



Cutting Pollution, Cutting Costs

How New Jersey Can Maximize the Benefits
of the Regional Greenhouse Gas Initiative

Environment New Jersey
Research & Policy Center

Fall 2007

Cutting Pollution, Cutting Costs

How New Jersey Can Maximize the Benefits
of the Regional Greenhouse Gas Initiative

Environment New Jersey
Research & Policy Center

Written by:

Tony Dutzik,
Frontier Group

Matt Elliott,
Environment New Jersey
Research & Policy Center

Fall 2007

Acknowledgments

The authors thank Alice Liddell of Environment Northeast, Luis Martinez and Dale Bryk of the Natural Resources Defense Council, and Ned Reynolds of the Union of Concerned Scientists for their review and insightful suggestions. Thanks also to Rob Sargent of U.S. PIRG and Susan Rakov and Timothy Telleen-Lawton of Frontier Group for their editorial and technical assistance.

Environment New Jersey Research & Policy Center thanks the Energy Foundation for making this project possible.

The authors bear responsibility for any factual errors. The recommendations are those of Environment New Jersey Research & Policy Center. The views expressed in this report are those of the authors and do not necessarily reflect the views of our funders or those who provided review.

Copyright 2007 Environment New Jersey Research & Policy Center

Environment New Jersey Research & Policy Center is a 501(c)(3) organization. We are dedicated to protecting New Jersey's air, water and open spaces. We investigate problems, craft solutions, educate the public and decision-makers, and help New Jerseyans make their voices heard in local, state and national debates over the quality of our environment and our lives.

Frontier Group conducts research and policy analysis to support a cleaner, healthier and more democratic society. Our mission is to inject accurate information and compelling ideas into public policy debates at the local, state and federal levels.

For more information about Environment New Jersey Research & Policy Center, or for additional copies of this report, please visit our Web site at www.environmentnewjersey.org.

Table of Contents

Executive Summary	1
Introduction	4
The Regional Greenhouse Gas Initiative in Brief	5
Why Reduce Global Warming Pollution?	5
Why Start with Power Plants?	7
How RGGI Works	8
Why RGGI Is Important	11
What RGGI Will Mean to New Jersey	11
Making the Right Choices	13
How New Jersey Can Get the Most Benefits From RGGI	14
New Jersey's Role in Setting the Rules Under RGGI	14
Auctioning Allowances: The Cheaper and Smarter Way to Implement RGGI	15
Keeping RGGI Strong by Avoiding New Loopholes	19
Other Decisions for New Jersey in RGGI Implementation	21
Challenges Ahead	22
Conclusion and Recommendations	26
Notes	28

Executive Summary

New Jersey is one of 10 northeastern states taking part in the Regional Greenhouse Gas Initiative (RGGI), a first-of-its-kind program to limit emissions of carbon dioxide—the leading pollutant responsible for global warming—from power plants in the Northeast. RGGI will cap carbon dioxide emissions from power plants at projected 2009 levels through 2014 and cut emissions by 10 percent by 2018.

The 10 RGGI states are in the midst of adopting the rules necessary to implement the program. While the most important rules governing the program—including the level of the emission cap—have already been agreed upon by the RGGI states, the regional process gives states flexibility in how to implement several important parts of the program.

By adopting strong rules for the implementation of RGGI, New Jersey can maximize the environmental benefits of the program while protecting consumers.

RGGI is an important step forward for New Jersey in the fight against global warming.

- New Jersey has a great deal to lose from unrestrained global warming. Projected future impacts of global warming on the state include the possible inundation of parts of the Jersey Shore by rising seas, increases in heat-related and smog-related deaths, an increase in heavy precipitation events leading to flooding, and impacts on New Jersey agriculture and wildlife.
- Power plants are the second-largest source of carbon dioxide pollution in the Northeast, accounting for one-quarter of the region's emissions.
- While not perfect, RGGI is a trailblazing program that will set precedents for future action on global warming at the state, regional and federal levels.

New Jersey should auction 100 percent of pollution allowances under RGGI and invest the proceeds in programs to improve the energy efficiency of the state's economy.

- The pollution permits (called “allowances”) issued under RGGI will likely have a value of between \$46 million and \$229 million per year, at an estimated allowance price of \$2 to \$10 per ton.
- Giving allowances away to polluters enables polluters to achieve unjustified windfall profits. In the European Union’s emission trading system, which is similar to RGGI, power producers have received billions of dollars in windfall profits at the expense of consumers and businesses.
- Auctioning allowances to polluters is consistent with the “polluter pays” principle and would generate significant amounts of money to use for public purposes. By investing the proceeds from auctions in energy efficiency, New Jersey can reduce the cost of RGGI to consumers. Indeed, a study conducted for the RGGI state working group shows that pairing RGGI with a doubling of energy efficiency spending would *reduce* the average household electric bill.

New Jersey should resist efforts to weaken RGGI in the guise of containing the costs of the program. Caps on the cost of emission allowances and expansion of the use of “offsets” should not be considered.

- RGGI already includes several measures to prevent significant increases in electricity costs. Power plants may meet some of their compliance obligation through the use of offsets, which are emission reductions achieved at facilities other than power plants. Power plant owners may also bank allowances and offset credits for use later on in the program, thereby preventing price spikes. Finally, RGGI includes provisions to allow greater use of offsets if

allowance prices rise beyond certain levels.

- Cost caps and expanded use of offsets would threaten the integrity of the RGGI emission cap, reducing (and possibly eliminating) the emission reductions achieved by power plants in the Northeast.
- Imposing cost caps or expanding the use of offsets would require New Jersey to rewrite portions of the RGGI model rule that have been agreed upon by all 10 states. Doing so would undermine New Jersey’s commitment to the RGGI process and open the door for further changes by other states—changes that might not be in New Jersey’s best interests.

New Jersey should take additional steps to ensure that RGGI delivers the maximum benefits for the state.

- New Jersey should require that emission allowances be retired when consumers purchase renewable electricity (or “green power”) through their utilities. More than 10,000 New Jersey consumers have purchased “green power” products, believing that their actions will reduce environmental impacts. By tying renewable energy purchases to the retirement of pollution allowances under RGGI, the state can ensure that those purchases deliver their promised environmental benefits and achieve greater reductions of global warming emissions from power plants.
- New Jersey should reject efforts to exempt electric generators that consume most of the power they produce on-site from the RGGI emission cap.
- New Jersey should play a leading role

in developing a regional response to the problem of emissions “leakage,” which is the potential for distribution utilities in RGGI states to increase their imports of dirty power produced outside of the region, thereby reducing the aggregate emission reductions

delivered by the program. New Jersey should also work with other states to tighten the emission cap under RGGI and consider short-term measures to ensure that the program achieves real emission reductions upon taking effect in 2009.

Introduction

In 2003, New Jersey and its neighbors in the Northeast launched the Regional Greenhouse Gas Initiative (RGGI)—the first multi-state effort to limit global warming pollution from electric power plants.

Much has changed since then. Hurricane Katrina, *An Inconvenient Truth*, and a steady drumbeat of scientific evidence pointing to the imminence and severity of climate change have attracted the attention of the public and decision-makers to the issue of global warming and how the United States can address it.

New Jersey can be proud of its efforts as a founding member of RGGI and as a national leader in policies that move us toward a clean energy economy with a dramatically lower impact on the global climate. But now the state faces the next, challenging phase of its efforts to limit global warming pollution: implementation.

Adoption of a plan to implement RGGI is an important moment for the state. New Jersey faces a choice. The state can move forward with a strong plan to implement RGGI, ensuring that the plan delivers the maximum benefits for the environment and New Jersey residents while continuing to set a positive example for the region and the nation. Or New Jersey could implement RGGI in ways that primarily benefit a narrow set of special interests and undermine the commitments the state has already made to its neighbors in the Northeast.

This paper describes some of the important choices facing New Jersey in implementation of RGGI and the benefits of getting those choices right. The stakes are high. To cement its reputation as a climate leader, the state should ensure that RGGI delivers on its promise of cutting power plant emissions and design the program in ways that will benefit consumers and the state as a whole.

The Regional Greenhouse Gas Initiative in Brief

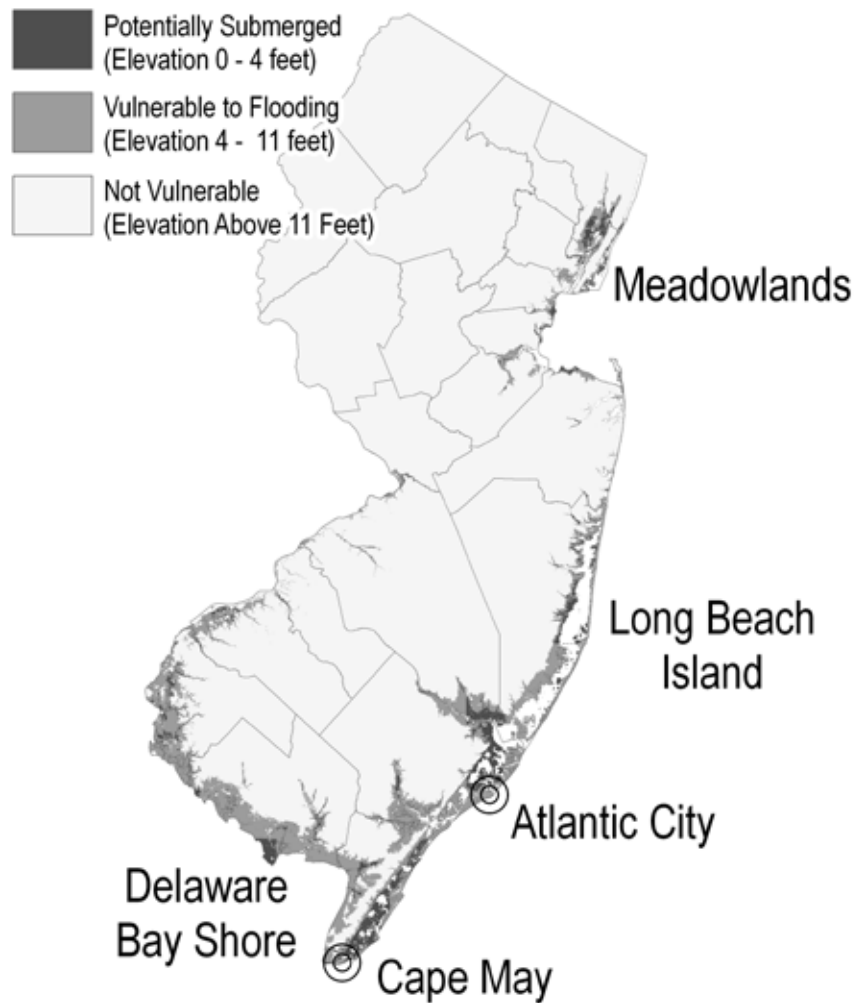
The Regional Greenhouse Gas Initiative is the first multi-state cap on global warming pollution in the United States. Ten northeastern states—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware and Maryland—are participating in the initiative. Power plants are one of the biggest sources of global warming pollution in the Northeast and RGGI is an important first step to reducing pollution from electricity generation.

Why Reduce Global Warming Pollution?

New Jersey and the Northeast as a whole have a great deal to lose from global warming. As documented in Environment New Jersey Research & Policy Center's 2007 report, *An Unfamiliar State: Local Impacts of Global Warming in New Jersey*, global warming has the potential to alter life in every corner of the Garden State. For example:

- A global warming-induced sea level rise of 16 to 31 inches (within the range of what scientists predict if emissions of global warming pollutants continue to increase) would inundate low-lying areas along the Jersey Shore and increase the risk of coastal flooding during major storms.
- Sea-level rise also threatens the vital transportation infrastructure of the New York metropolitan area, with key transportation links like the Holland Tunnel and Newark Airport at increased risk of flooding.
- The number of days with temperatures above 90 degrees could more than quintuple, increasing heat-related deaths in cities like Newark five-fold.
- Increased summertime smog could threaten public health in suburban New Jersey, causing smog-related premature deaths to increase by 6 percent in some suburban counties.

Fig. 1. Areas of New Jersey Susceptible to Global Warming-Induced Sea Level Rise



- An increase in the number of heavy precipitation events could exacerbate flooding in the Delaware River valley, which has experienced several major floods in recent years.
- Rising temperatures could harm migratory birds that use Delaware Bay, increase pest infestation in the Pine-lands, put Camden's drinking water supply at increased risk of saltwater infiltration, and increase heat stress on crops raised by New Jersey farmers.¹

A recent region-wide scientific analysis of global warming impacts estimated that, along with many of the impacts described above, global warming could cause average temperatures to rise by 7° to 12° F in winter and by 6° to 14° F in summer by the end of the 21st century.²

Many scientists and policy-makers recognize a global average temperature increase of 2° C (3.6° F) above pre-industrial levels as a rough threshold beyond which dangerous impacts from global warming will become inevitable. To have a chance

of preventing a temperature rise of more than 2° C, the world must keep the concentration of global warming pollutants in the atmosphere below 450 parts per million (carbon dioxide equivalent). Doing so won't be easy—the concentration of global warming pollutants in the atmosphere is 427 parts per million and rising every year, so the need for action is immediate.³

To prevent the worst impacts of global warming, the United States must:

- Start reducing emissions of global warming pollution now.
- Cut emissions by at least 15 to 20 percent by 2020.
- Reduce emissions by at least 80 percent by 2050.⁴

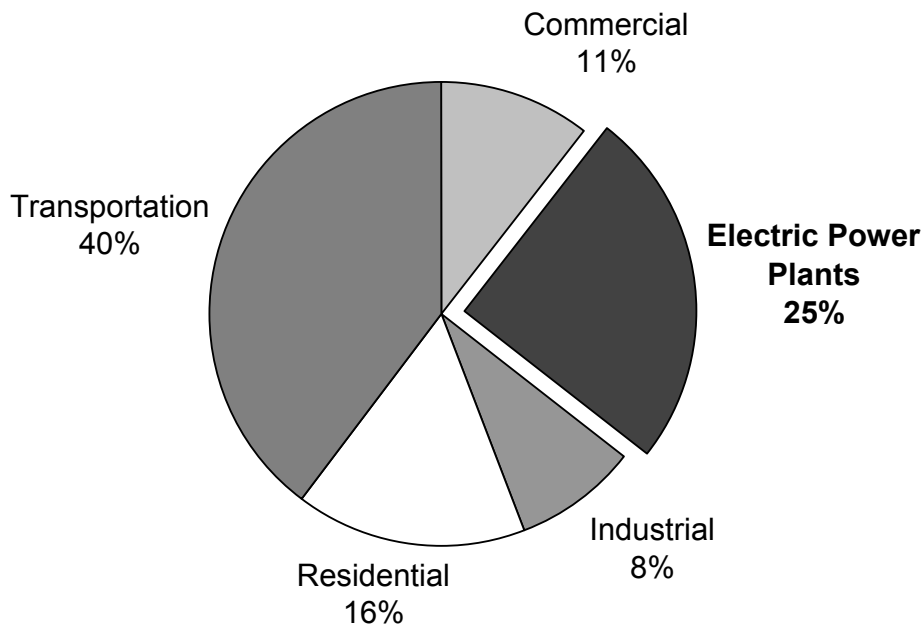
These targets are similar to those adopted by the state of New Jersey through the Global Warming Response Act in July 2007.

Why Start with Power Plants?

The Regional Greenhouse Gas Initiative focuses on global warming pollution from power plants. Power plants are a good place to begin efforts to reduce global warming emissions, for several reasons:

- **Power plants are among the leading emitters of global warming pollution in the Northeast.** Power plants were responsible for about one-quarter of the region's emissions of carbon dioxide—the leading global warming pollutant—from energy use in 2004.⁵ Only transportation produces more global warming pollution in the region.
- **Global warming pollution from power plants is easy to monitor and regulate.** In contrast to transportation—where carbon dioxide pollution comes from tens of millions of vehicle tailpipes—there are only

Fig. 2 Energy-Related Emissions of Carbon Dioxide in the RGGI Region, 2004⁶



approximately 800 electric generating units in the Northeast that would be subject to RGGI.⁷ Most of the region's power plants are already regulated for emissions of other air pollutants. As a result, tracking carbon dioxide emissions from power plants and enforcing a cap does not require states or power plants to invest large amounts of money in new monitoring systems or regulatory structures.

- **There are many ways to reduce global warming pollution from power plants.** Perhaps the best reason to start with power plants is that there are many technologically proven and cost-effective ways to curb global warming emissions from electricity generation. Reducing electricity demand through energy efficiency improvements, shifting to renewable sources of energy, making greater use of combined heat-and-power, improving the efficiency of power plants themselves, and moving to low-carbon fuels are all ways to reduce global warming pollution. Many of these changes—and particularly energy efficiency improvements in homes, businesses, and industry—make economic sense in their own right.

How RGGI Works

The Emission Cap

The core of RGGI is the regional cap on carbon dioxide emissions from power plants. The program covers power plants with a capacity of 25 MW or greater that primarily burn fossil fuels.⁸

The 10 RGGI signatory states have agreed to stabilize carbon dioxide emissions from power plants in the region at

projected 2009 levels through 2014, and to cut emissions by 2.5 percent each year until 2018. By 2018, the states will have achieved a 10 percent reduction in carbon dioxide emissions from power plants.⁹

The RGGI states will achieve that goal through “cap-and-trade.” Under a cap-and-trade program, polluters must hold a permit, called an “allowance,” for every unit of pollution they emit, with the total number of allowances limited by the level of the cap. Power plants that reduce their emissions must hold fewer allowances, enabling them to sell off any excess allowances or to purchase fewer to begin with.

Each RGGI state has been allocated a specific number of allowances for each year of the program. New Jersey, for example, will issue allowances for 22.9 million tons of carbon dioxide pollution in the program's first year, 2009.¹⁰ Each state will decide what share of allowances will be given away to polluters for free and what share will be sold via an auction (although each RGGI state must allocate at least 25 percent of its allowances for “a consumer benefit or strategic energy purpose,” which is undefined in the RGGI model rule).

Offsets

RGGI also allows power plants to use “offsets” to help comply with emission limits. Offsets are emission reductions that occur at other facilities not covered by the RGGI cap. For example, a power plant owner might pay for a project to capture methane gas at a landfill if doing so were cheaper than achieving similar reductions at the power plant itself or purchasing allowances to cover the power plant's emissions.

The use of offsets, however, poses many potential problems, the largest of which is that offset programs may not deliver emission reductions that are of the same integrity as emission reductions that occur under the cap-and-trade program itself. (See, “Offsets: Meeting The Five-Point Test.”)

Offsets: Meeting the Five-Point Test

Exchanging offsets for allowances within a cap-and-trade program is like trading apples for oranges. An allowance represents a discrete amount of pollution that can either be emitted or not. If it is emitted, the emitter must hold an allowance. If it is not emitted, that allowance can be sold to someone else. The total number of allowances is set in advance and is limited by the level of the cap.

An offset, however, represents a unit of pollution *not emitted*. Proving that emissions *would have* happened, but did not, is far more difficult and prone to error than confirming that an emission did or did not actually take place. Thus, any cap-and-trade program that allows offsets must include strict rules to ensure that the emission reductions generated by the “oranges” are as real and as beneficial as those generated by the “apples.”

To ensure their integrity, offsets must meet what is called the “five point test.” The emission reductions delivered by offsets must be:

- **Real**, in that they deliver emission reductions in the aggregate (that is, do not result in emissions simply being shifted to other industries or locations).
- **Surplus**, in that they would not have happened under business-as-usual conditions. This concept is also called “additionality” and truly high-quality offsets are considered to be “financially additional,” meaning that the emission reduction would not have occurred were it not for the money provided by the offset payment.
- **Permanent**
- **Quantifiable**
- **Enforceable**

Even if offsets do meet these criteria, their use in cap-and-trade programs should be limited, both to preserve the integrity of the emission reductions delivered by the program, and to ensure that a large share of the emission reductions occur at the facilities actually regulated under cap-and-trade.

Because of the uncertainty regarding the quality of the emission reductions delivered by offset programs, RGGI allows only limited use of offsets that meet the five-point test for offset integrity. Only a few types of projects may be counted for credit as offsets under RGGI, and offsets may be used to cover only 3.3 percent of a facility’s emissions. Offset projects may be in any one of the following categories:

- Projects that capture methane (a potent global warming pollutant) from landfills and agriculture and use it as an energy source.
- Projects that capture and recycle sulfur hexafluoride gas, a powerful global warming pollutant that is used by the electric industry.

- Projects that plant new trees on previously unforested land, thereby increasing the amount of carbon dioxide removed from the atmosphere by plants.
- Projects that improve the efficiency with which homes, businesses and industry use natural gas and heating oil, or that replace fossil fuels with renewable energy.
- Projects that reduce methane emissions from natural gas transmission and distribution.¹¹

All offset projects must be located within the RGGI region, or within a U.S. state that agrees to monitor the integrity of offset projects within its borders. However, the RGGI model rule allows power plants to use offsets to cover a greater share of their emissions if the cost of allowances exceeds certain thresholds. If the cost of allowances exceeds an average of \$7/ton for 12 months, facilities may use offsets for up to 5 percent of their compliance obligation. If the cost of allowances exceeds an average of \$10/ton for 12 months, power plant owners may use offsets to cover 10 percent of their compliance obligation and use offsets from foreign sources—including allowance retirements under other mandatory cap-and-trade programs (like that of the European Union) or offset credits generated under the United Nations' Clean Development Mechanism.

Offsets are not the only flexibility mechanism provided under RGGI. Power plants must comply with RGGI's emission targets over three-year spans of time, allowing for emissions to vary slightly from year to year within a particular compliance period. Power plant owners may "bank" additional allowances or offset credits for use later on in the program, enabling power plant owners to hedge against volatility in allowance prices. Finally, RGGI allows

states to award credits for "early action" to curtail emissions prior to the start of the emission trading program in 2009. Such early action awards, however, can reduce the integrity of the emission cap and allow for greater emissions in future years.

Flaws in RGGI

RGGI is a ground-breaking effort in the fight against global warming, but it is not perfect. The most glaring weakness of RGGI is the lack of stringency of the emission cap. At a time when the best scientific evidence suggests that we need to reduce global warming emissions 15 to 20 percent below today's levels by 2020, RGGI's target reductions of 10 percent below projected 2009 levels by 2018 are insufficiently aggressive. That is particularly the case given that it is likely to be easier and less expensive to achieve large emission reductions from the electricity system than it will be to reduce emissions from homes, industrial facilities, vehicles and other sources of global warming pollution.

Moreover, several recent analyses suggest that RGGI may achieve even fewer emission reductions than anticipated because the states have set the emission cap for the early years of the program too high. When the emission cap for RGGI was being set, policy makers assumed that emissions from power plants in the region would continue to increase through 2009. However, carbon dioxide emissions dropped significantly in 2006 as power plants in the Northeast switched from oil to natural gas.¹² As a result, there is increasing concern that RGGI is "over-allocated"—that is, that the number of allowances issued in early years of the program will exceed actual emissions, making the allowances nearly worthless and making RGGI virtually irrelevant, at least in the near-term, as an emission-reducing tool. Tightening the RGGI emission cap would resolve this problem.

RGGI also includes several potential

loopholes that could reduce the effectiveness of the program in achieving its emission reduction goals. By taking full advantage of the ability to use offsets, for example, power plants can actually increase their emissions from 2009 levels until more aggressive emission reductions kick in after 2014. The RGGI model rule also includes no provisions to prevent “leakage” of emission reductions—as might occur if polluting power plants are built in neighboring states and sell their power into the RGGI region. Without a plan to prevent leakage (a plan that the RGGI states are now working to develop), the program may not deliver the intended reductions in overall global warming emissions.

Why RGGI Is Important

Despite its flaws, RGGI is an important step forward for New Jersey and the Northeast states.

First, RGGI has established a number of positive precedents for future efforts to reduce global warming pollution in the Northeast and nationwide. RGGI requires the auctioning of a substantial number of pollution allowances and allows states to auction up to 100 percent of their allowances, thereby reducing the risk that power plant owners will receive unjustified windfall profits from participation in the program and ensuring a flow of revenue that can be used to support energy efficiency improvements and other public purposes. (See “Auctioning Allowances Benefits Consumers,” page 15.) In addition, RGGI sets relatively strict limits on the use of offsets and the kinds of projects that can qualify for credit as offsets. While not perfect, RGGI’s rules for the use of offsets are preferable to the looser offset rules that have been discussed in other models for future global warming cap-and-trade programs.

Second, when the program begins in 2009, RGGI will provide a base of real-world experience for global warming cap-and-trade programs. Just as the European Union’s cap-and-trade program, which began operation in 2005, has provided real-world experience that has shaped the development of RGGI, so too will RGGI provide lessons to guide future global warming pollution reduction efforts in the United States.

Finally, a successful RGGI program will demonstrate that global warming emissions can be reduced effectively while benefiting the region’s economy and build confidence that the region can achieve the deep, long-term emission reductions that will be needed to prevent the worst impacts of global warming.

What RGGI Will Mean to New Jersey

Global Warming Pollution Reductions

RGGI’s greatest benefit to New Jersey will be in reducing the state’s contribution to global warming, which threatens our environment, our economy and our way of life. While the emission reductions delivered by RGGI fall short of what is required to stave off the most dangerous impacts of global warming, the program will prevent further increases in emissions and put New Jersey and the Northeast on a pathway to further emission reductions in the years to come.

RGGI, along with other complementary energy policies adopted by New Jersey, such as the state’s renewable electricity standard, will also help to move the state toward the forefront of a new energy economy that is increasingly reliant on clean, renewable sources of energy and improvements in energy efficiency. By

embracing clean energy, New Jersey can reduce its reliance on fossil fuels, encourage the development of new industries in the state, and keep more of the state's energy dollars at home.

Economic Benefits

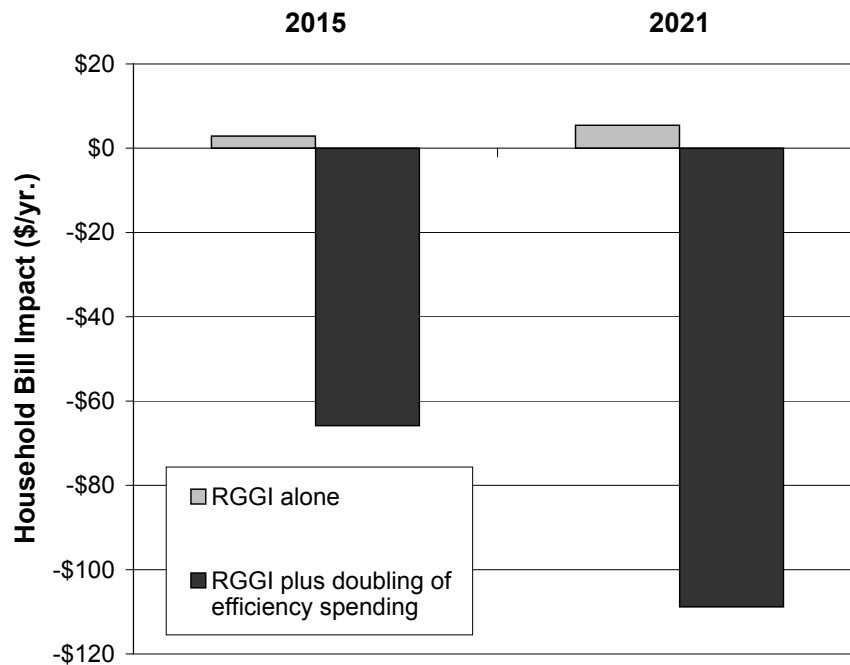
The economic impact of RGGI is likely to be small for both homeowners and businesses. And if the state makes the right choices by auctioning 100 percent of allowances to polluters and plowing the revenue back into energy efficiency efforts, New Jersey consumers will likely gain.

Analysis conducted for the RGGI state working group (the collection of state officials that designed the program) by the Massachusetts Division of Energy Resources examined the impact of RGGI on household electric bills under two scenarios: the RGGI program itself and the RGGI program paired with a doubling of energy efficiency spending (which could be financed by the sale of allowances un-

der RGGI). The study concluded that the imposition of RGGI alone would cause household electricity bills to increase by \$2.90 per year in 2015 and \$5.45 per year in 2021. However, a doubling of energy efficiency spending would both reduce the cost of allowances under RGGI and reduce overall energy consumption, leading to an average bill reduction of \$65.85 per year in 2015 and \$108.84 in 2021.¹³ (See Fig. 3.)

New Jersey's existing Clean Energy Program delivers energy efficiency improvements at a high benefit-to-cost ratio for New Jersey. In 2005, the New Jersey Clean Energy Program spent \$85.4 million on electric and natural gas energy efficiency programs, which will deliver cumulative, lifetime energy bill savings of more than \$520 million—a simple benefit-cost ratio of more than five to one.¹⁵ Many additional cost-effective energy efficiency opportunities remain in New Jersey's economy, meaning that further investments—perhaps financed by RGGI

Fig. 3. Projected Household Electricity Bill Impact of RGGI¹⁴



auction revenues—can deliver even greater benefits.¹⁶

Continued Transition to a Clean Energy Economy

Implementation of RGGI will also continue New Jersey's momentum toward a clean energy economy. In recent years, New Jersey has taken several steps toward a cleaner energy system—including adoption of a renewable electricity standard and increases in the state's investments in energy efficiency. By putting a price on the carbon dioxide emitted by fossil fuel power plants, New Jersey will further encourage the development of cleaner sources of energy, such as wind and solar power, within the state and region. Investments in renewable energy create more jobs than investments in fossil fuel-fired generating technologies, and states that have adopted clean energy policies are succeeding in attracting a new wave of businesses and investment.¹⁷ Participation in RGGI will cement New Jersey's reputation as a clean energy leader, bolster the state's economic

development, and help to achieve the goals of New Jersey's Energy Master Plan, which seeks to cut projected energy use in New Jersey by 20 percent by 2020, meet 20 percent of the state's energy needs with clean renewable energy, and ensure that energy efficiency, conservation and renewable energy can meet all future increases in energy demand in the state.¹⁸

Making the Right Choices

New Jersey's decision to join RGGI and commit to global warming emission reductions was a good choice for the state's environment and economy. But the state faces additional choices in how it implements the program—choices that could maximize RGGI's benefits or undermine the program before it even begins. The following section describes some of the key decisions facing New Jersey as the state implements RGGI.

How New Jersey Can Get the Most Benefits from RGGI

New Jersey's Role in Setting the Rules Under RGGI

By coming together under the Regional Greenhouse Gas Initiative, 10 northeastern states made a mutual commitment to work together to reduce carbon dioxide emissions from power plants. But there is no regional governmental entity that can enforce RGGI. Instead, each state must develop and adopt its own rules to implement the program. The program will only be effective if each state adopts rules that are similar to those adopted by other states—thereby creating a program with consistent rules and procedures across the region.

To encourage consistency among the states, the RGGI state working group developed a “model rule” that was intended to provide a framework for the individual rules adopted by the various states. The RGGI model rule sets the basic outlines of the program, including the carbon dioxide emission budgets, the rules regarding the use of offsets, and the mechanisms for demonstrating compliance.

However, the model rule also leaves some leeway for states to adopt different approaches to key elements of the program.

For example, while the model rule requires states to reserve at least 25 percent of allowances for “consumer benefit or strategic energy purposes,” it leaves the door open for states to auction up to 100 percent of their allowances to polluters and does not define what a “consumer benefit or strategic energy purpose” might be. As a result, states have great latitude in determining how to distribute allowances and how to use any revenue from auctions.

The RGGI model rule also provides states with flexibility in whether to exempt generators that produce most of their electricity for on-site use (as opposed to supplying it to the electric grid), guarantee carbon dioxide emission reductions resulting from voluntary consumer purchases of renewable energy, and allow credit for early action to reduce emissions, among other issues.

However, the ample flexibility provided by the model rule has not satisfied everyone. Power plant owners, utilities, or other interests may push for New Jersey to adopt a version of RGGI that differs significantly from the provisions of the model rule. Doing so, however, would undermine New Jersey's commitment to its neighboring

states and could jeopardize the program altogether.

Auctioning Allowances: The Cheaper and Smarter Way to Implement RGGI

One of the most important decisions facing New Jersey is whether it will give away most of the carbon dioxide emission allowances to polluters for free, or auction those allowances, with the proceeds used to benefit the public. To ensure that RGGI delivers the maximum benefits for New Jersey consumers, the state should opt to auction 100 percent of pollution allowances under RGGI and use the revenues to improve the energy efficiency of New Jersey's economy.

The most important thing to remember about allowances is that they are items of monetary value—they can be bought, sold and traded on open markets. Assuming that the price of carbon dioxide emission allowances under RGGI will range from \$2/ton to \$10/ton, New Jersey's initial allotment of 22.9 million allowances would have a value of \$46 million to \$229 million.

Auctioning pollution allowances under RGGI is a fair and less costly way to achieve the aims of the program. By contrast, giving allowances away to polluters for free will do nothing to reduce the cost of the RGGI program and will merely enable power plant owners to gain unjustified windfall profits at the expense of consumers.

Auctioning Allowances Is Fair

No one has an inherent right to pollute. The atmosphere is a common resource and should be managed in such a way as to benefit the public as a whole. As a result, it is perfectly appropriate for society to determine when and under what conditions

polluters may use common resources. It is also appropriate for polluters to compensate the public for the damage done.

The “polluter pays” principle has long been a cornerstone of environmental law in the United States. When polluters foul the atmosphere with pollutants that contribute to global warming, it is only fair that they—and not the public at large—pay the costs for that pollution.

The polluter pays principle has an economic dimension as well. The production of electricity imposes what economists call “externalities,” or costs that are imposed on other members of society but that are not reflected in the cost of electricity. Increased health care costs resulting from smog and soot pollution, as well as costs resulting from global warming, are among the external costs imposed by power plant pollution. By requiring polluters to pay for the costs imposed by their pollution, the costs become factored into the cost of goods and services, sending economic signals to producers and consumers that discourage pollution.

All cap-and-trade programs—regardless of how allowances are distributed—internalize at least some of the cost of pollution. Auctioning allowances, however, ensures that all polluters pay for the right to emit global warming pollutants. Bigger polluters pay more, smaller polluters pay less. Auctioning allowances is therefore consistent with the polluter pays principle and ensures that the costs of reducing global warming emissions are spread fairly through the economy and society.

Auctioning Allowances Benefits Consumers

Economic research shows that auctioning allowances (along with “recycling” some or all of the revenue from the auction back to the public) reduces the cost of achieving emission reductions through cap-and-trade compared with a system in which allowances are distributed for free.

Why Giving Away Allowances Doesn't Make Electricity Any Cheaper

Opponents of allowance auctions sometimes claim that requiring polluters to buy allowances, as opposed to being given them for free, will cause the price of power to rise. This is untrue.

In New Jersey's restructured electricity market, the price of power is set by the interplay of supply and demand, not by the cost of generating that power. Regardless of whether allowances are auctioned or given away for free, the price of electricity will rise to incorporate the value of the allowances.

To understand why, one must understand a bit about how electricity markets work. In the wholesale market for electricity, the price of power is set by what economists call the "marginal cost" of producing electricity – in other words, the amount that it costs to produce the last unit of power that is needed to meet demand. All power plants receive this same price – which is based on the cost of producing power at the most expensive power plant needed to meet demand – regardless of their actual costs.

Requiring power plants to hold allowances for carbon dioxide emissions increases the marginal cost of producing power. If the marginal power plant must purchase the allowance, its cost to produce electricity increases. But, if the marginal power plant receives the allowance for free, it would *still* charge more for its electricity, since it would require a higher price to make it worth its while to sell power to the grid. Should the plant choose not sell power to the grid, it would avoid the cost of producing power and be able to cash out the value of the allowance, which it would not need and would therefore be free to sell. As a result, under both an auction and free allocation, electricity prices rise.

The key difference between an allowance auction and free allocation is that, under a free allocation scheme, power plant owners receive the value of the allowances. In the end, consumers pay more for power and power plant owners have the opportunity to achieve windfall profits.

By auctioning allowances, however, the value of those allowances is returned to the public sector, which can use that revenue for public purposes, including efforts to reduce the impact of the program on consumers.

For example:

- A study by Resources for the Future estimated that an auction and revenue recycling approach was roughly half as expensive to society as an allocation system based on "grandfathering" of existing emitters. Total savings under the auction approach increase as emission-reduction targets become more stringent.¹⁹
- These results are supported by evidence from other economic modeling efforts suggesting that allowance auctions, combined with recycling of auction revenues, can allow for emission reductions at lower overall cost and possibly promote more innovation and better investments in technology.²⁰

The conclusion that auctioning allowances is less costly to society than giving

them away may be counterintuitive. After all, consumers will mainly see the impact of a cap-and-trade system in higher prices for energy and some products. If polluters are given allowances for free, one might think that they would not need to pass the cost of compliance down to consumers, thus saving consumers money.

However, economic research and practical experience show that giving away allowances to polluters represents the worst of both worlds. Consumers pay more for energy or products as the cost of those commodities comes to reflect the cost of global warming pollution—just as they would under a system in which allowances are auctioned. But instead of government gaining revenues from allowance auctions, which could then be used in a variety of ways to reduce the cost of the program, polluters could benefit by receiving unjustified “windfall” profits—even if they take no action at all to reduce their global warming emissions. (See “Free Allocation of Allowances: A Giveaway to Polluters,” page 18.)

In the case of RGGI, the cost of achieving the program’s modest pollution reduction targets is likely to be low. However, there are many ways that revenues from auctions can be used to reduce the cost of the program even further and to achieve environmental goals. One way is by using auction revenues to fund improvements in the energy efficiency of New Jersey’s economy.

Recycling Revenues from Allowance Auctions: Putting Efficiency First

Economic modeling conducted for the Regional Greenhouse Gas Initiative found that pairing the RGGI emission cap with strong energy efficiency efforts resulted in an overall reduction in consumers’ household energy bills.²¹ Increased energy efficiency investment also reduces the cost of global warming emission allowances under the cap-and-trade program.²²

As noted earlier, New Jersey already sponsors highly effective energy efficiency and renewable energy efforts through the New Jersey Clean Energy Program. Energy efficiency measures installed between 2001 and 2005 under the program will save an estimated 15.6 billion kilowatt-hours of electricity over their lifetimes—enough to power half of New Jersey’s homes for a year.²³ The program’s savings have come at an average cost of 2.4 cents per kilowatt-hour, compared to the 10 cents per kilowatt-hour average retail price of electricity in 2005.²⁴ As a result, the \$85 million invested in energy efficiency programs in 2005 will eventually deliver cumulative bill savings of more than \$500 million.

The benefits of New Jersey’s investment in energy efficiency are broad-based, helping homeowners, businesses and local governments. Among those who benefited from the program in 2005 were:

- More than 27,000 residential customers who received rebates on high-efficiency heating equipment.
- More than 6,400 low-income households, which received energy efficiency improvements at no cost.²⁵

In addition, more than 1,900 New Jersey businesses benefited from the program in 2006 (and more than 20,000 have benefited since 2001), mostly through technical support and financial incentives for commercial and industrial energy efficiency projects.²⁶

However, there are plenty of additional investments in energy efficiency that can be made in New Jersey and still deliver substantial benefits to the public. In 2004, the Rutgers University Center for Energy, Economic and Environmental Policy commissioned a study by KEMA, Inc. that examined the potential for improving the energy efficiency of New Jersey’s economy. The study found that New Jersey has the

technical potential to reduce electricity demand by nearly 17,000 gigawatt-hours per year by 2020—or about 23 percent of statewide consumption.²⁷ Of those savings, about three-quarters, or 12,832 GWh per year, appear to be cost-effective to consumers.

Combined heat-and-power (CHP)—in which wasted heat from electricity generation is used to provide useful heat energy for industrial, commercial or residential purposes—is another tool New Jersey can use to save energy and reduce the cost of the RGGI program.

The 2004 KEMA, Inc. study cited earlier identified a market potential of approximately 2,100 MW of additional CHP, which could be realized with a reduction of “stand-by” power charges (fees charged to CHP owners to pay for the ability to draw power from the grid when their CHP units are not operational) and an incentive for new CHP of \$1/Watt.²⁸ The total program cost of achieving that penetration of CHP was estimated at \$662 million, which, if divided equally over a 13-year period from 2007 through 2020, amounts to approximately \$51 million of today’s dollars per year.

New Jersey has already adopted significant incentives for new CHP applications, but the current state program does not have enough funding to provide support to all the businesses that wish to install CHP. Because of the lack of funding, the state has done limited promotion of its CHP programs, meaning that the current state effort barely scratches the surface of the potential for CHP installations in New Jersey.

Funding from RGGI could be used to tap the region’s ample energy efficiency potential, encourage further development of CHP, or both, thereby reducing the cost of achieving required emission reductions under RGGI, saving consumers money on their electric bills by reducing their consumption of energy, and helping New

Jersey avoid expensive future investments in new power plants and transmission lines.

Free Allocation of Allowances: A Giveaway to Polluters

Not every pollutant cap-and-trade program has required the sale of allowances to polluters. In fact, many such programs—including Europe’s pioneering Emission Trading Scheme (ETS), which regulates carbon dioxide emissions from power plants and other large industrial sources—have given some or all allowances away to polluters for free.

The experience of Europe’s ETS—the first widescale carbon dioxide cap-and-trade program in the world—has demonstrated the importance of auctioning allowances. Prior to implementation of ETS, researchers with the investment bank, UBS, warned that the free allocation of nearly all the allowances under the program would result in “windfall profits” of €27.6 billion (approximately \$39 billion at today’s exchange rates) to a select set of companies, prompting the authors of the report to ask, “Whatever happened to the principle of ‘polluter pays?’”²⁹

Those predictions of large windfall profits have come true. Estimates of windfall profits for power generators in the United Kingdom alone top \$1.9 billion.³⁰ Similar windfall profit gains are likely to have occurred in other European countries as well.³¹ WWF, for example, estimates that the largest German utilities will accrue windfall profits of between €31 billion and €64 billion (\$43 billion to \$90 billion) by the time the second phase of the emission trading program is complete in 2012.³²

The cost of windfall profits has not only hit European consumers, but businesses as well. Even before the implementation of the ETS, Europe’s energy-intensive industries—including the steel, cement, glass and paper industries—warned of the impact that windfall profits would have on

their industries' bottom line, even as they supported the concept of emission trading overall.³³

How can new limits on power plant pollution turn into a profit opportunity for power plant owners? In short, the reason is that pollution allowances represent items of monetary value. Giving pollution allowances away for free represents distributing items of monetary value to polluters.

Competitive markets for electricity, such as New Jersey's restructured electricity system, ensure that the cost of pollution allowances is factored into the price consumers pay for electricity. However, if power plant owners receive pollution allowances for free, power plant owners do not necessarily experience any increased cost to produce and sell electricity. Thus, the increased price of electricity flows directly as profit to the bottom lines of power plant owners. (See, "Why Giving Away Allowances Doesn't Make Electricity Any Cheaper," page 16.)

To be sure, power plant owners will incur some additional costs under RGGI. Some power plant owners, for example, will make investments based on the desire to reduce their carbon dioxide emissions and, therefore, their compliance obligations under RGGI. However, the cost of these investments is likely to be far less than the value of the allowances traded under the program. Economic analysis suggests that redistributing less than 10 percent of the value of allowances to polluters would make them whole for the additional costs they incur under the program (although the public has no obligation to do so under the "polluter pays" principle.)³⁴

Other RGGI States Are Moving Toward 100 Percent Auctions

Of the RGGI states that have made decisions on implementation of the program, four states—New York, Massachusetts, Maine and Vermont—have already committed to auctioning 100 percent of pollutant

allowances under the program.

New Jersey's leadership within the RGGI process helped ensure that states will have the flexibility to auction 100 percent of their allowances. To protect consumers and reduce the cost of the program to New Jersey residents, the state should opt to auction 100 percent of pollution allowances under RGGI, with the proceeds used to support further improvements in the energy efficiency of New Jersey's economy.

Keeping RGGI Strong by Avoiding New Loopholes

Committing to the auctioning of 100 percent of pollution allowances under RGGI would strengthen protections for consumers and reduce the cost of achieving emission reductions. But there are other potential changes that New Jersey could make to RGGI that would reduce the integrity of program and threaten New Jersey's efforts to reduce emissions of global warming pollution.

Existing Provisions for Cost Containment Are Enough

There are several ways in which RGGI could be weakened under the auspices of attempting to reduce the cost of the program. Among them are allowing more liberal use of offsets than permitted in the RGGI model rule and imposing caps on the price of carbon dioxide allowances under the program.

Both an expansion of offset use and the imposition of cost caps would erode the integrity of the RGGI emission cap. As discussed earlier (see page 9), offsets provide less certain emission reductions than those achieved under an emission cap. RGGI already allows power plants to use significant amounts of offsets to

comply with the program—enough so that global warming emissions in the region can actually increase within the region until approximately 2015 under the program. Further expanding the use of offsets—or allowing the use of a broader array of offset programs that may not meet a “five point test” for integrity (see page 9)—would erode the emission cap, allowing further emission increases within the region. For a state that is working to establish itself as a leader in efforts to curb global warming, allowing further increases in global warming pollution from power plants would send a poor message.

The imposition of hard cost caps would similarly undermine RGGI’s emission reduction goals. Under a hard cost cap, the state would be required to sell additional allowances to polluters at a predetermined price—for example, \$10/ton. If the price of allowances on the open market exceeds that level, the cap is effectively lifted—thereby flooding the market with allowances (and the associated pollution)—until prices fall beneath the threshold again.

Both expanded offset use and hard cost caps are “solutions” in search of a problem with regard to RGGI. As described earlier, the modest emission reductions required under the program are unlikely to trigger a significant increase in electricity prices. Indeed, if New Jersey and other RGGI states auction allowances and use the revenues for energy efficiency, the program may even reduce net energy costs. As a result, there is little need for “safety valves” to artificially contain costs in RGGI, which risk undermining the effectiveness of the program.

Even if allowance prices were to rise unexpectedly, the RGGI model rule already provides several mechanisms to ease the cost burden. Power plants are required to demonstrate compliance with RGGI over three-year periods of time (extended to four years if allowance prices exceed \$10/ton for one year), thus giving them

ample flexibility to increase or curb emissions to avoid temporary price spikes. The RGGI model rule allows for increased use of offsets if the price of carbon allowances exceeds \$7 per ton for one year, and allows for further increases in offsets use (along with the use of offsets generated in foreign countries) if the price of allowances exceeds \$10/ton for one year. Further, power plants may purchase allowances or offset credits at any time and bank them for use later in the program, when greater emission reductions are required. All of these mechanisms reduce the possibility of allowance price spikes under the program, making additional “safety valves” unnecessary.

The animating rationale behind cap-and-trade programs such as RGGI is that market forces should be used to achieve specific environmental results. Cost caps and other loopholes constrain the operation of market forces in ways that discourage necessary investments in technologies to reduce global warming emissions. New Jersey should reject any attempt to further weaken RGGI’s primary purpose of delivering carbon dioxide emission reductions from power plants in the region.

Changes by New Jersey Would Weaken the Regional Agreement

Even if there were a case to be made for adopting changes to the agreed-upon portions of the model rule, New Jersey would be wise to avoid them. The RGGI model rule is the product of a three-year-long process of negotiation among the various northeastern states and a multitude of stakeholders ranging from power plant owners to utilities to environmentalists to consumer advocates. The final result is not perfect and does not suit any state’s needs perfectly. But it is a compromise that moves the region in the right direction and sets the stage for future cooperative efforts.

The unilateral adoption of changes to the RGGI model rule by a single state would upset the delicate web of negotiated

compromises that are the foundation of the process. Changes made by New Jersey to benefit its interests would likely be quickly followed by alterations made by other states to promote their own self-interests. And what began as a cooperative process among 10 states would quickly degenerate into 10 separate programs.

New Jersey has a responsibility to its fellow Northeast states to implement the common provisions of the model rule as agreed upon during the RGGI negotiations. Future changes should be made collaboratively, along with the other Northeast states. By working together, New Jersey and the other Northeast states can set a powerful, positive example for cooperative effort on global warming that can influence future regional and national efforts in the United States.

Other Decisions for New Jersey in RGGI Implementation

Recognizing Voluntary Purchases of Renewable Energy

Thousands of New Jersey residents have “gone green” by voluntarily purchasing renewable energy from their electricity suppliers. At least 10,000 New Jersey residents have enrolled in the state’s “Clean Power Choice” program, which enables them to buy renewable electricity from independent marketers.³⁵ Many of them made this decision on the assumption that their purchases of renewable energy will translate into tangible environmental benefits, including reductions in emissions that cause global warming.

The nature of a cap-and-trade program, however, is that the level of emissions in a given region is usually dictated by the cap. In other words, a consumer who reduces

global warming emissions by purchasing green energy merely frees up emission allowances that can be used to increase emissions at other power plants. That is not to say that purchasing green energy does not deliver other benefits—it helps to advance renewable energy technologies and to make possible greater emission reductions at lower costs in the long-term. Green energy purchases can also indirectly reduce emissions by reducing the potential for increased power purchases from dirty sources outside the region, a problem known as “leakage.” But under a cap-and-trade program, such purchases do not provide guaranteed reductions in global warming emissions in the near term.

Acknowledging this problem, the RGGI model rule includes an optional section that allows states to retire carbon dioxide emission allowances commensurate with consumers’ voluntary purchases of renewable energy. By doing so, states can ensure that consumers purchasing renewable energy are truly contributing to reductions in global warming emissions. In addition, the retirement of allowances makes it possible to achieve global warming emission reductions that are beyond the modest targets set under RGGI. New Jersey should consider retiring carbon dioxide emission allowances to reflect its citizens’ commitment to a clean energy future.

Including the Broadest Range of Polluters in the Program

The RGGI model rule also includes an optional provision that would allow states to exempt certain electric generators that are located at industrial facilities and that consume the majority of their power on-site. The exemption is designed to benefit a small number of large industrial facilities that generate most of their electricity for their own use.

The optional provision in the RGGI model rule stipulates that states that exempt large industrial generators from the

program also ratchet down their emission caps accordingly, ensuring that the exemption is not used to inflate the emission cap. However, by exempting some industrial generators from the RGGI program, emissions at these facilities would be uncontrolled and allowed to continue to rise.

Proponents of the industrial exemption claim that the exemption is needed to promote the use of combined heat-and-power at industrial facilities. While combined heat-and-power is a useful strategy to reduce energy consumption and peak electricity demand, as well as to reduce global warming emissions, exempting large combined heat-and-power from the program is not the answer. Instead, the RGGI states should lay the groundwork for expansion of the program to include carbon dioxide emissions from all large emitters and undertake other steps to encourage the use of combined heat-and-power. Using some of the revenue from a RGGI allowance auction to provide incentives for combined heat-and-power would be a legitimate way to promote the technology in New Jersey.

RGGI was purposely designed by the states as a model program that could be expanded to include other sources of carbon dioxide and other global warming pollutants in the years to come. Exempting significant sources of carbon dioxide from the program would take RGGI in precisely the opposite direction. New Jersey should ensure that the broadest range of possible polluters is included in the RGGI program by ensuring that large industrial electric generators are included from the outset.

Challenges Ahead

Agreement on the RGGI model rule, and the adoption of regulations implementing it in the states, is not the final word in the development of RGGI. The model

rule leaves one very important issue unaddressed: the issue of how to prevent leakage of emission reductions outside the boundaries of the RGGI program. The weakness of the RGGI emission cap also suggests that states will need to take action soon to reduce the emission target.

Addressing Leakage

The efforts of New Jersey and the other RGGI states to reduce global warming pollution from power plants will only make a difference if those reductions are not matched by increasing emissions from power plants outside the region that sell power into RGGI states. Addressing “leakage” is not easy, but it is one of the most important challenges RGGI states must face.

The geography of electricity does not always match perfectly with political boundaries. The 10 RGGI states, for example, do not exist within a common regional electricity market, but are rather governed by three regional independent electric system operators (ISOs): ISO-New England, New York ISO, and PJM Interconnection, which includes RGGI states New Jersey, Maryland and Delaware. Both ISO-New England and New York ISO include only utilities that will be affected by RGGI. But PJM Interconnection extends well beyond the boundaries of its three RGGI states, incorporating electric grids in parts of Pennsylvania, Virginia, Illinois, Indiana, Michigan, Ohio, West Virginia and North Carolina. In addition, the Northeast’s electric grids are also interconnected, enabling New York ISO, for example, to trade a limited amount of power with PJM.

Unlike the RGGI region, which relies on a mix of resources for its electricity, electricity generation in the western region of PJM is dominated by highly polluting coal-fired power plants. Because RGGI regulates power production and not power purchases by utilities, it is possible for

utilities in the RGGI region to use their interconnections with other utilities to increase their imports of low-cost, high-polluting coal-generated power from outside the RGGI region. As a result, emissions may decline within the RGGI region, but increase as a result of increased purchases of electricity from outside the region, leading to little aggregate reduction in global warming pollution.

New Jersey is at the front lines in the leakage debate. The state is a net importer of power, with a large share of those imports coming from Pennsylvania.

In practice, there are several factors that could limit leakage:

- Transmission capacity to carry power from west to east is currently constrained. As a result utilities in New Jersey and other RGGI states may be limited in the amount of power they can import from other states.
- The cost of pollution allowances under RGGI is projected to remain relatively low—below \$10 per ton. As a result, RGGI itself may not cause a shift in power production outside the region.
- Wise investments in energy efficiency could reduce the growth of power demand within the RGGI region, thereby keeping allowance prices relatively low and reducing both the need for additional power imports and the financial advantages of importing power from outside of RGGI.

Despite these factors, it is important that the RGGI states prevent emission leakage. The proposed addition of new transmission capacity to carry power from west to east within PJM, coupled with the continued high price of natural gas relative to coal, could encourage the further construction of coal-fired power plants outside the

RGGI region that supply power to New Jersey and other RGGI states.

New Jersey and the rest of the northeastern states should adopt strong rules to ensure that an increase in power imports does not undermine efforts to reduce global warming pollution from power plants.

The region has several options to address the problem:

- The RGGI states could adopt generation portfolio standards that ensure that power imported into the region meets the same environmental profile as power generated within the region.
- The RGGI states could adopt a load-based cap on global warming emissions, which would regulate the global warming emissions of power supplied to the region, as well as the power produced within the region. A group of western states that is developing a program similar to RGGI is considering a load-based system.
- RGGI states could implement changes in power procurement practices to reduce the potential for leakage. States with traditionally regulated utilities or those that procure power through bilateral contracts could adopt power procurement rules that give priority to energy efficiency and renewable energy in meeting a state's energy needs. States such as New Jersey that purchase electricity through wholesale auctions could implement a "carbon adder"—a phantom charge that would be applied to account for the value of carbon dioxide emissions from power plants supplying electricity to the state. The use of a carbon adder would ensure that in-region and out-of-region power plants are considered on a level playing field when electricity is purchased for basic generation service customers.

- The RGGI states could take aggressive steps to promote the development of clean, distributed generation technologies and renewable energy sources with few global warming emissions. Solar photovoltaic power, clean combined heat-and-power, and other distributed technologies can increase the amount of power generated within the region while reducing strain on regional transmission networks and reducing the need to import power from elsewhere. In addition, the region should develop its native renewable energy resources—particularly onshore and offshore wind power—to reduce dependence on imported power.
- Finally, the RGGI states could encourage neighboring states to join the program. Including other states in the program would reduce the potential for emissions leakage to those states, since emissions there would also be capped. However, including other states in the program will only be effective if those states are subject to emission caps of similar stringency to the rest of the RGGI region. Leakage would also be reduced if the federal government were to adopt a nationwide global warming pollution cap for power plants that is at least as stringent as the current RGGI cap.

Developing effective systems to contain leakage is no simple matter and there are many technical and legal hurdles to consider. A detailed discussion of the available policy options for addressing leakage is beyond the scope of this report. But New Jersey should take the lead among the RGGI states in advocating for strong provisions to prevent emission leakage in the RGGI program.

Tightening the Cap

The most recent climate science tells us that preventing the worst impacts of global warming will require the United States to halt increases in global warming pollution now, achieve significant reductions in emissions over the next two decades, and cut emissions by 80 percent or more by 2050. The emission reductions required under RGGI, while an important step forward, make insufficient progress toward those goals. Moreover, with the recent decline in power plant emissions in the Northeast, there is increasing concern that RGGI is over-allocated—meaning that the emission cap could be greater than the amount of pollution actually produced by power plants in the region. Over-allocation would make pollution allowances nearly worthless in the near-term and provide a less-than-inspiring beginning to the RGGI program.

Both the urgency of reducing global warming emissions in the Northeast and the problems posed by over-allocation suggest that the Northeast states should reduce the amount of pollution allowances issued under the program. States, including New Jersey, could opt to unilaterally retire allowances, agree to do so through revisions to the regional agreement, or establish a mechanism for retiring allowances if the price of allowances in an auction is too low.

One such mechanism would be to set a floor for allowance prices—called a “reserve price”—in an allowance auction. Individual states or the region could establish a price of, for example, \$3/ton as a minimum allowance price. If the price set in the first round of an auction were to be less than \$3/ton, the states could retire a certain percentage of the allowances and solicit a new round of bids. The process would then continue, and allowances would continue to be retired, until the reserve price was met.

Mechanisms such as a reserve price may be useful strategies to ensure that the RGGI program achieves actual emission reductions in the near term. Ultimately, however, states will need to renegotiate

the RGGI emission cap to ensure that the program achieves reductions consistent with those needed to prevent the most dangerous impacts of global warming.

Conclusion and Recommendations

New Jersey has established a record of leadership in the effort to reduce global warming pollution. To build upon that record of leadership, New Jersey should adopt strong rules for the implementation of RGGI that include:

- The auctioning of 100 percent of pollution allowances, with the proceeds of the auction used for public purposes. Proceeds should initially be directed toward efforts to improve the energy efficiency of New Jersey's economy, which would reduce the cost of the program to New Jersey residents and businesses.
- No weakening of the RGGI model rule itself. The state should not allow the use of additional offsets beyond the amount described in the model rule, nor should New Jersey impose a cost cap on global warming pollution allowances. Weakening these provisions of the RGGI model rule would undermine New Jersey's commitments to its neighboring states and weaken the program in its objective to reduce

global warming pollution from power plants in the Northeast.

- The adoption of optional provisions in the RGGI model rule that retire global warming pollution allowances when New Jersey residents purchase renewable energy through their utilities. By doing so, New Jersey can ensure that consumers' green power purchases deliver on their promises of environmental benefit and further reduce global warming pollution from power plants in the Northeast.
- No exemption for electricity generators that primarily provide power for on-site use.

New Jersey should also play a leading role in developing and implementing strong solutions to the potential problem of emission leakage. A load-based cap on global warming pollution, a generation portfolio standard that regulates pollution per unit of energy produced from sources outside the RGGI region, and addition of a "carbon adder" to the cost of power

imported from highly polluting sources outside of the region all have promise as a solution to the leakage problem.

In addition, New Jersey should also implement complementary energy policies such as energy efficiency standards and programs to promote energy efficiency and the development of clean distributed generation and renewable power within the

region, to reduce the potential of significant emission leakage.

Finally, New Jersey should work with the other RGGI states to tighten the emission cap under the program and should consider measures to ensure that the program delivers real reductions in emissions upon its launch in 2009.

Notes

- 1 Suzanne Leta Liou and Travis Madsen, Environment New Jersey Research & Policy Center, *An Unfamiliar State: Local Impacts of Global Warming in New Jersey*, May 2007.
- 2 Union of Concerned Scientists, *Confronting Climate Change in the U.S. Northeast: New Jersey* [fact sheet], based on findings from Northeast Climate Impacts Assessment, *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*, 2007.
- 3 European Environment Agency, *Atmospheric Greenhouse Gas Concentrations (CSI 013)—Assessment*, published Oct 2005, downloaded from themes.eea.europa.eu/IMS/ISpecs/ISpecification20041007131717/IAssessment1116319511425/view_content, 29 June 2007.
- 4 For a detailed discussion of the emission reductions required in the United States to prevent the most dangerous impacts of global warming, please see Amy Luers, Michael Mastrandrea, et al., Union of Concerned Scientists, *How to Avoid Dangerous Climate Change: A Target for U.S. Emissions Reductions*, September 2007.
- 5 Based on data from U.S. PIRG Education Fund, *The Carbon Boom: State and National Trends in Carbon Dioxide Emissions Since 1990*, April 2007.
- 6 Ibid.
- 7 Based on Regional Greenhouse Gas Initiative, *Draft Lists of Units Potentially Subject to the RGGI Program* [Excel workbook], downloaded from www.rggi.org, 7 September 2007.
- 8 Regional Greenhouse Gas Initiative, *Regional Greenhouse Gas Initiative Model Rule*, 5 January 2007.
- 9 Regional Greenhouse Gas Initiative, *Regional Greenhouse Gas Initiative Memorandum of Understanding*, 21 December 2005.
- 10 Ibid.
- 11 Ibid.
- 12 Point Carbon, “Report Predicts RGGI Carbon Market Overallocated,” *Carbon Market North America*, 29 August 2007.
- 13 Regional Greenhouse Gas Initiative, *RGGI Region Projected Household Bill Impacts: Summary of Results*, 12 December 2005.
- 14 Ibid.
- 15 New Jersey Board of Public Utilities, Office of Clean Energy, *New Jersey’s Clean Energy Program 2005 Annual Report*, 2006. Note: savings in the first year of energy efficiency measures installed in 2005 were estimated at \$50 million, meaning that the investment in energy efficiency will be recouped in consumer bill savings in less than two years.
- 16 See KEMA, Inc., *New Jersey Energy Efficiency and Distributed Generation Market Assessment*, final report to the Rutgers University Center for Energy, Economic and Environmental Policy, August 2004.

- 17 See U.S. PIRG Education Fund, *Reaping the Rewards: How State Renewable Electricity Standards Are Cutting Pollution, Saving Money, Creating Jobs and Fueling a Clean Energy Boom*, September 2007.
- 18 State of New Jersey, Energy Master Plan, *Energy Master Plan Goals*, downloaded from nj.gov/emp/about/goals.html, 8 October 2007.
- 19 Dallas Burtraw, Resources for the Future, "Carbon Emission Trading Costs and Allowance Allocations: Evaluating the Options," *Resources*, Fall 2001.
- 20 See Jonathan Pershing, World Resources Institute, *Submission to the U.S. Senate Energy and Natural Resources Committee Climate Conference: Responses to Questions on Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System*, 13 March 2006.
- 21 See note 13.
- 22 ICF Consulting, *RGGI Electric Sector Modeling Results: Updated Reference, RGGI Package and Sensitivities*, 21 September 2005.
- 23 See note 15. "Half of New Jersey's homes for a year" based on comparison with retail sales of electricity in 2005 from U.S. Department of Energy, Energy Information Administration, *State Electricity Profiles: 2005 Edition*, March 2007.
- 24 Ibid.
- 25 Ibid.
- 26 New Jersey Board of Public Utilities, personal communication, 13 October 2007.
- 27 Total savings from KEMA, Inc., *New Jersey Energy Efficiency and Distributed Generation Market Assessment*, final report to the Rutgers University Center for Energy, Economic and Environmental Policy, August 2004.
- 28 See note 16.
- 29 UBS Investment Research, *EU ETS: Bonanza or Bust?*, September 2003.
- 30 House of Commons (United Kingdom), Environmental Audit Committee, *The EU Emissions Trading Scheme: Lessons for the Future*, 20 February 2007.
- 31 Jos Sijm, Karsten Neuhoff and Yihsu Chen, *CO₂ Cost Pass Through and Windfall Profits in the Power Sector*, May 2006.
- 32 WWF, *WWF's Assessment: Key National Allocation Plans for Phase II of the EU Emissions Trading Scheme*, 9 November 2006.
- 33 EUROFER: European Confederation of Iron and Steel Industries, *Power Intensive Industries Object to Windfall Profits from Emission Trading*, January 2004.
- 34 Anne E. Smith, Martin T. Ross, Charles River Associates, *Allowance Allocation: Who Wins and Who Loses Under a Carbon Dioxide Control Program?*, prepared for Center for Clean Air Policy, February 2002.
- 35 New Jersey Clean Energy Program, *Notes of Renewable Energy Committee Meeting*, 12 June 2007.