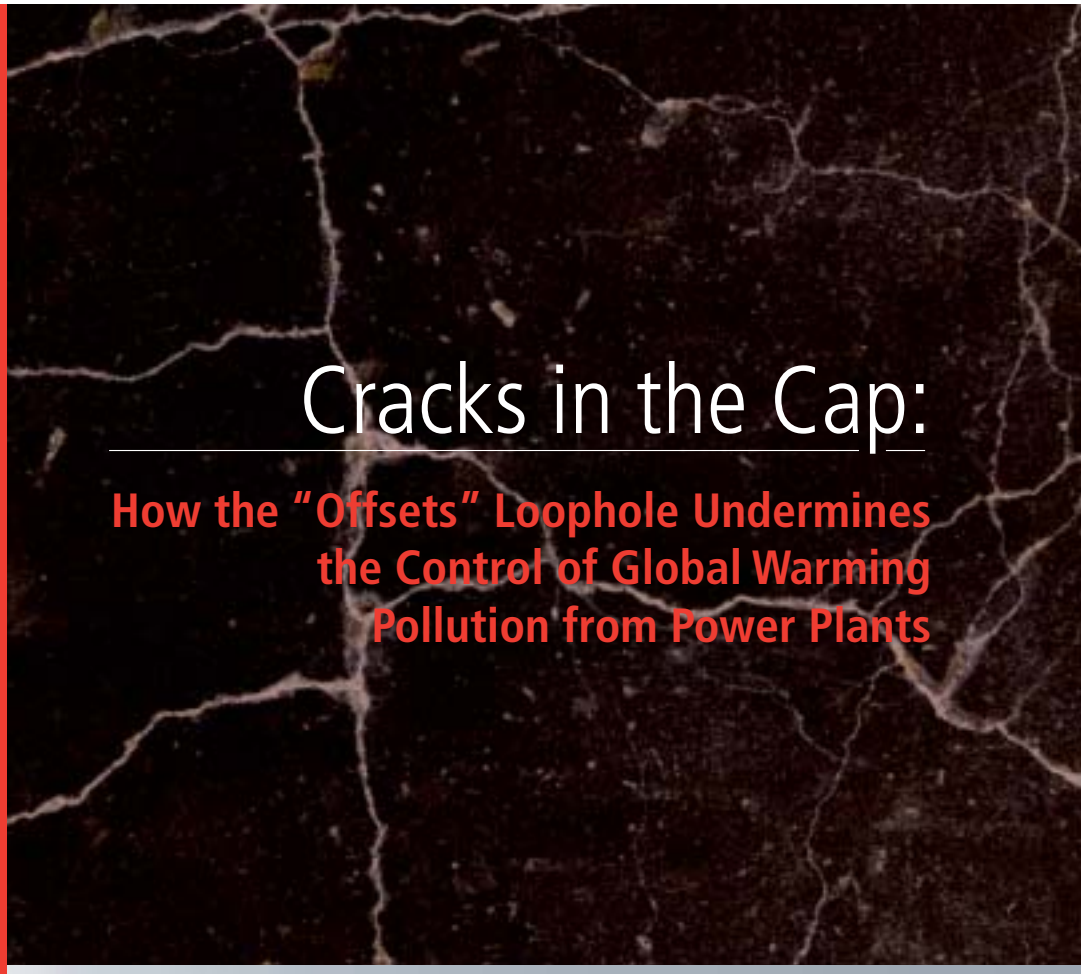

Cracks in the Cap:

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Executive Summary

Nine Northeast states from Delaware to Maine are currently working to develop a regional system to limit global warming pollution from power plants. The program, known as the Regional Greenhouse Gas Initiative (RGGI), represents one of the first significant efforts to mitigate the serious impacts of global warming in the United States.

At the outset of the negotiations, the states agreed to keep the program simple as a guiding principle. The states decided to initially limit the program to reducing global warming pollution from electric power generators in the Northeast. However, negotiators are now revisiting that principle and considering five categories of offset measures—pollution cuts outside the regional electricity sector that would "offset" excess power plant pollution.

The five offset measures under consideration are:

- Reducing methane emissions from landfills;
- Cutting sulfur hexafluoride (SF_6) emissions from electrical equipment;
- Planting forests on non-forested land (afforestation); and
- Improving the efficiency of natural gas, heating oil and propane use and reducing fuel consumption with solar thermal technology.

And potentially:

- Accepting retired credits from the European Union Emission Trading Scheme and the Clean Development Mechanism.

For a variety of reasons, these proposed offset measures will undermine the benefits of the program for the Northeast:

Offsets would *reduce the level of emission reductions* from power plants in the Northeast and *erode the integrity of the cap-and-trade program*.

- The cap proposed by the RGGI staff working group would limit global warming pollution to current levels for 10 years and then reduce emissions 10 percent by 2020. Offsets would be allowed to substitute for half

of the required emissions reductions—defined as the difference between a business-as-usual forecast and the cap—slashing the amount of emission reductions that will be attained from power plants in the Northeast.

- The 50 percent cap on the use of offsets is an unnecessarily high threshold that, over time, will create pressure on state officials to approve low integrity offset measures when the currently proposed measures prove inadequate to meet demand.

Proposed offsets may fund pollution cuts that *would happen anyway*, driven by economic incentives and policies already in place. For example:

- Landfill gas projects are already driven by regulations and financial incentives, such as Renewable Energy Standards and dedicated funding programs for renewable energy. Landfill gas consumption doubled nationwide between 1994 and 2002—*without* additional financial advantages from carbon trading programs—and will likely continue to grow.
- Sulfur hexafluoride emissions have dropped more than half since 1990, driven by the rapidly increasing price of the gas (which increased from $3 per pound in 1994 to between $12 and $37 per pound in 2001). Pacific Gas & Electric saved $300,000 by cutting its emissions of sulfur hexafluoride in half between 1998 and 2002.
- End-use fuel efficiency projects are already cost effective in many cases. For example, New Jersey's Clean Energy program installed measures in 2003 that delivered natural gas savings at $0.30 per therm, 37 percent lower than the U.S. wellhead price and 64 percent lower than the average residential price. Ongoing high natural gas prices will continue to make efficiency measures attractive.
- Some land chosen for afforestation projects could revert to forest without human intervention. Most of the Northeast was originally covered by forest. Since 1870, forest coverage in New England has been on the rise. From 1970 to 1998, forest area increased by 12 percent without carbon credit trading programs.

Offsets can *reduce the local co-benefits* of a carbon cap. For example:

- Credits under the European Union Emissions Trading Scheme would direct Northeast dollars to fund clean-up abroad. As a result, Europe would benefit from improved air quality, better energy efficiency and increased economic output, while the Northeast would share only in the benefit of reduced global emissions of carbon dioxide.
- Clean Development Mechanism offsets—a part of the Kyoto Protocol meant to encourage technology sharing with underdeveloped countries—could generate environmental improvements in Third World nations. Northeast electricity consumers would fund these projects without sharing in the co-benefits. This would be acceptable only if the modest cap currently under consideration were stringent enough to move us toward real climate stabilization.

Offsets raise *equity and fairness issues* and *limit the expandability of the cap* to other sectors of the economy. For example:

- Allowing offsets for sulfur hexafluoride (SF_6) reductions would actually reward bad actors who have failed to adequately reduce their emissions of SF_6 in the past. Utilities that have

already made voluntary, good-faith efforts to reduce SF_6 emissions would be penalized by allowing their competitors to receive a greater amount of offsets.

- Landfill gas offsets would subsidize landfill operators for installing pollution control measures—a "pay me not to pollute" arrangement. Rewarding landfill operators that do not currently capture methane would undermine the ability to fairly incorporate these pollution sources into the program later on, or to require them to reduce methane emissions by regulation.

Offsets can inadvertently create *adverse environmental outcomes*. For example:

- Landfill gas offsets could create a perverse subsidy to dispose of recyclable wastes in a landfill. Much organic matter—the source of landfill methane—could more effectively be composted and recycled as fertilizer, reducing global warming pollution and creating a useful product at the same time.
- Clean Development Mechanism projects could include large-scale dams and mono-culture industrial tree farms, both of which damage local ecosystems.

Offsets can be *difficult to quantify* and *challenging to enforce*. For example:

- Afforestation measures could displace global warming pollution rather than reducing it in the aggregate. For example, an afforestation project could displace would-be development from vacant pastureland to a nearby forest parcel.
- All five proposed offset measures would need rigorous accounting to ensure credit only for the extent that the offset overcomes a genuine market or financial barrier, and to discount for any "leakage" of emission reductions to other locations. Developing and implementing accounting standards would be time- and resource-intensive, with no foolproof guarantee of accuracy.
- State agency staff tasked with monitoring compliance and enforcement may not have the funding to do so for complicated projects or those located outside the region. Third party certifiers are not elected or appointed officials and not directly accountable to the public.

Policy Recommendations

Given the substantial issues facing development of an effective offset protocol, RGGI negotiators should *keep it simple* in the first phase of the program:

- The first phase of RGGI should not include offsets. Reductions should be achieved first and foremost from a mandatory cap on carbon dioxide emitted from fossil-fueled power plants in the Northeast, including electricity imports. Offsets should not be considered until the cap-and-trade program has matured and been proven effective.

- If offsets are eventually considered, they should be limited to no more than 5 percent of allowances. This trial period will offer time to evaluate the effectiveness of the offset measures and ensure that most of the pollution reductions occur locally, and that Northeast ratepayers receive the bulk of the co-benefits.

- Any proposed offsets should meet conservative and rigorous criteria to ensure that they enhance the benefit of the cap-and-trade program, rather than allow leakage outside the cap. These criteria should include a test for *financial additionality*—an independent audit to ensure that an offset program is breaking down a genuine market barrier preventing a pollution reduction from occurring, and giving credit only for the contribution of offset funding to the overall pollution reduction.

Negotiators should also *strengthen the cap on carbon* and use revenue from the sale of allowances to *support energy efficiency and other public benefit programs*.

- Negotiators should strengthen the level of the proposed cap, reducing global warming pollution to 25 percent below current levels by 2020 and growing tighter over time.

- Emission allowances should be sold at market price and the proceeds should be dedicated to fund energy efficiency and other public benefit programs, reducing the overall cost of the cap and enabling the Northeast to meet more meaningful pollution reduction targets. Allowances should not be given to generators for free.

Introduction

Across the Northeast and the world as a whole, there is a growing consensus that action to reduce global warming pollution is necessary and urgent.

Global warming threatens to significantly increase the average temperature in the Northeast and around the world, causing dramatic changes in our economy and quality of life. Within the next century, the impacts of global warming in the Northeast could include coastal flooding, shifts in populations of fish and plants, loss of hardwood trees responsible for fall foliage displays, longer and more severe smog seasons, increased spread of exotic pests, more severe storms, increased precipitation and intermittent drought.[1]

With leadership from Washington D.C. absent, the governors of nine Northeast states have taken the initiative in reducing the region's contribution to global warming. State negotiators are currently developing a plan to cap global warming pollution from power plants in the region. The program, known as the Regional Greenhouse Gas Initiative (RGGI), is the first effort of its kind in the United States. As such, the states are crafting new rules and wrestling with a variety of program design issues that will determine the overall effectiveness of the program.

Of primary importance is the level of the cap on global warming pollution. In order for the cap to produce benefits for the environment and public health, it should be set at an achievable but ambitious level that forces the development and deployment of new technologies.

The main argument against an aggressive cap is that it will cost too much. Because of cost concerns, some stakeholders have urged negotiators to expand the program to include the use of "offsets"—emission reductions achieved in other locations or other sectors of the economy that would be used in place of pollution cuts by power plants in the Northeast. The use of offsets, supporters claim, would deliver equivalent results for less cost and serve as a model for strategies to reduce emissions in other regions and other sectors.

In August, state officials unveiled their initial proposal for the structure of the RGGI program. The proposal included five categories of offset measures and an overall limit on offsets equal to half of the required emissions reductions under the cap.[2]

Each of the five measures under

consideration has the potential to reduce global warming pollution and produce a variety of additional benefits, from increased economic activity to cleaner air. Many of the measures also avoid some of the worst accounting and enforcement problems posed by offsets generally (as outlined in our previous report *Stopping Global Warming Begins at Home*).[3]

However, even the limited offsets being considered by the RGGI states pose significant challenges to the integrity of the program, its enforcement, and the goal of maximizing the local benefits of a regional carbon cap. Moreover, many of the worthwhile goals that RGGI participants would use offsets to promote—such as energy efficiency and reduced emissions of potent global warming gases—can be achieved more effectively outside the program or through a future expansion of RGGI to cover other sectors of the Northeast's economy.

At a time when the region's leaders struggle with important issues that are central to the success of RGGI—such as the level of the carbon cap and how the costs and benefits of attaining the cap will be allocated—it makes little sense to invest the necessary time and energy in dealing with the difficult challenges inherent in the design of an effective offset program.

Once RGGI has matured and been proven effective, states could revisit the idea of offsets, while also considering a reduction in the level of allowable global warming pollution, expanding the cap to cover other sectors of the economy, or applying the program to other regions in the U.S.

By so doing, Northeast states can make real progress in cleaning up the region's electric sector and reducing our contribution to global warming. More importantly, the Northeast can magnify its impact by setting a powerful example for other states and the country as a whole.

The Regional Greenhouse Gas Initiative

The governors of nine Northeast states (Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont) have initiated a process to reduce the region's impact on global warming. The effort, known as the Regional Greenhouse Gas Initiative (RGGI), aims to reduce carbon dioxide pollution by cleaning up power plants—which contribute over one-fifth of the region's global warming pollution.[4]

Building on the success of national efforts to reduce sulfur dioxide pollution from power plants, the initiative will employ a cap-and-trade mechanism. The policy will establish an overall limit on carbon dioxide pollution from the electricity sector. Each ton of carbon dioxide pollution will be represented by an "allowance," which regulated facilities must hold in order to legally emit pollution. Facilities that reduce their emissions can hold fewer allowances, enabling them to sell their excess allowances to other facilities that may be having a harder time cutting their pollution. By trading allowances, the power sector can reach the overall goal at lower aggregate cost, while regulators can reduce the amount of pollution over time by tightening the cap.

In August 2003, the RGGI staff working group released an action plan with the goal of "developing a program to reduce carbon dioxide emissions from power plants in the participating states, while maintaining energy affordability and reliability and accommodating, to the extent feasible, the diversity in policies and programs in individual states," reaching "an agreement on program design by April 2005 or sooner."

Negotiators underestimated the amount of time it would take to resolve all of the difficult technical and political issues surrounding the creation of a new program, including the baseline level of emissions, the level of the cap, the allocation of allowances, the structure of the trading program, and the role of offsets.

In mid-August 2005, state officials involved in the RGGI process unveiled a discussion memo outlining the preliminary details of program design as proposed by the RGGI Staff Working Group.[5] Key aspects of the proposal include:

- Setting a cap at 150 million short tons of carbon dioxide, applicable from 2009 to 2015, then reducing emissions 10 percent below that level by 2020.
- Allocating only 20 percent of allowances for public benefit purposes and 5

percent to a "strategic carbon fund" meant to mitigate leakage caused by electricity imports, while allowing states to decide individually what to do with the rest; and

- Creating a "robust offsets component," allowing offsets to account for 50 percent of the difference between projected business-as-usual emissions and the cap.

This proposal goes against the guiding principles agreed upon in the original action plan, including:

- starting the program simply by focusing on a core cap-and-trade program for fossil-fueled power plants; and
- in a subsequent design phase, turning attention to reliable offset protocols (i.e., credits for reductions outside of the power sector).

The Role of Offsets

An original guiding principle of RGGI was to start the program simply, initially allowing trading of allowances to emit carbon dioxide (the leading global warming pollutant) among electric power generators in the Northeast only. However, negotiators are now revisiting that principle and considering five categories of offset measures that would expand the range of activities eligible for significant credit under the program.

Because global warming is a worldwide problem caused by many different sources of pollution, some stakeholders believe that making progress would be cheaper by including credit for pollution cuts achieved outside of the Northeast power sector. These "offsets" could theoretically be aimed at pollution cuts from many different sources, from combustion of fossil fuels for transportation to agricultural land use practices to chemical use and waste processing.

By purchasing an offset representing a pollution cut from another region or another sector of the economy, a generator could emit more carbon dioxide pollution than would technically be allowed under a strict power-sector only program. Theoretically this arrangement would yield the same global warming benefit for less cost.

However, offsets under consideration for inclusion in the RGGI program pose significant challenges to the integrity of the program, its enforcement, and the goal of maximizing the local benefits of a regional carbon cap. At the same time, the worthwhile goals promoted by the offset measures could be more effectively achieved through other policy avenues or by future expansion of RGGI.

Criteria for Sound Offset Measures

Offsets under consideration for inclusion in the Regional Greenhouse Gas Initiative may not deliver equivalent emissions reductions as an electricity sector-only approach. In order to ensure that the integrity of the program remains intact and to maximize the local benefits of the program, negotiators must ask several questions of any proposed offset measure:

1) Is the measure of legitimate value in reducing carbon dioxide pollution?
2) Does the measure direct ancillary benefits of pollution reduction away from the Northeast?
3) Does the measure harm the environment or have other negative outcomes?

Allowances and offsets are fundamentally different. An allowance represents a unit of emissions. If a facility decides to emit carbon dioxide, it must hold an allowance. If it opts not to emit carbon dioxide, it can sell the allowance to someone else. The total number of allowances is capped and does not change (except by design).

An offset, on the other hand, represents a unit of pollution *not emitted*. It is of equal value to an allowance only if it can be judged with certainty that the pollution *would have been emitted*, but was not, and that the emission reduction resulted from the incentive provided through the offset program. Needless to say, determining what has happened is far easier than predicting what would have happened in an alternative version of reality.

Thus, programs that enable offsets to be exchanged for allowances must be designed with great care to ensure that out-of-sector actions provide benefits that are as real and effective as steps taken to meet the requirements of a narrowly focused pollution cap.

Is the Measure of Legitimate Value?

Typically, offsets must meet several criteria in order to be eligible for use in a cap and trade program. For example, in Massachusetts' carbon dioxide regulations for older power plants, any offsets must deliver emission reductions that are:

- Real,
- Surplus,

- Permanent,
- Quantifiable and
- Enforceable.[6]

Real

A "real" emission reduction reduces emissions *in the aggregate*. That is, a program that merely shifts emissions from one facility or jurisdiction to another does not deliver a "real" reduction. Such "leakage" of emission benefits is a major problem with programs for carbon dioxide because it is a global pollutant.

Surplus

Also referred to as "additional," surplus emission reductions represent those that go *beyond business as usual*. If, for example, a factory or other facility would have shut down anyway due to economic conditions or other factors, the emission reductions from the closure are not surplus or additional. Determining additionality requires the development of accurate forecasts that predict what would have happened under business as usual conditions and then comparing them with the actual emission reductions achieved.

Permanent

Many efforts to reduce global warming emissions (or the concentration of global warming gases in the atmosphere) are, by their very nature, temporary. For example, planting a forest absorbs carbon dioxide from the atmosphere, but it will eventually be released again when the trees die due to forest fire, pest infestation or some other cause. Such temporary programs should only receive credit as offsets for the period in which they function to reduce net global warming emissions.

Quantifiable

The emission reductions delivered by an offset measure must be measurable using generally accepted and replicable techniques. Some potential offsets—such as forestation—may prove more difficult to quantify than more straightforward emission reductions such as fuel switching at a power plant. In addition, quantification methods must identify and discount any emission reductions that are shifted to other locations (leakage) or that would have occurred anyway (non-additional).

Enforceable

A governmental agency must be able to take enforcement action against entities that deliver fraudulent or illusory offsets. Since, for the near future at least, these governments will be state or regional entities, offsets would either have to be limited to those jurisdictions or some mechanism would need to be created to allow, for example, the New York Department of Environmental Conservation to verify and take action affecting a project located in another state or nation. Third-party verification might alleviate these concerns, but even then, governments would need to create systems to watchdog the third parties, who are not elected or appointed officials and not directly accountable to the public. Monitoring compliance and enforcement must be practical as well. For example, the agency charged with enforcement must have enough funding to effectively carry out the task.

Does the Measure Direct Ancillary Benefits Away from the Northeast?

A program allowing offsets would also differ from a more focused and local program in terms of the ancillary benefits of pollution reduction. Even if an offset can be shown to deliver an equivalent result in terms of reducing net carbon dioxide emissions, it can re-direct the ancillary benefits that go along with reducing pollution to

another region of the country or world. These benefits include improved air quality, reduced health-damaging pollution, and economic benefits.

For example, a strategy to meet a carbon cap could involve decommissioning some carbon-intensive power plants—such as a large coal-fired facility like the Brayton Point power plant in Somerset, MA. Since coal combustion is a major source of other harmful pollutants like mercury and soot, decommissioning this plant would yield important public health benefits. Brayton Point was until recently allowed to emit five times the level of pollution allowed for newer facilities.[7] Researchers at Harvard estimated that the plant caused 100 premature deaths annually, tripling mortality risk for people living with 30 miles of the plant.[8] Although the plant has been required to reduce its emissions, decommissioning it and replacing it with cleaner technology (or simply switching fuel from coal to cleaner-burning natural gas) would yield important health and environmental benefits for the people of New England.

In the context of a complete and balanced set of clean energy policies (including vigorous energy efficiency funding and deployment of renewable energy technologies), a focused carbon cap policy could contribute to significant local economic benefits. For example:

- A 2001 study by Resources for the Future estimated that a $25 per ton tax on carbon dioxide emissions from electricity generation (which, like a carbon cap without offsets, could not be escaped by power plant owners) would generate approximately $12-$14 per ton of ancillary economic benefits through reduced public health expenditures and reduced need for utilities to invest in emission control equipment.[9] The ancillary benefits were estimated to be about equal to the anticipated marginal cost of reducing carbon dioxide emissions.[10]
- A variety of studies have pointed to the job creation benefits of renewable energy— which could play a significant role in reducing power-sector emissions. A 2001 study by the Renewable Energy Policy Project estimated that wind and solar power offer 40 percent more jobs per dollar spent than coal.[11] Because the Northeast produces relatively little of the fossil fuel it consumes for electricity generation, the region would likely benefit strongly from this job-creation phenomenon.
- Shifting to a less carbon intensive electric system could also reduce (rather than increase) costs for electricity consumers, particularly if paired with policies that encourage energy efficiency. A 2004 study by Synapse Energy Economics estimated that, nationally, such a balanced energy strategy would reduce electric system costs by $36 billion annually by 2025—not including environmental or other co-benefits of the policies, while reducing dependence on nuclear energy by half.[12]
- In addition to the quantifiable benefits of a combined carbon cap/clean energy strategy for the Northeast, such a policy direction would tend to insulate

Brayton Point Power Plant emits health-damaging pollution.

the region's economy from fossil fuel price volatility, encourage the location of renewable energy and energy efficiency companies within the region, and establish the region as an exporter of technology and expertise to other regions and the world.

To the extent that offsets direct Northeast ratepayer dollars to other parts of the country or the world, the local co-benefits of the carbon cap would be less. Since northeastern electricity consumers will be paying additional money for electricity after the introduction of a carbon cap, it would only be fair for a majority of the ancillary benefits to remain local.

Does the Measure Harm the Environment?

Not all projects that reduce global warming pollution are good for the environment. Large scale hydroelectric dams, nuclear power plants and other projects can displace fossil fuel combustion, but have serious side effects that must be considered before inclusion in an offset program.

Large hydroelectric dams damage river ecosystems and often displace local communities. The world's large river systems are disrupted by dams and water transfer systems over more than half their length—damaging habitat and contributing to the vulnerable or endangered status of close to a third of freshwater fish species.[13] In addition, the widespread flooding that accompanies large-scale dams also creates methane pollution through rotting vegetation.

Nuclear power poses large risks and costs, making it an inappropriate solution to global warming. For example, in 2002 inspectors discovered a football-sized cavity in the reactor vessel head of the Davis-Besse nuclear reactor in Ohio. The reactor vessel could have breached in as little as two months, potentially causing a core meltdown worse than Three Mile Island.[14] In 2005, the National Academy of Sciences found that a terrorist attack aimed at the spent fuel storage pools at a boiling water reactor could cause a large radiation release, perhaps worse than Chernobyl.[15] Nuclear power technology also is one of the only sources of material required to make nuclear weapons—creating the possibility of weapon proliferation. Additionally, nuclear power is expensive. The high cost of building and operating a nuclear plant makes it roughly seven times less cost-effective at displacing carbon pollution than energy efficiency.[16] Investing additional money in nuclear power would take funding away from the cheapest and fastest options to address global warming—actually slowing the needed transition away from fossil fuels.

Weaknesses of Proposed Offset Measures

Stakeholders in the RGGI process are currently considering five categories of offsets for inclusion in the cap-and-trade program. These measures include:

- Accepting retired credits from the European Union Emission Trading Scheme and Clean Development Mechanism credits;
- Reducing methane emissions from landfills;
- Cutting sulfur hexafluoride (SF_6) emissions from electrical equipment;
- Planting forests on non-forested land (afforestation); and
- Improving the efficiency of natural gas, heating oil and propane use and reducing fuel consumption with solar thermal technology.

Each of these measures would have valuable benefits, ranging from greater energy efficiency to reduced global warming pollution. However, allowing credit for these measures through offsets could complicate the RGGI program, undermine its overall goals and deliver fewer results for the money spent when compared to keeping the program simple.

Too Many Offset Credits

As proposed by participants in the RGGI process, offset credits would form a significant route of compliance with the cap. The proposed cap would limit global warming pollution to current levels for 10 years and then reduce emissions 10 percent by 2020. Offsets would be allowed to substitute for half of the required emissions reductions—defined as the difference between a business-as-usual forecast and the cap. This will greatly decrease the amount of emission reductions that will be attained from power plants in the Northeast.

Allowing half of compliance to come from offsets could significantly erode the integrity of the RGGI program. The level of allowed offset credit will heavily influence the future administration of the RGGI program, including the technical criteria applied to evaluate and enforce pollution reductions from offset projects and the possible addition of new project types in addition to the five discussed in this report. Creating room for offsets to replace 50 per-

cent of the required emissions reductions creates the expectation that new measures will be allowed or standards will be relaxed if current offset proposals are inadequate to meet demand.

The European Union Emission Trading Scheme and the Clean Development Mechanism

The European Union's Emission Trading Scheme (EU ETS) and the Clean Development Mechanism (administered by the United Nations) were both designed to ease compliance with the Kyoto Protocol—the international treaty that calls upon industrialized nations to reduce their emissions of global warming gases. Under the latest proposal from RGGI staff, offset credit would be awarded for retired EU ETS credits and for Clean Development Mechanism projects—but only if the price of allowances reaches a set (but as yet unspecified) price per ton on a sustained basis.[17]

Linking RGGI to these programs through offsets would direct co-benefits abroad and cede authority to the European Union and the United Nations to evaluate and enforce offset projects.

Concerns with the Emission Trading Scheme

The EU ETS is similar in many ways to the cap-and-trade program proposed for the Northeast under RGGI. Each EU member country received an allocation of carbon dioxide emissions (the cap), which it then converted into allowances. Each country then created its own plan for allocation of allowances to its various industries and electricity generators. Owners of the allowances are able to trade them freely, thus allowing for emission reductions to take place at the lowest cost possible anywhere in the European Union.

The EU ETS does allow for the limited use of offsets through the Kyoto Protocol's Joint Implementation (JI) mechanism and its Clean Development Mechanism (CDM). Each member country sets a threshold for the percentage of emissions that can be offset, under the guideline that the "use of the mechanisms should be *supplemental to* domestic action."[18] Once the level of offsets reaches 6 percent of the initial allocations, the European Commission must meet to determine if an EU-wide cap on offsets should be implemented.[19] In addition, EU member states are barred from using emission reductions for nuclear projects and from land use and forestry projects as offsets.[20]

With the exception of allowances retired through CDM projects (about which more will be said in a moment), retired EU ETS allowances are likely to have the highest degree of integrity of any of the offsets currently being considered by RGGI participants. In essence, acceptance of retired EU ETS allowances would "link" the northeastern cap-and-trade system with the European one (although, for the time being, retired allowances could only flow one way, from Europe to the Northeast—allowances retired in the U.S. are currently ineligible for use as offsets in the European scheme).

Thus, retired EU ETS allowances are likely to meet or come close to meeting the criteria of delivering real, surplus, permanent, quantifiable and enforceable reductions in carbon dioxide emissions. The Northeast, however, should be wary of accepting retired EU ETS allowances for a different reason: the loss of the local co-benefits of reduced carbon dioxide emissions—including cleaner air, increased innovation in clean energy industries and improved energy efficiency—to another continent.

Generators regulated under RGGI are not likely to demand many retired EU ETS allowances at first. The current market price of EU allowances is $25/ton and

Photo: Daniel West

The Clean Development Mechanism could inadvertently support fossil fuel technology.

rising.[21] EU prices are likely to be comparable to or even higher than allowance prices in the early years of RGGI. Power generators would be more likely to seek out lower-priced CDM credits to meet their offset needs. However, these credits come with their own problems.

Concerns with the Clean Development Mechanism

As noted above, the Kyoto Protocol established two mechanisms for allowing industrialized countries to use emission reductions that occur elsewhere to count toward their emission reduction targets: the Joint Implementation (JI) mechanism and the Clean Development Mechanism (CDM). JI projects are those undertaken by industrialized countries in concert with former communist countries. Because many formerly communist Eastern European nations recently joined the EU—and because the EU ETS explicitly bars the double-counting of emission reductions from JI projects—JI projects do not hold much potential for participation in a Northeast emission trading scheme.

The second U.N.-administered program—the CDM—was designed to promote the sharing of clean and sustainable technologies between industrialized countries and developing nations while lowering the cost of complying with the Kyoto protocol. CDM projects are sponsored by countries with emission reduction targets (or are proposed independently with credits to be sold to such countries) and approved by the host countries and the U.N.'s CDM Executive Board. To qualify as a CDM project, initiatives must meet several criteria[22]:

- Additionality: "A CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity."

The WWF Gold Standard for CDM Projects

In order to qualify for Gold Standard certification, a CDM project must pass three screens: a project type screen, an additionality and baseline screen, and a sustainable development screen.

The Gold Standard is restricted to end-use efficiency improvements and renewable energy projects (from solar to ecologically sound biomass)—technologies critical to addressing global warming in the long run. Gold Standard projects must show that the pollution reductions would not have happened without stimulus and that the project will lower emissions beyond what would have happened without the project. Gold Standard projects also undergo an enhanced environmental impact statement and rigorous stakeholder process to incorporate local concerns.

- Baselines: Baseline emission levels are established on a project-by-project basis.

- Permanence: Projects may receive credit either for a seven-year period (with at most two renewals) or for a 10-year period with no renewal.

Specifically, to prove additionality, an entity proposing a project must demonstrate that the project faced barriers to implementation (financial or other) and that the CDM removed those barriers.[23] In other words, those proposing projects must show that the projects would not have occurred but for the existence of the CDM.

The CDM process has been questioned by environmental groups, sustainable development advocates and by industry.

Sustainable development and environmental advocates have several serious concerns. First, the CDM process to date is failing to promote renewable energy technology, energy efficiency, sustainable transportation or other sustainable development in host countries. Instead, the bulk of the credits proposed to date stem from projects that reduce emissions from gases other than carbon dioxide—gases like methane, nitrous oxide and hydro-fluorocarbons—from existing industrial facilities. While these programs are cost effective and produce cheap pollution credits, they tend to provide few opportunities for sustainable development.[24]

As of December 2004, renewable energy projects made up only 10 percent of proposed CDM credits. With credible additionality testing, many of these projects will be ineligible.[25] For example, the Suzlon wind farm in India was withdrawn from consideration for CDM credit because it was clearly non-additional—the plant was already operating at the time it sought approval.[26] Because of additionality concerns and competition with more conventional projects, WWF estimates that CDM will increase overall funding for renewable energy development in developing countries by a paltry 0.5 percent.[27]

Other CDM projects, including large industrial monoculture tree plantations and large hydroelectric dams, harm ecosystems and indigenous populations.[28] Projects that reward oil and coal companies for capturing fugitive emissions—while reducing global warming pollution—also arguably provide funding for further extraction and combustion of fossil fuels.

To make the CDM into a more useful tool in promoting sustainable development, WWF designed a set of more rigorous stan-

dards to ensure that projects funded by the CDM deliver the highest assurance of real global warming benefits and environmental sustainability benefits for developing countries.[29] (See "The WWF Gold Standard for CDM Projects.")

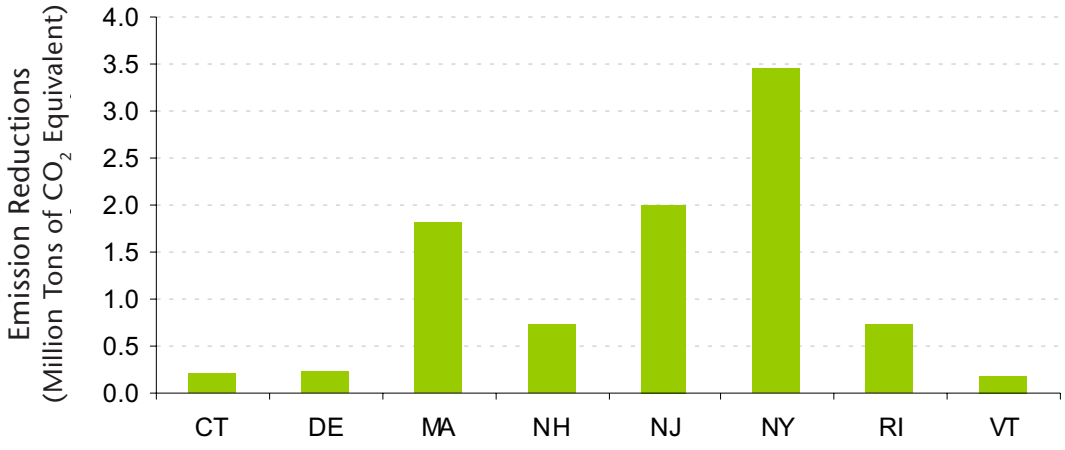
On the other hand, potential purchasers and traders of CDM credits have argued that the additionality rules of the program are too strict. They point to the current emphasis on *financial* additionality. According to critics, sponsors of CDM projects should not have to prove that the project would not have happened "but for" CDM; merely that the project itself will result in lower emissions.[30] Continuing to impose the more rigorous additionality standard, critics charge, will result in fewer CDM projects being proposed and completed.

What does all this mean for the Northeast? First, it means that CDM projects, as currently designed and regulated, do not provide a foolproof guarantee of additional emission reductions or of environmental benefits to the countries in which they take place. Second, the interpretation of the rules for assigning credit to CDM projects is subjective. Should the current additionality rules be weakened such that financial additionality is eliminated as a criterion, the door would open to the granting of CDM credit for clearly non-additional projects. By accepting CDM credits into the RGGI program, Northeastern states would be ceding authority to the U.N. and to project host countries to determine the value of each project and enforce the rules. Finally, as noted above with regard to EU ETS allowances, incorporating CDM credits into the Northeast's emission trading system would allow money paid by Northeastern ratepayers to generate potential environmental co-benefits elsewhere, and not here in the Northeast. This would be acceptable only if the modest cap currently under consideration were stringent enough to move us toward real climate stabilization.

Landfill Gas Projects

The decay of organic waste in landfills produces methane—a potent global warming gas, but also a source of useful energy for electricity generation and other purposes. Nationally, landfill methane emissions are

Figure 1: Annual Global Warming Pollution Reductions from Landfill Methane Projects in RGGI States as of December 2004



responsible for about 2 percent of the U.S.'s contribution to global warming.[31] Capturing and converting landfill gas to electricity results in a net decrease in global warming emissions and possibly displaces other forms of electricity generation (such as combustion of coal, oil and natural gas) that themselves contribute to global warming.

However, granting offset credits to landfill gas projects would raise significant questions about how to determine additionality and may undermine future efforts to limit global warming emissions from landfills. Subsidizing methane capture with offset funding may also encourage landfilling of waste at the expense of a more effective solution—preventing organic waste from entering landfills in the first place and recycling it into useful products instead.

Additionality

There are currently about 380 operating landfill gas projects in the United States, of which about 64 are located in the RGGI participating states.[32] These facilities reduce global warming pollution by 9.3 million metric tons of carbon dioxide (CO_2) annually. (See Figure 1.) Landfill gas consumption has increased dramatically in recent years, doubling between 1994 and 2002.[33] It is important to note that the recent growth in landfill gas projects in the U.S. has taken place *without* additional financial advantages from carbon trading programs. And landfill gas projects will likely continue to expand as a result of a series of regulatory and economic factors.

Existing Incentives for Development of Landfill Gas Projects

Photo: NREL

A landfill.

Landfill gas-to-energy projects are already promoted by a variety of regulations and financial incentives. These raise the question of how one would determine if a new project is "additional," and therefore eligible for credit as an offset.

Clean Air Act Regulations

The Clean Air Act amendments of 1996 require a significant number of landfills—both new and existing—to control methane emissions, typically through flaring or energy recovery. The federal regulations are not airtight, exempting many smaller landfills, but EPA estimates that the Clean Air Act landfill rule will reduce methane emissions from landfills by more than 40 percent by 2020 versus business as usual.[34]

Federal Tax Credits

Landfill gas projects that generate electricity are currently eligible for a tax credit of $0.009 per kWh. The credit was extended beyond the original in-service deadline of January 1, 2006 by the passage of the federal energy bill in July 2005.[35]

Renewable Energy Standards

Six of the nine RGGI participant states have adopted renewable energy standards (also known as renewable portfolio standards) for electricity generation in their states. The standards set a minimum threshold for the percentage of electricity that must be generated from renewable sources. Landfill gas projects fit within the definition of "renewable" power in each of the six states. Numerous landfill gas projects have been proposed to fulfill requirements for new renewable energy sources, including 23 projects in various states that have been certified for inclusion under the Massachusetts renewable energy standard.[36]

Green Electricity Pricing

In states that have restructured their electric industries (including every RGGI participant state except Vermont), consumers may have the ability to choose alternative electricity suppliers that provide "green" electricity products, often with a substantial

reliance on renewable energy. These green pricing programs (along with programs that purchase renewable energy certificates outside of the power purchase process) can serve as a subsidy to renewable forms of generation, including landfill gas projects.

Higher Natural Gas and Electricity Prices

Even without the subsidies and incentives mentioned above, many landfill gas projects are likely to approach cost-competitiveness with conventional sources of generation—especially in an era of higher natural gas prices and especially in a region such as the Northeast that is heavily dependent on natural gas. Landfill gas projects differ greatly in their costs, and the cost of energy from a new project can range from 3.4 cents/kWh to 10 cents/kWh, depending on the size of the landfill and whether a methane collection system is already in place.[37] By contrast, the cost of electricity from a new natural gas-fired combined cycle plant is estimated at between 4 and 5 cents/kWh (assuming relatively low future prices for natural gas).[38] The U.S. EPA estimated in 1999 that landfill gas projects would emerge to offset nearly 40 percent of remaining landfill methane emissions (those left over after Clean Air Act controls) by 2010 should electricity production costs exceed 6 cents/kWh or natural gas prices exceed $5/million BTU—cost levels similar to those in much of the Northeast at present. These emission reductions were projected to occur *without* additional federal or state incentives.[39] In other words, many landfill gas projects are likely to be cost-competitive at today's energy prices without the further inducements that would result from eligibility for offsets in the RGGI process.

Additionality Criteria

The draft quantification mechanism for determining offsets for landfill gas projects specifically—and rightly—excludes projects required under mandatory programs and any indirect emissions benefits due to offset electricity generation.[40] However, the draft contains no formal consideration of whether the project would have occurred but for the existence of the offset. As a result, landfill gas projects could be awarded offset credit when they would have happened anyway, undermining the effect of the overall RGGI program.

Subsidization of Pollution Cleanup and Cap Expandability

A secondary, but extremely important question is whether it is proper for northeastern electricity consumers to directly subsidize landfill operators for installing pollution control measures on their landfills. Such a strategy smacks of a "pay me not to pollute" arrangement. An alternative is to hold landfill owners accountable for the global warming emissions they produce—just as electric power plants will be held accountable under the RGGI carbon cap. Such accountability can be achieved either through regulation or through the incorporation of landfills into a future expansion of RGGI.

Should landfill gas projects—which do emit carbon dioxide but also reduce global warming emissions in the aggregate—be exempt from the need to hold allowances, they would gain competitive advantage over forms of generation that are net emitters of global warming gases. Allowing landfill operators to qualify for offsets under RGGI for methane collection at this time would undermine the ability to fairly incorporate these sources of global warming emissions within the program later on.

Promoting Disposal of Recyclable Waste

Finally, offset funding or other subsidies are not the most environmentally sound solution to the problem of fugitive methane emissions from landfills. Well-meaning efforts to provide incentives to capture methane and turn it into energy could have the

Photo: Thomas Burgey

Electrical equipment can contain sulfur hexafluride.

perverse impact of promoting the dumping of recyclable waste.

Methane emissions from landfills would be greatly reduced if organic wastes were not disposed of in landfills. Organic material (including paper, food waste and other plant and animal-based waste) generates methane in landfills when it decomposes in the absence of oxygen. However, the same waste, if properly composted and kept free of toxic substances, produces much less methane, while also producing valuable fertilizer that can be used to replenish soils. It is also possible to use organic waste in a controlled process to maximize the production of methane for energy (and minimize global warming emissions). The residue from this process can also be used as fertilizer if kept free from toxic substances.[41]

Paying landfill owners for capturing methane is a subsidy that could tend to encourage more landfill disposal at the expense of recycling, composting, anaerobic digestion and other better solutions.

Sulfur Hexafluoride Reduction Projects

Sulfur hexafluoride (SF_6) is used as an electrical insulator in high-voltage electricity transmission and distribution equipment. It is also an extremely potent global warming gas, with one pound of SF_6 creating a global warming effect equivalent to 11 tons of carbon dioxide.[42] Despite its potency, SF_6 is responsible for only a tiny share of U.S. global warming emissions—about two-tenths of 1 percent.[43]

Emissions of SF_6 have been on the decline nationwide; the U.S. now releases less than half the amount of SF_6 it did in 1990.[44] These reductions have been motivated in large part by cost: in many cases, it has been and remains cost-effective for electric power companies to reduce the use of SF_6 in equipment and to prevent leakage. The price of SF_6 has increased sharply, from about $3 per pound in 1994 to between $12 and $37 per pound in 2001.[45] Even at an average

cost of $8 per pound, the EPA estimates that cost-effective steps such as leak detection and equipment recycling could reduce SF_6 emissions by a further 30 percent by 2010.[46]

The cost-effectiveness of SF_6 emission reductions is demonstrated by the southern California utility, Pacific Gas & Electric (PG&E), one of many partners in an EPA-administered program to voluntarily reduce SF_6 emissions. Through a variety of measures, PG&E managed to slash its emissions of SF_6 by more than 50 percent between 1998 and 2002—at a net savings of $300,000. Further, PG&E estimates that improved handling of SF_6 can yield further savings of $50,000 to $100,000 per year for the next 10 years.[47]

In other words, for many entities that use or manage SF_6, emission reductions are already cost-effective or nearly cost-effective on their own terms—without additional financial inducements such as offsets. Because of the innate cost-effectiveness of many SF_6 emission reduction efforts, it is likely that many projects proposed for eligibility as offsets would not be "additional"—that is, they would have occurred anyway without the offset.

In addition, as is the case with landfill methane emissions, allowing entities in the RGGI region to receive offsets for SF_6 emission reductions would amount to a "pay me not to pollute" scenario. Electric utilities and other entities that emit SF_6 should eventually be required to purchase global warming emission allowances under an expanded version of RGGI or to have their emissions limited through other regulations—not be financially rewarded for continuing to contribute to global warming, albeit at a reduced level.

Finally, the proposed criteria for inclusion of SF_6 offsets under RGGI actually reward bad actors who have failed to adequately reduce their emissions of SF_6 in the past. Under the proposal, to qualify for an offset, the SF_6 reduction measure cannot be part of a "previously established" SF_6 reduction effort.[48] Such a distinction is necessary to meet the "additionality" requirement, since projects that began prior to the application for an offset should never receive consideration for offset credit. However, this distinction, in effect, penalizes utilities that have made good-faith, voluntary efforts to reduce SF_6 emissions in the past by allowing their competitors to receive a greater amount of offsets.

Afforestation

Afforestation projects convert agricultural land or grassland to forest through human intervention. These projects rely on the ability of trees to fix carbon dioxide in solid form, removing it from the atmosphere.

Well-implemented afforestation projects creating native, balanced ecosystems could improve wildlife habitat, reduce soil erosion and create recreational opportunities. Trees planted in urban areas could have the additional advantage of shading buildings, reducing the energy needed to cool them in the summer.

Photo: Matthew Bowden

Afforestation projects rely on trees to store carbon.

However, allowing offset credit for afforestation projects poses significant problems, including the potential to displace global warming pollution elsewhere and the difficulty of determining the additionality of a forest planting project.

Leakage of Global Warming Pollution

Afforestation projects could displace economic activity to another area, storing carbon in one place but releasing it in another. This "leakage" of global warming pollution outside the cap could significantly undermine the value of afforestation as an offset measure.

The draft proposal for RGGI program design suggests that local afforestation projects in participating states will be eligible for offset credit.[49] However, the Northeast has less potential for afforestation than other parts of the country—mainly because afforestation projects in the Northeast are comparatively expensive.[50] The most likely locations for projects include pastureland and barren areas.[51] Northeast states have less than 800,000 acres of pastureland available, mostly located in New York.[52]

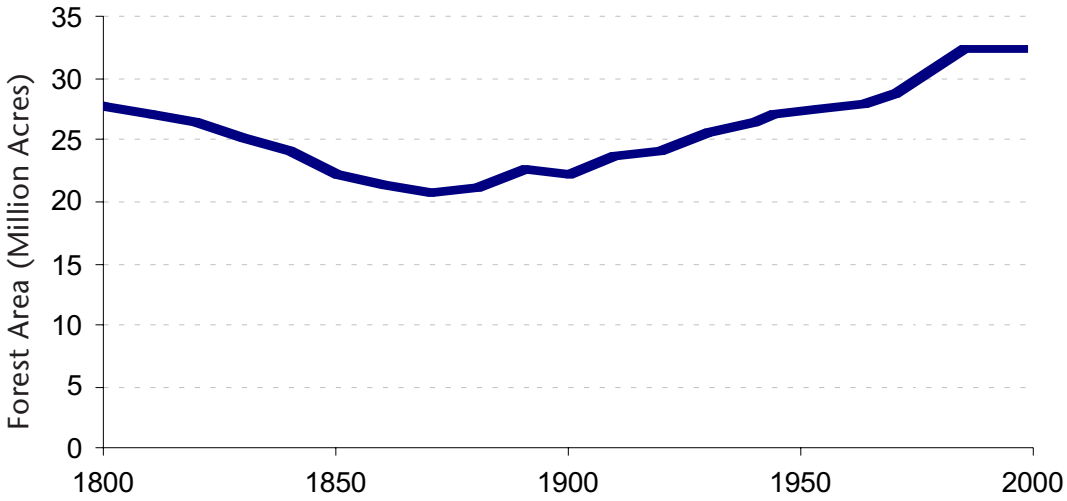
If the pastureland or barren land is under consideration for development, afforestation projects competing for the same land could displace that development to a nearby area. This could result in a new forested parcel being cleared to make room for building, reducing or negating the effect of the afforestation project. Identifying and accounting for potential leakage events poses a major obstacle for using afforestation while maintaining the integrity of a carbon cap.

Determining Additionality

Determining the additionality of an afforestation project in the Northeast would also pose a significant challenge. Afforestation measures, as defined in the draft standards under consideration by RGGI participants, would have to occur on land that had been clear of forests for at least ten years.[53]

However, in the Northeast, these projects might be more accurately termed "reforestation," or re-establishing trees on lands that had once supported forests. Most of the Northeast region was covered by forests at the time of European settlement. Without human intervention, much barren land today might return to a forested state

Figure 2: Forest Cover in New England from 1800 to 1998[55]



on its own within a relatively short period.

Forestland in the Northeast has been gradually increasing since reaching a low point in 1870.[54] The increase in forest cover has paralleled a gradual shift in the economy from land-intensive agricultural practices like cattle grazing toward greater industrial and information-based economic activity. (See Figure 2.) From 1970 to 1998, forest area in New England increased by 12 percent.

While afforestation projects could certainly accelerate the reforestation of barren parcels, determining that afforestation projects provided equivalent value to a retired emission allowance would require a rigorous additionality test designed to ensure that the parcel would not have reverted to forest in the absence of the offset.

Given these serious issues, developing an acceptable offset protocol for afforestation will be complex and difficult. Dealing with the issues that arise in creating standards for and evaluating afforestation offset projects could distract from the larger issues that will determine the overall success of the RGGI process, including the size of the cap and the method of allowance allocation. At this time, energy would be best spent on improving the fundamental aspects of program design as opposed to afforestation.

End-Use Energy Efficiency for Natural Gas, Oil or Propane—or Solar Thermal Applications

End-use energy efficiency measures can reduce electricity use or the direct use of fossil fuels for space heating, water heating, or industrial processes. By reducing fuel consumption, efficiency programs can directly prevent global warming pollution. Efficiency programs can also reduce electricity demand, contributing to reduced emissions at power plant smokestacks. Efficiency programs offer a variety of other benefits and must be a central part of any effective long-term strategy to slow global warming.[56]

RGGI negotiators are currently considering offset measures to improve the efficiency of natural gas, oil and propane use, as well as offset measures promoting solar thermal projects (which, much like an efficiency measure, would reduce natural gas and oil used for space and water heating).

Efficiency programs, especially if they are carried out within the Northeast, are likely to meet many of the criteria for a valid offset measure. The major problem with efficiency offset measures would be separating additional or surplus projects from business as usual projects that would have happened to some degree even in the absence of offset funding.

The cost effectiveness of efficiency measures will drive efficiency improvements to some degree. In 2003, New Jersey's Clean Energy program delivered natural gas savings at a cost of $0.30 per therm, 37 percent lower than the U.S. wellhead price and 64 percent lower than the average residential price that year.[57] These measures will save consumers an estimated $77 million on their gas bills over time.[58] With continued strain on natural gas supplies, high natural gas prices will continue to be a strong factor in the economic attractiveness of efficiency measures.

However, some cost-effective efficiency measures will not be pursued without policy support. Markets tend to substantially under-value energy efficiency, preventing it from competing with supply-side measures on equal footing.[59] Substantial barriers exist between sensible technologies and marketplace penetration, including consumer awareness of energy saving measures; the up-front capital cost of efficient technologies; and split incentives between builders and buyers or landlords and tenants. (For example, builders typically do not have an incentive to spend extra time and effort designing and building the most efficient

building possible, and emphasize lower design and construction costs over reduced energy bills—making new buildings typically less efficient than they could be.)

Efficiency programs are necessary to overcome these barriers. Natural gas efficiency programs already exist in New Jersey, New York, Massachusetts, Vermont and New Hampshire.[60] Other Northeast states, while they may not have specific initiatives focused on natural gas, have electric energy efficiency programs that impact electricity use and gas use at the same time. (For example, the Energy Star Homes standard requires energy-saving insulation and overall design that reduces the use of gas for heating and electricity for air conditioning.)

In 2003, programs run by the New Jersey Clean Energy program helped consumers install efficiency measures with lifetime savings of over 200 million therms of natural gas, including building 5,000 new homes to Energy Star standards.[61] Efficiency Vermont, an independent, non-profit integrated electric and gas efficiency utility, helped its customers save 1.2 million gallons of propane, 175 million cubic feet of natural gas, 600,000 gallons of oil and 360 million gallons of water in 2004.[62] New York's Energy $mart program reduced state electricity use by one billion kWh per year in 2003, lowering peak electricity demand by 880 megawatts (MW) and helping customers save significant amounts of natural gas and propane.[63]

While these programs are succeeding, they do not have enough money to tap all achievable efficiency opportunities. The American Council for an Energy-Efficient Economy estimates that nationwide, efficiency programs could save over 2 trillion cubic feet of natural gas, the equivalent of more than 100 million tons of carbon dioxide, with many substantial reservoirs of efficiency potential yet to be developed.[64]

An offset mechanism could provide some of the funding necessary to access this efficiency potential. However, in order to ensure that offset credit would not be awarded to projects that would have happened anyway, program administrators would need a rigorous additionality test, analyzing financial and market barriers and offering credit only to the extent that offset funding succeeds in overcoming those barriers. Even with a rigorous test, the subjective nature of establishing what would have happened without the offset means that some "double counting" could occur.

Developing effective standards, evaluating projects and enforcing the results would require a great deal of time, effort and administrative resources. Auditing and evaluation systems already in place for existing energy efficiency programs use different standards than would be required for offsets and would not provide the required rigor. These programs evaluate program success by whether actions funded by surcharges on energy bills generate savings for the ratepayer. However, offsets would have to be judged by whether they generate the same emissions reductions as a retired allowance for less cost. The goal of one is to save energy, the other to reduce carbon. Regulators would have to develop new accounting and evaluation standards to effectively evaluate the second goal.

Other policy avenues exist that could effectively increase energy efficiency without creating new administrative headaches. Effective policies include, but are not limited to:

- Selling RGGI global warming pollution allowances at market price and dedicating the proceeds to energy efficiency programs, reducing the overall cost of the policy, accelerating the transition of the electric system toward less carbon-intensive fuels and enabling the Northeast to meet meaningful pollution reduction targets;

- Establishing dedicated efficiency programs that are independent of electricity and gas service providers (like Efficiency Vermont);

- Raising additional money for these programs with charges on energy bills, ensuring enough funding to tap achievable efficiency potential;
- Improving residential and commercial building codes;
- Setting minimum appliance efficiency standards;
- Stimulating the deployment of combined heat and power technologies; and
- Educating consumers about energy efficiency opportunities.

Given these simpler policy opportunities—and the fundamental issues in the RGGI process that have yet to be resolved—the Northeast would be best served by leaving the question of energy efficiency offsets for a later date, until the basic cap-and-trade framework is up and running.

Realizing the Promise of the Cap-and-Trade Policy

The Regional Greenhouse Gas Initiative holds real promise to deliver results—but only if it is designed well. By excluding the potential loopholes created by offsets and instead focusing on cleaning up the region's electric sector, Northeast states can achieve real, tangible progress in reducing global warming pollution from power plants.

In order to make the RGGI initiative as effective as possible, state negotiators should set a strong cap on carbon, exclude offsets from the first phase of the program, limit them in future phases, and use allowance auction revenues to support energy efficiency and other public benefits. In so doing, the Northeast can show the rest of the nation—and the world—that we *can* succeed in addressing global warming.

Photo: TTracy Toh

Set a Strong Cap on Carbon

- **The proposed cap should be strengthened to reduce global warming pollution to 25 percent below current levels by 2020, growing tighter over time.** In order for the cap to be effective in producing benefits for the environment and public health, the cap must first be set at an achievable but ambitious level that forces the development and deployment of new technologies. In the case of a carbon cap, the cap must be set low enough to promote curtailment, efficiency improvements, and fuel switching at the most polluting power plants. Tightening the cap over time can continue momentum toward the desired region-wide shifts in the electricity system. The cap proposed in the most recent program design draft

(maintaining current pollution levels for 10 years, then reducing emissions 10 percent by 2020) is inadequate and will fail to drive significant changes to reduce power plant emissions in the Northeast.[65]

Do Not Include Offsets in Phase I; Limit Them In Future Phases

- **The first phase of RGGI should not include offsets.** Reductions should be achieved first and foremost from a mandatory cap on carbon dioxide emitted from fossil-fueled power plants in the Northeast, including electricity imports. Offsets should not be considered until the cap-and-trade program has matured and been proven effective**.**
- **If offsets are eventually considered, they should be limited to no more than 5 percent** of the allowances. This trial period will offer time to evaluate the integrity and effectiveness of the offset measures in reducing overall global warming pollution, and ensure that most of the pollution reductions occur locally and that Northeast ratepayers receive the bulk of the co-benefits.
- **Any proposed offsets should meet conservative and rigorous criteria** to ensure that they enhance the benefit of the cap-and-trade program, rather than allow leakage outside the cap. These criteria should prominently include a test for *financial additionality*—an independent audit to ensure that an offset program is breaking down a genuine economic barrier preventing a pollution reduction from occurring, and quantifying the contribution of offset funding to the overall pollution reduction. The most recent program design draft includes no mention of the standards that will be used to ensure that the "robust offsets component" achieves its intended result.[66]

Sell Allowances and Use Revenues to Support Energy Efficiency

- **Emissions allowances should be sold at market price and the proceeds should be dedicated to fund energy efficiency and other public benefit programs.** To ensure the fairness of the cap-and-trade program, emission allowances (that is, permits that allow a facility to emit carbon dioxide) should not be given to generators for free. Emissions allowances have monetary value. Giving them away for free would effectively create billions of dollars in "windfall" profit for polluters. Instead, facilities that emit pollution should be required to purchase allowances, creating a "polluter pays" mechanism. The proceeds should be directed toward energy efficiency and other public benefit programs, reducing the overall cost of the policy, accelerating the transition of the electric system toward less carbon-intensive fuels and enabling the Northeast to meet meaningful pollution reduction targets. The most recent program design draft proposes allocating only 20 percent of allowances for public benefit purposes and 5 percent to a "strategic carbon fund" meant to mitigate leakage caused by electricity imports, while allowing states to decide individually what to do with the rest.[67] If states give the offsets to generators, it would unfairly reward power plant owners and unnecessarily impair the effectiveness of the program.

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