

RGGI EPA RULES COLLABORATIVE

RESPONSES TO EPA QUESTIONS ON SECTION 111(d) GUIDELINES

The Pace Energy and Climate Center convenes a group of utilities, electric generators, environmental groups, a business coalition and state officials from the Northeast and Mid-Atlantic (NEMA) region to engage EPA on the development of federal guidelines under Section 111(d) of the Clean Air Act. The Collaborative also seeks to foster understanding of the Regional Greenhouse Gas Initiative (RGGI) among state officials and stakeholders in states not currently participating in RGGI. This document presents RGGI-focused answers to the questions posed by EPA to states and stakeholders in late September 2013.¹

Principles for Development of Section 111(d) Guidelines

On October 31, 2013, Collaborative participants submitted the following short set of objectives to EPA related to the development of guidelines under Section 111(d) of the Clean Air Act:

1. The Regional Greenhouse Gas Initiative (RGGI) should qualify as a compliance mechanism framework under forthcoming EPA rules under Section 111(d) of the Clean Air Act. EPA should allow additional states to use the RGGI cap-and-trade mechanism to meet federal Section 111(d) emission reduction requirements, subject to a determination of performance level equivalency.
2. Federal guidelines should not penalize early movers. Accordingly, the guidelines should give states, including those participating in RGGI, appropriate credit for the emissions reductions achieved due to efforts taken prior to the effective date of the federal requirements.
3. In determining what is the “best system of emission reduction” that has been “adequately demonstrated”, as those terms are used in Section 111(a)(1) of the Clean Air Act, EPA should evaluate the RGGI cap-and-trade mechanism as an applicable model for other interested states.
4. EPA should support states interested in participating in RGGI with assistance to facilitate the use of the RGGI mechanism to achieve reductions.

Consistent with these objectives and in furtherance of them, the Collaborative has considered select questions presented by EPA and, after setting those questions out, provides responses below.

¹<http://www2.epa.gov/sites/production/files/2013-09/documents/20130923statequestions.pdf>

EPA QUESTION 1: What is the state and stakeholder experience with programs that reduce CO₂ emissions in the electric power sector?

- What actions are states, utilities, and power plants taking today that reduce CO₂ emissions from the electric power system? How might these be relevant under section 111(d)?
- What systems do states and power plants have in place to measure and verify CO₂ emissions and reductions?
- How do state programs and measures affect electricity generation and emissions at a regional level?

- Nine Northeast and Mid-Atlantic States already regulate CO₂ emissions from power plants under the Regional Greenhouse Gas Initiative (RGGI).

RGGI in a Nutshell²

- RGGI is a cooperative effort among 9 states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce CO₂ emissions from power plants in the region.
- By combining emissions trading with a price for carbon emissions, the emissions budget model seeks out the most efficient reduction projects within the market and delivers a quantifiable, lowest-cost outcome in terms of both overall emissions levels and aggregate power plant emissions rates.
- RGGI is composed of individual CO₂ Budget Trading Programs in each participating state. Through independently promulgated state regulations consistent with the Model Rule,³ each participating state's CO₂ Budget Trading Program limits carbon emissions from electric generating units consistent with the regionally agreed to cap, issues CO₂ allowances and establishes a regional CO₂ allowance auction. States have the flexibility to select how allowances are distributed and may choose to participate in the regional auction. Revenues from the regional auctions are returned to each state where they may be invested in emissions reduction programs or other initiatives at the state's discretion.
- Covered units – electric generators 25 MW in size or greater - are required to report quarterly CO₂ emissions data to RGGI participating states through the U.S. Environmental Protection Agency's Clean Air Markets Division Business System in

² This section is taken largely from the RGGI, Inc. website at www.rggi.org

³ http://www.rggi.org/docs/ProgramReview/FinalProgramReviewMaterials/Model_Rule_FINAL.pdf. The current model rule underwent changes as a result of RGGI states' 2012 comprehensive review of the program.

accordance with U.S. EPA regulations at 40 CFR Part 75.⁴ Thus, RGGI does not impose reporting requirements different from federal requirements applicable to units nationwide.

- RGGI power plants can use a CO₂ allowance issued by any participating state to demonstrate compliance with an individual state program. In this manner, the state programs, in aggregate, function as a single regional compliance market for CO₂ emissions.

RGGI Region Progress on Power Plant Emissions

- As shown in the figure below, since 2005 the RGGI region has achieved an approximate 43% reduction in CO₂ emissions from power plants covered by RGGI.⁵
- The reductions depicted include the emissions reduction benefits achieved through a number of driving factors, including but not limited to: changes in relative fuel prices, renewable portfolio standards and energy efficiency programs, retirements of less efficient units and addition of more efficient units, changes in dispatch, overarching economic conditions,⁶ uprates in nuclear capacity and the RGGI program.
- After the 2012 comprehensive review of the RGGI program, the regional emissions cap was reduced by the RGGI States to 91 million tons beginning in 2014, reducing an additional 2.5 percent per year through 2020, leveling at 78,175,000 tons. The revised RGGI cap level was based on estimated 2012 emissions levels in RGGI member states.⁷
- RGGI market participants are able to bank allowances and use or sell them at their discretion; there is no expiration date for allowances. However, in the event that the overall emissions cap is modified, the 'bank' of privately-held allowances must be accounted for to ensure that the total pool of allowances matches the program's compliance requirements.

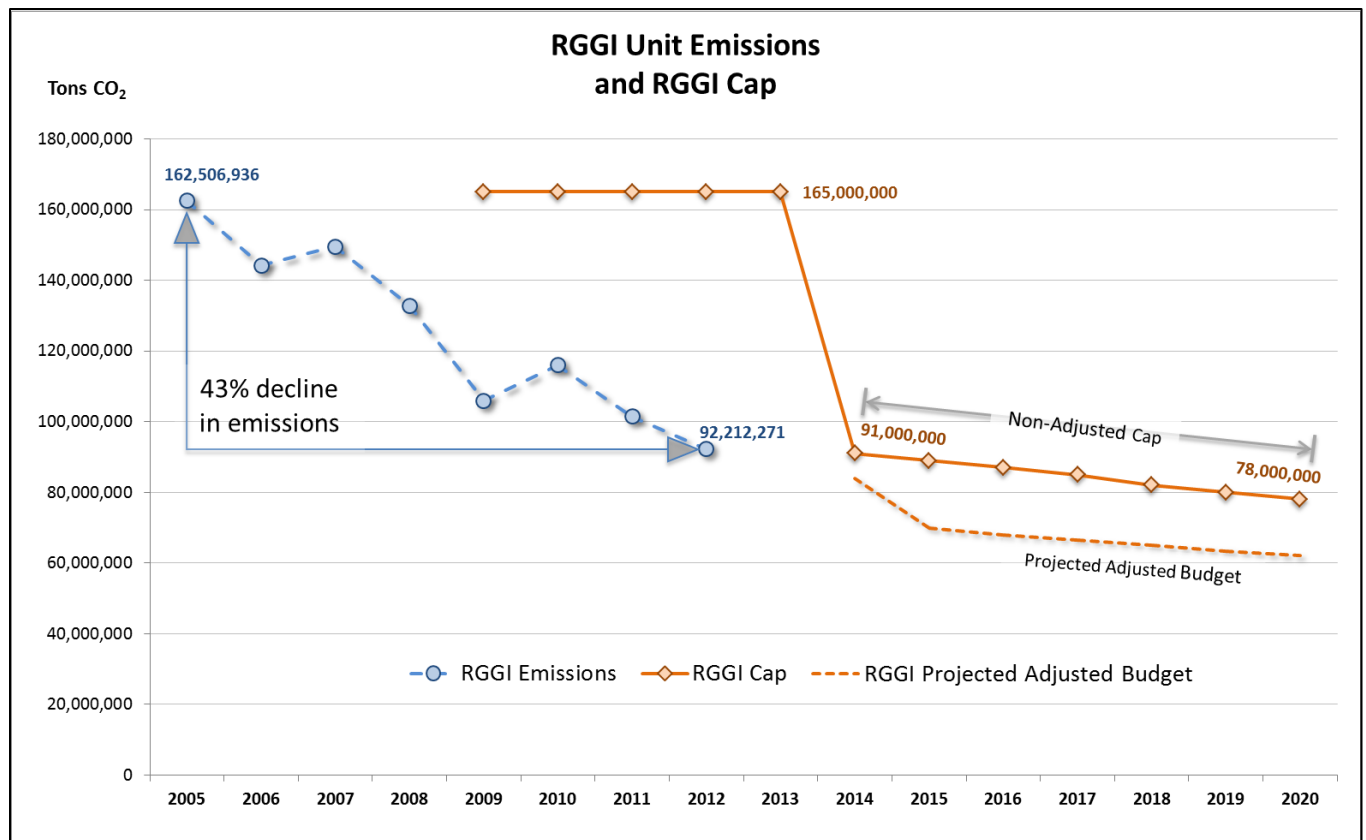
⁴ http://www.rggi.org/docs/RGGI_Compliance_2012_Fact_Sheet.pdf.

⁵ Data Source: RGGI⁵ 2005-2008 Emissions: http://www.rggi.org/historical_emissions; 2009-2012 Emissions: https://rggi-coats.org/eats/rggi/index.cfm?fuseaction=search.rggi_summary_report_input&clearfuseattribs=true; Adjusted Budget: http://www.rggi.org/docs/ProgramReview/February11/13_02_11_IPM.pdf

⁶ Analysis by the New York State Energy Research and Development Authority found that changing economic conditions contributed only 4.4% of the emissions decline from 2005-2009, far less than fuel-switching (31.2%) and changes in capacity mix (20.7%); see http://www.rggi.org/docs/Retropective_Analysis_Draft_White_Paper.pdf. Since 2009 RGGI emissions have continued to decline, even as the economies of RGGI states have experienced economic growth.

⁷ 91 million tons based on actual 2012 q1-q3 emissions, plus 2011 q4 emissions as an estimate for 2012 q4 emissions. See slide 4 at: http://rggi.org/docs/ProgramReview/January8/13_01_08_IPM_Presentation.pdf

- During the 2012 program review the RGGI States developed a plan to account for the private bank when the cap is reduced in 2014. Two adjustments will be applied to the number of allowances that will be offered at auction by the states:
 - First, the allowances that will be offered at auction by the states will be reduced over a seven-year period (2014-2020) to account for the private bank remaining from the first control period (vintages 2009, 2010, and 2011);
 - Second, to account for allowances that were auctioned in 2012 and 2013 – during the second compliance period, but before the cap is reduced on January 1, 2014 – the States will adjust the allowances that will be offered at auction over the six-year period from 2015 to 2020 to subtract any allowances held by market participants in excess of the total quantity of 2012 and 2013 emissions.



- Between 2005 and 2010, the overall CO₂ emission rate of the power sector in the RGGI states declined from 985 lbs/MWh_{net} to 807 lbs/MWh_{net}. The CO₂ emission rate of the

affected fossil fuel-fired sources only in the RGGI states declined from 1,707 lbs/MWh_{net} to 1,390 lbs/MWh_{net}.⁸

RGGI is Based on Extensive Stakeholder Input, and a 2012 Comprehensive Program Review

- The RGGI states began development of RGGI in the fall of 2003. Stakeholders, including all stakeholders participating in this RGGI EPA Rules Collaborative, actively engaged the states in the development of the RGGI program.
- The RGGI states recently completed a comprehensive 2012 program review with extensive stakeholder input. The 2012 review reflected on performance of the program and program design was adjusted to improve performance.
- The RGGI stakeholder process resulted in the adoption of some key provisions that provide for programmatic flexibility beyond the inherent flexibility of emissions trading, including: the ability of compliance entities to bank allowances for use in future years, multi-year compliance periods, ability to trade allowances, a cost-containment reserve (CCR) paired with an allowance price floor, and periodic program review to make necessary adjustments to the program.

RGGI is Modeled after Federal Programs to Reduce Emissions from Power Plants

- RGGI builds on years of experience that EPA, the states and power plant owners and operators have had with emissions trading programs under the federal Acid Rain Program, the summertime NO_x Budget Program in the Northeast and Mid-Atlantic states, and the NO_x SIP-Call Program, all of which were in place before RGGI.
- The RGGI Model Rule is based on the federal NO_x SIP Call model rule, adjusted by the states in consultation with their stakeholders.
- EPA and other states could develop Section 111(d) regulations that are similarly based on this experience.

⁸ From Table 1 of the following report and includes New Jersey:
http://rggi.org/docs/Documents/Elec_monitoring_report_2011_13_06_27.pdf

EPA QUESTION 2: How should EPA set the performance standard for state plans?

- Which approaches to reducing CO₂ emissions from power plants should be included in the evaluation of the “best system of emission reduction” that is used to determine the performance level(s) that state plans must achieve? Should the reduction requirement be source- or system-based?
 - How does the amount of flexibility that states are given to include different types of programs in their state plans relate to the “best system of emissions reduction” that is used to set the performance bar for state plans? For example, if state standards to improve end-use energy efficiency were included in state plans, should EPA consider potential improvements in end-use energy efficiency in setting the performance target for states?
 - What should be the form and specificity of the performance level(s) in EPA guidelines? (Rate-based or mass-based? Separate levels for each subcategory of sources, or one level for the covered sources in the state? A uniform national level, or different levels by state/region based on an established evaluation process?)
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- In determining the performance level state plans must achieve, EPA should evaluate the RGGI cap-and-trade mechanism framework as an applicable model for RGGI and other interested states. As outlined in the preceding section, the RGGI mechanism is a flexible system-based approach that offers benefits to participating states and in the context of section 111 of the Clean Air Act has been adequately demonstrated as a system of emissions reduction.
 - Flexibility should be permitted in state plans and that flexibility should be evaluated in setting the performance target for states.
 - EPA should consider providing a mass-based performance level for states consistent with establishing emissions allowance budgets or other mass-based approaches. If EPA moves forward with a rate-based performance standard, it should allow state plans to demonstrate that their chosen mass-based performance level is equivalent to, or more stringent than, a rate-based standard.

EPA QUESTION 3: What requirements should state plans meet, and what flexibility should be provided to states in developing their plans?

- What level of flexibility should be provided to states in meeting the required level of performance for affected EGUs contained in the emission guidelines?
- Can a state plan include requirements that apply to entities other than the affected EGUs? For example, must states place all of the responsibility to meet the emission performance requirements on the owners or operators of affected EGUs, or do states have flexibility to take on some (or all) of the responsibility to achieve the required level of emissions performance themselves or assign it to others (e.g., to require an increase in the use of renewable energy or require end-use energy efficiency improvements, which will result in emissions reductions from affected EGUs)?
- What components should a state plan have, and what should be the criteria for approvability?
- Can a state plan include programs that rely on a different mix of emission reduction methods than assumed in EPA's analysis of the "best system of emission reduction" that is used to set the performance standard for state plans?
- What should be the process for demonstrating that a state plan will achieve a level of emissions performance comparable to the level of performance in the EPA emission guidelines?
- What enforceability, measurement, and verification issues might arise, depending on the types of state measures and programs that states include in their plans? For example, what issues are raised by actions that have indirect effects on EGU emissions, such as end-use energy efficiency resource standards, renewable portfolio standards, financial assistance programs to encourage end-use energy efficiency, building energy codes, etc.)?
- Do different CO₂ reduction methods under different state plan approaches necessitate different timelines for the achievement of emission reductions?
- What issues arise from the fact that operation and planning of the electricity system is often regional, but CAA section 111(d) calls for state plans? How should interstate issues be addressed, where actions in one state may affect EGU emissions in another state? For example, where actions have interstate impacts, which state would receive credit for the emission reductions in its state plan? Could EPA provide for coordinated submittal of state plans that demonstrate performance on a regional basis?

- RGGI is an effective and flexible mechanism to reduce emissions from existing power plants. State plans should be allowed to rely on flexible mechanisms such as RGGI to achieve emissions reductions, even if EPA adopts a rate-based standard.
- RGGI essentially imposes two requirements on regulated electric generating units. Each unit must: (1) measure, monitor and report its CO₂ emissions, and (2) surrender one allowance for each ton of CO₂ emitted at the end of each compliance period.

- RGGI does not dictate which plants may emit CO₂ or how much. Plant owners and the purchasers of wholesale electricity determine which plants will run and when.
- As a mass- and system-based approach to reducing emissions, RGGI incorporates the avoided emissions from improved energy efficiency and non-emitting generation without the need for special crediting mechanisms.
- The performance level achieved by electric generating units in the RGGI program is clear and verifiable. When all units are in compliance with the program, the aggregate cap is met and the program has achieved its CO₂ emissions goal.
- RGGI demonstrates an approach that is regional in nature that can correspond geographically with the boundaries of regional transmission organizations that operate the electricity system. For example, all six New England states comprising the territory of ISO New England, the operator of New England's grid, are participants in RGGI.

EPA QUESTION 4: What can EPA do to facilitate state plan development and implementation?

- What types and amount of guidance and implementation support should be provided to states?
 - Are there benefits for coordination among neighboring states in the development and submittal of state plans? Should EPA facilitate the coordination of multi-state plan submittals?
 - Would certain types of measures that might be included in state plans increase the need for coordination among states?
 - Are there model rules that EPA could develop that would assist states, and what would those rules cover?
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- The RGGI states have developed a model rule that individual states used to enact state-by-state CO₂ Budget Trading Programs. As discussed above, this model rule is based on the federal model rule for the NO_x SIP-Call program, and therefore will be familiar to any state that was part of that program.
 - RGGI states have also developed an emissions and allowance tracking system, called the CO₂ Allowance Tracking System (COATS), which was modeled after and based on the federal Emissions and Allowance Tracking System (EATS) used to administer federal emissions trading programs.

- RGGI states have also developed an allowance auction platform that is used in quarterly, regionally coordinated auctions.
- EPA should consider and build upon the RGGI experience in developing guidance and other supporting materials for states. For states choosing to adopt the RGGI framework, RGGI offers a model rule and infrastructure.

RGGI EPA RULES COLLABORATIVE PARTICIPANTS

Calpine Corporation

Chesapeake Climate Action Network

Consolidated Edison

Environmental Defense Fund

Environment Northeast

Exelon Corporation

National Grid

Natural Resources Defense Council

New England Clean Energy Council

New York Power Authority

NextEra Energy

The RGGI EPA Rule Collaborative is convened and staffed by the **Pace Energy and Climate Center**. For inquiries, please contact Executive Director Franz Litz (flitz@law.pace.edu or (518) 424-5832) or Director of Strategic Engagement Jackson Morris (jmorris@law.pace.edu or 914-539-1985). Dallas Burtraw of Resources for the Future and Brian Jones of MJ Bradley & Associates served as advisors to the Collaborative.