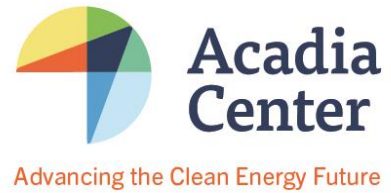


New Jersey and RGGI:

Potential Benefits of Renewed Participation

March 24, 2015

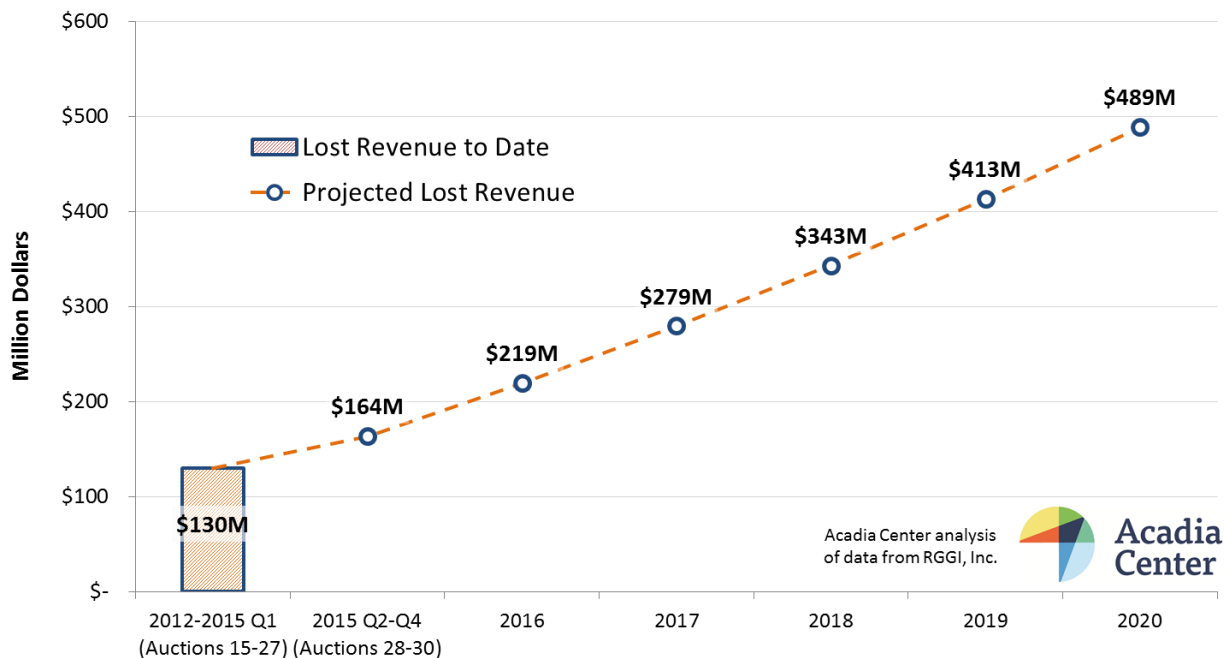


The Regional Greenhouse Gas Initiative (RGGI) has proven to be successful on many levels in the nine states that currently participate. It is helping to reduce carbon pollution, while at the same time supporting economic development, creating new jobs and saving consumers money on energy. However, in late 2011 the Christie Administration announced New Jersey's withdrawal from the program after three years of participation.¹ As a result, New Jersey's power plants are no longer governed by a limit on the amount of carbon pollution they can produce. At the same time, the state no longer receives any revenue resulting from the sale of pollution allowances required in participating states – limiting the state's ability to invest in clean energy initiatives. Without RGGI, the state is now missing out on an opportunity to reduce energy bills and create jobs.

Renewing New Jersey's participation in RGGI would generate a number of benefits. Power plants would have an incentive to reduce carbon pollution and other dangerous pollutants.² Allowance auctions would support investment in clean energy programs that benefit consumers and the state economy. Additionally, RGGI would position New Jersey to effectively comply with the U.S. EPA's Clean Power Plan – which will be the first federal requirement for power plants to limit their emissions of global warming pollution.

Lost Revenue

Since withdrawing from RGGI, New Jersey has forgone an estimated \$130 million in RGGI auction proceeds,³ and the state could miss out on an additional \$359 million through 2020.⁴ If these forgone proceeds of \$489 million were invested in energy efficiency programs, New Jersey consumers would save 15.3 million megawatt hours (15.3 TWh) of electricity, which is more than the 12.5 TWh of production from all of the coal plants in New Jersey from 2010 to 2012.⁵



Before New Jersey exited RGGI, the state allocated auction proceeds to clean energy projects through the Clean Energy Solutions Capital Investment (CESCI) Loan/Grant program. These projects save money and cut pollution, making the overall limit on global warming emissions within the RGGI region easier to achieve. Select projects funded through the CESCI program:⁶

- **William Patterson University** of Wayne worked with Nautilus Solar of Summit, NJ to install a 3 megawatt (MW) solar photovoltaic system with the help of a \$5 million loan from the CESCI, which covered approximately one-third of the project cost. The system produces roughly 3,450 MW of renewable power annually, saving approximately \$3.8 million in energy costs over ten years.
- **Warren Hospital** of Phillipsburg (a not-for-profit general acute care hospital) received a total of \$1,305,173 in CESCI incentives, consisting of a loan/grant mix, for a 1.25 MW combined heat and power (CHP) system that will save money on electricity and thermal energy costs.
- **Bais Rivka Rochel School** of Lakewood worked with CBS Research & Manufacturing Corporation (whose CEO helped found the school) to install a 300 kW solar PV system with a \$787,500 loan from CESCI.
- **NRG Thermal, LLC** developed a 4.6MW CHP system for The University Medical Center of Princeton (UMCPP) with a loan/grant mix of \$5 million from the CESCI. UMCPP is a 237 single patient acute care hospital.
- **DSM Nutritional Products** of Belvidere is a supplier of vitamins, carotenoids, other biochemicals, and fine chemicals which received a total of \$3,451,573 in CESCI incentives, consisting of a loan/grant mix, for a 7.5 MW CHP system that replaced a 40 MW cogeneration unit that was too large to operate economically.

In 2010 the Christie Administration diverted approximately \$75 million of RGGI revenue away from clean energy projects and into the general state budget. Though RGGI had a positive impact on New Jersey's economy during the state's participation, the benefits would have been greater if diverted revenue had been directed to clean energy programs.⁷

Economic Benefits

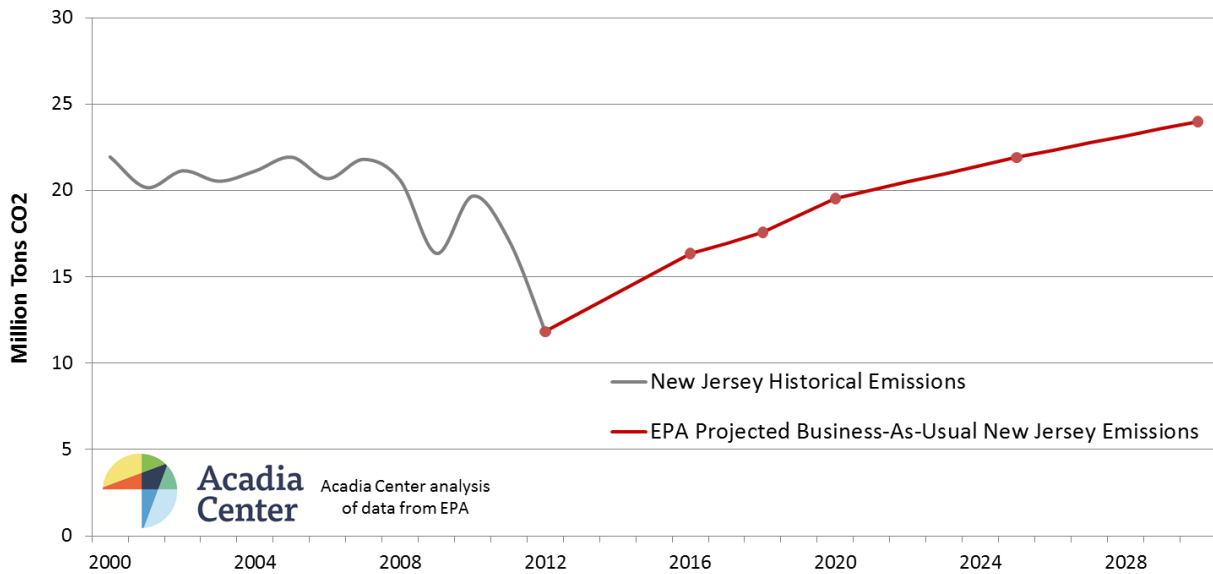
RGGI generates positive economic impacts because it replaces fossil fuel imports with local clean energy resources and increases consumer spending in the local economy. Power plants that import fossil fuels and emit CO₂ must buy allowances equivalent to their emissions. Revenue from the sale of these allowances is invested in energy efficiency and clean energy programs that save consumers money. Consumer savings are then spent on other goods and services, boosting local economic activity. Since it launched in 2009, RGGI has already helped participating states:

- Lock in more than \$1.8 billion in long-term savings on energy bills through energy efficiency
- Create more than 16,000 job-years of work
- Avoid 8 million tons of lifetime emissions, the equivalent of taking 1.4 million cars off the road⁸

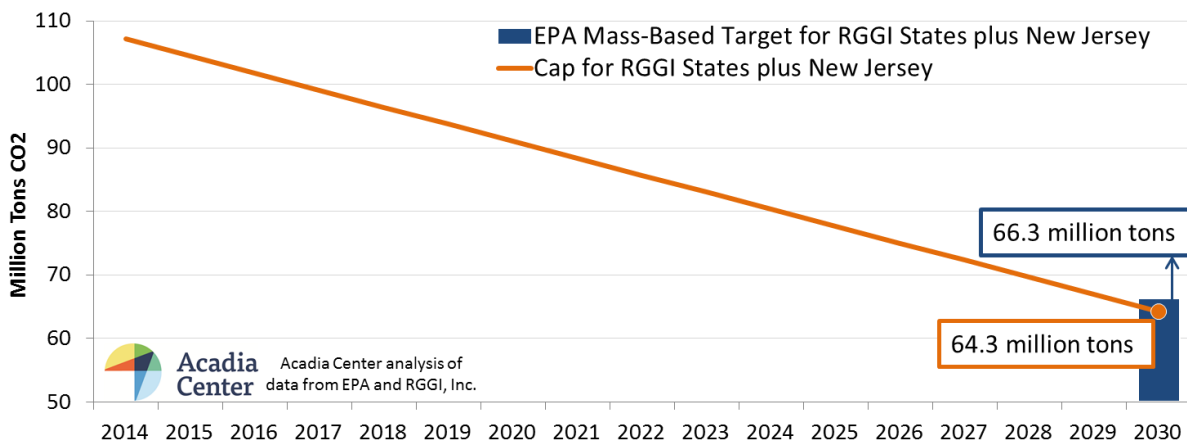
Over the next 10 years RGGI is projected to generate \$8.7 billion in economic growth and 132,000 job-years of employment in participating states,⁹ while cutting power plant pollution by another 15%.¹⁰ It is also worth noting that electricity prices in New Jersey were 5% lower last year than they were in 2008, the year before RGGI began.¹¹ In the nine participating RGGI states, emissions are down 8% over the same period.¹²

New Jersey Compliance with EPA Clean Power Plan

In June of this year the Obama Administration released its draft Clean Power Plan, which identifies emissions reduction targets that each state must meet by 2030. New Jersey’s CO2 emissions projections for 2030 under a business as usual scenario would not be compliant with the Clean Power Plan target.¹³ In order to demonstrate compliance with the Clean Power Plan, New Jersey will have to submit a plan to EPA that illustrates how the state will reduce its emissions. The figure below shows New Jersey’s projected emissions if the state does not renew participation in RGGI.



The simplest path for New Jersey to demonstrate compliance with the proposed Clean Power Plan would be through renewed participation in RGGI. EPA has already signaled support for RGGI as a Clean Power Plan compliance mechanism,¹⁴ and New Jersey’s utilities, power producers and Department of Environmental Protection are all familiar with the program through previous experience. The figure below shows the RGGI cap—if New Jersey were to renew its participation—along with EPA’s mass-based target for the currently participating states plus New Jersey.¹⁵ The fact that the RGGI cap is lower than EPA’s 2030 target demonstrates that the program should – with modest revisions¹⁶– be stringent enough to be considered an acceptable compliance mechanism.



Path Back Into RGGI

Renewing participation in RGGI would require updating New Jersey's existing RGGI regulations to reflect improvements made during the RGGI 2012 Program Review. At the conclusion of that program review states agreed to strengthen the emissions cap to reflect progress in reducing emissions, and made a number of other minor changes to market rules. In order to participate in the common RGGI market New Jersey would have to implement these improvements through the fairly straightforward step of harmonizing the current regulations to mirror model regulations implemented by participating RGGI states.¹⁷ Once New Jersey updates its regulations, the state would resume full participation in the program, with updated emissions targets requiring a 15% reduction from 2012 emissions levels by 2020, and revenue generated through quarterly allowance auctions.

After renewing participation in RGGI, New Jersey would join other states in conducting the 2016 Program Review, in which reforms to make RGGI compliant with EPA requirements will be considered. Principle among these reforms are:

- An extension of RGGI's cap to 2030 and return to a fixed annual reduction trajectory, which in conjunction will keep emissions in the RGGI states below EPA's final 2030 limits.
- Modification of RGGI's Cost Containment Reserve (CCR) to draw allowances from below the cap (rather than added to the cap) in order to maintain the legitimacy of RGGI's emissions targets.

Conclusion

New Jersey has much to gain by renewing participation in RGGI. The RGGI cap will drive reductions in carbon pollution and other hazardous pollutants. Revenue raised can be reinvested in programs to improve energy efficiency, generate clean energy, and keep money in the local economy. RGGI will also provide a straightforward and cost-effective means of achieving EPA requirements.

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Endnotes

¹ New Jersey's Notice of Withdrawal: http://rggi.org/docs/Documents/NJ-Statement_112911.pdf

² Participation in RGGI requires that affected power plants reduce their CO₂ emissions. The measures implemented to achieve these CO₂ reductions also result in reductions of other hazardous pollutants, like SO₂, NO_x and mercury. Reductions in SO₂ and NO_x in the RGGI region from 2009 (when RGGI started) to 2013 have accounted for \$10.4 billion in associated health savings. For more information see: The Regional Greenhouse Gas Initiative: Performance To-Date and the Path Ahead, May 2014, <http://acadiacenter.org/document/regional-greenhouse-gas-initiative-performance-to-date-and-the-path-ahead/>

³ This analysis assumes that had New Jersey remained in RGGI, the state would have continued to receive the same allowance budget—or share of the total RGGI cap—that it had received while participating in the program. By this metric, New Jersey's 2014 allowance budget would have been 11,995,620 tons (10,913,340 after accounting for the interim adjustment for banked allowances). Projected price data is from RGGI IPM analysis of the model rule: <http://www.rggi.org/docs/ProgramReview/2013%20IPM%20Modeling%20Results.zip>

⁴ Lost revenue to date includes results from Auction 27 (March 11th, 2015), in which 15,272,670 allowances were sold at a clearing price of \$5.41 per allowance, generating \$82.6 million for reinvestment in the RGGI states.

⁵ According to the NJ Office of Clean Energy, 2012 efficiency investments generate 4,798,164 MWh of lifetime savings from \$154,966,793 in program expenditures (see "Expenditures" from program summary data at: <http://www.njcleanenergy.com/files/file/2001-2012%20Program%20Results.xls>). At this cost of 3.2 cents per kWh of savings, investing \$488.8 million in foregone revenue leads to a projection of 15,274,375 MWh of savings (15.3 TWh). According to EIA, coal-fired power plants in New Jersey generated 12.5 TWh of electricity from 2010-2012 (see: <http://www.eia.gov/electricity/state/newjersey/xls/sept05nj.xls>).

⁶ For more information on New Jersey's investment plan and CESC, see: https://www.rggi.org/docs/Investment_of_RGGI_Allowance_Proceeds.pdf.

⁷ Independent analysis found that the reinvestment of revenue raised over RGGI's first two and a half years of participation would generate \$151 million in net benefit to New Jersey over 10 years, leading to 1,772 job years of employment. The analysis, The Economic Impacts of the Regional Greenhouse Gas Initiative on Ten Northeast and Mid-Atlantic States, additionally showed that states investing greater shares of auction revenue in energy efficiency and renewable energy programs derived higher net benefits than states using revenue for budgetary purposes. Analysis available at: <http://www.analysisgroup.com/RGGI.aspx>

⁸ RGGI benefits report, available at: http://www.rggi.org/rggi_benefits

⁹ REMI Economic Impact Analysis: Assumptions and Results, June 3, 2013.

http://www.rggi.org/docs/ProgramReview/REMI%2091%20Cap%20Bank%20MR_2013_06_03.pdf

¹⁰ See summary of Program Review reforms at:

http://www.rggi.org/docs/ProgramReview/Program_Review_%20Summary_of_Proposed_RGGI_Cap_Changes_13_11_21.pdf

¹¹ Average retail electricity prices from the Energy Information Administration (EIA) 826 Dataset, available at:

<http://www.eia.gov/electricity/data/eia826/>.

¹² See: The Regional Greenhouse Gas Initiative: Performance To-Date and the Path Ahead, May 2014, http://www.env-ne.org/public/resources/ENE_RGGI_Report_140523_Final3.pdf

¹³ IPM Modeling, "EPA Base Case for the Proposed Clean Power Plan"

<http://www.epa.gov/airmarkets/powersectormodeling/cleanpowerplan.html>. Within the zip file, state emissions data is available in the in the 'Proposed Clean Power Plan Base Case state emissions v2' spreadsheet, and we relied on data from the "All Fossil > 25MW" tab in order to reflect RGGI's inclusion threshold of 25MW.

¹⁴ The Clean Power Plan cites RGGI as evidence of a way "that states can design programs that achieve required reductions while working within existing market mechanisms used to dispatch power effectively in the short term and to ensure adequate capacity in the long term."

<https://www.federalregister.gov/articles/2014/06/18/2014-13726/carbon-pollution-emission-guidelines-for-existing-stationary-sources-electric-utility-generating>

¹⁵ The starting point for the cap as shown is 2014, which was the first year in which RGGI's revised cap was put into place. The 2014 cap for the current RGGI states was set at 91 million tons. The cap shown in this graph includes New Jersey, and assumes that New Jersey's allowance budget would be determined by the state's 2012 emissions from covered sources, which is how the RGGI states determined the 2014 cap. This brings the 2014 RGGI cap, including New Jersey, to 107 million tons. The trajectory of the cap decline reflects an annual 2.5% reduction from the 2012 baseline, rather than a 2.5% reduction from each successive year. The justification for using this approach—and the implications of doing so—are explained in the report linked in endnote 12. Data for "EPA Projected Emissions" can be found at:

<http://www.epa.gov/airmarkets/powersectormodeling/docs/Option%201%20Regional.zip>

¹⁶ In order to comply with EPA requirements, RGGI states will have to: 1) extend the emissions cap to 2030, 2) adopt an annual reduction target based on the 2012 baseline year rather than each prior year, and 3) modify the cost-containment reserve mechanism to avoid inflating the emissions cap. For additional detail see: RGGI and EPA Requirements: A Model for Market-Based Compliance, available at:

<http://acadiacenter.org/?p=602>

¹⁷ Changes resulting from the 2012 Program Review:

http://www.rggi.org/docs/ProgramReview/Program_Review_%20Summary_of_Proposed_RGGI_Cap_Changes_13_11_21.pdf, and the

Revised Model Rule: http://www.rggi.org/docs/ProgramReview/FinalProgramReviewMaterials/Model_Rule_FINAL.pdf