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# The Clean Power Plan Puzzle: The Future of Efforts to Control Climate Pollution in the Northeast



David Gahl, Pearl Gray, and Nicholas Martin

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## EXECUTIVE SUMMARY

In October 2015 the U.S. Environmental Protection Agency (EPA) finalized the first national plan to cut climate pollution from power plants. Called the Clean Power Plan (CPP), the effort requires a 32% nation-wide reduction in greenhouse gas (GHG) emissions from the power sector. The CPP also gives states multiple pathways to comply. Now states are on the clock: they must submit their individual compliance plans or signal their intent to submit multi-state plans by September 2016.

The nine states participating in the Regional Greenhouse Gas Initiative (RGGI), the first market-based trading platform established to cut climate pollution from power plants in the Northeast, must now decide the future of the effort.

This paper explores a few of the key issues for state regulators in the RGGI region with a special focus on New York State. We discuss the need to reset the RGGI cap to ensure progress toward New York's and other state climate pollution reduction goals. We recommend a change to RGGI's structure that will ensure compliance with the CPP. We discuss the EPA's proposed Clean Energy Incentive Program (CEIP), an effort to encourage early state actions to reduce emissions. And we discuss other implementation issues with respect to linking RGGI to other mass-based state compliance plans.

In brief, we recommend that the RGGI states adopt a new cap that requires *at least* a 2.5 percent per year reduction in region-wide GHG emissions.

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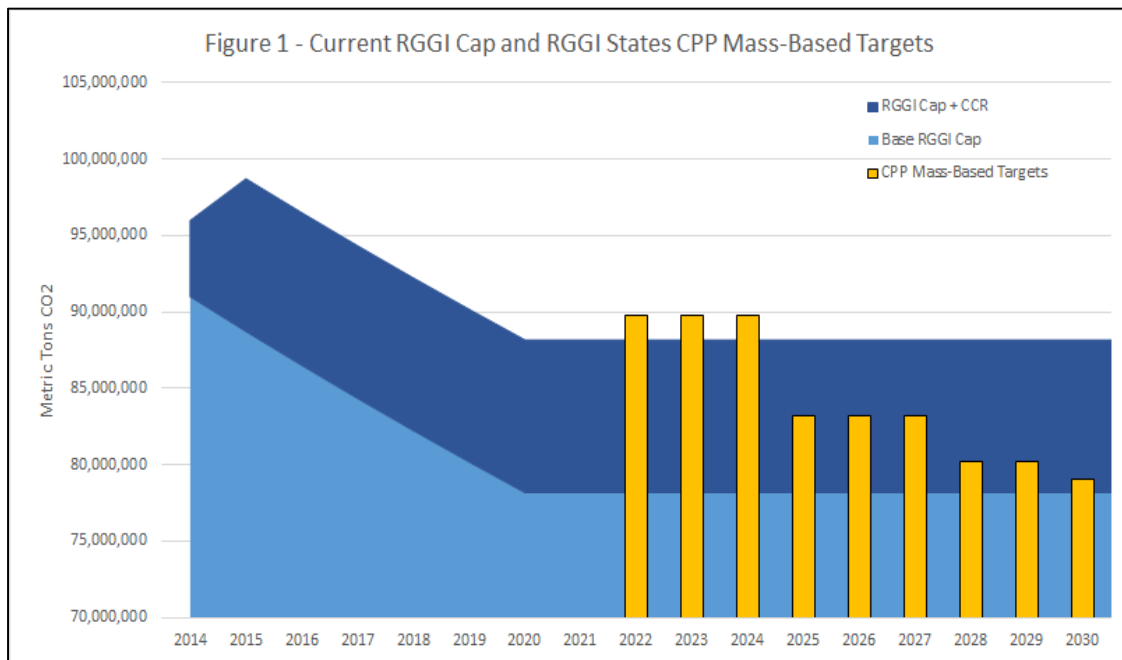
## 1. INTRODUCTION

On August 3rd, 2015, President Obama released the final version of the U.S. EPA's Clean Power Plan, the first national effort to cut the pollution responsible for climate change from the power sector. By the year 2030, the CPP will cut GHG emissions from power plants by 32% from 2005 levels. States must meet a set of interim GHG reduction targets and a final overall target.

EPA's final plan provides states with great flexibility in achieving this overall goal by establishing two major pathways for state compliance. States can either establish an overall rate-based target set in pounds of GHG per megawatt hour (MWh), or they can establish a mass-based target set in overall tons of GHG emitted.

While none of the states have formally announced whether they will submit rate or mass-based plans, states in the Northeast have already had great success with the mass-based approach. Starting in 2008, New York and eight other Northeastern states finalized and implemented the nation's first mass-based program to cut carbon dioxide (CO<sub>2</sub>) pollution from power plants. Called the Regional Greenhouse Gas Initiative (RGGI), the effort has helped reduce emissions by more than 40 percent since the program's inception.

In the second compliance period alone, RGGI's innovative cap, trade, and invest structure has also produced \$1.3 billion in net economic benefits for the region.<sup>1</sup>



By auctioning emissions allowances in the mass-based scheme, states raised additional funds for public benefit initiatives. States currently invest these proceeds in energy efficiency projects, renewable energy projects, and efforts to provide direct bill relief to electricity customers.

These same states have also established aggressive, economy-wide GHG emission reduction goals. New York State Governor Andrew Cuomo, for example, established an aggressive goal to reduce GHG emissions from all sources by 40 percent by the year 2030 in the recently finalized 2015 New York State Energy Plan.<sup>2</sup>

With EPA seeking final state compliance plans, or requests for time extensions to submit plans, by September 2016, all 50 states are grappling with important CPP decisions. State regulators in the Northeast, in particular, are also faced with a number of thorny implementation problems as they consider the relationship between RGGI and CPP implementation.

## 2. THE CURRENT RGGI CAP VS. EPA'S TARGETS: HOW THE GOALS COMPARE

Given that the RGGI states spent time and money to create the infrastructure to administer their mass-based trading platform, it is likely that they will pursue some

form of mass-based compliance plan. But the RGGI states cannot submit their existing state plans to EPA without modification.

Pace's preliminary analysis (Figure 1) shows that when added together, the CO<sub>2</sub> emissions target for the nine states under the CPP is slightly higher than the RGGI cap established in 2012. Using the base RGGI budget, the existing 2020 RGGI cap would be approximately 858,000 tons lower than the EPA's 2030 target.

But features of the RGGI program design need revisions to ensure compliance with the CPP. For example, in 2012, the RGGI states created the Cost Containment Reserve (CCR) as a mechanism to respond to allowance price increases caused by unexpected events such as power plant outages and transmission interruptions. This special pool of RGGI allowances is separate and in addition to the RGGI cap. The states set the CCR budget at 5 million tons in 2014 and 10 million tons in 2015 and each year thereafter. Upon reaching predefined allowance trigger prices in the quarterly RGGI auctions, allowances from the CCR are released and sold to help alleviate allowance price increases when demand outpaces supply.

Unmodified, the current CCR mechanism increases the overall RGGI cap above EPA's 2030 target (as well as 2025-2029 interim goals) as shown in the dark blue

shading in Figure 1. It is unlikely that EPA would approve state plans or a joint state compliance plan with this mechanism in place.

The simplest solution would be to eliminate the CCR altogether. The need for the CCR may have been justified when RGGI was essentially a closed nine-state system and more prone to fluctuations in allowance prices. As part of CPP compliance, however, many states are likely to set up mass-based programs that will be “trading ready.” In other words, the pool of states potentially issuing CO<sub>2</sub> allowances is likely to grow. Even if the RGGI states link with only a limited number of state mass-based plans, the scale of the CPP may provide the “liquidity” to respond to unforeseen events that had not existed in a nine-state context.

### 3. ACHIEVING STATE GHG REDUCTION GOALS: HOW RGGI CAN GET US THERE

Another key consideration for state regulators is setting RGGI on a path toward achieving their own economy-wide GHG emission reduction goals. Nearly every state in RGGI has committed to substantially reducing their economy-wide GHG emissions over the next several decades. Aggressive power sector reductions must be implemented if RGGI states are to meet their own emission targets.

In New York State, for example, Governor Cuomo adopted three ambitious clean energy goals earlier this year. In June, the Empire State committed to reducing greenhouse gas emissions by 40 percent below 1990 levels by the year 2030. The State also committed to obtaining 50 percent of the state’s electricity from renewable sources and increasing building efficiency 23 percent by 2030.

While reaching these goals will not be possible through GHG reductions in the electricity sector alone, states such as New York should strive to achieve the greatest amount of reductions as possible from this sector. This would alleviate pressure on other sectors that may find it more costly to achieve similar levels of reductions.

A McKinsey & Company report analyzing GHG abatement costs and potential in the United States found more than half of the abatement potential under \$50 per ton of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) in the Northeast is in the

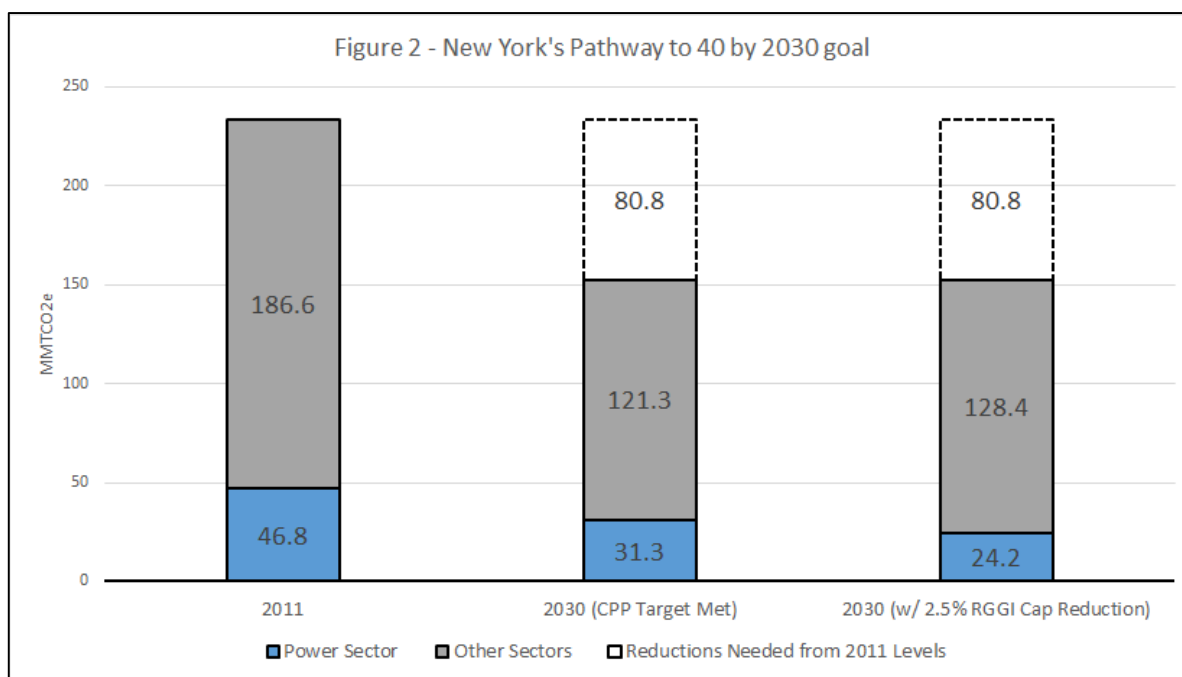
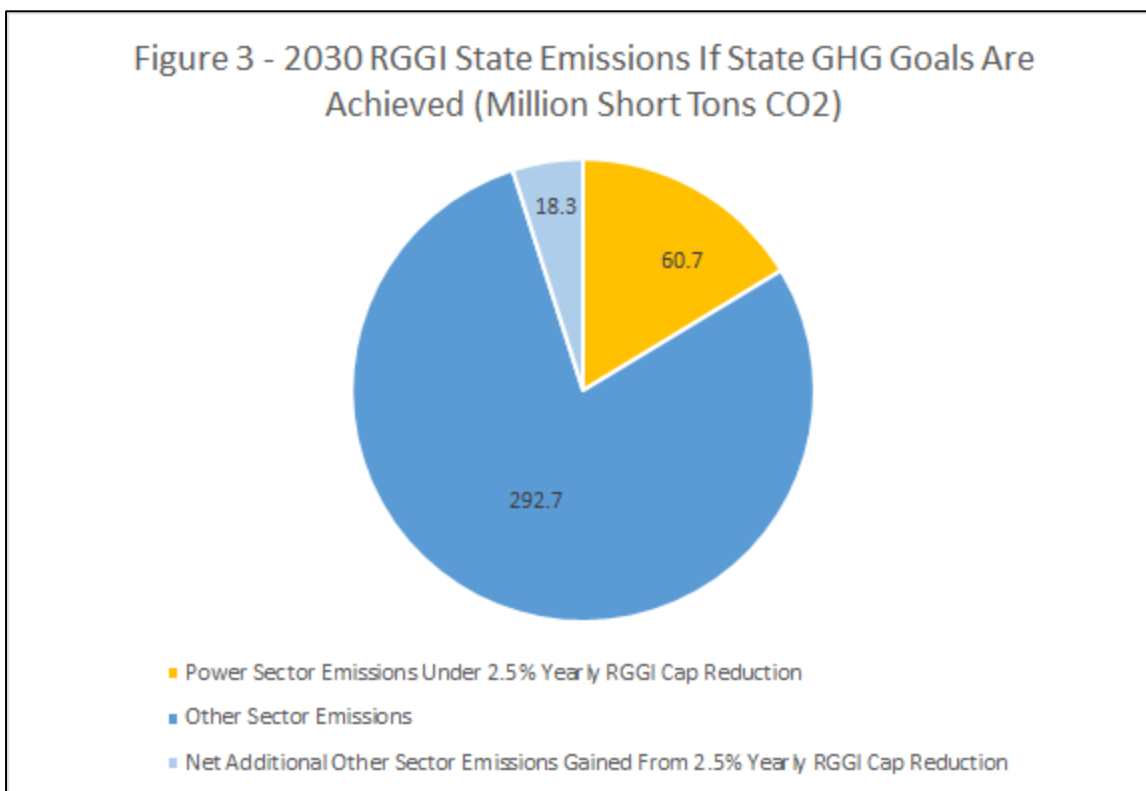


Figure 3 - 2030 RGGI State Emissions If State GHG Goals Are Achieved (Million Short Tons CO<sub>2</sub>)



power sector.<sup>3</sup> In other words, achieving emission reductions from the power sector is generally cheaper than reductions elsewhere.

Pace's preliminary analysis (Figure 2) shows that the cap on emissions from the power sector must be significantly more aggressive to keep New York State on the path to achieving the 40 by 2030 goal.

To meet this goal, New York must reduce annual GHG emissions to approximately (~) 152.6M tons CO<sub>2</sub> equivalent (CO<sub>2</sub>e) per year by 2030.<sup>4</sup> This is ~ 80.8M tons CO<sub>2</sub>e less than 2011 levels—the last year New York completed a comprehensive GHG inventory.<sup>5</sup> If only the CPP's targets are met, emissions from the power sector will be ~ 31.3M tons CO<sub>2</sub>e in 2030. This will require other sectors to reduce emissions by 121.3M tons CO<sub>2</sub>e. However, if the RGGI cap continues on its 2.5% reduction path through 2030, the power sector in New York will likely achieve an additional 22.5 percent of emission reductions beyond the CPP target.<sup>6</sup> The emission reductions in this scenario would ease the burden on other sectors where avoiding carbon emissions are more expensive.

Public and explicit commitments to GHG reductions have been made by all RGGI states, except Delaware. New York and New England states have committed reductions between 35 to 45 percent below 1990 levels.<sup>7</sup> Maryland has committed to a 25 percent reduction below 2006 levels by 2020 under the State's Greenhouse Gas Emissions Reduction Act of 2009. These state commitments combine to form a regional GHG emissions goal of ~340.4 to 353.8M tons CO<sub>2</sub>e per year.

Continuing a 2.5% reduction in the RGGI cap per year would increase power sector emission savings by 23% over the savings achieved by only meeting the regional CPP target.<sup>8</sup> This would allow 18.3M tons of costly CO<sub>2</sub> emission abatement measures to be avoided in other sectors while still moving towards state economy-wide GHG targets (Figure 3).

#### 4. POTENTIAL PROGRAM LINKAGE ISSUES

The CPP may provide an impetus for other states to join RGGI itself or for linking RGGI to other established regional mass-based programs. Expanding the cap-and-

trade program would be beneficial because it would increase the ability of the participating states to achieve emission reductions in a more economically efficient manner. Each additional state or region would add more facilities from which emission reductions might be obtained at a cheaper cost than would otherwise have been possible.

Once again, Governor Cuomo showed tremendous leadership in October 2015 when he announced his desire to establish a North American carbon market. At a speech delivered at Columbia University, Governor Cuomo signaled his interest in linking New York's market with California's and markets in Canada.

But linking carbon markets creates a new set of challenges. If the CPP creates a push for RGGI expansion, there may be a desire to allow new entrants to leverage the emission reductions already achieved by early-acting RGGI states to achieve CPP targets. If the current RGGI states maintain a 2.5% annual cap reduction, they will be 20M tons below the aggregate CPP target of 79.0M tons of CO<sub>2</sub>. If the cap is not adjusted adequately when new states or regions are added to RGGI, this 20M ton gap could be consumed by newly admitted entities that have not achieved the same degree of emission reductions as the RGGI states have garnered over the past decade.

If RGGI adds states or regions, the adjusted cap should maintain an equivalent stringency based upon a baseline year. For example, the 2015 RGGI cap of 88.7 million tons CO<sub>2</sub> represents an approximately 40 percent decrease of power sector emissions for the RGGI states from 1990 levels.<sup>9</sup> If another state were added to RGGI in 2015, the cap increase should be approximately 60 percent of the additional state's 1990 power sector emissions regardless of the state's current level of emissions. If, for example, Pennsylvania joined RGGI, the subsequent cap increase should be no more than 62.9 million tons—corresponding to an approximately 40 percent reduction from the state's 1990 power sector emissions.<sup>10</sup>

An additional consideration regarding the linking of programs involves how new emissions sources are

treated. A mass-based plan that includes both existing and new sources should not link to mass-based plans that cover only existing sources. Failure to match up compatible markets-based platforms would potentially leave a major source of emissions off the regulators' table and would encourage "gaming."

## 5. CLEAN ENERGY INCENTIVE PROGRAM

The CPP also incentivizes states to reduce emissions prior to the program start date of 2022 through the CEIP. The main motivation is to spur investment in renewables and install demand-side energy efficiency in low-income neighborhoods.

To encourage early action, under the CEIP states would award additional allowances in a mass-based program and emission rate credits (ERCs) in rate based program. A pool of allowances or ERCs created by the EPA would match these allowances. The allowances or ERCs that would be created under this effort may be used by power plants for compliance with state plans.

For rate-based compliance plans, EPA is offering 1 ERC for 1 MWh of generation from a solar or wind project. For mass-based plans, they are offering an equivalent number of allowances. EPA also proposes to offer 2 ERCs or allowances for avoided generation by using demand side energy efficiency in low-income communities. The emphasis on further investment in low-income neighborhoods is welcome, especially given that low-income customers spend a greater portion on their income on meeting their energy needs.

Plans for these investments must be submitted for approval by September 6, 2016. The installations cannot start before September 6, 2018 and the projects must come online in 2020-2021 in order to qualify. Allowances remaining after January 1, 2023 will be retired.

While not yet final—EPA is taking additional comment on this portion of the CPP—in a mass-based plan, accessing the additional federal pool of allowances is likely to increase emissions in states that set up a CEIP. States instead should consider ways to reward early action and invest in low-income communities without inflating the state cap.

## 6. RECOMMENDATIONS

As the states begin to craft their CPP compliance plans, policy makers in the Northeast should view these plans in the larger context of their overall GHG reduction goals. While achieving the CPP targets may be possible with modest modifications such as eliminating the CCR, the more important discussion involves ensuring that the state compliance plans are set at a level that will achieve each state's overall climate goals.

States in the RGGI region should at least continue on the 2.5 percent per year emissions reduction pathway. The RGGI states should also model more aggressive reductions to have a full understanding of the potential costs and benefits of even deeper GHG emissions reductions. RGGI states should also consider linking to other state plans that require similar stringency, and ensure that the efforts they link to are completely compatible.

What is new in climate policy, as President Obama put it in his CPP roll out announcement, is that Washington is starting to catch up to the vision of the rest of the country. Implicit in his comment is that New York and its Northeastern and Mid-Atlantic state allies have been leaders in the fight to protect us from the worst impacts of climate change. As the RGGI states now begin to design their CPP compliance plans, they must set an example for the nation yet again.

## Notes

<sup>1</sup> The Analysis Group. *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States: Review of RGGI's Second Three Year Compliance Period*. (July 14, 2015). Available at: [http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis\\_group\\_rggi\\_report\\_july\\_2015.pdf](http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_july_2015.pdf)

<sup>2</sup> The New York State Energy Planning Board. *The Energy to Lead: 2015 New York State Energy Plan*. (June 25, 2015). Available at: <http://energyplan.ny.gov/>

<sup>3</sup> 55% of <\$50/ton CO<sub>2</sub>e is attributed to the “power” and “buildings and appliances” sectors for the Northeast. However, the emission abatement potential of the “buildings and appliances” sector results primarily from increased electric energy efficiency, which would impact overall power sector emissions. See *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?* McKinsey & Company (2007). Available at: [http://www.mckinsey.com/client\\_service/sustainability/latest\\_thinking/reducing\\_us\\_greenhouse\\_gas\\_emissions](http://www.mckinsey.com/client_service/sustainability/latest_thinking/reducing_us_greenhouse_gas_emissions)

<sup>4</sup> NYSERDA. *New York State Greenhouse Gas Inventory and Forecast* (Revised June 2015) reports New York's 1990 GHG emissions at 254.4 million short tons of CO<sub>2</sub>e. A 40% reduction from this reported level is 152.6 million short tons of CO<sub>2</sub>e.

<sup>5</sup> NYSERDA. *New York State Greenhouse Gas Inventory and Forecast* (Revised June 2015). Available at: <http://energyplan.ny.gov/Plans/2015>

<sup>6</sup> Historically, New York generators have purchased 40% of RGGI allowances. Using this as a guide, we estimate New York's share of the 2030 RGGI cap under a 2.5% yearly reduction scenario to be approximately 24.3 million allowances.

<sup>7</sup> Available at: <http://www.coneg.org/Data/Sites/1/media/39-1-climate-change.pdf>

<sup>8</sup> A 2.5% reduction in the RGGI cap per year would create a cap of approximately 60.7 million short tons of CO<sub>2</sub> by 2030 compared to the regional CCP target of 79.0 million short tons of CO<sub>2</sub>.

<sup>9</sup> 1990 power sector emissions for the nine RGGI states were approximately 137.2 million tons CO<sub>2</sub>. See EIA State Carbon Emissions. Available at: <http://www.eia.gov/environment/emissions/state/>

<sup>10</sup> Pennsylvania's 1990 power sector emissions were approximately 104.9 million tons CO<sub>2</sub>. See EIA State Carbon Emissions. Available at: <http://www.eia.gov/environment/emissions/state/>