extremely reliable in providing electricity load reductions during all hours of the year.

B. Demand Response Directly Offsets a Substantial Amount of Carbon Emissions from Fossil-Fueled EGUs.

The utilization of demand response resources to provide electricity market products and services in place of traditional generation provides benefit to society, including significant reduction in carbon emissions. For additional detail and analysis regarding these carbon emissions reductions to EPA, AEMA commissioned the utility consulting firm Navigant Consulting ("Navigant") to study the carbon emissions reduction impacts of demand response. Navigant looked at the direct and indirect effect on carbon emissions reductions from both demand response ancillary services (i.e., spinning reserve and frequency regulation) and peak load reduction (i.e., simple load drop).

The Navigant Study is attached to AEMA's Comments as Attachment A. Most notably, the Navigant Study concluded the following:

> Navigant estimates that demand response could directly reduce CO2 emissions by more than 1% and that its overall role in economics of fuel mix and plan operations will result in CO2 emissions by a larger amount, i.e. potentially an additional 1 percent …. This emission reduction potential is significant when compared to the EPA's targets which propose to reduce CO2 emissions from fossil-fuel power plants by 20 percent from 2012 to levels by 2030. This analysis demonstrates that demand response provides valuable CO2 emissions reductions and thus should be a strategic part of implementation of the Clean Power Plan.[17]

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[17] Navigant Study, Attachment A to AEMA's Comments, at 17.

The Navigant Study found that utilization of demand response to provide ancillary services 50% of the time would directly reduce carbon emissions from fossil-fueled EGUs by 0.6% to 0.8%.[18] As the Navigant Study noted: "Demand response provided ancillary services can reduce CO2 emissions due to more efficient dispatch of generation units."[19]

The Navigant Study provided the following illustration of the problems caused by inefficient dispatch of fossil-fueled generating units that can be alleviated by demand response:

> As an illustration, if a 500 MW coal plant bids 200 MW into the reserves market then it takes heat rate penalty for operating at 300 MW…. The EPA demonstrated in their calculations for building block 1 in the Clean Power Plan that small changes in the heat rates of coal plants can have a significant effect on CO2 emissions.[20]

Moreover, if grid operators utilize demand response rather than dispatch a fossil-fueled peaking plant at all, additional carbon emissions will be avoided. As discussed above, the ancillary services of spinning reserve and frequency regulation are used in all hours of the year. Significantly, spinning reserve and frequency regulation are not provided by zero emissions renewable generating plants because these plants are intermittent electricity resources by nature. Nor are spinning reserve and frequency regulation typically provided by nuclear plants because these plants are usually running at full capacity generating electricity for sale. Spinning reserves and frequency regulation are in most cases provided by marginal fossil-fueled plants running far below their full capability. When grid

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[18] Navigant Study, Attachment A to the AEMA's Comments, at 14.
[19] Navigant Study, Attachment A to the AEMA's Comments, at 13.
[20] *Ibid.*

operators dispatch these fossil-fueled resources to provide ancillary services, there is an increase in carbon emissions that can be avoided if demand response is used instead.

In addition to the substantial carbon emissions reductions from demand response ancillary services, the Navigant Study showed that peak load reduction (i.e., simple load drop) can directly reduce carbon emissions from fossil-fueled EGUs by an additional 0.05% - 0.35%.[21] These emissions reductions occur when simple load drop provided by demand response reduces dependence on natural gas fueled combustion turbine plants that are in service to provide peaking capacity on high peak load days.

The Navigant Study also considered the indirect impact of demand response that results in reductions of carbon emissions that are not as precisely quantifiable.[22] These indirect effects include the retirement of fossil-fueled peaking plants and facilitation of the integration of renewable generation into the electricity grid. As the Navigant Study indicates and as we discuss further below, these two indirect effects also reduce a meaningful amount of carbon emissions.[23]

C. Demand Response Contributes to Retirements of Fossil-Fueled EGUs and Delays Investment in New Fossil-Fueled Peaking Plants.

Demand response has a positive economic impact on the electricity market as a more cost-effective way to manage system peaks than traditional generation. As a result, deployment of demand response contributes to the retirement of uneconomic fossil-fueled peaking plants that rely on operating during a few annual price peaks to maintain

[21] Navigant Study, Attachment A to AEMA's Comments, at 12.
[22] Navigant Study, Attachment A to AEMA's Comments, at 15-17.
[23] Navigant Study, Attachment A to AEMA's Comments, at 17.

economic viability. Generator interests have been very outspoken about the economic disruption that demand response has caused by forcing early retirements of power plants.[24]

As captured in the Navigant Study, these retirements can have a material impact on states in meeting their emissions targets:

> Demand response is one of the factors that can lead to lower coal use and thus lead to retirements of coal units. PJM has noted this in a recent transmission expansion plan.[25] The CO2 emissions reductions from one coal plant retirement can be significant…. PJM calculated that the removal of CO2 emissions from those units that have announced their retirement reduced overall emissions from units covered by the Clean Power Plan by 12 percent, or from 442 million short tons to 392 million short tons, using 2012 emissions. These emission reductions in PJM play a major role in helping states meet their proposed interim (2020-2029) goals under the Clean Power Plan.[26]

Demand response's peak-shaving capabilities also push out in time the development of new fossil-fueled power plants and energy infrastructure that would otherwise be required to meet constantly growing system peaks. Just as significantly, since additional demand response resources can be deployed with short lead times, these resources can reduce carbon emissions more quickly than no-carbon and low-carbon generation resources that have much longer lead times and often require extensive transmission build out. This is particularly important given President Obama's

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[24] See Amended Complaint of First Energy Service Company, FERC Docket No. EL14-55-000, filed September 22, 2014, at 28; Complaint Requesting Fast Track Processing of the New England Power Generators Association, Inc., FERC Docket No. EL15-21-000, filed November 14, 2014, at 13.
[25] PJM, 2012 Regional Transmission Plan: http://www.pjm.com/documents/reports/rtep-documents/2012-rtep.aspx.
[26] Navigant Study, Attachment A to the AEMA's Comments, at 15.

commitment to accelerate reduction in carbon emissions 28% (from 2005 levels) by 2025 in his joint announcement with Chinese President Xi Jinping on November 12, 2014.[27]

D. Demand Response is a Tool to Facilitate Effective Integration of Substantial Amounts of Renewable Generation into the Grid, Increasing Reliability and Offsetting Emissions from Fossil-Fueled EGUs.

The Navigant Study highlights the benefit of demand response as a tool to assist in the integration of renewable generating plants into the grid.[28] Unless demand response is used to maintain system balance to offset the intermittent output of wind and solar generating plants, system operators are forced to rely on fossil-fueled peaking plants to provide the balancing. If more renewable resources are placed on the grid, as EPA calls for in its Proposed Rule, these balancing demands will increase significantly. Therefore, it is critical to utilize demand response resources to the maximum extent possible and avoid the increased use of fossil-fueled peaking plants to balance the grid.

IV. DEMAND RESPONSE SHOULD BE INCLUDED BY EPA AS PART OF ITS BEST SYSTEM OF EMISSIONS REDUCTIONS ("BSER") FOR CARBON EMISSIONS

Since demand response provides so much benefit regarding carbon emissions reductions, the salient question is whether under applicable law EPA should clarify that demand response is included in Building Block 4 in the Final Rule. Since demand

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[27] U.S.-China Joint Announcement on Climate Change, November 12, 2014: http://www.whitehouse.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change.

[28] Navigant Study, Attachment A to the AEMA's Comments, at 16.

response satisfies all of the criteria for being a Best System of Emissions Reduction ("BSER") adequately demonstrated, which is the legal standard under the Clean Air Act and applicable case law, demand response should be included in EPA's Final Rule.

In support of its Proposed Rule, EPA included a Legal Memorandum that discussed the legal issues involved in EPA's determination of a BSER for fossil-fueled EGUs. According to EPA's Legal Memorandum, "a key step in promulgating requirements under CAA Section 111(d) is determining the BSER…"[29]

AEMA agrees that determination of the BSER is "a key step" in EPA's promulgation of these regulations. AEMA believes that determination of the BSER is *the key step* in EPA's regulation of carbon emissions. As EPA's Legal Memorandum points out, under the Clean Air Act, EPA must first determine the adequately demonstrated BSER for carbon emissions from EGUs and then apply that BSER to determine each state's required level of emissions reductions, which the regulations refer to as the "emissions guidelines."[30]

As set forth on 37-38 of EPA's Legal Memorandum, EPA must consider the following criteria in determining whether a system of emission reductions is the BSER:

- The system of emission reduction must be technically feasible;
- EPA must consider the amount of emission reductions that the system would generate;
- The costs of the system must be reasonable: EPA may consider the costs on the source level, the industry wide level, and at least in the case of the power sector, on the national level in terms of the overall costs of electricity and impact on the national economy over time;

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[29] EPA Legal Memorandum, at 13: http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf.
[30] *Ibid.,* at 8.

• EPA must also consider that Clean Air Act Section 111 is designed to promote the development and implementation of technology; and
• EPA must also consider energy impacts, and, as with costs, may consider them both on the source level and on the nationwide structure of the power sector over time.

Demand response meets all five of the criteria for the BSER set forth in EPA's Legal Memorandum based on the Clean Air Act and applicable case law.[31] Therefore, in order to promulgate the BSER for carbon emissions from fossil-fueled EGUs, EPA should clarify that demand response is included in Building Block 4. Additionally, as done with respect to energy efficiency in the Proposed Rule, EPA should calculate the carbon emissions from demand response based on feasible acceleration of demand response in each state for purposes of the Final Rule's determination of the state's required level of carbon emissions.

Demand response clearly meets the first criteria of being technically feasible. Demand response has been implemented by utilities through the country in various degrees for many years to protect the electricity system from brownouts and blackouts during times of peak demand. One proof point that demand response is technically feasible is that over 10,000 megawatts of demand response cleared in the capacity auctions of the PJM RTO for the last several years.[32] PJM recognized the value of

[31] EPA Legal Memorandum, at 37-38: http://www2.epa.gov/sites/production/files/2014-06/documents/20140602-legal-memorandum.pdf.
[32] PJM 2017/2018 RPM Base Residual Auction Results Report, at 15: http://www.pjm.com/~/media/markets-ops/rpm/rpm-auction-info/2017-2018-rpm-bra-planning-parameters-report.ashx.

demand response in their analysis of the Polar Vortex in the winter of 2014 stating, "demand response… assisted in maintaining the reliability of the system."[33]

EPA's second criterion of the amount of emissions reductions that the system would generate can also be met by demand response. As discussed above, the Navigant Study highlighted that demand response can reduce carbon emissions from fossil-fueled EGUs by an estimated 2%.[34]

Perhaps most importantly, demand response programs meet the third criterion that the costs be reasonable with flying colors. Implementation of demand response on the national level would have an incredibly dramatic impact on reducing the costs of electricity and thereby stimulating the national economy. The National Assessment of Demand Response, which evaluated demand response potential on a state-by-state basis, estimated that full participation in demand response would reduce the nation's extremely costly peak demands by 188,000 megawatts or 20%.[35]

Evidence of electricity cost reduction from demand response can be found in PJM's most recent annual electricity supply capacity auction in which demand response reduced the costs of electricity supply capacity charges to consumers in the PJM region

[33] PJM Analysis of Operational Events and Market Impacts During The January 2014 Cold Weather Events, May 18, 2014, at 20: http://www.pjm.com/~/media/documents/reports/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.ashx.

[34] Navigant Study, Attachment A to AEMA's Comments, at 17.

[35] A National Assessment of Demand Response Potential, Federal Energy Regulatory Commission, Staff Report, June 2009, at 27: http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf.

by $9.3 billion.[36] Moreover, PJM has found that demand response was a cost-effective method of saving a megawatthour (MWh) during August 2010 – November 2014 at prices ranging from $22.00 MWh - $40.49 MWh, also cost-effective in the ability to save energy and reduce carbon emissions.[37]

With respect to the fourth criterion that emissions regulations must be designed to promote the development and implementation of technology, demand response can also be an effective tool. As utilities implement smart grid and automated metering infrastructure ("AMI") systems, demand response must evolve to be compatible with these systems. Clearly, inclusion of demand response as part of the BSER will help accelerate this development. Demand response also facilitates the development and implementation of renewable energy and electricity storage technologies. For example, the economics become more attractive for storage if it can be used as part of a demand response program. In this model, demand response resources are used to offset the cost of storage deployments at a customer facility, reducing the payback time for storage.

Finally, the fifth criterion of EPA's consideration of energy impacts can also be met in part by demand response. Since demand response is utilized during times of peak demand that are otherwise met by fossil-fueled peaking plants, demand response reduces the sourcing of fossil fuels necessary for these plants. Moreover, demand response

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[36] 2017/2018 RPM Base Residual Auction: Sensitivity Analyses Revised, Monitoring Analytics, August 26, 2014, at 2: http://www.monitoringanalytics.com/reports/Reports/2014/IMM_20172018_RPM_BRA_Sensitivity_Analyses_Revised_20140826.pdf.

[37] PJM Demand Response Net Benefits Test – Historical Results: http://www.pjm.com/~/media/markets-ops/demand-response/net-benefits/net-benefits-historical-results.ashx.

significantly benefits the nationwide structure of the power sector over time since the presence of demand response contributes to both the retirement of fossil-fueled power plants and avoidance of new fossil-fueled generating plants.

In summary, demand response satisfies the five specific criteria for inclusion in a BSER for carbon emissions from fossil-fueled EGUs set forth in EPA's Legal Memorandum based on the Clean Air Act and applicable case law. Moreover, demand response meets the "adequately demonstrated" standard because it is significantly utilized in all states even though its full potential is still largely untapped in many states.[38] Therefore, as discussed above, AEMA urges EPA to clarify that demand response is included in Building Block 4 by changing the last phrase of the definition of Building Block 4 to the following: "demand-side energy efficiency, *demand response and load management* that reduces the amount of generation required."

In conjunction with the clarification that demand response is included in Building Block 4, EPA should calculate a best practices scenario for demand response that can be included in EPA's calculation of emissions requirements for each state in the Final Rule. EPA has already determined such a best practices scenario for energy efficiency.[39] As with energy efficiency, every electric utility must report to the Energy Information Agency ("EIA") on energy (and peak demand) savings from demand response in EIA Form-861.[40] Clearly, EPA can use this available data, as well as data from the National

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[38] See, A National Assessment of Demand Response Potential, FERC Staff Report, June 2009: http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf.
[39] Fed. Reg. Vol. 79, No. 117, at 34872.
[40] Energy Information Administration Form 861: http://www.eia.gov/survey/form/eia_861/form.pdf; EPA GHG Abatement Measures

Assessment of Demand Response and other sources, in its calculation of a best practices scenario for demand response.

EPA determined its best practices scenario for energy efficiency based on "a feasible policy scenario showing the reductions in fossil-fueled electricity generation resulting from accelerated use of energy efficiency policies in all states consistent with a level or performance that has already been achieved or required by policies of the leading states."[41] AEMA urges EPA to utilize the same approach in determining the best practices scenario for demand response and include this scenario as part of the basis for each state's requirement for carbon emission reductions in EPA's Final Rule.

V. CARBON EMISSIONS REDUCTIONS BY DEMAND RESPONSE MEASURES ARE QUANTIFIABLE AND VERIFIABLE

EPA's Proposed Rule proposes that state implementation plans be allowed to include "a wide (or unlimited) set of energy efficiency programs and measure types in state plans, as long as the energy savings are adequately documented according to rigorous evaluation, measurement & verification ("EM&V") methods and appropriate state regulatory oversight."[42] AEMA urges EPA to clarify that the same approach applies to demand response programs and measures in the Final Rule in this docket. As with energy efficiency, this approach will work for demand response because energy savings

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Technical Support Document: http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-ghg-abatement-measures.pdf.

[41] Fed. Reg. Vol. 79, No. 117, at 34872.

[42] See EPA State Plan Considerations Technical Support Document, at 50: http://www2.epa.gov/sites/production/files/2014-06/documents/20140602tsd-state-plan-considerations.pdf.

calculated by rigorous demand response EM&V methodologies subject to regulatory oversight can be used to calculate carbon emissions reductions.

Tested and proven demand response EM&V protocols in use today adequately document energy savings, as well as peak load reduction impacts, and are subject to state regulatory oversight. For example, the California Public Utility Commission ("CPUC") developed its own demand response EM&V protocols to facilitate integration of demand response into the California electricity system.[43] CPUC requires that California utilities submit annual and monthly reports in compliance with the EM&V protocols which evaluate demand response energy savings and load reduction impacts.[44] Significantly, CPUC's EM&V protocols insure accurate measurement of energy savings from demand response events by addressing any issues of pre-cooling and snap back cooling as well as gaming of load impacts.[45] On the other hand, the State of Maryland has had success utilizing a third-party, independent evaluator model to measure and verify the energy

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[43] CPUC D.8-04-050, Load Impact Estimation for Demand Response: Protocols and Regulatory Guidance, April 2008, Attachment A: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/81979.PDF.

[44] CPUC D.8-04-050, Decision Adopting Protocols for Estimating Demand Response Load Impacts, April 2008: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/81972.PDF.

[45] CPUC D.8-04-050, Load Impact Estimation for Demand Response: Protocols and Regulatory Guidance, April 2008, Attachment A, at 51.

impacts of demand response.[46] The independent evaluator in Maryland verifies each utility's report on demand response energy impacts in a two-step process.[47]

Accurate evaluation of the energy impacts of demand response is critical to maintaining system reliability and grid stability. As a result, the Federal Energy Regulatory Commission ("FERC") tasked the North American Energy Standards Board ("NAESB") to promulgate demand response EM&V model standards for use in wholesale and retail electricity markets.[48] In FERC Order 676-G, FERC required RTOs and ISOs to incorporate the NAESB developed standards into their demand response evaluation, measurement and verification tariffs.[49] As a result, RTOs and ISOs have developed sophisticated demand response EM&V protocols incorporating NAESB standards that are used to pay demand response providers for load reductions and other purposes.[50]

In short, demand response has established EM&V protocols that are even more robust than the EM&V protocols that have been used for energy efficiency. Therefore, AEMA urges EPA to use the approach used for energy efficiency of allowing states (and

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[46] EmPOWER Maryland Energy Efficiency Act "STANDARD REPORT OF 2014", at 22: http://webapp.psc.state.md.us/intranet/Reports/2014%20EmPOWER%20Maryland%20Energy%20Efficiency%20Act%20Standard%20Report.PDF.

[47] Maryland Public Service Commission Order No. 82869, at 2-4: http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\CaseNum\9100-9199\9155\114.pdf.

[48] 131 FERC ¶ 61,022, FERC Order 676-F (2010), at 14: http://www.ferc.gov/whats-new/comm-meet/2010/041510/E-4.pdf.

[49] 142 FERC ¶ 61,131, FERC Order 676-G (2013), at 16-22: http://www.ferc.gov/whats-new/comm-meet/2013/022113/E-3.pdf.

[50] 137 FERC ¶ 61,216, Order on Compliance Filing in Docket ER11-4106-000 Dec. 11, 2011: https://www.ferc.gov/whats-new/comm-meet/2011/121511/E-7.pdf.

multi-states) to include an unlimited set of demand response measures in their implementation plans subject to the energy savings being documented by rigorous EM&V methods and appropriate state regulatory oversight.

VI. CONCLUSION

AEMA appreciates the opportunity to present comments in this regulatory proceeding, urges EPA to include the recommendations discussed above in the Final Rule in this docket, and stands ready to serve as a resource on demand response as EPA moves forward with finalization of the rule and states develop their implementation plans.

Respectfully submitted,

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