STATE OF NEW YORK

State of Vermont

November 5, 2014

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

Re: Docket ID No. EPA-HQ-OAR-2013-0602 – *RGGI States' Comments on Proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 FR 34830 (June 18, 2014)*

Dear Administrator McCarthy:

The nine states participating in the Regional Greenhouse Gas Initiative ("RGGI")[1] submit these comments on the U.S. Environmental Protection Agency's ("EPA's") proposed Clean Power Plan ("CPP"), which would establish carbon dioxide ("CO_2") emission guidelines for existing electric generating units ("EGUs") under Section 111(d) of the Clean Air Act ("CAA"). As the commissioners, directors and secretaries of environmental and energy agencies in our states, we take this opportunity to express the urgent need for strong federal action to reduce the greenhouse gas ("GHG") emissions that cause climate change. We commend the EPA for using its authority under CAA Section 111(d) to build upon the experience of states that have already reduced carbon pollution, by proposing a federal rule recognizing the success of RGGI and other existing state energy programs to reduce CO_2 emissions from power plants cost effectively.

[1] Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont (collectively referred to as the "RGGI states").

In these comments, we express our support for the basic structure of the CPP, in establishing the building block methodology used to construct state emission rate targets and the separate compliance requirement providing states the flexibility requested to build individual plans based on the specific electricity profile of each state or region. We were pleased to learn of the EPA's explicit recognition of RGGI as an acceptable mechanism to achieve compliance with the rule. We also appreciate that the EPA incorporated many of the RGGI states' other pre-proposal recommendations into the proposal[2].

While the CPP will set the nation on a clear path toward achieving significant CO_2 emission reductions from our largest source sector, the RGGI experience has demonstrated that additional cost-effective reductions are possible. In that regard, we identify a number of recommendations to strengthen the effectiveness of the final rule. We note that while the RGGI state comments are submitted at this time to provide substantive reaction to the original proposal, we currently anticipate that we will comment further based upon additional analysis, or any forthcoming information from the EPA. Further, the comments herein reflect the views of the RGGI states as a group. Individual RGGI states may choose to submit separate comments regarding issues specific to that state's circumstances, which may not be addressed herein or which may differ from the group's comments. Lastly, we offer recommendations for the EPA to ensure transparent, verifiable, equitable, and enforceable emission reduction targets for all states.

We recognize the need for urgent federal action to reduce the GHG emissions that cause climate change, especially because the RGGI states are already feeling its effects. According to the National Climate Assessment, heat waves, coastal flooding, and riparian flooding will threaten the Northeast's environmental, social, and economic systems. Indeed, the Northeast has recently been subjected to a greater increase in extreme precipitation than any other region in the nation: a 70 percent increase in the amount of precipitation falling in the heaviest 1 percent of events between 1958 and 2010. Regional sea-level rise has exceeded one foot over the past century. In 2011, Hurricane Irene and Tropical Storm Lee ravaged New York, Connecticut, and Vermont. A year later, the Derecho storm crossed the Midwest and hit the Mid-Atlantic States in less than 12 hours, causing outages for approximately 4.2 million customers. That same year, Hurricane Sandy killed approximately 75 Northeast residents and caused $60 to $80 billion in damage. The RGGI states believe that significant emission reductions offer the best hope of avoiding, to the extent possible, similar and worsening climatic events. The CPP is a critical component of overall national efforts to reduce GHG emissions.

[2] The December 2, 2013 Letter from RGGI states to the EPA is attached and also available at http://www.rggi.org/docs/RGGI_States_111d_Letter_Comments.pdf

1) The RGGI States Support the General Framework of the CPP and Highlight Opportunities for Strengthening the Final Rule

The RGGI states support the general framework of the CPP, including the implementation of multiple strategies across the electricity sector as the "best system of emission reduction" ("BSER") for CO_2 that has been adequately demonstrated. Given the interconnectivity of the U.S. electricity grid, implementation of a combination of measures as reflected in the EPA's "building blocks" – including "beyond-the-fenceline" measures – will have the effect of reducing CO_2 emissions at affected power plants. The RGGI states have demonstrated that by applying the strategies incorporated in the building blocks – as well as other approaches – substantial CO_2 emission reductions are possible over a relatively short time period, while supporting economic goals and maintaining grid reliability.

We also support the flexibility the EPA proposes to provide states in crafting plans to achieve compliance with the targets, which is consistent with key principles of cooperative federalism and the successful history of the CAA. The EPA correctly proposed state-specific emission targets under CAA Section 111(d), while, at the same time, recognizing that states and regions with the experience and authority to regulate energy markets and implement clean energy and energy efficiency programs are in the best position to determine the most cost-effective way to achieve the required emission reductions. Moreover, states and regions have the ability to coordinate across state agencies, work with independent system operators/regional transmission organizations (ISOs/RTOs), and solicit input from stakeholders.

The RGGI states especially welcome the CPP's acceptance of multi-state and mass-based programs as a means of compliance with the EPA's proposed emission guidelines. RGGI has demonstrated that, by working together, groups of states can achieve greater emission reductions at a lower cost, all while creating jobs, maintaining grid reliability, and improving the regional economy. Importantly, a mass-based program like RGGI avoids many of the complications of a rate-based approach, including those discussed by the EPA in the proposal, while also simplifying compliance and enforceability.

While the EPA has taken a significant step forward by proposing the CPP to meaningfully reduce CO_2 emissions from the power sector, we offer the following recommendations to further strengthen the final rule and increase emission reductions. First, additional cost-effective CO_2 emission reductions beyond those projected by the EPA proposal are achievable. Although a 30 percent nationwide CO_2 emission reduction from 2005 levels by 2030 is meaningful progress, it does not put the nation on a trajectory to achieve the 80 percent reduction in emissions by 2050 that scientists say is necessary to avoid the worst impacts of a changing climate. Our experience

in the RGGI region demonstrates that more substantial emission reductions are readily available from other states nationwide – particularly those that have not yet developed and implemented aggressive energy efficiency and renewable energy programs. Moreover, these additional emission reduction opportunities can be realized cost effectively, while creating jobs, maintaining reliability, and producing economic benefits. Additionally, as explained below, greater parity in the emission reduction targets will help facilitate the development of regional strategies to achieve compliance.

Although the proposal anticipates that RGGI or other multi-state programs can serve as a compliance pathway, the final rule should provide clarification on a number of issues to facilitate the use of regional mass-based programs for compliance. While a mass-based approach provides many advantages, for those states that elect to utilize a rate-based approach, the EPA should explicitly prohibit "double-counting" of emission reductions from energy efficiency ("EE") and renewable energy ("RE") measures.

Finally, the RGGI states suggest a number of refinements, discussed below, to the proposed building blocks and state target rate calculations that will enhance the equity and transparency of the targets for all states, and increase the national emission reductions. Specifically, the RGGI states assert that additional cost-effective emission reduction opportunities are available nationwide. Modifications to the building blocks will promote equity among the different state emission targets and recognize states who have already taken early action. For the purposes of these comments, our proposed modifications are discussed in the context of the RGGI region, although designed for applicability on a larger scale.

2) The Proposed Rule Does Not Adequately Recognize Emission Reductions Already Achieved in the RGGI Region

The CPP, which is based on the four building blocks methodologies to compute goals, results in a wide range of 2030 state emission rate targets, and therefore may not adequately recognize the substantial progress already made by early action states, such as the RGGI states. Although the RGGI states recognize that some level of divergence in state targets is necessary, given different starting points and electricity systems, the proposed state targets appear at face value to place some states at a competitive disadvantage by requiring more of states that have already made substantial progress in reducing emissions, while requiring less of states that have not yet acted aggressively to implement cost-effective emission reduction programs.

The RGGI states have already achieved a 40 percent reduction in regional CO_2 emissions from the electricity sector from 2005 levels. In less than a decade, the RGGI states have already

achieved a larger regional emission reduction than the EPA projects the CPP will produce by 2030 across the nation. And while the RGGI states have already realized this progress on a mass-basis, the EPA's proposal would require a 38 percent reduction in the combined CO_2 emission rate of the RGGI states.

These figures also establish that additional reductions are adequately demonstrated and achievable over a shorter time period in other states. Stated simply, some states can cost-effectively do more, as the EPA's proposal leaves substantial amounts of cost-effective emission reductions on the table. Particularly in states that have not yet achieved the early action emission reductions that the RGGI states have, the experience of RGGI states shows that states who have not yet acted to reduce CO_2 emissions from the power sector have an opportunity to make further reductions through the implementation of the more cost-effective efforts available to them. In particular, as the RGGI states have demonstrated, EE and RE measures offer especially cost-effective pathways for other states to reduce emissions.

The RGGI states have implemented a variety of complementary programs and policies to reduce CO_2 emissions. These include programs that incorporate components of each of the EPA's proposed building blocks, such as encouraging shifts to less carbon intensive fossil fuel generation, increasing reliance on carbon-free renewable power, and reducing the demand for generation through EE measures. The participation of our states in RGGI serves as an overarching policy that "caps" the overall level of CO_2 emission from the region's power sector and reflects the complementary benefits of our states' various programs. Taken together, the RGGI states' multifaceted approach to reducing CO_2 emissions from our electric sector is an available and adequately demonstrated system of emission reduction that can be implemented in other states. In other words, our success is evidence of a BSER that can be applied regionally, or even nationwide, to achieve greater levels of emission reduction in other states.

The inequities in the proposed CPP can be addressed by refining the building blocks and proposed state emission rate target calculations as described in more detail below. The CPP's development of emission reduction targets for each state should consider the efforts that many states have already taken and address the apparent inequity of how the emission reduction targets would be applied to early acting states, such as the RGGI states.

3) The RGGI States Support a Mass-Based Option

The RGGI states strongly support the EPA's inclusion of a mass-based compliance option in the proposal. The RGGI states have demonstrated that a regional mass-based approach is a cost-effective way to achieve substantial CO_2 emission reductions. As discussed in more detail below

in Sections 4 and 5, a mass-based approach simplifies compliance and enforceability, and avoids legal and accounting complexities associated with other rate-based approaches. For example, RE and EE programs act as complementary policies under a mass-based program that need not be separately accounted for or made federally enforceable. A mass-based approach also circumvents interstate issues, such as those regarding which state receives "credit" for various RE and EE measures. A mass-based option, in the form of a mass-based emissions cap, also ensures that overall CO_2 emissions remain below specified levels.

A market-driven, mass-based program like RGGI also provides additional emission reduction benefits by leveraging the value of emission allowances. The RGGI states, for example, distribute RGGI CO_2 allowances primarily through regional auctions. Allowance revenues are then used by each RGGI state to fund a variety of EE, RE, and other GHG emission reduction programs and projects. These activities yield significant additional GHG emission reductions, both within and outside of the electricity sector, as well as economic benefits. Other mass-based programs could achieve similar additional benefits through the use of allowance revenues. Finally, because these additional actions serve to facilitate compliance with the emissions cap, the EPA would not need to incorporate these measures as part of states' compliance plans.

4) EPA Should Improve Proposed Methodologies for Rate-to-Mass Conversions

The RGGI states have substantial experience using modeling and other analytical tools to project future CO_2 emissions and other aspects of our electricity sector. For example, as part of the recently completed RGGI Program Review, the RGGI states conducted extensive electricity sector modeling using the Integrated Planning Model ("IPM"). This process allowed for extensive stakeholder input and incorporated many state-specific assumptions including projected electricity load growth. The use of IPM modeling analyses supported our states' decision-making regarding the level of the RGGI emissions cap and other RGGI program changes, as well as individual rulemaking to implement such changes. Our experience demonstrates that it is possible for states to make appropriate projections of future electricity sector emissions that take into account all necessary factors, including load growth.

Given the demonstrated ability of states like ours to conduct modeling or other electricity sector projections and state-specific electricity sector considerations, the EPA should develop a collaborative process with states and regions to develop mass-based targets. In other words, rather than specifying mass-based targets for each state, the EPA should work together with states and regions in order to make the rate-to-mass translation based on assumptions and policy decisions as recommended by the individual state. As the EPA recognizes in the proposal, many states have unique factors within their electricity sectors, such as state-specific transmission constraints,

reliability rules, or other issues. Therefore, while the EPA must include clear methodologies in the final rule to ensure the credibility of each state's rate-to-mass translation, the states should retain a substantial role in the process. Such a collaborative process is also consistent with past practice between the EPA and the states under the CAA.

In developing this collaborative process between the EPA and the states for making the rate-to-mass conversion, the EPA should endeavor to provide as much support to the states as possible. This support should include providing resources to states in the form of both technical and analytical resources and modeling costs. Moreover, the analytical support the EPA provides should cover both the process for converting rate-based targets to mass-based targets, as well as subsequent modeling and other efforts used by states or regions to demonstrate compliance equivalency.

Although the EPA should allow states to have a significant role in the process, the EPA must ensure the integrity and credibility of each state's rate-to-mass translation. If the process outlined in the final rule is too open-ended, then it could create opportunities for states to "game the system" by, for example, building unreasonable assumptions into their projections. This could have the effect of reducing the level of stringency for a state, in terms of the required level of emission reductions. Therefore, in the final rule, the EPA must provide clear and rigorous methodologies for the conversion process.

Finally, the RGGI states acknowledge that EPA may have additional guidance on rate-to-mass translation and the RGGI states may have additional comments on this topic based on the expected additional materials.

5) EPA Should Facilitate Regional Plans and Clarify Compliance Issues

Regional mass-based programs like RGGI have been recognized as the most cost-effective way for states to reduce power sector CO_2 emissions at the levels required by the EPA, in that the least cost reduction mechanisms may be deployed over a larger geographic region and driven by the market. Given these advantages, the EPA should facilitate the use of regional mass-based approaches like RGGI as the means of definitive compliance with state targets. The EPA should also clarify certain issues regarding the use of regional plans for compliance.

A) Benefits of Regional Mass-Based Programs and Encouraging Regional Collaboration

As noted elsewhere, RGGI is a near-perfect match for the CPP. However, the EPA should not view RGGI as an isolated example of the potential of allowance trading programs to reduce emissions cost-effectively. Instead, RGGI draws on decades of economic analysis documenting the advantages of such programs, and successful experience reducing emissions of other pollutants in the northeastern US. In fact, every serious proposal to reduce carbon emissions from EGUs, from proposed US legislation to programs in place in California and Europe, has identified allowance trading as the best approach. The particular relevance of the RGGI program is that it provides an off-the-shelf model that is well-aligned with the goals and structure of the CPP. In order to ensure that other states can take advantage of the opportunity provided by the RGGI model, the EPA should provide strong support for states that implement RGGI-like programs or become participants in RGGI, an outcome that would be welcomed by the RGGI states.

The development of cost-effective multi-state and regional programs will also be supported by revising the proposal to provide for greater parity in emission reduction requirements. Although market-based programs have been shown to reduce costs to all participants by achieving the most cost-effective emission reductions within the region covered by a program, states may be reluctant to collaborate with other states whose reduction targets require a vastly different level of effort. The RGGI states, for example, developed their collaborative effort based on a shared view of the level of the regional emission reduction goals and they prefer to maintain those regional emission reduction goals by joining with other states that have comparable reduction targets. Likewise, a state with a less ambitious reduction target may hesitate to join a regional program with other states that have more stringent emission reduction requirements. Thus, the EPA can promote the development of more cost-effective regional compliance strategies by reducing the existing disparity of the EPA's emission reduction targets between early actors and other states. Further, because the primary driver of interstate collaboration will be the need for significant emission reductions, revisions that affect parity will best support regional collaboration if they maintain or increase the total amount of emission reductions required nationally.

B) Clarification of Compliance Issues for Regional Plans

While the CPP proposal, including associated documents, appears to already provide for many of our suggestions, the RGGI states request that the EPA confirm our understanding of several issues regarding compliance in the final rule.

First, the EPA should clarify its treatment of distinctions between state programs included as part of state plans and the requirements of the CPP under CAA Section 111(d). The RGGI states understand that, provided a state or region makes an acceptable equivalency demonstration in its plan, the EPA will allow for applicability or other differences between the scope of 111(d)

and those of state programs. For example, if a state program has a broader applicability than the affected sources covered under the CPP (e.g., new as well as existing sources), this should not create significant complications for the EPA or the states, and can be incorporated through modeling or other projections used in the rate-to-mass translation. As long as a state or region can demonstrate that its plan is projected to result in an equivalent level of emission reductions from affected sources without weakening the stringency of the targets, then the EPA compliance and enforcement requirements are satisfied. This approach has been used before by the EPA under the CAA, including in the context of State Implementation Plans ("SIPs") for nitrogen oxides ("NOx").

Second, once the EPA accepts the equivalency demonstration described above, then meeting the regional mass-based emissions cap will be the only federally enforceable component of the states' plan under the CPP. In other words, even if the emissions cap covers new sources or other sources that are not affected sources under the CPP, the EPA will still only consider whether the broader regional cap is met in determining states' compliance. The RGGI states recommend that the EPA explicitly confirm this understanding in its final rule. Further, complementary RE and EE programs need not be separately quantified or accounted for, and would not become federally enforceable. As a benefit to this approach, a host of complexities associated with enforceability, accounting, and "double-counting" are altogether avoided by the EPA and the states. Perhaps most importantly, this approach would be consistent with principles of federalism by ensuring that traditional roles of the states – including RE and EE programs – remain within state control.

Third, assuming states successfully make an equivalency demonstration to the EPA as part of their regional plan submission, then compliance and enforceability under this type of regional mass-based approach is straightforward. That is, states would demonstrate compliance with their targets by meeting the overall regional emissions cap. Given that the amount of allowances distributed is limited by the cap, as long as all individual sources hold sufficient allowances to cover their emissions over specified periods, then our understanding is that the EPA will be satisfied with this mechanism as compliance. Finally, individual sources would have a federally enforceable requirement, as part of their individual CAA Title V operating permits, to obtain and hold sufficient allowances to cover CO_2 emissions. In particular, the EPA should clarify that if a state chooses to implement a program that covers existing and new EGUs, it should be allowable for the state to demonstrate compliance with respect to aggregate emissions from both source categories.

Fourth, the EPA should make clear that two or more states or regions with approved mass-based compliance plans can link those approved programs without demonstrating anew

compliance with the EPA's guidelines on a regional basis. For example, if the RGGI states obtain approval for RGGI on a regional basis as complying with the CPP, the RGGI states should be able to link their approved market-based program with the mass-based program/programs of other states that have also obtained the EPA's approval, by allowing for the free exchange of emission allowances between or among the programs. As long as the linking includes such exchange of allowances on a ton-for-ton basis, it should not impact the overall level of emission reductions achieved by the programs. This will reduce the administrative burden of developing more cost-effective multi-state or multi-regional compliance programs and encourage larger groups of states to work together to reduce the cost of compliance.

Because the EPA explicitly recognizes RGGI as an acceptable means of compliance, the RGGI states anticipate that the EPA will confirm each of these issues in the final rule. By providing such confirmation, the EPA would help to encourage greater use of regional plans across the country, thereby achieving required emission reductions in the most cost-effective manner, while simultaneously satisfying the enforceability and other requirements of CAA Section 111(d).

Finally, the RGGI states also note with appreciation that, by regulating carbon emissions in other US states, the CPP will strengthen the RGGI program by leveling the economic playing field between in-region EGUs regulated under RGGI and EGUs in neighboring states that do not currently regulate carbon emissions from EGUs. Regardless of location, reducing carbon emissions from EGUs will benefit all states, so it is appropriate that the CPP will subject all EGUs to similar requirements. A particularly perverse potential outcome of the status quo is emissions "leakage," in which EGUs in adjoining states increase generation (and emissions) in response to any economic signal provided by the RGGI program. Strengthening RGGI by reducing the potential for leakage is therefore an important benefit of the CPP.

6) EPA Should Explicitly Prohibit "Double-Counting"

The RGGI states anticipate utilizing a mass-based approach for compliance, thereby avoiding the potential double-counting of EE or RE measures. However, the RGGI states recognize that some states may elect to use rate-based targets, and in order to ensure transparency and equity, the EPA should include additional clarity in the final rule to avoid potential double-counting of RE and EE measures in compliance demonstrations.

The RGGI states observe that a double-counting issue could arise at the seams of rate-based and mass-based approaches. Although the proposal suggests that this issue could be resolved by a

cooperative accounting agreement among states,[3] the RGGI states note that the approach articulated in the proposal is unlikely to produce the desired resolution. The proposal suggests that the mass-based state could adjust the overall CO_2 emissions from the affected fleet to account for the "export" of avoided CO_2 emission credits. However, RE and EE benefits are automatically accounted for under a mass-based program, as the existence of RE generation and EE "negawatts" displaces the state's or region's reliance on fossil fuel-fired generation. Due to the nature of the electricity system and the economic dispatch model of our shared grids, it is impossible to unravel the location and type of fossil fuel-fired generation the specific unit of RE or EE has displaced. Any adjustment to the overall CO_2 emissions from the mass-based state's affected fleet would therefore be derived from an arbitrary assumption; specifically, in determining the magnitude by which to offset the emissions of the mass-based state's affected fleet. Should an adjacent state — one that relies on a rate-based approach — attempt to claim credit for renewable generation produced in a mass-based state, the RGGI states respectfully suggest that this would reflect an unavoidable double-counting of the RE and EE measures. The mass-based state could not artificially subtract the RE or EE benefit from its compliance demonstration to avoid double-counting.

Therefore, the RGGI states recommend that the EPA prohibit rate-based states from taking credit for renewable generation that is already accounted for under the cap of a mass-based state, in order to ensure the integrity and stringency of the CPP targets. A categorical prohibition would not unduly restrict compliance options for states electing a rate-based approach, as these states still could comply using renewable energy generated in other rate-based states or through mechanisms designed to stimulate in-state renewable generation, such as feed-in tariffs or grant programs. It should be noted that while the RGGI states suggest this prohibition, we would support an alternative approach that avoids the double-counting issue so long as the approach adequately addresses the concerns outlined herein.

Issues associated with the evaluation, measurement and verification of EE savings may also arise as part of states' efforts to comply with the EPA targets. The RGGI states recommend that the efforts of *all* states opting to rely on Building Block Four as a compliance strategy should be fully and consistently credited; the entirety of the energy savings and emission reductions attributable to the implementation of energy efficiency programs within each state should be recognized. However, the quantification and characterization of energy savings and carbon pollution reductions derived from energy efficiency efforts must be subjected to rigorous and consistent evaluation, measurement and verification ("EM&V") practices. The RGGI states advocate that the EPA should adopt baseline criteria for a national EM&V platform to support

[3] *Technical Support Document: State Plan Considerations*, U.S. Environmental Protection Agency Office of Air and Radiation (June 2014), at 94.

consistent methodologies, the use of documented data sources and transparent assumptions, annual reporting and third-party verification. Such baseline criteria could draw from the long-standing and robust EM&V practices employed by the RGGI states. Lastly, the RGGI states request that the EPA provide the recommended EM&V guidance document in advance of issuing the final rule, and that the EPA also provide the opportunity once again for state collaboration and feedback.

7) EPA Should Resolve the Inconsistency in the Definition of "Affected Source"

The RGGI states have identified an inconsistency between the definition of "affected source" in the preamble of the proposed rule and the definition of "affected source" in the proposed rule text. While the definition of "affected source" in the preamble includes the criteria that an EGU combust fossil fuel for more than 10 percent of its total annual heat output, §60.5795(b)(1) does not include this criteria for steam generating units.

This issue has generated some confusion among the RGGI states because the list of affected sources used to set individual state goals is inconsistent with the definition of "affected source" as proposed in the rule. If the proposed definition is included in the final rule, the list of affected sources will need to be broadened, which could lead to amendments to individual state goals. This uncertainty makes it challenging for affected states to submit complete and accurate comments if a proposed state goal is not accurate. To remain consistent with the intent of the preamble, the rules proposed for new, modified, and reconstructed sources under 111(b) and the definition of "affected source" as applied in the setting of state goals, the EPA should amend the definition of "affected source" in §60.5795(b)(1) to include the 10 percent fossil fuel requirement for steam generating units.

8) The Best System of Emission Reduction

Consistent with the Clean Air Act § 111(a)(1) and (d), the EPA set forth its proposed standard of performance for existing sources that reflects the degree of emission limitation achievable through the application of the BSER,[4] expressed by grouping measures into four main categories, or "building blocks."[5] The RGGI states assert that the basic structure of the rule is sound and that cost-effective reductions are possible even beyond what is proposed by the EPA. The building blocks represent a strong foundation from which to compute individual rate-based targets, while providing states with the requested flexibility to design individual compliance plans.

[4] 42 U.S.C. § 7411.
[5] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829, 34836 (proposed June 2, 2014) (to be codified at 40 C.F.R. pt. 60).

The building blocks are intended only as a guide to states for constructing emission reduction strategies, and not as a mandated pathway for compliance.

Indeed, the RGGI states welcome the opportunity to pursue a compliance pathway to meet the EPA's proposed goals that will leverage the market-based regional cooperation already established through the RGGI program and appropriately recognize progress already achieved in the RGGI region. Although such a compliance demonstration would rely on a mass-based program and not on the targeted application of specific building block strategies, the RGGI states engaged in an analysis of the building block structure for purposes of assessing the achievability and stringency of the nationwide goal-setting methodology. Drawing from the RGGI states' demonstrated experience as early adopters of climate change mitigation efforts, the states offer the following comments and suggested modifications to the individual building block methodologies in support of maintaining, and ideally increasing, the overall nationwide level of emission reductions required as part of the final rule.[6]

First, the RGGI states conclude that the 6 percent heat rate improvement targeted by Building Block One is both reasonable and achievable on a fleet-wide basis, and may even extend the economic useful life of aging coal-fired EGUs. *Second*, with respect to Building Block Two, the EPA should seize this opportunity to capture the potential for additional cost-effective reductions achievable through the construction of new natural gas combined cycle units or through the re-powering of existing coal boilers. Failure to account for this potential allows states with no existing natural gas capacity to skirt consideration of this building block altogether in the computation of their rate-based goals, leaving significant additional cost-effective reductions on the table. Furthermore, the RGGI states recommend that the EPA increase the fleet-wide re-dispatch ceiling to a 75 percent capacity factor based on the utilization of the average annual capacity of the natural gas-fired fleet, instead of the nameplate capacity. *Third*, the EPA should adopt – with some modifications to ensure proper stringency – the alternative methodology grounded in the technical and economic potential for in-state renewable generation as the foundation for Building Block Three. If the EPA decides to retain the proposed approach instead, then the RGGI states respectfully urge the EPA to rectify the inconsistency between reliance on hydroelectric resources in the goal computation process while excluding existing hydroelectric resources from compliance demonstrations, which creates an issue for early action states. *Finally*, the RGGI states recommend an alternative methodology for Building Block Four designed to increase the ramp-up rate for states that have not yet taken full advantage of the least-cost resource of energy efficiency.

[6] The RGGI states also evaluated the achievability of building block assumptions, specifically in regard to individual affected sources located within each RGGI state. If certain technical errors or adjustments were identified, the RGGI state may choose to submit state-specific comments as well.

The RGGI states also note a general need to clarify the process for calculating actual rates used to determine compliance following implementation of the emission reduction guidelines. Although the apparent intent is that the compliance demonstration process should mirror the process used in the goal computation methodology, the failure to explicitly articulate this principle has created uncertainty, particularly with regard to the treatment of existing renewable resources. In general, the EPA should clarify that, while existing renewable resources used to calculate state goals are similarly eligible for compliance (to the extent that the resource operates in a particular compliance year), existing resources that are excluded from the goal calculation process cannot be counted toward compliance.

A) Building Block One – Fleet-wide Heat Rate Improvements

Following an economic and technical feasibility assessment, the EPA found that heat rate improvement ("HRI") is an available low-cost approach to CO_2 reduction for existing coal-fired EGUs and subsequently proposed a 6 percent heat rate improvement in each state's coal fleet.[7] During the 2012 baseline year proposed by the EPA, affected coal-fired EGUs totaled 10,466 MW[8] of net summer capacity in the RGGI region and generated electricity at an average rate of 2,175 lb/MWh.[9] The application of a 6 percent HRI translates into a targeted 131 lb/MWh reduction in the carbon intensity of the RGGI region-wide coal fleet. The RGGI states welcome the opportunity to provide feedback in support of the inclusion of a 6 percent HRI assumption in the EPA's BSER determination.

Many stakeholders have and will continue to comment on the achievability of a 6 percent HRI, especially in the context of whether it is appropriate to apply such an assumption uniformly given HRIs accomplished by some coal-fired EGUs prior to the 2012 baseline and given the remaining useful life of such plants. Specifically, in a November 2013 resolution with regard to this proposal, the National Association of Regulatory Utility Commissioners ("NARUC") noted that Section 111(d)(1)(B) requires the Administrator to permit a State, in applying such standards of performance, "to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies."[10]

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[7] *Technical Support Document: GHG Abatement Measures*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014), at 2-40.
[8] *Report EIA-860: "GenY12" Excel*, U.S. Energy Information Administration (Dec. 4, 2013), http://www.eia.gov/cneaf/electricity/page/eia860.html.
[9] In 2012, affected coal-fired EGUs in the RGGI region reported 27,780,609.63 tons of carbon dioxide and produced a net energy output of 25,542,597.07 MWh. (27,780,609.63 tons *2,000 lbs/ton) / 25,542,597.07 MWh = 2,175 lb/MWh. *Id.*
[10] *Resolution on Increased Flexibility with Regard to the EPA's Regulation of Greenhouse Gas Emissions from Existing Power Plants*, NARUC (Nov. 20, 2013).

In regard to the remaining useful life of existing coal-fired sources, according to a recent Southwest Power Pool market study, the national average retirement age of coal-fired generation is 48 years.[11] In the RGGI region, almost 40 percent of the affected EGU coal fleet has been in-service for between 41 and 50 years; and an additional 36 percent of the RGGI region's affected coal summer capacity is already operating well in excess of the national average retirement age.

Table 1: Age of the RGGI Region's Coal Fleet (2012)

	1-10 Years	11-20 Years	21-30 Years	31-40 Years	41-50 Years	51+ Years
Total Coal Summer Capacity (MW)	-	180.00	2,015.20	395.00	4,125.30	3,750.10
% of RGGI Region Coal Capacity	0.00%	1.72%	19.26%	3.77%	39.42%	35.83%

By the beginning of the 2020 compliance timeframe, an even greater percentage of the RGGI region's coal fleet will be approaching the natural end of its industry-recognized useful life. Based on that factor alone and even without further HRI investments, the assumed retirement of any affected coal-fired EGU in the RGGI region that had reached the national average retirement age by 2020 would yield a reduction in the RGGI region's coal fleet carbon intensity of over 56 lb/MWh.[12] In the alternative, as noted by the aforementioned Southwest Power Pool market study, these coal generation units could be retrofitted with emission controls, including efficiency investments that "could significantly extend the economic useful life of the plants well beyond the normal retirement point."[13]

Although independent experts have concluded that the EPA's goal is technically feasible,[14] the proposal does not mandate that every state or every coal-fired EGU engage the 6 percent HRI as a compliance strategy. Indeed, the flexibility afforded by the proposal allows the states to forgo this building block altogether; should a state elect HRI as a compliance strategy, the proposal

[11] *2012 State of the Market*, Southwest Power Pool (May 17, 2013) at 19, a*vailable at:* http://spp.org/publications/2012-State-of-the-Market-Report.pdf.
[12] This calculation assumes that any affected coal-fired EGU in the RGGI region operating in excess of 48 years is retired by 2019 year-end. The calculation also uses the 2012 reported CO_2 emissions and net energy output of the respective coal-fired EGUs. *Report EIA-860: "GenY12" Excel*, U.S. Energy Information Administration (Dec. 4, 2013), http://www.eia.gov/cneaf/electricity/page/eia860.html.
[13] *2012 State of the Market*, Southwest Power Pool (May 17, 2013) at 19, *available at:* http://spp.org/publications/2012-State-of-the-Market-Report.pdf.
[14] Dallas Burtraw, *How can coal power plants reduce emissions and be made more efficient—and at what cost (building block #1)?*, Resources for the Future (Oct. 7, 2014), http://www.rff.org/centers/climate_and_electricity_policy/Pages/6-Increasing-Efficiency-at-Coal-Plants.aspx#A1.

expressly anticipates fleet-wide averaging, thereby facilitating greater opportunities at a lower cost compared to the treatment of plants on an individual basis.[15]

Therefore, to the extent that the 6 percent HRI assumption may be perceived as presenting a near-term challenge with respect to the achievability of individual state goals, the RGGI states suggest several important factors that show that this perception is incorrect. *First*, the range of relative in-service dates of the nation's coal fleet indicates that many of these units may face potential retirement in the coming decade due to age alone, thereby resulting in significant emission reductions during the 111(d) compliance timeframe. *Second*, should these aging coal units elect to invest in HRI efficiency measures as part of a larger strategy for emission reductions in a state, such investments will also serve to increase the lifespan of these units. *Third*, the flexibility afforded to states by the CPP provides an opportunity for a state to demonstrate compliance through any number of pathways, which may not even include an HRI investment strategy. The RGGI states stress that flexibility for purposes of compliance is a welcomed opportunity, but that accountability should not give way to flexibility for purposes of state goal computations. Therefore, the 6 percent HRI assumption should be retained in the final CPP.

B) Building Block Two – Reduced Dispatch From High-Emitting EGUs

Building Block Two focuses on opportunities to improve emissions intensity by increasing the utilization of existing natural gas combined cycle ("NGCC") units. The RGGI states welcome the opportunity to provide suggestions regarding the structure of Building Block Two that would capture some of the potential for additional cost-effective reductions not included in the initial proposal and enhance the technical implementation of the EPA's target-setting methodology.

The RGGI states observe two opportunities which, if implemented together, could strengthen Building Block Two in order to capture some of the cost-effective emission reduction potential not captured in the proposed methodology. First, the EPA should consider revisions to this building block that represent the potential for re-dispatch from existing coal EGUs to new NGCC plants likely to be constructed between now and 2030. Even without the incentives inherent in the CPP, significant new NGCC capacity is anticipated to come on-line by 2030. This significant new capacity represents the potential for additional reductions not contemplated by the proposal, especially by states not currently subjected to this building block due to their lack of existing NGCC plants. The new capacity simultaneously dampens the compliance costs attributable to the CPP. Furthermore, the experience of the RGGI states illustrates that it is reasonable and consistent with demonstrated practices to contemplate the potential for additional re-dispatch to lower-emitting EGUs as part of the target-setting methodology. For example, in New York alone, 18

[15] *Id.*

new NGCC units came on-line between 2004 and 2011, increasing the State's natural gas-fired nameplate capacity by approximately 150 percent in a seven-year period. This experience is typical of the RGGI region, which added more than 21 gigawatts of natural gas-fired generation capacity between 1997 and 2011.[16] Compliance under the CPP is not until 2030, a 16 year period from 2014.

In evaluating a state's potential for new NGCC capacity, the EPA could derive a target using the national compound average growth rate for natural gas projected by the U.S. Energy Information Administration's Annual Energy Outlook, or some other uniform national standard. Other considerations could be the production capacity and construction plans for new natural gas pipelines, as well as the potential to re-power existing coal boilers. As with all of the building block methodologies, the states would not be limited in their compliance options and could achieve the targeted emission reductions through any low or zero-emitting technology, should that option prove more competitive in the particular state.

Including the potential for new natural gas-fired plants as part of Building Block Two will ensure that the effectiveness of the EPA's proposal is not diluted by the construction of new NGCC units, since the current proposal contemplates the use of new NGCC plants as a compliance strategy without including such potential in the goal computation methodology. The RGGI states respectfully recommend that the EPA should generally provide for consistency between target-setting and compliance tools in order to maintain the integrity and effectiveness of the program.

Absent this consistency, the current structure of the CPP may create perverse incentives to build unnecessary new NGCC units. Because new units are not subject to the CPP, a state could achieve emission reductions from affected sources by reducing corresponding generation and constructing new plants to serve the remaining load. Such an approach may reduce the emissions intensity of affected sources in a state without any overall reduction in fleet-wide emissions. Under the current proposal, emissions may simply shift from existing sources to new sources without any overall environmental benefit, a particularly troublesome outcome as new NGCC units can remain in operation for a half century or more. Therefore, the EPA should consider incorporating the potential for new natural gas-fired units into the target-setting methodology included in the final rule to facilitate the overall goal of reducing emissions and encouraging the development of additional renewable energy resources and energy efficiency programs. Moreover, allowing states to count new NGCC towards compliance with a target that does not consider the potential for new natural gas creates inequity in the proposal, since many states with relatively low existing and target emission rates would not actually have that opportunity. The RGGI states have an existing

[16] *Report EIA-860: "Annual Electric Generator Report" Excel*, U.S. Energy Information Administration (2011), http://www.eia.gov/cneaf/electricity/page/eia860.html.

regional emission rate, as well as a 2030 regional emission target, less than that of a typical new NGCC unit.

As a second adjustment to Building Block Two, the RGGI states advocate that the EPA consider re-dispatching affected NGCC units to a higher fleet-wide capacity factor than currently contemplated by the proposal and basing that higher capacity on the average annual capacity instead of nameplate capacity. As observed by the EPA, roughly 6 percent of NGCC units operated at a 75 percent capacity factor or higher in 2012,[17] and this analysis speaks only to the *number* of NGCC units comprising the 6 percent and not to the capacity of these units. Such a distinction is important particularly because this methodology is designed on a fleet-wide basis and not designed to assume achievement of a certain capacity factor on a unit-by-unit basis. A capacity factor in excess of 75 percent at a larger base load plant may facilitate far lesser capacity factors at smaller NGCC units relied on for the peaking power, while still averaging a fleet-wide capacity factor of 75 percent.

In recommending these changes to this building block, the RGGI states note that the EPA proposal contemplates adjusting the application of any particular building block, without detriment to the EPA's proposed stringency of the national goal, if a state can also demonstrate why the application of the other building blocks would not result in greater emission reductions than are reflected in the EPA's quantification for that state.[18] The RGGI states recognize that the proposal therefore allows a state's overall emission reduction target to be adjusted should demonstrated geographical and system topology constraints exist in a state's electricity system.[19]

Overall, most of the RGGI states are able to re-dispatch to lower-emitting EGUs, serving as a region to depict the achievability and reasonableness of the Building Block Two methodology. In the RGGI region, there are over 70 affected NGCC plants representing 25,559 MW of nameplate capacity.[20] During the 2012 baseline year proposed by the EPA, affected NGCC plants across the RGGI region operated at an average 48 percent capacity factor; following the Building Block Two application of the assumed increased NGCC utilization rates, the RGGI region's NGCC capacity factor increases to 59 percent, although three states in the RGGI region individually reach the maximum assumed re-dispatch target of 70 percent.

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[17] *Technical Support Document: GHG Abatement Measures*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014), at 3-9.
[18] 79 Fed. Reg. 34893.
[19] New York anticipates submitting separate comments regarding the application of this building block to New York.
[20] *Report EIA-860: "GenY12" Excel*, U.S. Energy Information Administration (Dec. 4, 2013), http://www.eia.gov/cneaf/electricity/page/eia860.html; *Technical Support Document: Goal Computation*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014), at data file: goal computation – Appendix 1 and 2 (XLS).

Table 2: Building Block Two Impact on the RGGI Region [21]

	NGCC Nameplate Capacity (MW)	Hist NGCC Gen. (MWh) (2012)	Re-dispatched NGCC Gen. (MWh)	2012 NGCC Capacity Factor	Post Re-dispatch NGCC Capacity Factor Assumed by EPA
Connecticut	2,749	15,299,704	15,734,432	63%	65%
Delaware	1,193	5,179,270	7,335,518	49%	70%
Maine	1,389	4,053,378	4,112,445	33%	34%
Maryland	289	676,556	1,775,773	27%	70%
Massachusetts	6,625	23,603,160	26,201,176	41%	45%
New Hampshire	1,506	6,946,869	8,300,824	53%	63%
New York	9,848	44,002,777	60,550,923	51%	70%
Rhode Island	1,961	8,140,017	8,140,017	47%	47%
RGGI Region	**25,559**	**107,901,731**	**132,151,109**	**48%**	**59%**

The nameplate capacity relied on by the EPA within the context of this proposed methodology indicates the maximum output a generator can produce without exceeding design thermal limits. Therefore, the RGGI states recommend that the EPA improve the technical implementation of its methodology by reflecting instead an adjusted capacity factor and re-dispatch derived from the average annual capacity of affected NGCC units.[22] The average annual capacity is derived from the *net summer capacity* and the *net winter capacity* of the affected NGCC plants, since these values indicate the maximum load a generator can support at the point of interconnection during the respective season.[23]

[21] New Hampshire notes that the nameplate capacity of its NGCC units (1,506 MW) cited by the EPA may represent a technical error. *See 2014 – 2023 Forecast Report of Capacity, Energy, Loads, and Transmission*, ISO New England (May 1, 2014), at 5.1.4, 5.1.8; *available at:* http://www.iso-ne.com/static-assets/documents/trans/celt/report/2014/2014_celt_report_rev.pdf.

[22] The RGGI states note that this recommendation is contingent on the EPA also adopting the discussed recommendation pertaining to inclusion of new natural gas capacity in the building block.

[23] For purposes of these comments, the "average annual capacity" is derived by assuming three summer months rated at the net summer capacity and nine winter months rated at the net winter capacity. The RGGI states note that the EPA may elect some variation of this formula to derive the average annual capacity should the EPA adopt this recommendation.

Table 3: Affected NGCC Plants in the RGGI Region
Comparison of Nameplate Capacity (MW) and Net Summer Capacity (MW)

	Nameplate Capacity		Net Winter Capacity		Net Summer Capacity		Average Annual Capacity	
	NGCC Capacity (MW)	2012 NGCC Capacity Factor	NGCC Capacity (MW)	2012 NGCC Capacity Factor	NGCC Capacity (MW)	2012 NGCC Capacity Factor	NGCC Capacity (MW)	2012 NGCC Capacity Factor
Connecticut	2,749	63%	2,659	65%	2,418	72%	2,599	67%
Delaware	1,193	49%	1,082	54%	1,130	52%	1,094	54%
Maine	1,389	33%	1,350	34%	1,250	37%	1,325	35%
Maryland	289	27%	230	33%	230	33%	230	33%
Massachusetts	6,625	41%	6,324	42%	5,414	50%	6,097	44%
New Hampshire	1,506	53%	1,358	58%	1,203	66%	1,319	60%
New York	9,848	51%	9,613	52%	8,529	59%	9,354	54%
Rhode Island	1,961	47%	1,930	48%	1,725	54%	1,879	49%
RGGI Region	**25,559**	**48%**	**24,546**	**50%**	**21,900**	**56%**	**23,896**	**51%**

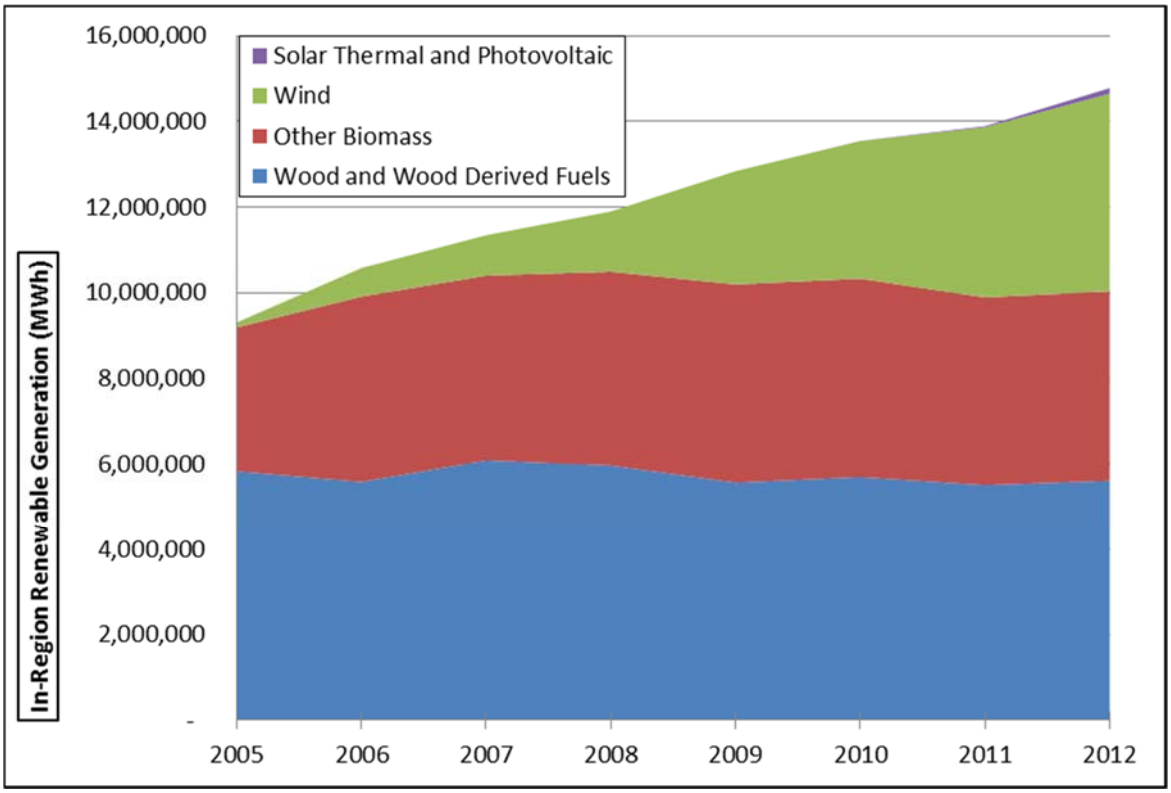
Taken together, these improvements to Building Block Two (i.e., including re-dispatch to new NGCC in the goal setting and re-dispatch of remaining coal and oil generation to existing NGCC, up to a 75 percent capacity factor based on average annual capacity) represent the BSER. The RGGI states assert that this package of recommendations: (1) optimizes the emissions reduction potential of this building block while limiting the potential for unintended outcomes; (2) capitalizes on the increase in new NGCC capacity nationwide that will occur through market forces irrespective of the proposed rule; and (3) reflects the thermodynamic limitations of NGCC units. It is important that these suggestions be implemented together so as to preserve the overall stringency of this Building Block. The combination of the recommendations results in a demonstrated level of achievable emission reductions, accountability, and flexibility consistent with states' requests and Congress's intent in section 111(d) of the Clean Air Act.

C) Building Block Three – Using an Expanded Amount of Less Carbon-Intensive Generating Capacity

A third component of the BSER includes a determination by the EPA that a certain amount of generation at the affected EGUs can be replaced by using an expanded amount of lower-carbon generating capacity. The RGGI states affirm through their demonstrated experience that the cultivation of less carbon-intensive, renewable generation can be a cost-effective prong of a wide-ranging emission reduction strategy. Between 2005 and 2012, the RGGI states increased in-region, non-hydroelectric renewable generation by 47 percent. Solar and wind generation increased by 4043 percent. This impressive growth in renewable generation promises to continue in the RGGI region, due to a combination of aggressive state policies such as renewable energy portfolio

standards ("RPS"), net metering tariffs, long-term contracting, the establishment of "Green Banks," innovative green financing mechanisms, and renewable energy technology grant programs.

Figure 1: RGGI Region Renewable Generation (MWh), 2005 – 2012 [24]



In addition to the aggressive renewable energy portfolio standards and other complementary policies implemented throughout the RGGI region, the RGGI states also reinvest auction proceeds to build a clean energy infrastructure and stimulate the creation of high-paying green jobs. More than 6 percent of RGGI proceeds generated at auction through the end of 2012 were reinvested in clean and renewable energy programs across the region; examples include programs that provide grants or low-interest financing to businesses and homeowners seeking to install on-site renewable or clean energy systems.[25] This reinvestment—topping $43 million—has helped consumers in the RGGI region minimize up-front expenses and use the savings generated by the installed measure each month to pay for the system. Furthermore, consumers in the RGGI

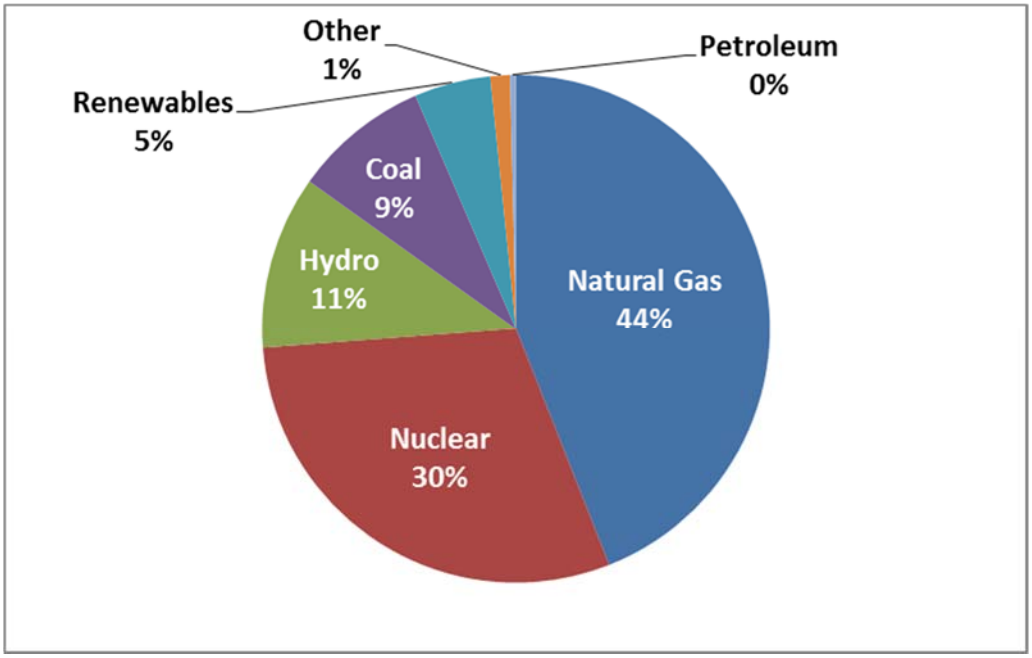
[24] *1990 – 2012 Net Generation by State by Type of Producer by Energy Source (EIA-906, EIA-920, and EIA-923)*, U.S. Energy Information Administration (May 20, 2014), http://www.eia.gov/electricity/data/state/.
[25] *Regional Investment of RGGI CO2 Allowance Proceeds, 2012*, The Regional Greenhouse Gas Initiative (Feb. 2014), at 4.

region are expected to realize more than $73 million in lifetime energy bill savings as a result of the states' reinvestment in clean and renewable energy.[26]

1. Renewable Generating Capacity

In the 2012 baseline year proposed by the EPA, the RGGI states produced 5 percent of their in-region generation from the renewable resources of biomass, solar thermal and photovoltaic, wind, wood and wood derived fuels. The other non-carbon emitting resources of nuclear and hydroelectric power produced an additional 30 percent and 11 percent of the 2012 RGGI in-region generation, respectively.[27]

Figure 2: RGGI Region Generation Mix, 2012



Therefore, with over 46 percent of the 2012 in-region generation derived from clean and renewable energy, RGGI is well-positioned to comment on the achievability of the Building Block Three state targets. The RGGI states offer the following recommendations in the context of assuring that the EPA exercises an approach to Building Block Three that maximizes the expansion of all cost-effective, cleaner renewable generation resources.

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[26] *Id.*
[27] *1990 – 2012 Net Generation by State by Type of Producer by Energy Source (EIA-906, EIA-920, and EIA-923),* U.S. Energy Information Administration (May 20, 2014), http://www.eia.gov/electricity/data/state/.

First and foremost, because the EPA has structured its building block methodologies to express the best system of emission reductions on an individual state basis, the RGGI states recommend that the focus of establishing an *in-state* renewable generation target should be on the technical and economic potential for the expansion of renewable generation within the boundaries of *the individual state*. Such an approach is different than the EPA's proposed derivation of an in-state renewable generation target from an averaging of the renewable portfolio standards in the corresponding region.

Renewable portfolio standards are a mechanism by which to drive investment in renewable energy through the participation of a state in a larger regional market. Through an RPS approach, renewable resources are incentivized to build at the most economically and technically feasible location within the borders of the defined RPS market – borders that generally correspond to the regional grid in which the state operates, rather than aligning with individual state boundaries. In establishing aggressive RPS policies, states consider the potential for the regional market to fulfill the demand created by the state policy, and do not necessarily require the siting of all incentivized renewable energy to occur within their individual state borders; to do so would be to ignore the benefits and realities of participating in a regional transmission organization. Contrary to these fundamentals, the EPA's proposed methodology relies on state RPS goals to yield in-state renewable generation targets and does not fully capture the benefits of the RPS mechanism as a *regional* tool. Furthermore, the EPA's proposed approach neglects to appropriately incentivize renewable energy in states and regions that previously disregarded the benefits of investing in a cleaner energy infrastructure.[28]

The majority of the RGGI states[29] recommend that the EPA adopt as its Building Block Three methodology, with modifications, the alternative approach to the quantification of renewable energy generation as described in the proposal and accompanying technical support documents.[30] However, with the recent release of a Notice of Data Availability (NODA) from EPA on October 28, 2014, the RGGI states now anticipate that they will provide further comments at a later date on an alternative methodology for Building Block Three that can better achieve cost-effective emissions reductions from deployment of renewable resources and provide appropriate

[28] For example, the Southeast regional renewable energy generation target corresponds to only 10 percent as proposed by the EPA since only 1 of the 8 states in the identified region previously adopted a renewable portfolio standard. This is in stark contrast to the 25 percent regional renewable energy generation target proposed for states in the Northeast. *Technical Support Document: GHG Abatement Measures*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014), at 4-17.
[29] Maine may submit separate comments recommending alternative approaches.
[30] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829, 34869 (proposed June 2, 2014) (to be codified at 40 C.F.R. pt. 60); *Alternative RE Approach Technical Support Document*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014).

recognition for states that already generate a significant portion of their electricity from renewable resources.

In addition, the RGGI states strongly urge the EPA to delineate in the final rule the renewable energy technologies used in the goal computation process and those that are available to the states for compliance purposes. Whatever the ultimate decision by the EPA with respect to the qualifying renewable technologies, the RGGI states urge consistency between target-setting and compliance options so that the stringency of the nationwide goal is maintained. The RGGI states note that this specificity and consistency is needed across all building blocks and for all proposed methodologies; if a reduction potential or technology is considered when computing a state's target, then that same mechanism should be available to the states for compliance purposes.[31]

The RGGI states further note that this consistency between renewable technologies used in the goal computation process and available to states as compliance options is especially critical should the EPA choose not to adopt the recommendation offered herein with respect to the alternative methodology for Building Block Three. Specifically, if the EPA chooses to maintain the current methodology, it must address the issue created for early actor states that include hydroelectric power as a qualifying resource in their RPS portfolios. The RGGI states recommend that the EPA *either*: (1) include hydroelectric resources in the goal computation procedure, and permit all existing and future hydroelectric resources to qualify for compliance purposes; *or*, (2) remove hydroelectric power from the goal computation methodology and permit only new or incremental hydroelectric renewable resources to qualify as compliance measures.[32]

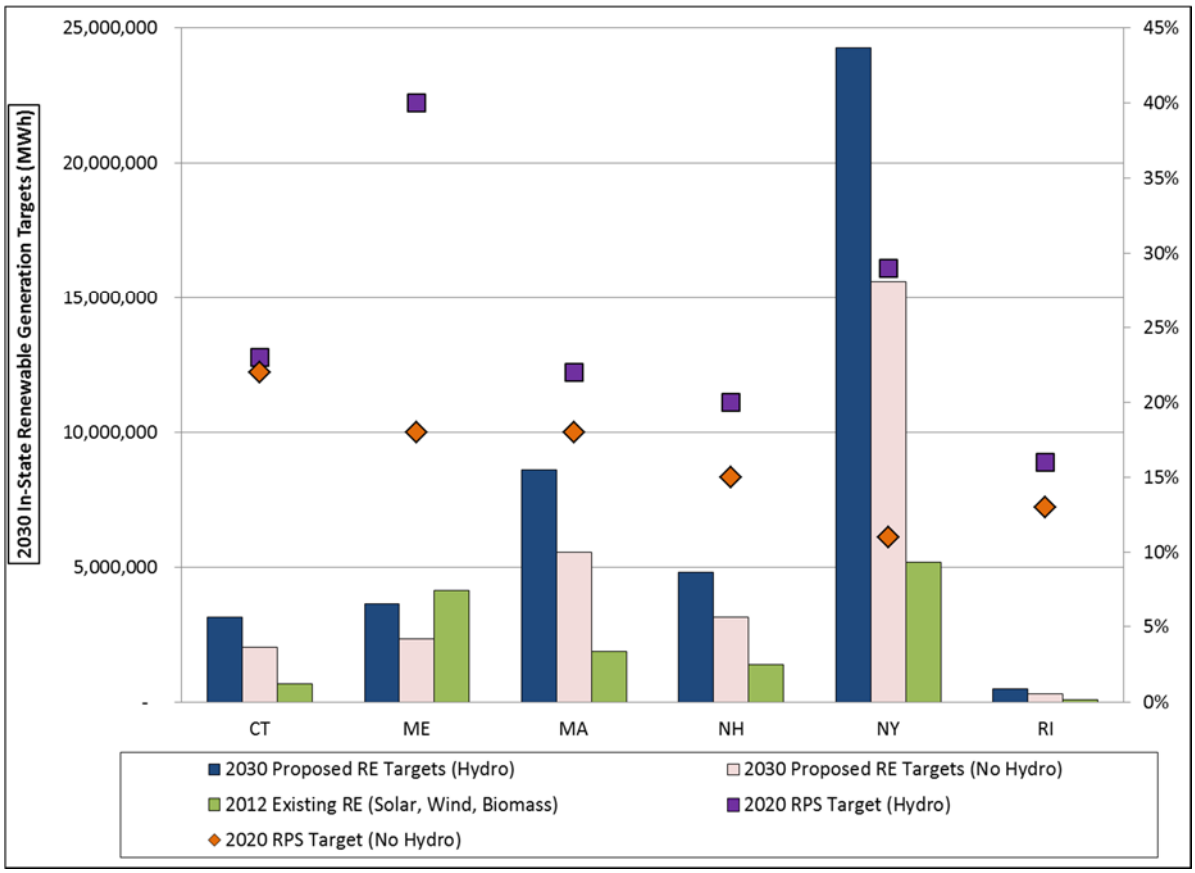
The RGGI states respectfully emphasize that a decision by the EPA to retain its current Building Block Three methodology, coupled with a decision not to adopt one of the above proposals with respect to hydroelectric resources, would artificially distort the objective of certain early actors' existing RPS state policies. State RPS targets are reflective of state expectations for future generation from technologies included in the RPS portfolio, and the RPS targets set by the

[31] The RGGI states strongly recommend that this consistency is a fundamental of all elements contained in the final rule, whether addressing renewable technologies such as hydroelectric or biomass resources, new natural gas combined cycle units, or any other component of the BSER determination.

[32] The majority of the RGGI states reaffirm the recommendation that the EPA adopt the alternative methodology for Building Block Three. However, consistent with this section, the RGGI states offer several suggested modifications to the original approach should the EPA maintain its current methodology. Additional suggested modifications include: if the EPA is unable to calculate a state's RPS percentage derived from existing hydroelectric resources, and that state's RPS is clearly distorted by the inclusion of existing hydroelectric resources, then the EPA could remove that state's RPS percentage from the regional calculation.

Northeast regional states[33] are dependent to varying degrees on the inclusion of hydroelectric resources for RPS compliance purposes. As demonstrated by the following graph, the impact of including hydroelectric resources as part of the target-setting methodology creates a differential between the Northeast states' existing renewable generation and their derived 2030 proposed renewable energy targets that is unrivaled in its stringency and may not be technically achievable without the inclusion of existing hydroelectric resources as a compliance option.

Figure 3: Impact of Including Hydroelectric Resources in the Renewable Energy Generation Goal Computation for the Northeast Region



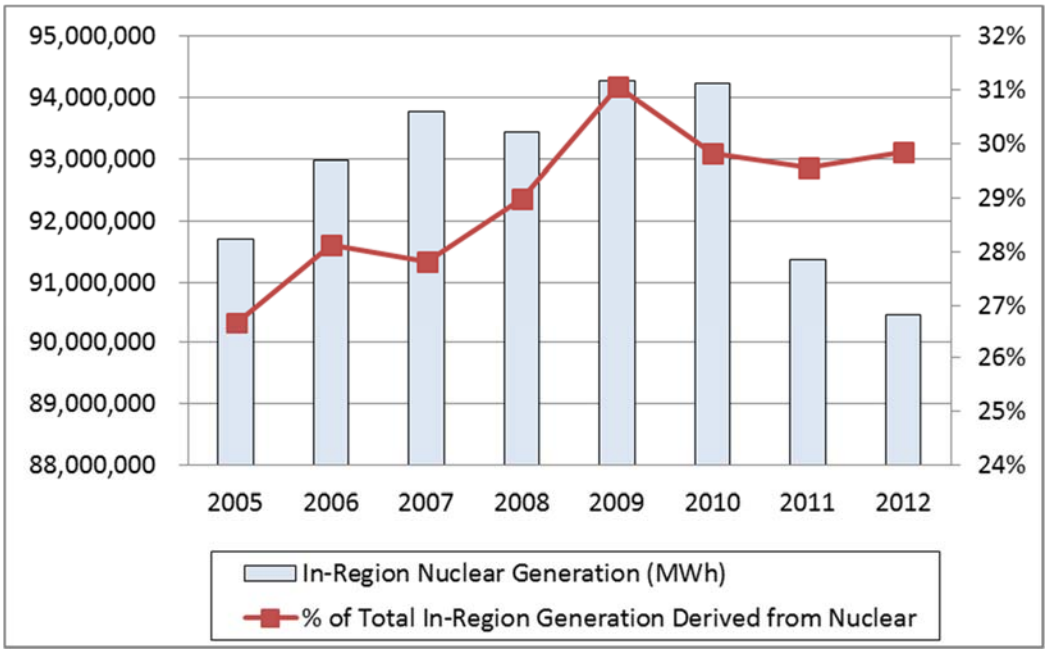
2. *New and Preserved Nuclear Capacity*

In the 2012 baseline year proposed by the EPA, approximately 30 percent of generation produced in the RGGI region was derived from nuclear resources. In fact, even as demand in the

[33] For purposes of the Building Block Three methodology, the EPA defined the Northeast Region as including the following states: Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

RGGI region decreased over time, nuclear generation increased its percentage share of the total in-region generation by 3 percent between 2005 and 2012.

Figure 4: RGGI in-Region Nuclear Generation (MWh), 2005 – 2012 [34]



The overall experience of the RGGI states demonstrates that a mass-based approach to emission reductions can incentivize economic and otherwise viable nuclear resources to remain on-line by increasing the competitiveness of legacy nuclear resources with fossil fuel-fired EGUs (which should increasingly reflect a carbon price in their offerings). However, experience in the RGGI region suggests that financial and other issues need to be taken into consideration when evaluating or forecasting the contribution of nuclear resources, particularly in light of the transformation of the natural gas market in recent years. In the rate-based goal-setting methodology at issue here, the EPA proposal attempts to incentivize states to retain existing nuclear generation through the inclusion of an at-risk assumption in the goal computation methodology.

While additional incentives may be necessary – especially at the federal level, the EPA should remove the at-risk assumption from the goal computation methodology since its design neglects to account for the full range of possible circumstances in which a nuclear resource may

[34] *1990 – 2012 Net Generation by State by Type of Producer by Energy Source (EIA-906, EIA-920, and EIA-923),* U.S. Energy Information Administration (May 20, 2014), http://www.eia.gov/electricity/data/state/.

be pressed into retirement. If the EPA opts to retain its proposed approach, then the EPA should consider outlining an off-ramp by which the nuclear generation component would be removed from a state's goal computation upon expiration of an existing license or following an accident that translates into cost-prohibitive repairs.

D) Building Block Four – Demand-Side Energy Efficiency

Energy efficiency is widely regarded as the least-cost energy resource option available today. A recent American Council for an Energy-Efficient Economy ("ACEEE") study concluded that electric utility energy efficiency programs, at an average cost of 2.8 cents per kilowatt hour ("kWh"), provide resource options ranging from one half to one third the cost of alternative options such as building new power plants.[35] Natural gas energy efficiency programs are also available and economic; compared to a natural gas commodity price of 49 cents per therm in 2013, natural gas energy efficiency programs prevailed as a least-cost option at an average cost of 35 cents per therm.[36]

On the demand side of the equation, investment in energy efficiency programs serves as an invaluable tool for ratepayers to mitigate their own reliance on electricity and to diminish their overall monthly gas and electric bills. The RGGI states are already reaping the benefits of these types of programs through the reinvestment of auction proceeds. The reinvestment of over $700 million generated by RGGI auctions through calendar year 2012 is projected to return more than $2 billion[37] in lifetime energy bill savings to more than 3 million participating households and more than 12,000 participating businesses[38] in the region.[39] Not only are these programs projected to offset the need for approximately 8.5 million megawatt hours ("MWh") of electricity generation and save more than 37 million British thermal units ("mmBTU") of fossil fuels, but in addition, the programs are projected to avoid the release of approximately 8 million short tons of carbon dioxide pollution into the atmosphere over their lifetime.[40]

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[35] Maggie Molina, *The Best Value for America's Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs*, ACEEE Report Number U1402 (March 2014), at iii.
[36] *Id.*
[37] RGGI investments in energy efficiency programs are expected to return more than $1.8 billion in lifetime energy bill savings to consumers in the region. An additional $73 million in lifetime energy bill savings is attributable to RGGI investments in clean and renewable energy. *Regional Investment of RGGI CO2 Allowance Proceeds, 2012*, The Regional Greenhouse Gas Initiative (Feb. 2014), at 4.
[38] "Participating businesses" is defined in the report as the number of "end-user" businesses and government entities who have directly received assistance as a result of the program. Additional information is available in the report posted to the RGGI website. *See Regional Investment of RGGI CO2 Allowance Proceeds, 2012*, The Regional Greenhouse Gas Initiative (Feb. 2014), at 34, *available at:* http://rggi.org/docs/Documents/2012-Investment-Report.pdf.
[39] *Id.* at 3.
[40] *Id.*

Similar benefits will continue to accrue as the RGGI states reinvest proceeds generated from RGGI auctions in calendar years 2013 and beyond. In addition to the aforementioned benefits derived from RGGI auction proceeds generated in calendar years 2008 – 2012,[41] RGGI auctions produced an incremental $720,442,037 in calendar years 2013 and 2014 (with one more auction remaining this year), bringing in a total of over $1.8 billion in RGGI auction proceeds to date.[42]

Between the reinvestment of RGGI auction proceeds and the driving force of our states' existing aggressive energy efficiency policies, the RGGI states developed an early lead in realizing the benefits of energy efficiency as a resource and tool. The RGGI states are frontrunners in the implementation and adoption of energy efficiency programs, with eight of the RGGI states reporting incremental electricity savings and/or cumulative energy savings as a percentage of 2012 retail sales well above the national average.[43] Therefore, the RGGI states welcome the inclusion of energy efficiency as an element of the EPA's determined best system of emission reductions.

The RGGI states take this opportunity to note that our wealth of experience implementing energy efficiency programs demonstrates that other states—especially those that have not yet seized the opportunity to invest in such programs—possess largely untapped and substantial potential to achieve energy savings through energy efficiency measures. Furthermore, these states should embrace this opportunity to invest in energy efficiency programs that empower their ratepayers with tools that will lower their monthly bills by reducing energy consumption.

One mechanism to maximize the potential emission reductions contemplated by Building Block Four would be to assign an increased ramp-up rate to those states which by year-end 2012 had not met or exceeded either the average U.S. total incremental savings as a percentage of retail sales (2012) or the average U.S. total cumulative savings as a percentage of retail sales (2012).[44] Specifically, the goal computation for these states should reflect a targeted 0.38 percent rate of improvement of incremental annual savings per year, as opposed to the 0.20 percent per year ramp-up schedule identified by the EPA in the current proposed goal computation. This heightened ramp-up rate of 0.38 percent per year is supported by data and analysis included in the EPA's technical support documents,[45] and is consistent with the demonstrated concept that "lower-hanging fruit" is ripe for the picking.

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[41] RGGI auction proceeds generated in Auction Nos. 1 – 18 (held in calendar years 2008 – 2012) yielded $1,119,788,758.19. *See* http://rggi.org/docs/Auctions/18/Auction_18_State_Proceeds_and_Allowances.pdf.
[42] *Auction Results: Allowances Offered & Sold (by Auction)*, RGGI, Inc. (Sept. 5, 2014), *available at:* http://rggi.org/market/co2_auctions/results.
[43] *Technical Support Document: GHG Abatement Measures*, U.S. Environmental Protection Agency Office of Air and Radiation (June 10, 2014), at 5-17 – 5-19.
[44] This methodology would increase the stringency of this building block for 24 of the states using data included in Table 5-4 of the GHG Abatement Measures TSD.
[45] *Id.* at 5-35 and Appendix 5-3.

The concept of lower-hanging fruit recognizes that certain energy efficiency measures can be undertaken quickly, cost effectively, and as part of a wider range of reduction strategies. This is supported by energy efficiency supply curves, such as the McKinsey Curve, which depict a number of efficiency measures by category and sector according to the average cost of the efficiency measure and the value of direct energy savings that the measure is expected to provide over its lifetime.[46] States just starting to implement energy efficiency measures likely have a wide variety of inexpensive strategies to choose from, while states that are already undertaking aggressive efforts to achieve their economic energy efficiency potential may be targeting measures further up the supply curve, which requires a greater investment of resources and effort. The endeavors of states already exceeding the national average for incremental or cumulative savings (calculated as a percentage of 2012 retail sales) should be recognized by maintaining the 0.20 percent ramp-up rate as proposed by the EPA.

Sincerely,

Rob Klee
Commissioner
Connecticut Department of Energy and Environmental Protection

John W. Betkoski III
Vice Chairman
Connecticut Public Utilities Regulatory Authority

David S. Small
Secretary
Delaware Department of Natural Resources Environmental Control

Dallas Winslow
Chairman
Delaware Public Service Commission

[46] Hannah Choi Granade et al., *Unlocking Energy Efficiency in the U.S. Economy*, McKinsey & Company (July 2009), at 15.

Patricia W. Aho
Commissioner
Maine Department of Environmental Protection

David Littell
Commissioner
Maine Public Utilities Commission

Robert M. Summers, PhD
Secretary
Maryland Department of the Environment

Kelly Speakes-Backman
Commissioner
Maryland Public Service Commission

David W. Cash
Commissioner
Massachusetts Department of Environmental Protection

Mark Sylvia
Undersecretary
Massachusetts Energy and Environmental Affairs

Thomas S. Burack
Commissioner
New Hampshire Department of Environmental Services

Robert R. Scott
Commissioner
New Hampshire Public Utilities Commission

Joseph Martens
Commissioner
New York Department of Environmental Conservation

Audrey Zibelman
Chair
New York Public Service Commission

John B. Rhodes
President and CEO
New York State Energy Research and Development Authority

Janet Coit
Director
Rhode Island Department of Environmental Management

Marion S. Gold
Commissioner
Rhode Island Office of Energy Resources

Justin Johnson
Deputy Secretary
Vermont Agency of Natural Resources

James Volz
Chairman
Vermont Public Service Board