

# RGGI Brings Benefits Back to the States

The Regional Greenhouse Gas Initiative, or RGGI, is a collaboration of ten Northeast and Mid-Atlantic states that is designed to lower carbon pollution from the power sector by placing a declining cap on greenhouse gas emissions. New Jersey also joined the program in 2020, and Virginia will be joining in 2021. The program uses a flexible, market-based compliance mechanism that allows individual companies to decide on the most cost-effective measures to reduce emissions. By keeping costs low, the program encourages companies to pursue more ambitious pollution reductions and minimizes cost impacts for consumers.

The electric power sector is the largest source of climate warming pollution in North Carolina, making up 35 percent of the state's emissions in 2017.<sup>1</sup> As North Carolina works toward reducing its impact on the climate and meeting the goals established by Governor Cooper's Executive Order 80, decarbonizing the production of electricity is a foundational step. Reducing emissions from electricity generation facilitates decarbonization in other sectors of the economy, like buildings and transportation, through electrification.

North Carolina is already seeing the impacts of climate change, and rising temperatures will continue to bring more extreme weather, rising sea levels, disruptions to agricultural systems, and risks to public health. The impacts of climate change and the burden of air pollution from the state's electric power sector is disproportionately felt in low income communities and communities of color. To avoid the worst impacts of climate change and improve the quality of life for its communities, the state needs to rapidly deploy ambitious carbon reduction policies. **The RGGI program offers a proven framework to reduce emissions while stimulating economic growth, reducing states' reliance on fossil fuels, and improving public health through reduced air pollution.**

## How RGGI Works

RGGI's "cap-and-invest" framework places a cap on total power sector carbon emissions from participating states to limit pollution, and that cap decreases over time to drive emission reductions at power plants. Companies buy and sell allowances that let them emit a certain amount under the pre-determined cap as supply and demand set the price of an allowance. Allowing companies to trade allowances on a secondary market gives companies a strong incentive to save money by cutting emissions in the most cost-effective ways, which minimizes costs for consumers.

RGGI states can allocate these allowances through an auction – the proceeds from which can be used to fund initiatives that further reduce pollution and advance equitable outcomes, including investments in job-creating programs like increasing energy efficiency, expanding clean renewable energy generation, and improving transportation systems. States have flexibility in how they distribute funds, so North Carolina can identify the investments best suited to the needs of the state's residents. These funds can be specifically directed toward programs that benefit priority populations

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<sup>1</sup> Based on North Carolina's Greenhouse Gas Emissions Inventory. See <https://files.nc.gov/ncdeq/climate-change/ghg-inventory/GHG-Inventory-Report-FINAL.pdf>.

in the state, including those most impacted by pollution and low-income households whose finances are sensitive to changes in energy prices.

## Flexible Design Lets North Carolina Prioritize Community Needs

While RGGI provides a Model Rule to the states as a framework to draft their own policies, the design of the rule can be tailored to meet the unique needs of each state. North Carolina has the flexibility to decide how best to distribute emission allowances (e.g., through an allowance auction), and how to invest the proceeds generated by the program. Since pollution from power plants disproportionately impacts low-income communities and communities of color, the state can identify what safeguards and complementary policies are necessary to ensure localized pollution falls in its most overburdened communities. North Carolina can also develop a strategic investment portfolio that directs funding where it is most needed, including initiatives that invest in energy efficiency, renewable energy, and clean transportation options in communities that are the most impacted by pollution.

RGGI undergoes a program review every three years, which allows the states to adapt to changing circumstances and continuously improve the program over time.

## A Successful Framework for Reducing Pollution

RGGI has a proven track record of reducing emissions while providing economic and public health benefits. By bringing new states into the RGGI market, the program can improve overall environmental and climate outcomes, while providing expanded opportunities for cost-effective emission reduction for those subject to the regulation. Cost-effectiveness facilitates greater ambition in the program and keeps costs low for consumers.

We have been successfully harnessing the power of markets for decades to solve our most pressing environmental challenges. In the 1990s, as acid rain caused by sulfur dioxide emissions from power plants threatened our aquatic life and forests, a cap-and-trade program was put in place. It required drastic reductions in sulfur dioxide emissions but allowed each company to decide how to make the cuts. Plants that lowered their pollution more than required by the cap were able to sell extra allowances to other plants, creating a new market for allowances. This approach drove emissions down faster than predicted and for a fraction of the originally projected cost, dramatically reducing the impact of acid rain in North America.<sup>2</sup>

Since its implementation, RGGI too has seen success in reducing carbon emissions across the region. By placing a price on CO<sub>2</sub>, electricity sources with higher carbon contents become more expensive relative to those that produce fewer emissions, incentivizing the use of low and zero-emissions energy sources. Through the first ten years of the RGGI program, CO<sub>2</sub> emissions from RGGI power plants fell 47% while GDP in RGGI states grew by 47%, both substantially outpacing the rest of the country.<sup>3</sup>

In addition to the climate benefits, RGGI also reduces co-pollutant emissions of particulate matter, air toxics, and ground level ozone, which all have adverse health impacts on the people of North Carolina. These pollutants exacerbate asthma symptoms and other respiratory illnesses, especially for those who live closest to power plants and for those most at risk including children and the elderly. A recent study from the Columbia Center for Children's Environmental Health found that between 2009 and 2014, air quality improvements from RGGI avoided 537 cases of childhood asthma, 112 preterm births, 98 cases of autism spectrum disorder, and 56 cases of term low birthweight. These benefits were

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<sup>2</sup> According to a 2015 discussion paper from Resources for the Future, cost savings of the program were estimated to be at least 15 percent and perhaps as high as 90 percent compared to a counterfactual command and control program. See Schmalensee, R. and Stavins, R. 2015. Lessons Learned from Three Decades of Experience with Cap-and-Trade. Resources for the Future. Available at: <https://media.rff.org/archive/files/document/file/RFF-DP-15-51.pdf>

<sup>3</sup> Acadia Center. The Regional Greenhouse Gas Initiative: 10 Years in Review. 2019. Available at <https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center-RGGI-10-Years-in-Review-2019-09-17.pdf>.

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estimated to save between \$191 million and \$350 million.<sup>4</sup> A previous 2017 study by Abt Associates concluded that from 2009 through 2014, air quality improvements from RGGI led to total public health benefits worth an estimated \$5.7 billion.<sup>5</sup>

## RGGI Stimulates Economic Growth

As emissions have gone down in RGGI states, thousands of new jobs have been created in the clean energy industry, and ratepayers are saving money on electricity through improvements in building energy efficiency. There is also potential for cost savings in the transportation sector, where investments in electric vehicles, clean transit options, and efficiency improvements can save money on fuel and vehicle maintenance costs.

The proceeds generated from an allowance auction, called an emission allowance value, can be used to support various policy objectives including investments in energy efficiency, renewable energy, transportation improvements, and consumer bill assistance. Savings on energy bills increase consumer spending, benefitting the state's economy as a whole. The state can also direct proceeds to benefit priority populations, investing in communities most vulnerable to and overburdened by air pollution. These investments provide emission reductions, consumer savings, and regional job creation.

- According to electricity bill modeling by the Analysis Group, the average residential electricity bill in RGGI states will be 35 percent lower in 2031 than it is today, due largely to investing RGGI proceeds into energy efficiency programs.<sup>6</sup>
- Electricity prices in RGGI states fell 5.7 percent in the first ten years of the program, while they increased in the rest of the country.<sup>7</sup>
- RGGI states have generated \$3.2 billion in allowance auction proceeds for investment in renewable energy and energy efficiency. The majority of RGGI proceeds have been invested in energy efficiency programs that reduce consumers' bills and reduce demand for power.<sup>8</sup>
- Macroeconomic analysis shows that through 2017, RGGI has created over \$4 billion in net economic gains and over 44,000 job-years of employment.<sup>9</sup>

RGGI also provides support for zero emissions energy sources, including states' existing nuclear fleets. In Pennsylvania, the implementation of a carbon price is expected to increase generation from existing nuclear units,<sup>10</sup> and one plant has already expressed its intent to continue operating thanks to the new policy.<sup>11</sup> Analysis conducted by EDF and M.J. Bradley & Associates projects that if North Carolina were to participate in RGGI, 80% of current nuclear generation would be economically efficient—providing resilience for these assets and the jobs they support—under a range of possible futures, including one in which the state moves to a competitive wholesale market.

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<sup>4</sup> Perera, F., et al. Co-Benefits to Children's Health of the U.S. Regional Greenhouse Gas Initiative. Environmental Health Perspectives. Available at: <https://ehp.niehs.nih.gov/doi/pdf/10.1289/EHP6706>.

<sup>5</sup> Abt Associates. Analysis of the Public Health Impacts of the Regional Greenhouse Gas. January 2017. Available at: <https://www.abtassociates.com/sites/default/files/2018-06/Analysis%20of%20the%20public%20health%20impacts%20of%20regional%20greenhouse%20gas.pdf>.

<sup>6</sup> Analysis Group. The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States. 2015. Available at <https://www.nrcm.org/wp-content/uploads/2013/10/RGGIreportJuly2015.pdf>.

<sup>7</sup> Acadia Center. The Regional Greenhouse Gas Initiative: 10 Years in Review. 2019. Available at [https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center\\_RGGI\\_10-Years-in-Review\\_2019-09-17.pdf](https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center_RGGI_10-Years-in-Review_2019-09-17.pdf).

<sup>8</sup> Congressional Research Service. The Regional Greenhouse Gas Initiative: Background, Impacts, and Selected Issues. July 2019. Available at <https://fas.org/sgp/crs/misc/R41836.pdf>.

<sup>9</sup> Acadia Center. The Regional Greenhouse Gas Initiative: 10 Years in Review. 2019. Available at [https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center\\_RGGI\\_10-Years-in-Review\\_2019-09-17.pdf](https://acadiacenter.org/wp-content/uploads/2019/09/Acadia-Center_RGGI_10-Years-in-Review_2019-09-17.pdf).

<sup>10</sup> Resources for the Future. 2019. "Options for Issuing Emissions Allowances in a Pennsylvania Carbon Pricing Policy." Available at: [https://media.rff.org/documents/IB\\_19-08\\_5.pdf](https://media.rff.org/documents/IB_19-08_5.pdf).

<sup>11</sup> See <https://www.powermag.com/pennsylvania-move-to-join-rggi-may-save-nuclear-plant/>.

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## RGGI Provides Benefits at the State Level

While RGGI is a regional program, all participating states are seeing benefits for their own residents. The table below highlights economic benefits by state based on a study completed by the Analysis Group.<sup>12</sup>

State	RGGI Proceeds from 2012-2014 (\$ Millions)	Economic Value Added (\$2015 Millions)	Employment (Cumulative job-years)
Connecticut	71.2	56.2	863
Delaware	40.0	213.8	952
Maine	30.9	122.3	1,113
Maryland	221.6	213.8	2,475
Massachusetts	166.1	243.3	2,718
New Hampshire	41.6	67.3	583
New York	383.4	385.5	4,463
Rhode Island	20.6	16.6	195
Vermont	7.5	14.8	177

The RGGI states have used the proceeds they generate through allowance distributions to fund several beneficial programs:<sup>13</sup>

- Connecticut** has used allowance proceeds to fund building weatherization measures, LED streetlight retrofits, energy efficient lightbulb replacements, and incentives for energy efficient products. RGGI proceeds also helped fund the state's C-PACE program, which offers low interest financing for clean energy projects.
- Delaware** directs 65 percent of its allowance proceeds to the Delaware Sustainable Energy Utility, which promotes affordable clean energy and incentives for energy efficiency improvements. Another 20 percent goes toward the Delaware Department of Natural Resources to fund greenhouse gas reduction programs and implementation of the state's Weatherization Assistance Program. 5 percent is directed to a program to reduce energy bills for low-income customers.

<sup>12</sup> Analysis Group. The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States. 2015. Available at <https://www.nrcm.org/wp-content/uploads/2013/10/RGGIreportJuly2015.pdf>.

<sup>13</sup> Regional Greenhouse Gas Initiative. The Investment of RGGI Proceeds in 2017. October 2019. Available at [https://www.rggi.org/sites/default/files/Uploads/Proceeds/RGGI\\_Proceeds\\_Report\\_2017.pdf](https://www.rggi.org/sites/default/files/Uploads/Proceeds/RGGI_Proceeds_Report_2017.pdf).

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- **Maine** directs funding toward a combination of energy efficiency measures including the Home Energy Savings Program, Low Income Home Energy Savings Program, Commercial and Industrial Prescriptive Program, and C&I Custom Program. RGGI-funded efficiency investments in fiscal year 2017 were estimated to provide savings of over 10,350 MWh of electricity consumption and 5.4 million MMBtu of natural gas consumption, lowering participants' energy bills by more than \$39 million.
- **Maryland** uses RGGI proceeds to promote affordable, reliable, and clean energy in the state. These programs have reduced costs for homes and businesses, created jobs, and promoted energy independence.
- **Massachusetts** has invested more than \$450 million of RGGI proceeds to advance its energy goals since 2008. Most of the funds have supported energy efficiency programs, and other investments support communities affected by fossil fuel plant closures, clean energy projects, and incentive programs for electric and plug-in hybrid vehicles.
- **New Hampshire** has allocated RGGI funding to direct bill assistance for the state's electric consumers and energy efficiency projects for municipal facilities, businesses, and homes.
- **New York** used RGGI funding to support the launch of the Clean Energy Communities program in 2016. RGGI proceeds also support next generation clean energy technologies – one of the state's largest clean energy companies uses RGGI proceeds to support innovative clean energy businesses to expand operations.
- **Rhode Island's** Office of Energy Resources uses RGGI auction proceeds to invest in clean energy and energy efficiency, promoting job growth and driving down energy costs. Some of the proceeds have been allocated to National Grid, the state's primary electric utility, to support energy efficiency programs. Proceeds have also been directed to the state's Department of Transportation to replace streetlights with more efficient LED fixtures.
- **Vermont** uses RGGI proceeds primarily to expand energy efficiency programs, including thermal energy and process fuel efficiency programs. Funding through 2017 was estimated to save 3.4 million MMBtu of energy, avoiding over 200,000 short tons of CO<sub>2</sub> emissions and saving over \$95 million in energy bill for participants.
- **New Jersey** rejoined the RGGI program in 2020, **Virginia** is in the process of joining beginning in 2021, and **Pennsylvania** is currently developing a RGGI-compatible rule to participate in the regional program.

By joining RGGI, North Carolina can participate in this collaborative regional effort to reduce pollution, invest in a clean energy economy, and decarbonize its electric power sector.

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