

---

**To: The RGGI Staff Working Group and other RGGI Stakeholders**  
**From: Derek Murrow & Dan Sosland, Environment Northeast; Larry DeWitt, Pace Energy Project; Bill Prindle, ACEEE; Seth Kaplan, Conservation Law Foundation; Michelle Manion, Union of Concerned Scientists; Jim O'Reilly, Northeast Energy Efficiency Partnership; Dale Bryk, Natural Resources Defense Council; Christine Vanderlan, Environmental Advocates of New York**  
**Date: April 20, 2005**  
**Re: Efficiency Programs as a Cost-effective Mechanism to Allow the RGGI Program to Achieve its Goals**

---

## **SUMMARY**

### ***Recommendation:***

In order to maximize the economic benefits of RGGI, we recommend that the model rule and MOU contain the following:

1. The MOU should contain a specific energy efficiency target – such as holding load growth to XX% – and a commitment to expand specific energy efficiency programs and policies
2. The RGGI model rule and/or MOU should include a commitment that each state allocate at least 50% and a growing portion of allowances for the benefit of consumers

### ***Benefits:***

Increased cost-effective investments in energy efficiency will:

- Save consumers across the region money by reducing their consumption of energy
- Reduce the price of energy (electric and natural gas) by reducing total demand in the region
- Reduce the price of RGGI CO<sub>2</sub> allowances by lowering the rate of electric load growth
- Avoid or delay the need for new transmission and generation projects
- Assist economic development by creating jobs in the region by reducing the flow of dollars out of the region that are currently spent on imported fossil fuels (New York alone sends \$18 billion out of state each year to meet its energy needs)

If RGGI designs energy efficiency into the program, the result could be a package that reduces consumer's energy bills, delivers tremendous environmental benefits, and reduces leakage, while guiding businesses to make sustainable energy investments that increase their competitive advantage.

### ***Rationale:***

The RGGI program should be designed with consumers in mind and to maximize economic benefits. The economic value of allowances should be recognized by policy makers and they should be allocated in a manner that recognizes that consumers primarily bear the burden of the program and that investments in energy efficiency will reduce or eliminate that impact.

## Detailed Discussion

Governors and policy makers, when reviewing the RGGI model rule, will want to know that regulators have ensured that the rule will impose minimum costs on consumers and provide net economic benefits to the region. A well-designed cap and trade program by itself can bring costs down by harnessing the power of the market and innovation, but a RGGI cap-and-trade rule teamed with a set of complementary policy objectives will achieve carbon reduction targets at even lower costs. Because the cheapest way to purchase low or no-carbon energy is through efficiency, energy efficiency policies will cost-effectively improve the RGGI program to the benefit of consumers. We therefore recommend that energy efficiency policies be built into the program design – both addressed in the MOU and directly in the model rule.

Extensive existing data and studies show that states can achieve substantial reductions in load growth by building on cost-effective policies and programs, saving the state's consumers significantly more money than the programs would cost. The benefits of existing energy efficiency programs and the economically achievable potential that remains has been well documented in reports by the American Council for an Energy Efficient Economy (ACEEE)<sup>1</sup>, Northeast Energy Efficiency Partnerships (NEEP)<sup>2</sup>, the Regulatory Assistance Project (RAP)<sup>3</sup>, and various state specific assessments.<sup>4</sup>

This memo illustrates the contribution a robust efficiency policy can make to the RGGI program and sets forth the specific policies the states should embrace as part of, or in concert with, the RGGI program. We discuss both the options and the impacts of these policies on RGGI and the region.

As much as one would hope that consumers would make energy efficiency investments on their own, experience with existing programs and academic research has shown that programs and incentives are needed even though consumers will save money by making these investments on their own. Companies have hurdle rates (discount rates) that often cause investments in new ventures to win out over energy efficiency investments; and residential consumers have internalized discount rates in the hundreds of percent which means they will almost never spend more up front to receive future savings. Programs and

---

<sup>1</sup> S. Nadel et al, August 2004, *The Technical, Economic and Achievable Potential for Energy-Efficiency in the U.S. - A Meta-Analysis of Recent Studies*, ACEEE Conference Proceedings, <http://aceee.org/conf/04ss/rnemeta.pdf>; and M. Kushler et al, April 2004, *Five Years In: An Examination of the First Half-Decade of Public Benefits Energy Efficiency Policies*, ACEEE Report Number U041, <http://www.aceee.org/pubs/u041.htm>

<sup>2</sup> Northeast Energy Efficiency Partnership, November 2004, *The Economically Achievable Energy Efficiency Potential in New England*, available at: [www.neep.org](http://www.neep.org)

<sup>3</sup> W. Shirley, November 2004, *Electric Energy Efficiency In New England: An Assessment of Existing Policies and Prospects for the Future*, <http://www.raonline.org/Slides/EnergyEfficiencyStudy2004-11-17.pdf>

<sup>4</sup> As more fully described below, state efficiency reports demonstrate that low or even zero load growth is achievable with fairly conservative assumptions. See e.g., *Independent Assessment of Conservation and Energy Efficiency Potential for Connecticut and the Southwest Connecticut Region*, GDS Associates/Quantum Consulting for ECMB, Feb. 2004.

incentives are needed to ensure that cost-effective efficiency investments get made, even though on an economic basis it looks like people would make them on their own. The market barriers that we know exist for energy efficiency can be overcome with well designed programs, but programs will be needed even with restructured electricity markets and rising energy costs.

Energy efficiency programs in the RGGI states typically fall within the purview of governors' offices and utility regulators, where they were originally conceived to reduce consumers' energy bills and address other energy policy concerns. However, we believe that air regulators would be wise to embrace efficiency as part of the overall RGGI policy framework, and should work with governors' energy offices and utility regulators to craft RGGI-related efficiency initiatives that maximize total benefits to consumers.

RGGI modeling that looked at reduced demand (30% lower demand growth) confirms that new investments in energy efficiency would reduce the economic impact of the RGGI rule, while also minimizing carbon emissions "leakage." Additional modeling is needed to help determine the optimal level of efficiency investments. In previous comments, we recommended more rigorous assessments of efficiency to be completed that would examine the impacts of expanded energy efficiency programs as a policy option. Efficiency resource data developed by ACEEE should be used within the IPM model to examine the impact of procuring efficiency resources as an alternative to procuring generation. To provide a clear picture of what is achievable, the amount of resource available to the model should be limited to achieving zero load growth (a reasonable stretch target based on existing studies). The modeling will illustrate the costs and benefits of implementing new energy efficiency programs and help policy makers set RGGI specific energy efficiency targets.

**In order to maximize the economic benefits of RGGI, we recommend that the model rule and MOU contain the following:**

3. **The MOU should contain a specific energy efficiency target – such as holding load growth to XX% – and a commitment to expand specific energy efficiency programs and policies** (existing demand-side management programs for electricity and natural gas, appliance and equipment efficiency standards, and building energy code improvements)
4. **The RGGI model rule and/or MOU should include a commitment that each state allocate at least 50% and a growing portion of allowances for the benefit of consumers.** This will return dollars back to consumers who will then benefit from lower energy bills, reducing the cost of the cap and trade program. States should be allowed to exceed the minimum of 50% and allocate a larger portion to consumers as they see fit. The consumer allocation should primarily fund energy efficiency programs, low income relief or consumer rebates, and other clean energy programs that will improve the economics of the RGGI program, although rebates to consumers should be considered as well.

The following is a more detailed explanation of the basis of our recommendation and a description of some of the efficiency policies that will allow states to achieve significant reductions in load growth.

### **Allowance Value Used to Expand Efficiency Programs: The Consumer Allocation**

We are advocating the concept of a Consumer Allocation, which recognizes that consumers bear the economic costs of the program and that allowance value should thus be used to minimize the economic impacts of the program. When regulators set a cap on CO<sub>2</sub> and create the associated tradable allowances (emissions permits), they are creating a resource that has value. This permit or allowance will be in demand by the regulated entities (fossil generators), but the generators pass the costs of these allowances on to consumers whether or not they receive them for free. Companies acknowledge that because the allowances are tradable they have value either for a facility's own compliance or for sale to another facility. This opportunity cost means facilities will build the cost of allowances into their bid prices and pass those costs on to consumers. This is especially true in states that have gone through electricity restructuring and have competitive wholesale electric markets. The states however can choose to distribute the allowances in a way that is equitable to both the regulated entities and to consumers. The consumer allocation should be used primarily to fund programs that cost-effectively reduce the cost of RGGI and reduce consumer's energy bills as a whole. **That translates primarily into increased funding for energy efficiency programs.**

**Allowances should be distributed by air regulators to existing energy efficiency program administrators.** The allowances would then be sold by the administrators of the programs (often the local distribution companies) with the money used to expand their existing programs in order to make progress towards the load growth reduction goals. Rules governing the use of allowance proceeds should be written to ensure that such funds are used only for the public purposes defined in the RGGI program. This is not technically an auction conducted by the state, but an allocation of a public good to a regulated entity for the benefit of consumers.

#### **Example Efficiency Allocation Process:**

- The state DEP would determine a percentage of the total state's allowances to be invested in energy efficiency (EE) programs
- The state PUC would develop a proceeding or regulation to oversee the allocation, sale, and use of EE allowances
- Allowances would be distributed to an existing or new EE program administrator (often a T&D electric utility) and sold under PUC supervision to generators or traders
- The money raised from the sale of allowances would be used, under PUC supervision, to expand energy efficiency programs in the state

Extensive data analysis and evaluation proves that existing efficiency programs succeed in lowering bills, reducing stress on the electricity grid, and avoiding air pollution, and that there is tremendous additional potential for expanded programs. As an example for electric sector efficiency programs, the summary

results from the *Independent Assessment of Conservation and Energy Efficiency Potential for Connecticut and the Southwest Connecticut Region*<sup>5</sup> are shown below:

**Results from the Connecticut Conservation and Efficiency Potential Study**

---

Scope of Study	Identify the maximum achievable, cost-effective, conservation and efficiency programs for the two utilities in the state (CL&P and UI)
Demand Reduction	Potential of 13% or 908 MW by 2013
Reduction in Electric Use	Potential of 13% or 4,466 GWh by 2013, which equals <b>zero load growth</b>
NPV of Program Savings	\$1.8 Billion or \$1,228 per household (benefits less costs in today's dollars)

---

The level of funding needed in each state to achieve the reduced load growth targets exceeds today's system benefit charge levels. The level of spending needed to achieve RGGI-related load growth targets should be determined using the data developed for the RGGI modeling process. However, our current understanding of efficiency program costs leads us to estimate that achieving a load growth target of 0% would likely cost an *additional* 2-4 mills per kWh in each state. States in the RGGI region today spend up to 3 mills per kWh on efficiency programs; the regional average is between one and two mills. The new funding requirements are thus above current spending levels, but would be closer to historical peak (1990s) spending levels. **A combination of renewing and expanding existing SBC funds, and supplementing them with RGGI allowance values, would allow states to attain aggressive load growth reduction targets and deliver significant economic benefits.**

Increases in funding for efficiency programs will also allow states to further target their activities in areas that are experiencing transmission constraints and high generation capacity charges. This would be especially helpful in urban areas such as Southwest Connecticut, New York City, Long Island, New Jersey, Delmarva, and Boston. Reducing congestion in these areas would reduce future electricity prices in those markets.

Some of the allowances could also be used to fund natural gas conservation and efficiency programs. Natural gas is a critical fuel for the RGGI region (gas plants are on the margin) and these programs would lower gas prices, reduce consumer's gas bills, and allow more supply to be available for likely gas fired power plant capacity additions. A report released last month by the New England Governor's Conference that looks at the region's natural gas demand concludes that one of the best ways to solve the current

---

<sup>5</sup> GDS Associates, Inc. and Quantum Consulting, June 2004, *Independent Assessment of Conservation and Energy Efficiency Potential for Connecticut and the Southwest Connecticut Region: Final Report for the Connecticut ECMB*, Available at: <http://www.dpuc.state.ct.us/Electric.nsf/ByECMB?OpenView>

supply crunch is to invest in natural gas efficiency programs.<sup>6</sup> The following is an excerpt from the report's Executive Summary:

“To ensure reliable delivery of natural gas in the winters beyond 2010, the region must accomplish a substantial amount of demand reduction or infrastructure development before that time. Since many of these developments will require several years of program expansion or facilities permitting and construction, state policies to encourage and develop these initiatives need to be implemented in the very near future.

Various demand reductions or resource development scenarios are available to be pursued, each providing a different degree of success in achieving energy policy and other public policy goals. Some of these scenarios can only be accomplished with new public mandates and additional financial support while others may be accomplished by privately financed, market-based developments which government must regulate, but cannot prescribe.

We find that expansion of fuel switching, energy efficiency and renewable energy programs may be the least expensive ways to improve gas supply reliability while improving fuel diversity.”

We also recommend that two additional policies be adopted by the states and embraced in the RGGI MOU; both save money and would allow the states to achieve significant load reduction. These include upgrading building energy codes and implementing appliance and equipment efficiency standards.

### **Implement Appliance & Equipment Efficiency Standards**

All states should pass legislation or regulations to set minimum energy efficiency standards for products that are identified as cost-effective and complementary to federal standards. The states of Connecticut, Maryland, and New Jersey have passed these standards for a set of appliances, some of which include: torchiere lighting fixtures; building transformers; commercial refrigerators and freezers; traffic signals; exit signs; large packaged air-conditioning equipment; unit heaters; and commercial clothes washers. These standards build on experience in California with standards that save consumers money while significantly reducing demand for energy. All the proposed products have large numbers of suppliers that can meet the standards today. The list of products can also expand with time through cooperation between states (as Connecticut and California are now doing). These standards are currently being introduced as legislation in all of the other Northeastern states under the Northeast States Minimum Efficiency Standards Project established by NEEP in 2001.

---

<sup>6</sup> Power Planning Committee of the NEGC, March 2005, *Meeting New England's Future Natural Gas Demands: Nine Scenarios and Their Impacts*.

More information on the legislation being considered, the economic, environmental, and energy benefits, and a list of products that meet the standards, can be found on the Appliance Standards Awareness Project web page: <http://standardsASAP.org> and the NEEP web page: <http://www.neep.org/Standards/index.html>. A recent report entitled, *Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards*, from ACEEE and the Appliance Standards Awareness Project documents the benefits of these new standards.<sup>7</sup> The results of this study are summarized by state below.

**Appliance & Equipment Efficiency Standards**

State	Energy Savings by 2020		
	Electricity Savings (Current Dollars)	Electricity (GWh)	Summer Peak Demand (MW)
Connecticut (Completed)	\$38 Million	293	83
CT (Potential Expansion)	\$57 Million	429	118
Delaware	NA	NA	NA
Maine	\$37 Million	267	74
Massachusetts	\$173 Million	1,255	354
New Hampshire	\$35 Million	252	70
New Jersey	\$215 Million	1,803	492
New York	\$594 Million	3,742	1,057
Rhode Island	\$28 Million	211	58
Vermont	\$18 Million	126	35

As ACEEE and ASAP note in the Executive Summary of *Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards*:

Appliance and equipment efficiency standards have been one of the most successful policies used by state governments and the federal government to save energy. These standards prohibit the production and import or sale of appliances and other energy-consuming products less efficient than the minimum requirements. These standards not only save energy but also reduce pollutants, improve electric system reliability, and save consumers and business owners significant amounts of money over the life of the equipment.

<sup>7</sup> S. Nadel et al, 2005, *Leading the Way: Continued Opportunities for New State Appliance and Equipment Efficiency Standards*, ACEEE Report Number A051 and ASAP Report Number 5, <http://standardsasap.org/stateops.htm>

## Upgrade Building Energy Codes

The states should ensure that all energy portions of state building codes are regularly updated to national model code standards. They should also thoroughly examine and implement programs such as advanced building standards that go beyond existing model codes.

Sound energy codes ensure that inefficient buildings are not constructed; however, instituting state-of-the-art codes and implementing them effectively takes both regulatory effort and sustained funding support. All state building energy codes should be updated to the latest building energy code developed by the International Code Council (<http://www.iccsafe.org/>)

The following are the energy and economic benefits of upgrading state building energy codes in New England as calculated by NEEP.<sup>8</sup>

### Impacts of Upgraded Building Energy Codes in New England

Summer Demand Reduction	230 MW by 2008 and 481 MW by 2013
Reduction in Electric Use	509 GWh by 2008 and 1,090 GWh by 2013
NPV of Program Savings	\$3.6 Billion (benefits less costs in today's dollars)

States should also consider going beyond the minimum energy standards established nationally and implement advanced building energy codes. This could start with the state leading by example in the manner developed by Maine where legislation was passed requiring all state buildings to exceed the national model code by 20 percent. This standard will reduce overall building operating costs dramatically and should be pursued in all states.

## Summary

Efficiency programs continue to stand out as one of the biggest economic opportunities for the RGGI states – with or without a cap and trade program for CO<sub>2</sub>. However, with the cap in place, efficiency and reducing growth in consumption of both electricity and natural gas become even more important. RGGI provides an opportunity to highlight the benefits of conservation and efficiency, and significantly expand efficiency programs and funding.

**We call on the state agencies leading the RGGI effort to recognize the critical need for states to use energy resources more efficiently, and to build this commitment directly into the program.**

---

<sup>8</sup> Northeast Energy Efficiency Partnership, November 2004, *The Economically Achievable Energy Efficiency Potential in New England*, available at: [www.neep.org](http://www.neep.org)