INVESTMENT OF PROCEEDS FROM RGGI CO_2 ALLOWANCES

Benefits of Regional Greenhouse Gas Initiative (RGGI)-funded programs in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

February 2011

RGGI Inc.

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This report is the product of the Regional Greenhouse Gas Initiative, Inc. (RGGI, Inc.). It is not an official statement by any of the states participating in the Regional Greenhouse Gas Initiative (RGGI). For regulatory matters, consult the regulations of each state cited throughout the report. RGGI Inc. is the nonprofit corporation created to provide technical and administrative services to the RGGI CO_2 Budget Trading Programs of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont.

Executive Summary

The First Market-Based Program to Reduce Greenhouse Gas Emissions

In 2008, ten states – Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Rhode Island, and Vermont – launched the first market-based regulatory program to reduce greenhouse gas (GHG) emissions in the United States. Through the Regional Greenhouse Gas Initiative (RGGI), each participating state caps carbon dioxide (CO_2) emissions from power plants, auctions CO_2 emission allowances[i], and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. Each RGGI participating state has developed its own plan for investment of CO_2 allowance proceeds. This analysis translates the investment plans of the ten RGGI participating states into common, comparable terms to identify regional trends and demonstrate the benefits of RGGI participating state investments.

The Value of CO_2 Allowances

A key design element of RGGI is the distribution of CO_2 allowances through quarterly, regional CO_2 allowance auctions. Building on the experiences of earlier cap-and-trade programs, which distributed allowances to regulated entities for free, the RGGI participating states each chose to auction the majority of their CO_2 allowances and invest the proceeds in consumer benefit programs. Table 1 (below) shows the percentage of CO_2 allowances offered through auction by each state, as well as the percentage of CO_2 allowances offered for sale directly to certain qualifying emitters at a fixed price of $2.00 per allowance, as specified in each state's regulations. Across all ten RGGI states, approximately 86 percent of CO_2 allowances are offered at auction[ii] and approximately 4 percent of CO_2 allowances are offered for sale at a fixed price.

Table 1: CO_2 Allowance Allocation By State

STATE	Initial Annual CO_2 Allowance Budget	Percent Offered through Auctions	Percent Offered for Sale at a Fixed Price
Connecticut	10,695,036	77%	13%
Delaware[iii]	7,559,787	60%	n/a
Maine	5,948,902	80%	n/a
Maryland	37,503,983	80%	n/a
Massachusetts	26,660,204	98%	n/a
New Hampshire	8,620,460	69%	n/a
New Jersey[iv]	22,892,730	74%	25%
New York	64,310,805	94%	n/a
Rhode Island	2,659,239	99%	n/a
Vermont	1,225,830	99%	n/a
Total	**188,076,976**	**86%**	**4%**

[i] A CO_2 allowance is a limited authorization to emit one short ton of CO_2 from a regulated power plant.

[ii] The percentage of CO_2 allowances offered at auction may increase as participating states allocate CO_2 allowances remaining in set-aside accounts, as specified in state CO_2 Budget Trading Program regulations.

[iii] In Delaware, the percentage of CO_2 allowances distributed through auctions will increase by 8 percent per year from 2009-2014, such that 100 percent of CO_2 allowances will be auctioned in 2014.

[iv] For New Jersey, percentages shown here are based on actual percentages of CO_2 allowances distributed through auction and direct sale in 2009. Pursuant to New Jersey CO_2 Budget Trading Program regulations, a combined 99 percent of the annual New Jersey CO_2 allowance budget is offered through both auction and a fixed-price sale to qualifying industrial cogeneration facilities. The number of CO_2 allowances offered through direct sale is based on recent CO_2 emissions from qualifying industrial cogeneration facilities. CO_2 allowances that are offered through direct sale and not sold through such offers are offered through auction. In 2010, 99 percent of New Jersey's CO_2 allowance budget was offered through auctions.

Auctioning CO_2 allowances provides three important benefits in the context of a cap-and-trade system. First, auctions ensure all parties have access to CO_2 allowances under uniform terms. Second, auctions realize the value of CO_2 allowances for investment in strategic energy programs that reduce CO_2 emissions, save consumers money, and create jobs. Third, reinvestment of auction proceeds in energy efficiency and renewable energy programs allow cap-and-trade programs to address CO_2 emissions at both the supply side (power plants) and the demand side (energy use), delivering emission reductions at lower cost.

Table 2 shows the total amount of proceeds yielded from the sale of RGGI CO_2 allowances for each state and for the entire 10-state RGGI region, through December 31, 2010.

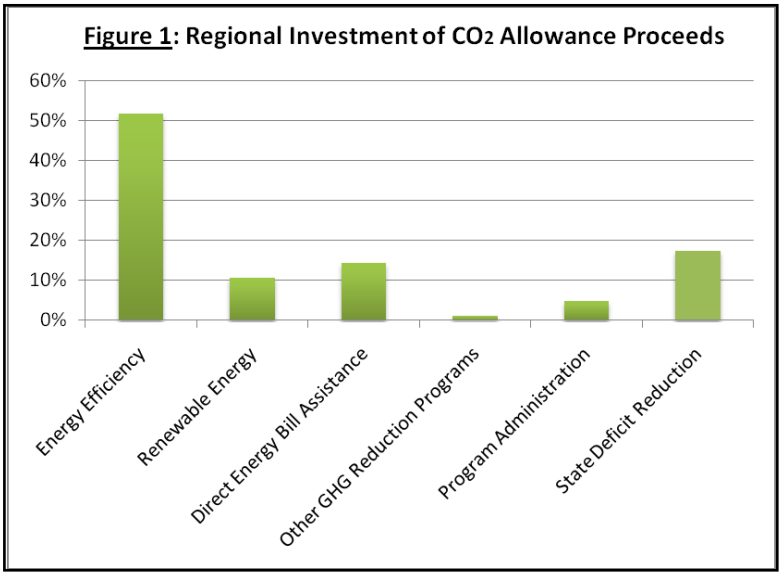
Table 2: CO_2 Allowance Proceeds by State through Dec 31, 2010

STATE	Proceeds – Auctions 1-10	Proceeds – Direct Sale ('09-'10)	Total Allowance Proceeds
Connecticut	$44,900,580	$441,094	$45,341,674
Delaware	$18,858,578	n/a	$18,858,578
Maine	$23,544,204	n/a	$23,544,204
Maryland	$147,530,363	n/a	$147,530,363
Massachusetts	$123,229,478	n/a	$123,229,478
New Hampshire	$28,215,274	n/a	$28,215,274
New Jersey	$90,913,275	$11,310,356	$102,223,631
New York	$282,272,683	n/a	$282,272,683
Rhode Island	$12,340,209	n/a	$12,340,209
Vermont	$5,701,535	n/a	$5,701,535
REGION	**$777,506,180**	**$11,751,450**	**$789,257,630**

Investing in a Clean Energy Economy

Each RGGI participating state has developed its own plan for investing its share of CO_2 allowance proceeds. While each state directs its own investment strategy, overall, states have allocated proceeds as follows:

- **52 percent** to improve energy efficiency;
- **11 percent** to accelerate the deployment of renewable energy technologies;
- **14 percent** to provide energy bill payment assistance, including assistance to low-income ratepayers;
- **1 percent** for a wide variety of greenhouse gas reduction programs, including programs to promote the development of carbon emission abatement technologies, efforts to reduce vehicle miles traveled, and programs to increase carbon sequestration. For regional comparison purposes, climate change adaptation measures are also included in this category.



Triple Benefits: for the Environment, Consumers and the Economy

Investments by RGGI participating states in energy efficiency and renewable energy reduce greenhouse gas emissions and generate important consumer benefits, including energy bill savings, greater electric system reliability, and new jobs.

◆ Environmental Gains

Investments Reduce Emissions

Investments in energy efficiency and renewable energy reduce reliance on fossil fuels, lowering emissions of CO_2 as well as other harmful pollutants, including sulfur dioxide (SO_2) and nitrogen oxides (NO_x), which cause acid rain. Investments that improve energy efficiency and increase renewable generation capacity in the electricity sector (e.g. incentives for the deployment of solar electric generation systems on homes and businesses) complement the RGGI CO_2 emission cap, helping to reduce power sector CO_2 emissions at least cost. Investments that improve energy efficiency and increase use of renewable energy outside the capped electricity sector (e.g., incentives for improving the efficiency of oil and natural gas space heating) generate additional emission reductions beyond those achieved through the RGGI CO_2 emission cap.

◆ Consumer Savings

Investments Save Consumers Money

At the household and business level, energy efficiency investments enhance consumers' control over their energy use, typically reducing energy bills by 15 to 30 percent.[1] On a regional level, energy efficiency investments drive down peak and overall electricity demand, which works to depress wholesale electricity prices, improve electric system reliability, and mitigate the need for investment in new or expanded electric generation facilities, transmission lines, and distribution systems.

◆ Economic Benefits

Investments Create Jobs

Investments in energy efficiency and renewable energy drive demand for new products and services and stimulate the economy with energy bill savings, thereby creating jobs. A 2010 analysis by Environment Northeast estimates that energy efficiency programs funded with CO_2 allowance proceeds through December 2010 are projected to create nearly 18,000 job years – that is, the equivalent of 18,000 full-time jobs that last one year.[2] Employment benefits result from state program investments and from the reinvestment of consumer energy bill savings in the wider economy. While there has not yet been a similar analysis of RGGI-funded renewable energy programs, data from the Renewable Energy Policy Project shows every $1 million invested in renewable energy systems creates about six full-time manufacturing jobs, as well as additional jobs in construction and facility maintenance.[3]

Investments Create Business Opportunities

Investments in energy efficiency and renewable energy create business opportunities in the clean energy sector. The RGGI CO_2 emission cap sends a long-term price signal for a more efficient, cleaner energy supply. At the same time, the investment of CO_2 allowance proceeds in energy efficiency and renewable energy projects helps emerging technologies achieve economies of scale, accelerating widespread adoption and facilitating growth of the clean energy sector.

Investments Generate Economic Returns

Investments in energy efficiency and renewable energy are economically beneficial. Evaluations of several energy efficiency and renewable energy programs in the RGGI participating states indicate that these programs provide $3-$4 in savings for every dollar invested.[4] When macroeconomic benefits are considered, the benefits are even greater.[5]

Driving Policy Innovation

Innovative elements of RGGI's design are influencing the development of other cap-and trade programs, such as the Western Climate Initiative and the European Union Emissions Trading System. Two key design elements – CO_2 allowance auctions and reinvestment of proceeds in strategic energy programs – have demonstrated how market-based programs can harness the value of a CO_2 emission cap to deliver emission reductions at low cost.

In particular, the investment of CO_2 allowance proceeds in energy efficiency and renewable energy within the electricity sector reduces the demand for fossil-fuel generated electricity, which reduces CO_2 emissions and the demand for CO_2 allowances. The result is lower CO_2 allowance prices and lower program impacts on wholesale electricity prices.[v] When considering the overall consumer benefits provided through energy efficiency and renewable energy programs — in the form of energy bill savings, demand-induced reductions in wholesale electricity prices, improved electric system reliability, and job creation—economic benefits are expected to outweigh the minimal impact of the RGGI cap-and-trade program on electricity prices.[vi]

[v] On average, in 2009, the cost of CO_2 allowances accounted for 0.4 percent to 1 percent of average residential electricity bills, depending on the state (based on actual or estimated CO_2 component of ISO wholesale electricity prices, state residential retail electricity prices, EIA residential electricity usage data, and a 2009 average CO_2 allowance spot price of $3.06). Based on typical household electricity usage, this translates into a weighted average of 73 cents per month for residential consumers across the 10-state RGGI region.

[vi] Building on data issued by the RGGI participating states, a number of economic, energy, and regulatory policy analysts are working to evaluate the benefits of investments in the electricity sector. See: Derek Murrow and Peter Shattuck, *Economy-Wide Benefits of RGGI: Economic Growth through Energy Efficiency,* Environment Northeast, December 2010; Bruce Biewald, Max Chang, Lucy Johnston and David White, *Electricity Energy Efficiency Benefits of RGGI Proceeds: An Initial Analysis*, Synapse Economics, October 5, 2010.

Recent Highlights: Benefits of RGGI Participating State Investments

Below are examples of the estimated environmental, consumer, and economic benefits associated with RGGI participating state investments of CO_2 allowance proceeds. The examples included below are intended to provide a high-level snapshot of some of the benefits associated with each state's investments, and are not intended to facilitate comparison among state programs. Estimated program benefits are drawn from independent, state-level analyses and may reflect different variables and/or calculation methods.

Programs Funded Exclusively by CO_2 Allowance Proceeds:
The programs described below are funded exclusively by CO_2 allowance proceeds.

Maryland: Strategic Energy Investment Fund (SEIF)
Through June 30, 2010, Maryland has invested $19.9 million in CO_2 allowance proceeds in energy efficiency and renewable energy. To date, more than 17,000 Marylanders and their families have taken part in CO_2 allowance proceeds that funded energy efficiency and renewable energy programs, saving more than $77 million over the life of the investments. As a result of clean energy programs funded by Maryland's investment of CO_2 allowance proceeds:

- More than 3,000 low-income apartments have received energy efficiency retrofits;
- More than 350 farmers have received funding for energy efficiency projects;
- More than 900 people have received training for careers in energy efficiency;
- Grants to local governments and non-profits to have helped over 7,500 low-income Marylanders;
- Marylanders have purchased nearly 5,000 energy efficient appliances.[6]

New Hampshire: Greenhouse Gas Emissions Reduction Fund (GHGERF)
Through 2010, New Hampshire has awarded $31 million[vii] in CO_2 allowance proceeds to 36 projects and programs that improve energy efficiency, support energy education and outreach, and provide energy efficiency job training to workers across the state. Through July 2010, 30 of the projects received a total of $17.7 million. Through July 2010, those 30 projects have:

- Supported energy efficiency job training for more than 170 workers across the state;
- Supported energy use assessments and energy audit evaluations for 436 buildings across the state.[7]

In addition, those 30 projects are projected to:

- Reduce consumer energy costs by $60.6 million over the lifetime of the installed measures;
- Avoid the emission of 220,000 tons of CO_2 pollution over the lifetime of the installed measures.[8]

New Jersey: Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program
Through 2010, New Jersey has awarded $29.6 million in CO_2 allowance proceeds to 12 large-scale energy efficiency and renewable energy projects in the commercial and industrial sectors through its Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program. These 12 projects:

- Represent 29.6 megawatts (MW) of new, clean electric generation capacity;
- Are projected to generate more than 167 million kWh of electricity annually, enough to meet the equivalent needs of more than 19,600 New Jersey households each year;
- Are projected to avoid 84,000 tons of CO_2 emissions per year and 1.7 million tons of CO_2 emissions over the lifetime of the projects.[9]

[vii] Includes anticipated proceeds from 2011 CO_2 allowance auctions.

Programs Funded in Part by CO_2 Allowance Proceeds:

The programs described below are funded by CO_2 allowance proceeds, in addition to other funding sources, such as state Systems Benefit Charges and/or the American Recovery and Reinvestment Act of 2009.

Connecticut: Utility-Administered Energy Efficiency Programs

Utility-administered energy efficiency programs overseen by the Energy Conservation Management Board (ECMB) in 2010 are projected to:

- Save 3.7 billion kWh of electricity over the lifetime of the installed measures, enough to meet the needs of more than 442,476 homes for one year;
- Reduce consumer energy costs by $744 million over the lifetime of the installed measures;
- Avoid 2.4 million tons of CO_2 pollution over the lifetime of the installed measures.[10]

CO_2 allowance proceeds represented about 7 percent of the ECMB's total funding in 2010.[11]

Delaware: Energize Delaware Appliance Rebate Program

Between September 2009 and September 2010, the Energize Delaware Appliance Rebate Program provided more than 15,900 rebates for energy-efficient household appliances to Delaware consumers. These rebates are:

- Saving more than 1.9 million kWh of electricity annually;
- Saving participating consumers a total of more than $366,000 per year;
- Avoiding 1,916 tons of CO_2 pollution annually.[12]

According to program administrators at the Sustainable Energy Utility, CO_2 allowance proceeds represented about 40 percent of the Appliance Rebate Program's total funding.

Maine: Efficiency Maine Energy Efficiency Programs

Energy efficiency programs administered by Efficiency Maine in 2010 are projected to:

- Save nearly $3 for every $1 invested over the lifetime of the installed measures;
- Generate $95.8 million in lifetime economic benefits for the state of Maine;
- Avoid more than 429,901 tons of CO_2 pollution over the lifetime of the installed measures.[13]

According to staff of Efficiency Maine, CO_2 allowance proceeds represented 35 percent of Efficiency Maine's total funding in 2010.

Massachusetts: Utility-Administered Energy Efficiency Programs

Expanded energy efficiency programs administered by the state's electric utilities over the three-year period 2010-2012 and funded in part by CO_2 allowance proceeds are projected to:

- Reduce consumer energy costs by $6 billion over the lifetime of the installed measures;[14]
- Save 2.6 billion kWh of electricity over the lifetime of the installed measures, enough to meet the needs of more than 350,000 Massachusetts households for a year;
- Avoid 15 million tons of CO_2 pollution over the lifetime of the installed measures.[15]

CO_2 allowance proceeds are projected to represent 11.5 percent of the total funding provided for these programs over the three-year period 2010-2012.[16]

New York: Investments in New York's Clean Energy Economy

Through 2010, New York has committed $150 million in CO_2 allowance proceeds to consumer benefit programs that reduce greenhouse gas emissions while promoting energy efficiency and renewable energy. These investments save consumers money, create jobs, reduce the flow of dollars outside the state for imported fossil fuels and protect public health and the environment. Highlights to date include:

$112 million in CO_2 allowance proceeds dedicated to Green Jobs/Green New York for energy efficiency audits and financing, sustainable community development, workforce training, and green job creation. GJ/GNY is designed to leverage additional public and private capital to:

- Provide energy audits for 100,000 households and small businesses and support the implementation of 56,000 projects;
- Result in electricity savings of approximately 675,000 MWh and energy bill savings of $600 million over the lifetime of the installed measures;
- Support training programs for 6,000 workers.[17]

$12 million supports installation of 383 solar photovoltaic systems (3,710 kW), with anticipated production of 4,370 MWh per year.[18]

Vermont: Vermont Community Energy Mobilization Project

Vermont is investing CO_2 allowance proceeds in Efficiency Vermont's Vermont Community Energy Mobilization (VCEM) project, a program to train volunteers to install energy efficiency measures in homes across the state. In 2009 and 2010:

- More than 500 volunteers received training;
- More than 1,100 homes received energy-efficient upgrades;
- The homes saved an estimated total of 590,000 kWh.[19]

According to staff of Efficiency Vermont (EVT), CO_2 allowance proceeds represented about 25 percent of the funding for EVT's heating and process efficiency programs, including VCEM, in 2010.

Rhode Island: Utility-Administered Energy Efficiency Programs

Rhode Island has invested nearly $4 million of its CO_2 allowance proceeds in cost-effective energy efficiency programs administered by National Grid. In 2010, these programs:

- Provided energy efficiency services to more than 150,00 Rhode Islanders;
- Saved more than 80 million kWh of electricity. [20]

According to National Grid, RGGI proceeds accounted for approximately 14 percent of the total funding provided for these programs.

Introduction

> "*Each Signatory State agrees that 25% of the allowances will be allocated for a consumer benefit or strategic energy purpose*."
>
> ~ RGGI Memorandum of Understanding, December 20, 2005

Ten Northeast and Mid-Atlantic states – Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont – have put into effect the first market-based regulatory program to reduce greenhouse gas emissions in the United States. The Regional Greenhouse Gas Initiative (RGGI) establishes a regional cap on carbon dioxide (CO_2) emissions from the power sector and requires power plants to possess CO_2 allowances[viii] equal to their CO_2 emissions over each three-year control period. The regional CO_2 emission cap comprises the sum of each RGGI participating state's annual CO_2 allowance budget. For the first six years of the program (2009-2014) the emission cap is 188 million short tons of CO_2 per year. Beginning in 2015, the cap will decrease by 2.5 percent per year, such that it will be 10 percent lower by the end of 2018.

In a 2005 Memorandum of Understanding (MOU), the RGGI participating states each committed to allocate a minimum of 25 percent of their CO_2 allowances for a "consumer benefit or strategic energy purpose." In practice, the RGGI participating states have each chosen to auction the vast majority of their CO_2 allowances and invest the proceeds in consumer benefit programs. Auctioning CO_2 allowances provides three important benefits in the context of a cap-and-trade system. First, auctions ensure all parties have access to CO_2 allowances under uniform terms. Second, auctions realize the value of CO_2 allowances for investment in programs that reduce energy costs for consumers and build a clean energy economy. Third, reinvestment of auction proceeds in energy efficiency and renewable energy programs allow cap-and-trade programs to address CO_2 emissions at both the supply side (power plants) and the demand side (energy use), delivering emission reductions at lower cost.[ix]

Table 2 (below) shows the total amount of proceeds yielded from the sale of RGGI CO_2 allowances for each state and for the entire 10-state RGGI region, through December 31, 2010.

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REGION	**$777,506,180**	**$11,751,450**	**$789,257,630**

[viii] A CO_2 allowance represents a limited authorization to emit one ton of CO_2 from a regulated power plant.

[ix] In competitive wholesale electricity markets, CO_2 allowances are treated as assets by electricity generators, regardless of how they were obtained. Therefore, the market value of CO_2 allowances is passed through in the price of wholesale electricity, regardless of whether CO_2 allowances are auctioned or distributed for free. Cap-and-trade programs with CO_2 allowance auctions benefit consumers by harnessing the value of the CO_2 allowances for investment in programs that reduce energy demand, CO_2 emissions, and consumer energy costs.

Section 1: Regional Trends in State Investment Plans

> *"Consumer benefit or strategic energy purposes include the use of the allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewable or non-carbon-emitting energy technologies, to stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and/or to fund administration of this Program."*
>
> ~RGGI Memorandum of Understanding, December 20, 2005

Each RGGI participating state has developed its own plan for investment of CO_2 allowance proceeds in consumer benefit and strategic energy programs. The plans, which are individually administered by each state, encompass a wide variety of initiatives to improve energy efficiency, increase renewable energy generation, reduce consumer energy costs, and drive the transition to a clean energy economy. Each state's investment plan is summarized in Section 4 of this report. This analysis translates the regional portfolio of investments across all ten RGGI participating states into four key program areas: energy efficiency, renewable energy, direct energy bill assistance, and other greenhouse gas (GHG) reduction programs. The four categories are described below.

Energy Efficiency:	Programs to increase end-use energy efficiency
	States have tailored their programs to their own economies, but programs across the region typically include initiatives to weatherize homes, businesses and public buildings; provide incentives for the purchase of energy-efficient appliances and equipment; provide grants for large-scale commercial and industrial energy efficiency projects; foster community-wide commitments to improve energy efficiency; and provide job training for workers in the energy efficiency field.
Renewable Energy:	Programs to accelerate the deployment of renewable energy technologies
	Programs vary from state to state; however, the majority of regional CO_2 allowance proceeds are currently devoted to the deployment of solar energy generation technologies on residential, municipal, and non-profit buildings, with a smaller portion supporting the deployment of wind, solar and biomass technologies in commercial and industrial settings.
Direct Energy Bill Assistance:	Programs to directly mitigate consumer energy costs
	Programs vary, but most programs provide direct energy bill payment assistance to ratepayers with moderate or limited income and/or households with a demonstrated inability to cover energy costs.
Other GHG Reduction Programs:	Varied programs to reduce greenhouse gas emissions
	Programs include a wide variety of initiatives to promote research, development and deployment of carbon emission abatement technologies, efforts to reduce vehicle miles traveled, and carbon sequestration (terrestrial and geologic). For regional comparison purposes, climate change adaptation measures are also included in this category.

Table 3 (below) shows each state's investment of CO_2 allowance proceeds by percentage across the regional program categories for the period September 25, 2008 (the debut of the RGGI CO_2 allowance auctions) through December 31, 2010. In addition to program investments, the table also shows the percent of proceeds used by each state to cover costs associated with the administration of a state's CO_2 Budget Trading Program and/or related consumer benefit programs, as well as the percent of proceeds dedicated to state budget deficit reduction measures, for the period September 25, 2008 through December 31, 2010.

Table 3: Percent of State Investments by Category (September 25, 2008-December 31, 2010)

State	Percent of Total Proceeds	Energy Efficiency	Renewable Energy	Direct Energy Bill Assistance	Other GHG Reduction Programs	Program Admin.	State Budget Deficit Reduction	TOTAL
Connecticut	6.02%	69.5%	23.0%	--	4.5%	3.0%	--	100%
Delaware	2.38%	64.8%	18.2%	5.0%	7.0%	5.0%	--	100%
Maine	2.97%	94.0%	--	--	1.0%	5.0%	--	100%
Maryland[x]	18.64%	23.2%	7.3%	66.4%	--	3.1%	--	100%
Massachusetts	15.57%	89.0%	9.3%	--	--	1.7%	--	100%
New Hampshire	3.56%	86.6%	--	--	--	2.4%	11.0%[xi]	100%
New Jersey	12.91%	18.0%	18.0%	14.2%	0.5%	5.3%	44.0%[xii]	100%
New York	35.66%	48.7%	10.5%	--	1.7%	7.3%[xiii]	31.8%[xiv]	100%
Rhode Island	1.56%	95.0%	--	--	--	5.0%	--	100%
Vermont	0.72%	98.0%	--	--	--	2.0%	--	100%
Region	**100%**	**51.6%**	**10.7%**	**14.4%**	**1.1%**	**4.8%[xv]**	**17.4%**	**100%**

[x] In Maryland, CO_2 allowance proceeds from auctions conducted before March 1, 2009 (auctions 1 and 2) are allocated according to Senate Bill 268: An Act Concerning Regional Greenhouse Gas Initiative (S-268). CO_2 allowance proceeds from auctions conducted after March 1, 2009 (Auctions 3-10) are allocated according to House Bill 101: The Budget Reconciliation and Financing Act of 2009 (H-101). The percentages shown here reflect a weighted average between H-101 and S-268, with H-101 factored at 2/10 and S-628 factored at 8/10.

[xi] As part of the New Hampshire 2010 State budget, $3.1 million of CO_2 allowance proceeds was diverted to the State General Fund in 2010. The percentage figure here accounts for the entire amount.

[xii] As part of the New Jersey 2011 State budget, $65 million of CO_2 allowance proceeds are anticipated to be diverted to the State General Fund over the course of fiscal year 2011 (through June 2011). The percentage figure here accounts for $45 million, the amount anticipated to be diverted to the State General Fund through December 31, 2010.

[xiii] The percentage figure here includes 4.7 percent for program administration, 1.2 percent for State Cost Recovery Fee, 0.8 percent for New York's prorata share of ongoing RGGI, Inc. operating costs through 2011, and 0.6 percent for RGGI, Inc. start-up costs.

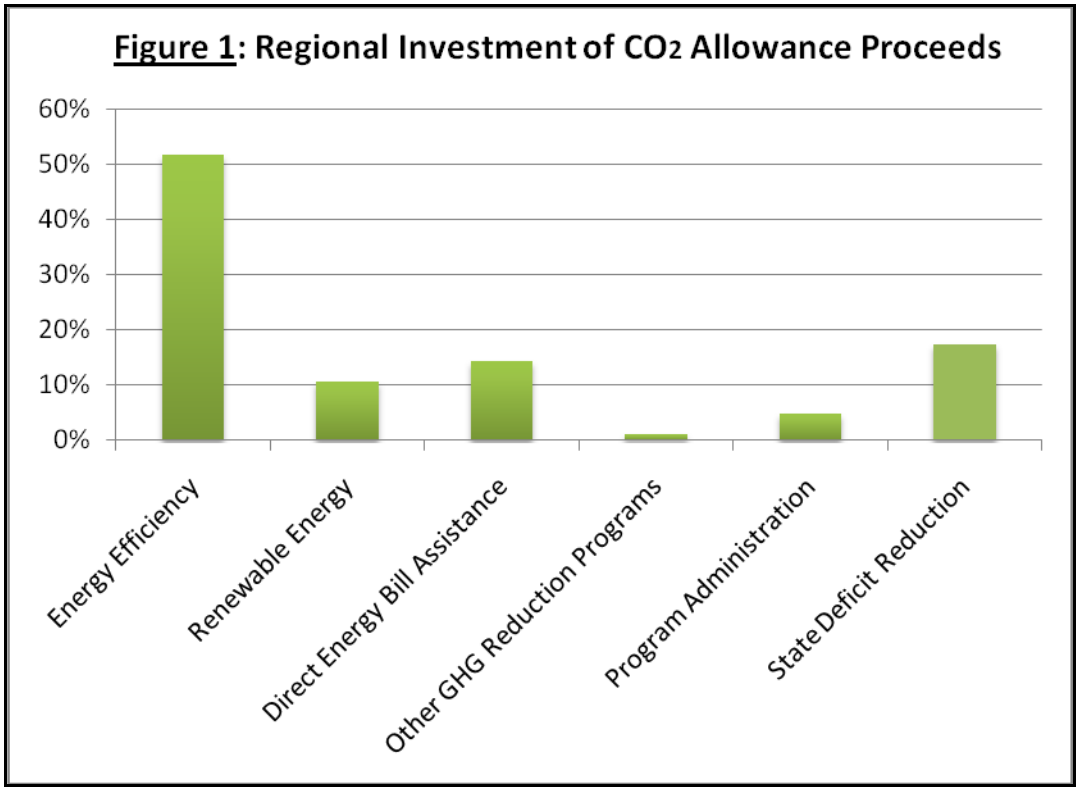
[xiv] As part of an emergency Deficit Reduction Plan enacted in 2009, $90 million of CO_2 allowance proceeds was diverted to the State General Fund. The percentage figure here accounts for the entire amount.

[xv] RGGI, Inc. operating costs through 2010 account for approximately 15 percent of the CO_2 allowance proceeds allocated to program administration (represented in this category) and approximately 0.7 percent of total regional CO_2 allowance proceeds through December 31, 2010.

While each state directs its own investment strategy, the following regional trends emerge:

- Overall, states are investing 52 percent of CO_2 allowance proceeds in energy efficiency programs;
- Overall states are investing 11 percent of CO_2 allowance proceeds in renewable energy programs;
- Regionally, states are investing 14 percent of CO_2 allowance proceeds in direct energy bill payment assistance programs, including assistance to low-income ratepayers;
- Regionally, states are investing 1 percent of CO_2 allowance proceeds in a wide variety of programs to promote research, development and deployment of other greenhouse gas emission reduction techniques and technologies;
- For five of ten states, investments in energy efficiency programs account for more than 85 percent of CO_2 allowance proceeds; and
- For seven of ten states, investments in energy efficiency and renewable energy programs account for more than 85 percent of CO_2 allowance proceeds.

Figure 1 shows the estimated portion of total regional CO_2 allowance proceeds (through December 31, 2010) invested in each program category by RGGI participating states.



Section 2: Energy Efficiency, Renewable Energy, and a Clean Energy Economy

Overall, the RGGI participating states are investing the vast majority of CO_2 allowance proceeds in programs to improve energy efficiency and accelerate the deployment of renewable energy technologies. These investments deliver triple benefits – to the environment, consumers, and the economy. Some of the benefits provided by RGGI state investments include:

	Environmental Gains		**Consumer Savings**			**Economic Benefits**			
	Reduced Emissions of GHGs	Improved Air Quality	Consumer Control over Energy Use & Costs	Reduced Electricity Demand & Lower Wholesale Prices	Reduced Need for New Power Generation Facilities	Increased Demand for Clean Energy Products & Services	New Jobs in Clean Energy Industries	Increased Investment in Emerging Businesses & Technologies	Positive Returns on Investment
Energy Efficiency	✓	✓	✓	✓	✓	✓	✓	✓	✓
Renewable Energy	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sections 2.1 and 2.2 below describe some of the energy efficiency and renewable energy programs funded with CO_2 allowance proceeds, and explain how these programs contribute to the benefits described above. Sections 2.3 and 2.4 describe energy bill assistance programs and other greenhouse gas reduction programs funded with CO_2 allowance proceeds.

2.1 Energy Efficiency

Energy efficiency is the most cost-effective tool for reducing greenhouse gas emissions in the near-term. It typically costs about 2.5 cents to save a kilowatt-hour of electricity though energy efficiency, and between 6 and 15 cents to generate a kilowatt-hour from conventional generation sources.[21] To harness the vast potential for cost-effective energy efficiency gains, the RGGI participating states are investing 52 percent of CO_2 allowance proceeds to improve energy efficiency in residential, commercial, industrial, institutional, and municipal sectors. Some of the many energy efficiency programs being funded with CO_2 allowance proceeds include:

- Home weatherization and retrofitting
- Incentives for energy-efficient appliances
- Energy efficiency retrofits for small businesses
- Educational programs for businesses and consumers
- Large-scale commercial and industrial energy efficiency projects, including combined heat and power
- Municipal clean energy projects
- Energy sector occupational training programs

Home Weatherization and Retrofitting

Home weatherization and retrofitting measures, including duct sealing, window replacements, and heating system repairs, typically reduce household heating energy needs by 15 to 30 percent while improving indoor air quality and overall comfort for occupants.[22] The same measures also reduce CO_2 emissions by an average of one metric ton of CO_2 per year per weatherized home.[23] All of the RGGI participating states are investing CO_2 allowance proceeds to weatherize homes, especially in low-income communities where homeowners and renters spend a disproportionate percentage of their income on energy. Programs funded with CO_2 allowance proceeds include:

New York – Green Jobs/Green New York (GJ/GNY): GJ/GNY is a statewide $112 million program to promote energy efficiency and the installation of clean energy technologies to reduce energy costs and greenhouse gas emissions. GJ/GNY provides approximately $20 million to support energy audits for an anticipated 100,000 households and small businesses. The program also offers approximately $50 million in financing options to support the implementation of many of these projects. It is estimated that all of the projects implemented using GJ/GNY audits and/or financing may result in 675,000 megawatt-hours in electricity savings, more than 25,000,000 MMBTU in thermal savings, and about $600 million in energy bill savings over the lifetime of the installed measures. In addition, GJ/GNY is designed to support sustainable community development and create green job opportunities. For instance, the program provides approximately $8 million in funds to support job training programs that will reach approximately 6,000 New York workers.[xvi]

Success Story: RGGI Funds Help Low-Income Family in Upstate New York Cut Energy Costs and Increase Comfort

EmPower New York is investing $3 million of RGGI proceeds to help 700 low income households save money while making their homes more comfortable. For example, in Watertown, N.Y., the program helped a family add attic insulation, seal doorways and install a programmable thermostat. The contractor, certified by the Building Performance Institute, reduced air leakage paths above 15 recessed lights, repaired the bathroom vent and vented the dryer to the outside. In addition, high efficiency lighting was funded through New York's System Benefits Charge. The family reports that the house is quieter and less drafty, and the program estimates that the household will save $670 a year in the cost of home heating oil, and $60 in electricity bills annually.

EmPower serves households with income below 60 percent of state median income and pays for 100 percent of the approved work scope.

Connecticut – Home Energy Solutions Program (HES): HES provides weatherization measures to help renters and homeowners, including those with limited incomes, reduce their energy costs. In 2010, these programs serviced over 34,000 customers, saving them a total of more than $10.4 million per year.[24] In 2010, CO_2 allowance proceeds accounted for approximately 7 percent of the total funding provided for this program.[25]

Massachusetts – Heating Emergency Assistance Retrofit Task Weatherization Assistance Program (HeartWAP): In 2009, the Massachusetts Department of Housing and Community Development (DHCD) deployed $4 million in CO_2 allowance proceeds to replace more than 1,300 heating system units in low-income households. DHCD estimates that the program reduced

[xvi] While a portion of the GJ/GNY projects are expected to access a GJ/GNY Loan, a significant number of participants may complete the installation of their energy-related improvements exclusively with alternative financial support.

household heating energy costs by 25 percent, equivalent to about $500 in energy savings per household per year.[26]

Incentives for Energy-Efficient Appliances

Replacing outdated household appliances, such as refrigerators, room air conditioners, water heaters, dishwashers, dehumidifiers, clothes washers, clothes driers, and lighting, with more energy-efficient models can result in significant energy savings. For example, by replacing a 20-year-old refrigerator with a new, energy-efficient model, consumers can reduce their annual electricity costs by about $80, while avoiding roughly one ton of CO_2 emissions per year.[27] Similarly, by replacing an incandescent light bulb with an ENERGY STAR-qualified compact fluorescent light (CFL), consumers can save $30 over the life of the bulb.[28] All of the RGGI participating states have in place programs to incentivize the purchase of energy-efficient appliances or lighting, and several (Connecticut, Delaware, Maryland, Maine, New Hampshire, and Rhode Island) are investing RGGI CO_2 allowance proceeds to expand these programs. Examples of programs funded with CO_2 allowance proceeds include:

Connecticut – Retail Products Program: Connecticut's Retail Products Program promotes the sale of discounted CFLs in many of Connecticut's grocery, pharmacy, home improvement and big box stores. In 2010, the program served more than 797,000 consumers, saving them a total of more than $37 million per year.[29] In 2010, approximately 7 percent of the program's funding was provided by Connecticut's investment of CO_2 allowance proceeds.[30]

Maine – Efficiency Maine Residential Lighting Program: Efficiency Maine's Residential Lighting Program works closely with lighting manufacturers and retailers to encourage them to produce and sell energy-efficient lighting products. In 2010, the program resulted in more than 303,000 megawatt-hours in annual electricity savings, and generated more than $5.70 in lifetime benefits for every $1.00 invested.[31] According to staff of Efficiency Maine, CO_2 allowance proceeds represented 55 percent of the program's total funding in 2010.

Rhode Island – ENERGY STAR Lighting and Products: Rhode Island is investing CO_2 allowance proceeds in a variety of appliance discount and rebate programs administered by National Grid. A program similar to those currently being funded by CO_2 allowance proceeds leveraged a National Grid Partnership with Sears to provide a $20 mark down on Energy-Star-certified room air conditioners. The program serviced more than 500 Rhode Islanders, saving them a collective total of more than $7,000 in energy bills annually.[32]

Delaware – Energize Delaware Appliance Rebate Program: The Sustainable Energy Utility's Energize Delaware Appliance Rebate Program provides rebates of up to $200 for the purchase of an ENERGY STAR-qualified clothes washer, dishwasher, room air conditioner, or gas water heater. Between September 2009 and September 2010, the program provided more than 15,900 rebates to Delaware consumers, saving them a collective total of more than $366,000 in energy bills annually. [33] According to program administrators at the Sustainable Energy Utility, CO_2 allowance proceeds represented approximately 40 percent of the program's total funding.

Energy Efficiency Retrofits in Small Businesses

Several of the RGGI participating states are investing CO_2 allowance proceeds to provide technical and financial assistance to help small businesses reduce their energy budgets through energy efficiency. Examples of programs funded with CO_2 allowance proceeds include:

New Hampshire – Business Energy Conservation Revolving Loan Fund: In 2009, New Hampshire invested $2 million of its CO_2 allowance proceeds to establish an energy conservation revolving loan fund administered by the Business Finance Authority. Through July 2010, a total of $650,000 in loans has been approved for three recipients, which together employ nearly 660 people in high-wage manufacturing jobs.[34] The loans, which would not have been funded through other lending institutions, are helping New Hampshire businesses lower energy expenses and improve their competitiveness. Loan repayments are being reinvested in the fund to help additional businesses finance energy improvements.

Success Story: RGGI Funds Help New Hampshire Rehabilitation Center Save Energy

Crotched Mountain Rehabilitation Center, a charitable organization that provides education, rehabilitation and residential support services, is realizing significant energy savings with help from New Hampshire's investment of CO_2 allowance proceeds. Using a $176,500 grant funded by CO_2 allowance proceeds, the center connected one of its buildings to a state-of-the art central district heating system that uses wood chips harvested locally from New Hampshire forests. As a result of the project, the building now requires the equivalent of 6,000 gallons of heating oil per year, down from 25,000 gallons prior to the retrofit.

"Our residents now enjoy comfortable, regulated heat, from an efficient system fueled by wood from a nearby family-run business" said Ray Sebold, project manager at Crotched Mountain. "As the largest employer in the area, with more than 800 employees, keeping our costs low is a top priority. The RGGI grant is enabling us to save resources, cut costs, and support a local business with sustainable fuel purchases."

The project was funded by $176,500 in CO_2 allowance proceeds.

Connecticut – Small Business Energy Advantage Program (SBEA): SBEA provides small business owners with the means to reduce their energy budgets. In 2010, SBEA's authorized contractors conducted energy assessments and provided energy-efficient upgrades to nearly 1,900 businesses. The upgrades are saving participating businesses more than $5.8 million annually, while avoiding nearly 18,000 tons of CO_2 emissions per year.[35]

Success Story: RGGI Funds Help Connecticut Restaurant Improve Energy Efficiency

Chick's Drive-In, a landmark restaurant in West Haven, Connecticut, was just one of nearly 1,900 small businesses to benefit from SBEA in 2010. Through SBEA, the restaurant received financial incentives for the purchase and installation of more efficient lighting and refrigeration equipment. As a result, the owner Joseph "Chick" Celentano is now saving hundreds of dollars on his electricity bill each month. The eatery will save 468,000 kilowatt-hours of electricity—the equivalent of planting 56 acres of trees or saving more than 17,000 gallons of gas—over the lifetime of the new equipment.

In 2010, CO_2 allowance proceeds represented about 7 percent of SBEA's total funding.

Maine – Efficiency Maine Business Incentive Program: The Efficiency Maine Business Incentive Program provides cash incentives and free, independent technical advice to help businesses save energy. In 2010, the program completed 1,656 projects for 1,029 companies. Participating businesses will save more than $50 million in electric bills over the lifetime of their new equipment.[36] According to staff of Efficiency Maine, CO_2 allowance proceeds represented 50 percent of the program's total funding in 2010.

Educational Programs for Businesses and Consumers

Increasing awareness of both the opportunities for energy efficiency as well technical and financial resources available to consumers can lead to measurable energy and cost savings. An evaluation of New York's Consumer Education Program for Residential Energy Efficiency showed that more than two-thirds of people who participated in the program in 2006 implemented recommended practices.[37] Those who implemented the practices reduced their home energy bills by an average of approximately $400 annually and avoided nearly 2.5 metric tons of CO_2 emissions per year.[38] Many of the RGGI participating states are investing CO_2 allowance proceeds in similar programs to educate consumers and help them realize cost-effective energy efficiency improvements. Examples of programs funded with CO_2 allowance proceeds include:

Vermont – Vermont Community Energy Mobilization (VCEM) Project: Vermont is investing CO_2 allowance proceeds to engage local town energy committees and other groups to organize and train volunteers to undertake door-to-door visits in their communities. In 2009 and 2010, more than 500 volunteers visited approximately 1,100 homes to install simple energy-saving measures and teach homeowners about larger opportunities for energy efficiency improvements. Over the first two years of the program, the installed measures saved an estimated total of 590,000 kilowatt-hours of electricity and 1,750 MMBTU of heating energy.[39]

Success Story: Residents of Manchester, Vermont Reap Benefits of RGGI-Funded Energy Efficiency Program

As a result of energy efficiency measures installed through the Vermont Community Energy Mobilization (VCEM) Project, participating residents in Manchester, Vermont, are now saving a collective total of more than $5,000 per year, based on average residential electricity rates. Manchester's efforts brought 34 Efficiency Vermont-trained volunteers into a total of 48 homes in Manchester, Dorset and Peru to identify potential energy-saving retrofits, install energy-efficient products, and educate residents about ways to further reduce energy costs.

"A great component of this project is that it truly reflects Vermont's state ethos of neighbors helping neighbors," said VCEM statewide coordinator, Paul Markowitz.

According to Efficiency Vermont, CO_2 allowance proceeds currently represent approximately 25 percent of VCEM's total funding.

The home energy visits also incited participants to implement additional energy efficiency measures beyond those provided through the program. In a follow-up survey conducted in 2009, approximately 62 percent of participants said that they had already taken additional steps to improve energy efficiency in their homes, while 72 percent said that they planned to take additional steps to improve efficiency as a result of the home energy visit.[40]

Maryland – General Awareness Campaign: Based on the EmPOWER Maryland 15 percent energy efficiency goals, the General Awareness Campaign provided 15 tips for saving money and energy and guided consumers through the process of implementing home energy efficiency improvements. Between fiscal year 2009 and fiscal year 2010, the Maryland Energy Administration's (MEA's) website traffic increased by more than 34 percent. During the same period, MEA's newsletter increased its reach to more than 3,600 opt-in subscribers each month, up from 2,300 in fiscal year 2009. The campaign was funded in part by $1.6 million of Maryland's CO_2 allowance proceeds. [41]

Large-Scale Commercial and Industrial Energy Efficiency Projects

Commercial and industrial operations represent significant potential for energy efficiency gains. Together, the sectors account for 50 percent of national energy use[42] and about 65 percent of national cost-effective energy efficiency potential.[43] Many of the RGGI participating states are investing CO_2 allowance proceeds to improve energy efficiency in large-scale commercial and industrial settings. Maine and New Jersey are each investing a significant portion of CO_2 allowance proceeds to provide loans and grants for process improvements and combined heat and power (CHP) systems in these sectors. Examples of programs funded with CO_2 allowance proceeds include:

Maine – Large Projects Grant Program: Maine has invested $7.1 million of its CO_2 allowance proceeds to provide grants ranging from $100,000 to $1 million for large-scale commercial and industrial energy efficiency projects. Through December 2010, a total of 36 grants were awarded, 19 of which were funded with CO_2 allowance proceeds. Those 19 projects are expected to save 533,876 megawatt-hours of grid electricity over the lifetime of the projects, preventing the emission of 506,861 tons of CO_2. Awarded projects range from installing variable-speed drives, to heat recovery and CHP systems.[44]

Success Story: RGGI Funds Help Waldo County's Largest Industrial Manufacturer Reduce Energy Costs

With the help of a $314,000 grant from Efficiency Maine, GAC Chemical in Searsport, Maine, is implementing a variety of innovative measures to recycle steam from the manufacturing process to heat water. Together the measures are projected to:

- Save 275,000 gallons of #6 fuel oil over their lifetime, enough to heat 247 homes for a year
- Save 223,861 kWh of electricity over their lifetime, enough to power 35 homes for a year

GAC Chemical is the largest industrial manufacturer in Waldo County, employing 60 people. The project will help keep these jobs in Waldo County and make GAC more competitive with companies outside the state.

GAC Chemical is just one of 19 companies to receive a RGGI-funded grant for large-scale efficiency retrofits from Efficiency Maine.

New Jersey – Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program: Through 2010, New Jersey has allocated $36.8 million of its CO_2 allowance proceeds to provide zero-interest loans and grants for large-scale energy efficiency and renewable energy projects. Through 2010, 12 projects have received a total of $29.6 million in grants or loans funded by CO_2 allowance proceeds for CHP systems and commercial-scale solar electric systems. The CHP and solar-electric systems represent 29.6 megawatts of new, clean generation capacity. These projects are projected to generate more than 167,000 megawatt-hours of electricity per year, enough to meet the equivalent annual electricity needs of more than 19,600 typical New Jersey households, and are projected to avoid 84,000 tons of CO_2 emissions per year and 1.7 million tons of CO_2 emissions over the lifetime of the projects.[45] CESCI is funded exclusively by New Jersey's investment of CO_2 allowance proceeds.

Municipal Clean Energy Programs

Energy efficiency improvements in public buildings and facilities can generate significant energy cost savings for local governments, freeing up funds for important public services. All of the RGGI participating states have in place programs to assist local governments with energy efficiency measures, and several (Connecticut, Maryland, Massachusetts, New Hampshire, New Jersey, and New York) are investing CO_2 allowance proceeds to expand their efforts. Examples of programs funded with CO_2 allowance proceeds include:

Massachusetts – Green Communities Program: Nearly 150 cities and towns have qualified to receive free technical assistance as they strive to qualify for grants for municipal energy efficiency and renewable energy projects through the Green Communities Program. Through the program, contractors are providing more than $1.62 million in energy consulting services to help cities and towns meet five criteria required to receive designation as "Green Communities." Municipalities that meet the five criteria are then eligible for grants to expand municipal renewable energy and energy efficiency programs. Grants are funded exclusively by CO_2 allowance proceeds. As of December 16, 2010, 35 municipalities had received grants totaling $8.1 million. Another 18 communities that recently met eligibility requirements for Green Communities grants will share an additional $4 million in grants this winter, and a subsequent $4 million grant round will take place during the spring and summer of 2011.[46]

Success Story: RGGI Funds Improve Working Conditions for City Employees in Athol, Massachusetts

Eighty years after its construction, the Town Hall in Athol, Massachusetts, had become an uncomfortable place for its 29 employees. "The town clerk's office was so cold that we put plastic up inside the window," David Ames, Athol's town manager, said in a November interview with *Governing Magazine*. But when Ames looked into replacing the old single-pane windows, the total cost ($100,000) prevented the project from moving forward.

In 2010, all that changed when Athol received a $98,000 grant from the Massachusetts Department of Energy Resources for new Energy Star-certified windows. The grants, made possible by the Green Communities Program, are enabling Athol to realize significant energy bill savings while improving working conditions for its employees.

The Green Communities Program is funded exclusively by CO_2 allowance proceeds.

New Hampshire – EnergySmart Schools Program: New Hampshire has invested $500,000 in CO_2 allowance proceeds to provide energy benchmarking services to New Hampshire's K-12 schools. Each school will receive a report that documents energy use, costs, and CO_2 emissions for each building, and provides recommendations for immediate strategies to improve energy efficiency. As of July 2010, 62 schools have been provided with benchmarking reports.[47]

New York – Climate Smart Communities Program: New York has allocated $1.7 million in CO_2 allowance proceeds to connect local governments with regional planning boards, Municipal Planning Organizations (MPOs), and other consortia that can provide senior staff, technical platforms, and best practices to help local governments develop greenhouse gas inventories and commit to aggressive, achievable greenhouse gas emissions reduction targets. [48] More than $100 million are available through other New York funding sources to help communities implement identified efficiency and renewable energy measures. The Climate Smart Communities Program is funded exclusively by CO_2 allowance proceeds.

Energy Sector Occupational Training Programs

Investments in energy efficiency and renewable energy drive demand for new products and services and stimulate the economy with energy bill savings, thereby creating jobs. A 2010 analysis by Environment Northeast estimates that energy efficiency programs funded with CO_2 allowance proceeds through December 2010 will create nearly 18,000 job years – that is, the equivalent of 18,000 full-time jobs that last one year.[49] Employment benefits result from state program investments and from the reinvestment of consumer energy bill savings in the wider economy. While there has not yet been a similar analysis of RGGI-funded renewable energy programs, data from the Renewable Energy Policy Project shows every $1 million invested in renewable energy systems creates about six full-time manufacturing jobs, as well as additional jobs in construction and facility maintenance.[50]

To ensure people have the training and certification they need to take advantage of emerging opportunities, the RGGI participating states are partnering with a variety of organizations, including electric utilities, trade associations, and community colleges, to train and certify workers to fill entry-level and advanced jobs in clean energy industries. Programs implemented from Maine to Maryland are engaging third parties to train new building energy analysts, heating energy technicians, energy auditors, and green building architects. Programs funded with CO_2 allowance proceeds include:

New Hampshire – Building Analyst Course through Lakes Region Community College: In 2009, New Hampshire invested $174,000 of its CO_2 allowance proceeds to establish a new certification program for building analysts through Lakes Region Community College (LRCC) and at five other locations around the state.[51] Scholarships equal to up to 50 percent of program's tuition are available, and graduates emerge as Building Performance Institute (BPI)-certified energy auditors. Between late 2009 and December 2010, LRCC conducted 13 energy-auditor trainings, reaching more than 170 professionals from across New Hampshire.[52]

Participants are reporting significant benefits as a result of the program. In a survey conducted among recent graduates, 38 percent said they were better able to perform existing job duties as a result of the program; 9 percent said they had become employed in the energy field; and 10 percent said they had started a new energy business.[53]

Success Story: RGGI-Funded Job Certification Program Gives Rise to New Business

One company to emerge from a new training program for building analysts at Lakes Region Community College (LRCC) is NHNRG, a full-service energy auditing and building performance contractor. The company was founded by Shad Lawton and Jamie Myers, both students in the October 2009 Littleton class. After completing the course, Lawton and Myers decided to found NHNRG in Lisbon, New Hampshire. As a company, they have conducted more than 140 energy audits and performed more than 80 building retrofits.

"I really enjoyed the course," said Mr. Lawton. "I had wanted to get certified for a while, but the cost and distance to the closest course were preventative for me. Then LRCC advertised the BPI BA course with the discounted tuition and it was a no brainer."

"The key components of the audits that we are now doing every day are taught in the Building Analyst course," he added. "We had a very busy year in 2010, but there is enough housing stock in the North Country alone to keep several companies busy for years to come."

The BPI certification program at LRCC was funded by an initial grant of $174,000 in CO_2 allowance proceeds in 2009 and an additional grant of $400,000 in CO_2 allowance proceeds in 2010.

Maryland – Home Energy Retrofit and Weatherization Workforce Training Program: Through June 30, 2010, Maryland invested $1.37 million of its CO_2 allowance proceeds to expand the Home Energy Retrofit and Weatherization Workforce Training Program, which offers a "one-stop" training source for any energy retrofit career path, including careers with local weatherization agencies and with Maryland's utility providers. Through June 30, 2010, the program provided energy efficiency-related job training to more than 900 individuals and businesses across the state.[54]

Massachusetts – Energy Efficiency Skills and Innovation Initiative: Massachusetts has invested $1.9 million of its CO_2 allowance proceeds in the Energy Efficiency Skills and Innovation Initiative. Under the Initiative, Springfield Technical Community College (STCC) was awarded a three-year $1.87 million contract to coordinate energy efficiency workforce training programs across the state. STCC is serving as a statewide clearinghouse for energy efficiency training activities and services, and is coordinating job training at community colleges across the state.

New York – Workforce Development Programs: New York has committed $8 million in CO_2 allowance proceeds to greatly expand the workforce training infrastructure needed to prepare workers to design, implement, and maintain energy efficiency projects. Funds are used to provide apprenticeship and internship incentives to employers and training institutions, expand existing training centers, fund basic skill initiatives, provide funding for training equipment, and improve field testing and certification processes to help increase the number of qualified workers. The funds are projected to support training programs that will reach approximately 6,000 workers.

2.2 Renewable Energy Programs

Harnessing the power of renewable energy sources, such as solar, wind, and geothermal, is central to developing a clean energy economy. However, renewable energy generation projects often confront market barriers associated with higher upfront costs and access to capital. To overcome these barriers, the RGGI participating states are investing 11 percent of CO_2 allowance proceeds to support the deployment of renewable energy technologies. The vast majority of the programs provide grants and low- or no-interest loans for on-site renewable energy generation systems on homes, businesses, and public buildings, and in commercial and industrial settings.

On-Site Renewable Energy Generation

On-site renewable energy generation systems, such as solar, geothermal, and wind, have several unique benefits compared to conventional large-scale power plants. By generating clean, renewable electricity at the point of use, renewable energy generation systems reduce demand for conventional grid electricity, depressing wholesale electricity prices and improving overall electric system reliability. These investments also reduce CO_2 emissions and, in some cases, generate excess power that consumers can sell back to the grid for a profit. Examples of programs funded with CO_2 allowance proceeds include:

New York – Statewide Photovoltaic Program: Through October 2010, New York has committed $12 million of its CO_2 allowance proceeds to support end-use solar installations for commercial, industrial, and residential customers, as well as electric utility applications. The program, which includes targeted financial incentives, is designed to help establish a sustainable market for solar energy throughout New York. The program is also designed to improve the performance of distribution circuits and reduce peak electric load in critical load pockets. Through October 2010, the program has supported the installation of 383 solar photovoltaic systems with a total capacity of approximately 3,710 kilowatts. It is estimated that these systems will produce 4,371 megawatt-hours of electricity annually.[55]

Success Story: Developer Invests in Solar Panels to Cut Electricity Costs for Medical Group in New York

Benerofe Properties, a third-generation family real estate business with properties in the Eastern United States, has installed 308 solar modules on the rooftop of its property in Harrison, N.Y., to help its tenant, WestMed Medical Group, cut electricity costs. The 80 kilowatt system is expected to produce approximately 93,000 kilowatt-hours of electricity each year, reducing the building's carbon footprint by 960 tons of CO_2 over the lifetime of the system. Mercury Solar, the qualified PV installer, estimates that WestMed Medical Group will save approximately $14,000 in electricity costs each year. WestMed Medical Group is a Westchester County-based medical group that has been helping the community since 1996.

New York supported this project with $200,000 in CO_2 allowance proceeds.

Connecticut – On-Site Distributed Generation Program: Through October 2010, Connecticut has approved the use of $4.7 million of its CO_2 allowance proceeds for municipal renewable energy projects through the On-Site Distributed Generation Program administered by the Connecticut Clean Energy Fund. The allocation funds solar photovoltaic energy systems on municipal buildings. Between November 2009 and October 2010, 22 projects were approved, 15 on schools and seven on town buildings, with a total capacity of 1,236 kilowatts It is estimated that these systems will produce 1,456 megawatt-hours of electricity annually.[56]

Maryland – Residential Renewable Energy Grant Program: Through June 30, 2010, Maryland invested $3.4 million of its CO_2 allowance proceeds to provide grants for the installation of solar, wind and geothermal electricity and hot water systems in homes and small businesses. Through July 2010, more than 820 Marylanders received grants for renewable energy systems. Together, the projects are estimated to generate and save more than 4,000 megawatt-hours of electricity annually.[57]

Success Story: Solar Energy Grants Help Maryland Couple Reduce Power Bill by 33%

Frank and Lois Bohdal are among more than 820 Marylanders who received grants to help them install home solar, wind or geothermal energy systems. Bohdal, a computer programmer with the state comptroller's office, has blanketed the south-facing roof of the couple's Millersville rancher with 40 solar panels. The panels cost a total of $55,000, but Maryland helped cover their installation with nearly $14,000 in grants. The electricity the Bohdal's solar system generates has reduced the couple's power bill by nearly a third.

Maryland's Residential Renewable Energy Grant Program was funded by $3.4 million in CO_2 allowance proceeds in fiscal years 2009 and 2010.

New Jersey – Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program: Through 2010, New Jersey has allocated $36.8 million of its CO_2 allowance proceeds to provide zero-interest loans and grants for large-scale energy efficiency and renewable energy projects. Through 2010, 12 projects have received a total of $29.6 million in grants or loans funded by CO_2 allowance proceeds for CHP systems and commercial-scale solar electric systems. The CHP and solar-electric systems represent 29.6 megawatts of new, clean generation capacity. These projects are projected to generate more than 167,000 megawatt-hours of electricity per year, enough to meet the equivalent annual electricity needs of more than 19,600 typical New Jersey households, and are projected to avoid 84,000 tons of CO_2 emissions per year and 1.7 million tons of CO_2 emissions over the lifetime of the projects.[58] CESCI is funded exclusively by New Jersey's investment of CO_2 allowance proceeds.

2.3 Direct Energy Bill Assistance Programs

Direct energy bill payment assistance programs, such as the federal Low-Income Heating Energy Assistance Program (LIHEAP) and state Universal Service Funds, provide essential lifelines to many low-income residents in the Northeast and Mid-Atlantic regions. Regionally, the RGGI participating states are investing 14 percent of CO_2 allowance proceeds to supplement existing funds, helping to deliver benefits to the greatest possible number of qualifying consumers. In particular, Delaware, Maryland, and New Jersey are using CO_2 allowance proceeds for these purposes. Other states, including Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont, are investing CO_2 allowance proceeds to help reduce consumer energy costs through weatherization programs. Examples of programs funded with CO_2 allowance proceeds include:

Maryland – Electric Universal Service Program (EUSP): Through June 30, 2010, Maryland invested $45.4 million of its CO_2 allowance proceeds to provide electric bill payment assistance to low-income consumers across the state. Funds are invested to provide Bill Payment Assistance and Arrearage Retirement Assistance benefits to low-income eligible households through the Electric Universal Service Program (EUSP). Bill Payment Assistance benefits are based upon electric usage and household income with a portion of electric bills being paid by the benefit. Arrearage Retirement Assistance benefits, available once every seven years per applicant, are used to retire energy bills up to a maximum of $2,000. In fiscal years 2009 and 2010, CO_2 allowance proceeds provided more than 35,000 households with benefits totaling $45.4 million. All benefits were paid directly to utilities on behalf of program applicant.[59]

Delaware – Delaware Energy Assistance Program (DEAP): Delaware is investing CO_2 allowance proceeds to support the Delaware Energy Assistance Program (DEAP). DEAP is administered on a contractual basis with Catholic Charities, Inc. DEAP programs include: the Low-Income Heating Assistance Program (LIHEAP), which provides discounted heating fuel to qualifying low-income consumers; Summer Cooling Assistance Program (SCAP), which provides electricity bill assistance, as well as free or discounted air conditioning units, to income-eligible households during the summer months; and a Crisis Assistance program to provide supplemental grants to low-income residents who are unable to pay their energy bills and are facing service cutoffs during the winter months.

2.4 Other Greenhouse Gas Reduction Programs

The RGGI participating states are investing one percent of CO_2 allowance proceeds in a wide variety of programs to promote research, development, and deployment (RD&D) of carbon emission abatement technologies, adaptation measures, and carbon sequestration (terrestrial and geologic). Five states are investing proceeds in this program area: Connecticut, Delaware, Maine, New Jersey, and New York. Programs vary significantly from state to state, and are typically designed to build upon a particular state's existing partnerships and RD&D programs. Examples of programs funded with CO_2 allowance proceeds include:

New York – Advanced Power Delivery Program:
New York's Advanced Power Delivery program is led by the New York Smart Grid Consortium, a group consisting of utilities, the New York Independent System Operator (NYISO), New York State agencies and authorities, and industry representatives. The program will provide targeted grants for specific technology areas, including but not limited to: energy storage, distribution automation, advanced metering, dynamic pricing, and reactive power management to reduce electric system losses**.**

Maine – Forestry Offset Research:
Maine is investing up to $100,000 of its annual CO_2 allowance proceeds in terrestrial carbon sequestration projects. These projects build on Maine's standing expertise in forest management and its innovative work on the development of new offset project categories and methodologies.

Section 3: Driving Policy Innovation

Innovative elements of RGGI's design are influencing the development of other cap-and trade programs, such as the Western Climate Initiative and the European Union Emissions Trading System. Two key design elements – CO_2 allowance auctions and reinvestment of proceeds in strategic energy programs – have demonstrated how market-based programs can harness the value of a CO_2 emission cap to deliver emission reductions at low cost.

In particular, the investment of CO_2 allowance proceeds in energy efficiency and renewable energy within the electricity sector reduces the demand for fossil-fuel generated electricity, which reduces CO_2 emissions and the demand for CO_2 allowances. The result is lower CO_2 allowance prices and lower program impacts on wholesale electricity prices.[xvii] When considering the overall consumer benefits provided through energy efficiency and renewable energy programs — in the form of energy bill savings, demand-induced reductions in wholesale electricity prices, improved electric system reliability, and job creation—economic benefits are expected to outweigh the minimal impact of the RGGI cap-and-trade program on electricity prices.[xviii]

[xvii] On average, in 2009, the cost of CO_2 allowances accounted for 0.4 percent to 1 percent of average residential electricity bills, depending on the state (based on actual or estimated CO_2 component of ISO wholesale electricity prices, state residential retail electricity prices, EIA residential electricity usage data, and a 2009 average CO_2 allowance spot price of $3.06). Based on typical household electricity usage, this translates into a weighted average of 73 cents per month for residential consumers across the 10-state RGGI region.

[xviii] Building on data issued by the RGGI participating states, a number of economic, energy, and regulatory policy analysts are working to evaluate the benefits of investments in the electricity sector. See: Derek Murrow and Peter Shattuck, *Economy-Wide Benefits of RGGI: Economic Growth through Energy Efficiency,* Environment Northeast, December 2010; Bruce Biewald, Max Chang, Lucy Johnston and David White, *Electricity Energy Efficiency Benefits of RGGI Proceeds: An Initial Analysis*, Synapse Economics, October 5, 2010.

Section 4: Summaries of State Investment Plans

This section provides a summary of each RGGI participating state's plan for the investment of CO_2 allowance proceeds in consumer benefit programs. Each summary contains a table showing how the state's investments have been apportioned among the following program categories for comparison across the 10-state RGGI region: energy efficiency, renewable energy, direct energy bill assistance, other greenhouse gas emission reduction programs, and program administration.

Where a state's investments encompass more than one program category, the administering state agency was consulted to define a valid ratio for apportionment among relevant program categories. Those ratios are based on a state's investment plan, current project proposals, current program results, and/or policy guidance from the administering state agency.

4.1 Connecticut

Connecticut is using the vast majority of CO_2 allowance proceeds to expand existing energy efficiency and renewable energy programs overseen by the Energy Conservation Management Board (ECMB) and the Connecticut Clean Energy Fund (CCEF). In addition, the state is using a small portion of proceeds to support program administration and additional climate programs overseen by the Connecticut Department of Environmental Protection (DEP).

Investment Plan: Summary and Categorization

Proceeds from the sale of CO_2 allowances are invested according to the state's CO_2 Budget Trading Program regulations: Section 22a-174-31: Control of Carbon Dioxide Emissions/CO_2 Budget Trading Program (Section 22a-174-31).

Table 1 summarizes the investments specified in Section 22a-174-31 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Section 22a-174-31

State Program	Percent Allocated in State Plan	Regional Program Category
Energy Conservation Management Board Energy Efficiency Programs	69.5%	Energy Efficiency (100%)
Connecticut Clean Energy Fund Renewable Energy Programs	23%	Renewable Energy (100%)
Additional Climate Programs and Program Administration	7.5%	Other GHG Reduction Programs (60%) Program Administration (40%)

Program Descriptions

ECMB Energy Efficiency Programs

The ECMB is an appointed group of 14 members who advise the state's three electric distribution companies – Connecticut Light and Power Company (CL&P), United Illuminating Company (UI), and the Connecticut Municipal Electric Energy Cooperative (CMEEC) – in the development and implementation of cost-effective energy efficiency programs. Between 2008 and 2009, electric and natural gas energy efficiency programs overseen by the ECMB have been shown to produce system benefits of between $3.00 and $4.00 for every $1.00 invested.[60] Historically, programs overseen by the ECMB were funded exclusively through the Systems Benefit Charge. Today, those programs are supported through the SBC, CO_2 allowance proceeds, the Forward Capacity Market and the sale of Renewable Energy Credits. In 2010, CO_2 allowance proceeds accounted for about 7 percent of the total funding for ECMB programs.

The ECMB's current energy efficiency programs are concentrated in four areas: residential energy efficiency; public education and outreach; commercial and industrial process improvement; and workforce development. Programs are designed to provide energy savings to consumers, businesses and municipalities, while supporting growth of clean energy industries in Connecticut. According to a 2009 study by Navigant Consulting, 2,675 Connecticut jobs are currently directly attributed to energy efficiency.[61] These jobs create $137 million of employment income, at an average of $50,000 per year across all industry segments (residential, small business, commercial and industrial).[62] Another 4,280 "induced" jobs are attributable to energy efficiency, as consumers and businesses spend and invest the money they would otherwise have spent on energy.[63]

In addition to supporting the growth of emerging clean energy industries in Connecticut, a significant portion of the ECMB's energy efficiency programs are tailored to benefit low-income consumers, for whom the immediate benefits of lower energy costs are greatest. In 2010, the ECMB's low-income

auditing, weatherization and retrofitting programs provided a total of more than $6.1 million dollars in annual energy savings to participating consumers.[64]

CCEF Renewable Energy Programs

The CCEF was created by the Connecticut Legislature to promote, develop, and invest in clean energy sources for the benefit of Connecticut consumers. Since its inception in 2000, the CCEF has provided over $100 million for the installation of more than 1,000 clean energy systems, including fuel cell, solar photovoltaic, biomass, wind, landfill gas, and advanced hydro, across 88 percent of all Connecticut towns.[65]

CCEF programs are concentrated in three areas: community education and goal setting, grants for on-site renewable energy installations and power generation, and large-scale renewable energy generation capacity development. At this time, the CCEF is using CO_2 allowance proceeds to fund initiatives in the second category – specifically, to fund installations of solar PV systems on government and non-profit buildings. Between November 2009 and October 2010, 22 projects were approved, 15 on schools and seven on town buildings, with a total capacity of 1,236 kilowatts It is estimated that these systems will produce 1,456 megawatt-hours of electricity annually.[66]

Administration and Additional Climate Change Programs

The Connecticut Department of Environmental Protection (DEP) has reserved 7.5 percent of the state's CO_2 allowance proceeds to support assessment and design of additional measures to reduce greenhouse gas emissions and mitigate the impacts of climate change. Funds in this category may also be used for reasonable administrative costs associated with the implementation of Connecticut's CO_2 Budget Trading Program and costs incurred by state agencies associated with the adoption of regulations plans and policies. Through December 2010, it is estimated that approximately 3 percent of Connecticut's total proceeds have been allocated to administration.

4.2 Delaware

Delaware is investing the vast majority of CO_2 allowance proceeds in innovative energy efficiency and renewable energy programs administered by the Sustainable Energy Utility (SEU). The state is also investing proceeds to expand existing low-income energy assistance programs and to provide competitive grants for greenhouse gas emission reduction projects. A small portion of proceeds is invested in program administration, implementation, and monitoring, as well as additional multi-sector climate change programs.

Investment Plan: Summary and Categorization

Proceeds from the sale of CO_2 allowances are allocated according to Senate Bill No. 263: An Act to Amend Title 7 of the Delaware Code Relating to a Regional Greenhouse Gas Initiative and CO_2 Emission Trading Program (Senate Bill No. 263).

Table 1 summarizes the investments specified in Senate Bill No. 263 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Senate Bill No. 263

State Program	Percent Allocated in State Plan	Regional Program Category
Sustainable Energy Utility: Conservation, Energy Efficiency, and Renewable Energy Programs	65%	Energy Efficiency (75%) Renewable Energy (25%)
Weatherization Assistance Program (WAP)	10%	Energy Efficiency (100%)
Low-Income Heating Energy Assistance Program (LIHEAP)	5%	Direct Energy Bill Assistance (100%)
Competitive Grants for Greenhouse Gas Emission Reduction Projects	10%	Energy Efficiency (60%) Renewable Energy (20%) Other GHG Reduction Programs (20%)
Administration, Implementation, Monitoring and Additional Multi-Sector Climate Change Programs	10%	Other GHG Reduction Programs (50%) Program Administration (50%)

Program Descriptions

Sustainable Energy Utility: Conservation, Energy Efficiency, and Renewable Energy Programs

The SEU is a public/private partnership established to help residents, businesses, and industries use less energy and generate energy cleanly. Programs are designed to provide maximum net benefits to households, small businesses, and local governments, and to create incentives for inventors and entrepreneurs to bring renewable and energy-efficient innovations to the marketplace.

SEU programs include initiatives to provide: consumer rebates for ENERGY STAR-approved refrigerators, freezers, washing machines, dehumidifiers, and compact fluorescent lighting; subsidized energy auditing and weatherization services for Delaware residents; incentives for energy-efficient new construction; grants and loans for large-scale commercial and industrial energy efficiency retrofits; and innovative funding techniques for large-scale renewable energy installations.

Low-Income Fuel and Weatherization Assistance

CO_2 allowance proceeds dedicated to this program area support the Weatherization Assistance Program (WAP) and the Delaware Energy Assistance Program (DEAP). Both programs are designed to reduce energy costs for consumers with incomes equal to or lower than 200 percent of the federal poverty level.

Weatherization Assistance Program (WAP)
WAP is administered under contracts with Neighborhood House, Inc., which operates weatherization programs in New Castle County, and First State Community Action Agency, which operates programs in Kent and Sussex Counties. Each agency subcontracts with private construction and heating contractors to install energy efficiency measures, including, air sealing, insulation, window and door replacement, and furnace repair and replacement.

Delaware Energy Assistance Program (DEAP)
DEAP is administered on a contractual basis with Catholic Charities, Inc. DEAP programs include the Low-Income Heating Assistance Program (LIHEAP) and Summer Cooling Assistance Program (SCAP), both of which provide energy bill payment assistance to low-income ratepayers. DEAP programs also include a Crisis Assistance program to provide supplemental grants to low-income residents who are unable to pay their energy bills or are facing service cutoffs during the winter months.

Competitive Grants for Greenhouse Gas Emission Reduction Projects
CO_2 allowance proceeds dedicated to this program area are invested to provide grants for energy efficiency, renewable energy, sustainable land use, and other projects to reduce greenhouse gas emissions. Grants are awarded by the Delaware Department of Natural Resources and Environmental Control (DNREC) through a competitive selection process. Through December 2010, 31 projects have received a total $1.3 million in grants. Projects include 11 energy efficiency and green building projects, six renewable and clean energy installations, six sustainable land use projects, five education and outreach programs, and three other projects to reduce greenhouse gas emissions.

Administration, Implementation, Monitoring and Additional Climate Change Projects
The DNREC has reserved ten percent of CO_2 allowance proceeds to support assessment and design of additional multi-sector climate change programs and to cover reasonable administrative costs associated with the administration, implementation, and monitoring of Delaware's CO_2 Budget Trading Program and related consumer benefit programs.

4.3 Maine

Maine is investing the vast majority of CO_2 allowance proceeds to support residential and commercial energy efficiency programs, and to provide grants for large-scale industrial energy efficiency and conservation projects. The Maine Department of Environmental Protection (DEP) and Efficiency Maine are also using a small portion of proceeds to support program administration, as well as additional carbon offsets research.

Investment Plan: Summary and Categorization

Proceeds from the sale of CO_2 allowances are allocated according to Title 35-A §10009: Regional Greenhouse Gas Initiative Trust Fund (Title 35-A §10009), which establishes the Maine Energy and Carbon Savings Trust (Trust) and directs trustees to invest proceeds as summarized in Table 1.

Table 1 summarizes the investments specified in Title 35-A 10009 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Title 35-A §10009

State Program	Percent Allocated in State Plan	Regional Program Category
Electric Energy Efficiency Programs	85%	Energy Efficiency (100%)
Fossil Fuel Efficiency Programs	15%	Energy Efficiency (100%)
Carbon Offset Research	Up to $100,000 annually	Other GHG Reduction Programs (100%)
Program Administration	Up to $800,000 annually	Program Administration (100%)

Program Descriptions

Electric Energy Efficiency Programs

CO_2 allowance proceeds dedicated to this program area support programs administered by Efficiency Maine, an initiative to promote energy efficiency throughout Maine's economy. Efficiency Maine has a proven track record of implementing cost-effective energy efficiency programs for residential, commercial, and industrial energy consumers. In 2010, Efficiency Maine's programs resulted in annual energy savings of more than 93,000 megawatt-hours and generated an estimated $95.8 million in lifetime economic benefits for the state of Maine.[67] Efficiency Maine's existing residential and commercial energy efficiency programs have been shown to produce benefits between 2:1 and 6:1 for every dollar invested.[68]

Residential programs currently supported with CO_2 allowance proceeds include the Efficiency Maine Residential Lighting Program, Efficiency Maine Appliance Rebate Program, and an appliance recycling program. Programs are designed to reduce energy demand and provide sustained energy cost savings for Maine consumers. Efficiency Maine is also using CO_2 allowance proceeds to expand the Efficiency Maine Business Incentive Program, which provides prescriptive and custom incentives for businesses to replace out-of-date equipment and upgrade to energy-efficient alternatives. Qualified appliances and equipment currently include compact fluorescent lighting, HVAC equipment, NEMA Premium® energy-efficient motors, variable-speed motor drives, commercial refrigeration, and agricultural equipment. As of August 1, 2009, eligible organizations may receive Business Program incentives of up to $300,000 in a single calendar year period.

Fossil Fuel Energy Efficiency Programs

In 2008 and 2009, the Trust invested a small portion ($650,000) of CO_2 allowance proceeds to weatherize160 homes across the state. Since then, the Trust has invested remaining CO_2 allowance proceeds in a competitive grant program for large-scale industrial energy efficiency projects. Grants

ranging from $100,000 to $1 million are being awarded to projects with the highest potential for reducing kilowatt-hour electricity use, decreasing greenhouse gas emissions, creating jobs, and producing additional economic benefits. Through December 2010, a total of 36 grants were awarded, 19 of which were funded by CO_2 allowance proceeds. Those 19 projects are expected to save 533,876 megawatt-hours of grid electricity over the lifetime of the projects.[69]

To allow for joint delivery of fossil fuel and electrical energy efficiency programs, the Trust has also directed 25 percent of the proceeds allocated to electricity energy efficiency to this large-scale industrial grant program.

Carbon Offset Research

$100,000 of CO_2 allowance proceeds are set aside per year for DEP-approved carbon offset research projects. Those projects have not yet been identified.

Administration

Title 35-A §10009 allows up to $800,000 in CO_2 allowance proceeds per year to be used to cover costs associated with administering the CO_2 Budget Trading Program and associated consumer benefit programs.

4.4 Maryland

Maryland is investing proceeds from the sale of CO_2 allowances to in the state Strategic Energy Investment Fund (SEIF), a special, non-lapsing fund administered by the Maryland Energy Administration (MEA). MEA has been deploying SEIF funds to deliver on its mission to promote affordable, reliable and clean energy. As part of Governor's O'Malley's "Smart, Green and Growing" initiative, these programs have helped reduce household bills, create new green collar jobs, address global climate change, and promote energy independence.

Investment Plan: Summary and Categorization

Proceeds from CO_2 allowance auctions conducted before March 1, 2009 and after June 30, 2012 (auctions 1, 2 and 17 onward) are allocated according to Senate Bill 268: An Act Concerning Regional Greenhouse Gas Initiative (S-268).

Table 1 summarizes the investments specified in S-S68 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Senate Bill 268

State Program	Percent Allocated in State Plan	Regional Program Category
Low- and Moderate-Income Residential Energy Efficiency	23%	Energy Efficiency (100%)
Multi-Sector Energy Efficiency and Conservation	23%	Energy Efficiency (100%)
Clean Energy and Climate Change	10.5%	Renewable Energy (100%)
Residential Rate Relief	23%	Direct Energy Bill Assistance (100%)
Low-Income Energy Assistance	17%	Direct Energy Bill Assistance (100%)
Administration	3.5%	Administration (100%)

Temporary Amendments: March 1, 2009 - June 30, 2012

Proceeds from CO_2 allowance auctions conducted between March 1, 2009 and June 30, 2012 (auctions 3-16), are allocated according to the House Bill 101: Budget Reconciliation and Financing Act of 2009 (H-101). H-101 is a temporary amendment enacted to provide emergency energy cost relief to Maryland consumers.

Table 2 summarizes the investments specified in H-101 and shows how those investments are apportioned among regional program categories for comparison.

Table 2: Summary of House Bill 101

State Program	Percent Allocated in State Plan	Regional Program Category
Low- and Moderate-Income Residential Energy Efficiency	8.75%	Energy Efficiency (100%)
Multi-Sector Energy Efficiency and Conservation	8.75%	Energy Efficiency (100%)
Clean Energy and Climate Change	6.5%	Renewable Energy (100%)
Residential Rate Relief	23%	Direct Energy Bill Assistance (100%)
Low-Income Energy Assistance	50%	Direct Energy Bill Assistance (100%)
Administration	3%	Administration (100%)

In total, the more than $100 million in investments made by MEA and its partners through June 30, 2010 resulted in numerous benefits for Marylanders.

To save Maryland households and businesses money:

- MEA invested $16.5 million in energy efficiency programs that:
  - will save Marylander's $68.3 million over the life of the investments;

  - created 150 jobs;
  - avoided CO_2 emissions equivalent to removing 3,474 cars from the road;
  - retrofitted more than 3,000 low-income apartments;
  - gave grants to more than 7,500 local governments and non-profits;
  - helped more than 350 farms;
  - trained more than 900 people for careers in energy efficiency;
  - helped Marylanders purchase nearly 5,000 energy efficient appliances.
- The Maryland Department of Housing and Community Development (DHCD) invested $2.5 million for home retrofits and weatherization.
- The Maryland Department of General Services (DGS) invested $502,235 to pay personnel costs.
- The Maryland Department of Budget and Management invested $7.8 million to make repayments on state agency loans.

To encourage adoption of renewable energy, promote energy awareness and address climate change:

- MEA invested $4.9 million in renewable energy and education programs that:
  - Helped 820 Maryland families buy solar, wind and geothermal systems;
  - Saved approximately 4,000 MWh of traditional power;
  - Reached Marylanders through large-scale and grass-roots media campaigns, increasing understanding of simple, no and low-cost energy changes Marylanders can undertake.
- The Maryland Department of the Environment (MDE) invested $3.2 million conducting research and implementing measures to help the state reduce its carbon footprint.

To provide residential rate relief: $23.5 million was distributed through the Public Service Commission and utilities to provide Maryland's nearly 5.7 million citizens an average credit on their utility bills of $0.17 per month.

To help low income households pay electricity bills and arrearage: the Maryland Department of Human Resources distributed $45.4 million to assist over 50,000 households to pay current and past energy bills, paying an average benefit of $817 per household.

Program Descriptions

MEA is investing CO_2 allowance proceeds in the following programs:

Multi-Family Housing Retrofits for Low and Moderate Income Families

A significant portion of low and moderate income families are renters, yet apartments and condominiums have not been included in the traditional weatherization programs. Through the Multi-Family Energy Efficiency Housing Affordability (MEEHA) Program, MEA, in coordination with the Department of Housing and Community Development (DHCD) and housing nonprofit organizations, conducts energy efficiency retrofits in apartment units to reduce energy bills for low and moderate income families.

Jane E. Lawton Conservation Loan Program

Named for the late Delegate Jane E. Lawton, a tireless advocate for energy efficiency and protecting our natural resources, the Lawton Loan Program provides below market loans to local governments, nonprofits and businesses for energy efficiency improvements. As those loans are repaid, MEA re-loans the money to new recipients, ensuring that the Lawton SEIF funds continue to benefit Marylanders for many years to come.

State Agency Loan Program (SALP)

SALP is a revolving loan program administered by MEA. To assist the state in leading by example, SALP provides zero interest loans (with a 1 percent administrative fee) to state agencies for energy efficiency improvements.

EmPOWERing Clean Energy Communities Grants

The EmPOWERing Clean Energy Communities Grant program provides funds to local governments and non-profit organizations to facilitate projects that increase the energy efficiency and/or the use of renewable energy to benefit the local government or community and to promote affordable, reliable, and clean energy. Examples include a housing authority that makes improvements to a building complex to reduce the energy bills of the low income residents or a feasibility study to enable a town to analyze opportunities for energy efficiency and/or renewable energy.

Farm Energy Technical Assistance and Incentives

Maryland's 12,000 farms spent about $26 million on electricity in 2008. Maryland farms spend tens of millions on petroleum products, gasoline, diesel fuel, natural gas, propane, fuel oil, and other fuels. This statewide project provides energy assessments to Maryland farms, and offers cash rebates for the installation of qualifying farm energy efficiency measures.

State Energy Efficient Appliance Rebate Program

MEA worked with Maryland's utilities to enhance their existing appliance rebate programs and put more rebates in the hands of Maryland consumers. This program provides additional rebates for super-efficient clothes washers and refrigerators, adding onto the amount offered as part of the utility programs. It also added a new product rebate for ENERGY STAR electric heat pump water heaters. Many utilities and retail appliance outlets offered appliance recycling which helped in the reduction of greenhouse gases.

Clean Energy Workforce Training and Capacity Building

MEA has partnered with the Department of Housing and Community Development (DHCD) and Maryland's community colleges to establish a workforce development program. The program provides training for trainers, the purchase of curriculum, materials, and equipment to support the Home Performance with ENERGY STAR program with the utilities. This Program, along with funding from the DHCD Weatherization Program, has resulted in the enrollment of nearly 1000 students in energy auditor/contractors classes. This new workforce will provide energy efficiency upgrades in homes throughout Maryland at all income levels. In addition, MEA used these funds for existing home retrofit quality assurance and support of the Maryland Home Performance website.

State Agency Energy Efficiency Improvements

During fiscal year 2010, MEA established a partnership with the Maryland Department of Naturals Resources to provide energy efficiency audits and upgrades to dozens of small State Park cabins throughout the state. The $200,000 program funds training for state park maintenance staff and Maryland Conservation Corps members to audit and retrofit cabins and small administrative buildings.

Residential Renewable Energy Grants

Marylanders understand that residential solar, geothermal, and wind can significantly reduce their energy bills and reduce the state's carbon footprint. Soaring demand for MEA's grant program has resulted in hundreds of Maryland households engaging in this ever increasingly popular program. MEA uses SEIF funds to serve applications as they come forward. Contractors market the program heavily and demand for renewable grants continues to be high.

Consumer Awareness - Educational Outreach Programs

The Maryland Energy Administration oversees the State's educational outreach efforts related to energy efficiency and clean energy, as well as the marketing of all related programs available through the MEA. The focus is on promoting general energy awareness, in connection with practical, low and no-cost energy saving tips for consumers, while tying all messaging back to our State goal of EmPOWER Maryland: 15 percent energy reduction by 2015. The MEA strives to create relevant and impactful campaigns and community partnerships which will reinforce the resources available through the MEA and EmPOWER this demographic to make smart energy decisions.

4.5 Massachusetts

Massachusetts is investing the vast majority of CO_2 allowance proceeds to support energy efficiency programs administered by the state's electric utilities. Programs are designed to improve energy efficiency in residential, commercial, and industrial sectors, decrease consumer energy costs, and create employment opportunities in the green energy sector. Massachusetts is also using proceeds to establish an innovative grant program to help local governments improve energy efficiency and increase renewable energy deployment. A small portion of CO_2 allowance proceeds are supporting additional state energy efficiency and clean energy projects.

Investment Plan: Summary and Categorization

Proceeds from the sale of CO_2 allowances are allocated according to Chapter 169 of the Acts of 2008: An Act Relative to Green Communities (Green Communities Act), which directs at least 80 percent of proceeds to utility-administered energy efficiency programs and up to 20 percent of proceeds to municipal energy efficiency and renewable energy programs, additional utility-administered energy efficiency programs, and other programs. The utility-administered energy efficiency programs supported with CO_2 allowance proceeds over the three year period 2010-2012 are projected to result in lifetime electricity savings of more than 2.6 billion kWh, enough to power more than 350,000 households for a year.[70]

Table 1 summarizes the investments specified in the Green Communities Act and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of the Green Communities Act

State Program	Percent Allocated in State Plan	Regional Program Category
Utility-Administered Energy Efficiency Programs	At least 80%	Energy Efficiency (100%)
Green Communities Program; Other Energy Efficiency and Clean Energy Projects; Zero-Interest Loans to Municipalities for Energy Efficiency Programs; as well as, where required, reimbursements to municipalities	Up to 20%	Energy Efficiency (50%) Renewable Energy (50%)
Program Administration	Currently 1.7%	Program Administration (100%)

Program Descriptions

Utility-Administered Energy Efficiency Programs

The Green Communities Act requires the state's four electric utilities – National Grid, NSTAR, Unitil/Fitchburg Gas & Electric Co., and Western Massachusetts Electric Co. – and the Cape Light Compact, a municipal aggregator that operates energy efficiency programs for part of the state, to jointly prepare comprehensive energy efficiency plans to "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost-effective or less expensive than supply." The current plan sets an energy savings target of 2.4 percent of electricity sales by 2012. The new target will significantly increase energy efficiency savings, reversing the historic trend in overall electricity usage – from growing at a rate of roughly 1 percent per year to declining by 1.4 percent per year. With energy savings of 2.4 percent per year going forward, Massachusetts will meet about 30 percent of its electricity needs through improved energy efficiency, rather than additional electric generation, by 2020. [71]

The plan is funded by at least 80 percent of Massachusetts' CO_2 allowance proceeds, distribution charges on electricity bills, regional capacity market auction proceeds, and third-party capital. Programs are providing workforce training, fully-subsidized energy auditing and weatherization, rebates for energy-efficient boilers and additional residential retrofitting, industrial process

improvements and combined heat and power, subsidies to promote the development of markets for energy-efficient technologies, building code consultations; public education and outreach, and additional programs to support the development and commercialization of energy-efficient products and practices.

Green Communities Program, Additional Energy Efficiency and Clean Energy Programs, and Municipal Reimbursements

The Green Communities Act directs remaining CO_2 allowance proceeds, up to 20 percent, to support primarily energy efficiency and clean energy generation, including the Green Communities Program; other energy efficiency and clean energy projects; zero-interest loans to municipalities for energy efficiency programs; as well as, where required, reimbursements to municipalities in which property tax revenues are reduced as a result of the RGGI CO_2 cap-and-trade program. Currently, Massachusetts is directing funding to:

The Green Communities Program

The Green Communities Act creates a Green Communities Division at the Department of Energy Resources (DOER) to provide an annual total of up to $10 million in grants and technical assistance to communities for energy efficiency and renewable energy projects. The program is designed to enable cities and towns to improve energy efficiency in schools, city halls, firehouses, and other public buildings; generate some of their energy needs from wind, solar, and forest trimmings; and make other decisions that reduce their environmental impact and carbon footprint.

Additional Energy Efficiency and Clean Energy Projects and Programs

CO_2 allowance proceeds dedicated to this program area support additional state energy efficiency and clean energy projects and programs. Current projects and programs include:

- Heating system replacements in low-income households, through the Department of Housing and Community Development (DHCD)'s HeartWAP program;
- Workforce development and training programs focused on energy efficiency for homes, businesses, and public buildings. At this time, the majority of proceeds in this category are allocated to the Energy Efficiency Skills and Innovation Initiative, which provides job training for energy auditors and installers of insulation and other energy efficiency measures;
- Seed grants and other support for innovative energy efficiency delivery models that will allow the energy efficiency industry to reach a new level of capacity and employment;
- Assistance to municipalities for energy efficiency projects identified in DOER audits, but previously unfunded.

Program Administration

The Green Communities Act allows CO_2 allowance proceeds to be used to cover costs to the Commonwealth associated with administering the CO_2 Budget Trading Program. Through December 31, 2010, approximately $2 million (1.7 percent of the state's total CO_2 allowance proceeds) have been used for this purpose.

4.6 New Hampshire

New Hampshire is investing nearly all CO_2 allowance proceeds in energy efficiency, energy conservation, and demand response projects. Projects are selected through a competitive process and are designed to reduce greenhouse gas emissions, provide energy cost savings to low-income consumers, create new jobs in the clean energy sector, and improve the capacity of local governments to pursue climate change strategies.

Investment Plan: Summary and Categorization

Chapter PUC 2600: Greenhouse Gas Emissions Reduction Fund (Chapter PUC 2600) directs a minimum of 10 percent of CO_2 allowance proceeds to low-income energy efficiency programs, and the balance to electric and fossil fuel energy efficiency programs, including but not limited to: energy audits, weatherization of buildings, energy efficiency-related workforce development, revolving loan funds for energy efficiency investment, deployment of industrial process and control systems, passive solar heating and ventilation, building code compliance, improvements to electric and thermal efficiencies of existing buildings, retrofitting of housing, education and outreach, and demand response programs to reduce peak electricity load.

Table 1 summarizes the investments specified in Chapter PUC 2600 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Chapter PUC 2600[xix]

State Program	Percent Allocated in State Plan	Regional Program Category
Low-Income Energy Efficiency Programs	At Least 10.0%	Energy Efficiency (100%)
Competitive Grants for Energy Efficiency Projects and Programs	Up to 90.0%	Energy Efficiency (100%)
Program Administration	Currently 2.4%	Program Administration (100%)

Program Descriptions

In the winter of 2008, New Hampshire invested $1.2 million of its CO_2 allowance proceeds to weatherize low-income homes across the state. Since then, the state has awarded $31 million[xx] in CO_2 allowance proceeds to 36 projects and programs that engage non-profits, utilities, businesses, residents, municipalities, universities, and K-8 schools to improve energy efficiency, support energy education and outreach, and provide energy efficiency job training to workers across the state. Through July 2010, 30 of the projects had received a total of $17.7 million. Through July 2010, those 30 projects have supported energy efficiency job training for more than 170 workers and supported energy use assessments and energy audit evaluations for 436 buildings across the state.[72]
In addition, those 30 projects are projected to reduce consumer energy costs by $60.6 million over the lifetime of the installed measures.[73] Programs funded to date include:

Utility-Administered Residential and Commercial Energy Efficiency Programs

In 2009, New Hampshire awarded grants totaling more than $7.6 million of CO_2 allowance proceeds to four electric utilities (National Grid, New Hampshire Electric Co-op, Public Service of New Hampshire (PSNH), and Unitil) to expand their CORE Efficiency Programs. RE-CORE is a portfolio of programs designed to enhance energy cost savings for residential, low-income, and business

[xix] As part of the New Hampshire 2010 State budget, $3.1 million of CO_2 allowance proceeds was diverted to the State General Fund. This summary addresses the use of current and future CO_2 allowance proceeds that are unaffected by this one-time budget diversion.

customers. Specific initiatives include: weatherization services for low-income customers, programs to identify and implement low-cost operational and maintenance improvements in large commercial buildings, zero-interest loans for energy efficiency measures through fixed monthly payments on consumer energy bills, appliance rebate and recycling programs, and expanded job training programs.

Low-Income Programs

In 2010, New Hampshire awarded $4 million to low-income energy efficiency programs managed by the New Hampshire Community Loan Fund and the New Hampshire Housing Finance Authority (NHHFA). The Community Loan Fund is leveraging CO_2 allowance proceeds, as well as federal and state funds, to implement deep energy efficiency retrofits, including roof replacements, in manufactured homes for an estimated savings of $614 per unit per year. Grant funds are also invested to train the state's Community Action Agencies to implement basic rehabilitation and energy efficiency measures in manufactured homes. The NHHFA's Greener Homes Program provides deep efficiency retrofits in low-income multi-family housing properties across the state.

Municipal Energy Efficiency and Clean Energy

In 2009, New Hampshire invested CO_2 allowance proceeds in a wide variety of projects to improve energy efficiency in municipal buildings and facilities. Specific initiatives being funded include projects to: track and evaluate building energy-use (benchmarking), provide energy efficiency audits and ongoing technical support services to municipal governments, implement deep energy efficiency retrofits in municipal facilities in Gorham, Fremont, Hancock, Jaffrey, Rochester, Warner, Temple, and Walpole, and establish outreach programs to educate homeowners, businesses, and renters about cost-effective energy efficiency measures.

Job Training Programs for Energy Auditors, Contractors, and Architects

New Hampshire is investing CO_2 allowance proceeds to establish specialized energy efficiency certification programs at New Hampshire community colleges, expand the reach of utility-administered job training initiatives, and train architects, energy auditors and contractors so that they can design, build and remodel homes to meet the National Association of Homebuilders National Green Buildings Standard. Through July 2010, these programs created energy efficiency training opportunities for 170 workers across the state.[74]

Large Energy Users

New Hampshire awarded $5 million to develop a "Pay for Performance (P4P)" program, which provides direct incentives for energy savings in large commercial and industrial facilities. The Program has developed a network of qualified "Partners" who provide technical services under direct contract to building owners. Partners will develop whole-building Energy Reduction Plans (ERPs) to achieve minimum energy savings of 15 percent per facility. Each ERP will include a financial plan, a construction schedule, and an energy verification component to ensure minimum energy savings of 15 percent. The P4P program provides three levels of incentives (based on the projected savings outlined in the ERP) to encourage large energy users to fully implement energy efficiency measures. The program is expected reduce CO_2 emissions by more than 140,000 metric tons over the lifetime of the installed measures.

Administration

[xx] Includes anticipated proceeds from 2011 CO_2 allowance auctions.

New Hampshire statute allows a portion of CO_2 allowance proceeds to be used to cover costs associated with administering the CO_2 Budget Trading Program and associated programs to reduce greenhouse gas emissions. Through December 2010, approximately 2.4 percent of the state's total CO_2 allowance proceeds have been used for this purpose.[75]

4.7 New Jersey

New Jersey plans to use the majority of CO_2 allowance proceeds to support energy efficiency and renewable energy projects in the commercial, industrial, and institutional sectors.[xxi] Energy efficiency investment includes a strong focus on combined heat and power (CHP) projects. New Jersey is also using proceeds to provide low- and moderate-income residential electricity customers assistance in paying electricity bills, and expects to implement programs to support efforts by municipalities to reduce greenhouse gas emissions and enhance the stewardship and restoration of New Jersey forests and tidal marshes that provide important opportunities to sequester carbon.

Investment Plan: Summary and Categorization

In New Jersey, proceeds from the auction and sale of CO_2 allowances are allocated according to the Global Warming Solutions Fund Act (N.J.S.A. 26:2C-45 et seq.), which establishes the Global Warming Solutions Fund and directs proceeds to programs and projects administered by the Department of Environmental Protection (DEP), the Economic Development Authority (EDA), and the Board of Public Utilities (BPU).

The Global Warming Solutions Fund Act specifies that the proceeds in the Global Warming Solutions Fund be distributed as follows:

- 60 percent to the EDA to provide grants and other forms of financial assistance to promote end-use energy efficiency, renewable energy, and state-of-the-art electric generation facilities, such as CHP, in the commercial, industrial, and institutional sectors;[xxii]
- 20 percent to the BPU to assist limited-income households with their electric bills through direct bill payment assistance or reduction in electricity demand;
- 10 percent to the DEP to support programs that help local governments reduce greenhouse gas emissions, including grants and other forms of financial assistance for energy efficiency, renewable energy, distributed energy, and land use planning projects that result in a measurable reduction in greenhouse gas emissions or energy demand;
- 10 percent to the DEP to support investment in forestry and tidal marsh stewardship and restoration to maximize carbon sequestration;[xxiii] and
- In addition, the DEP may use up to 4 percent of annual proceeds for administrative costs related to the above programs and administration of the CO_2 Budget Trading Program, and EDA and BPU may each use up to two percent of annual proceeds for similar administrative

[xxi] As part of the New Jersey 2011 State budget, $65 million of CO_2 allowance proceeds are anticipated to be diverted to the State General Fund over the course of fiscal year 2011 (through June 2011). This summary addresses the use of current CO_2 allowance proceeds that are unaffected by this one-time budget diversion.

[xxii] In August 2010, the Global Warming Solution Fund Act requirements for use of CO_2 allowance proceeds in the commercial, industrial, and institutional sectors were expanded upon in S. 2036 to include use of CO_2 allowance proceeds to develop qualified offshore wind power projects and to provide financial assistance to manufacturers of equipment associated with qualified offshore wind power projects.

[xxiii] In January 2010, the Global Warming Solution Fund Act requirements for use of CO_2 allowance proceeds for forest stewardship were expanded upon in S. 713, which establishes a non-lapsing Forest Stewardship Incentive Fund that is credited with monies in the Global Warming Solutions Fund that are apportioned to address stewardship of New Jersey forests. This fund will provide incentives for completing forest stewardship plans on nonprofit, local government, and private lands.

costs. These administrative costs are apportioned to each of the agencies prior to distribution of proceeds for program investment.

Table 1 summarizes the programs being implemented, or that are anticipated to be implemented, and shows how program investments are apportioned among regional program areas for comparison.

Table 1: Summary of Global Warming Solutions Fund Act

State Program	Percent Allocated in State Plan	Regional Program Category
EDA – Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program (energy efficiency, CHP, and renewable energy projects in commercial, industrial, and institutional sectors)	55.2%	Energy Efficiency (50%) Renewable Energy (50%)
BPU – Direct Bill Assistance to Low- and Moderate-Income Electricity Customers	18.4%	Direct Energy Bill Assistance (100%)
DEP – Carbon Sequestration through Stewardship and Restoration of Forests and Tidal Marshes	9.2%	Other GHG Reduction Programs (100%)
DEP – Local Government Greenhouse Gas Reduction Grant Program (energy efficiency, renewable energy, distributed energy, sustainable land use planning, and other GHG reduction projects)	9.2%	Energy Efficiency (33.3%) Renewable Energy (33.3%) Other GHG Reduction Programs (33.3%)
Program Administration	Up to 8.0%	Program Administration (100%)

Program Descriptions

The DEP, EDA, and BPU are coordinating in the administration of consumer benefit programs and projects. As required by the Global Warming Solutions Fund Act, DEP has adopted rules at N.J.A.C. 7:27D to establish guidelines and a priority ranking system that all three agencies apply in evaluating consumer benefit programs and projects.[xxiv]

Commercial, Industrial, and Institutional Energy Efficiency, Combined Heat and Power, and Renewable Energy

Sixty percent of the CO_2 allowance proceeds in the Global Warming Solutions Fund are allocated to the EDA to support efforts to deploy energy efficiency and clean energy technologies in the commercial, industrial, and institutional sectors. EDA is administering the Clean Energy Solutions Capital Investment (CESCI) Loan/Grant Program, which provides zero-interest loans and grants to qualified commercial, institutional, and industrial entities to support end-use energy efficiency projects, construction of state-of-the art electric generation facilities such as CHP, and renewable energy projects. A mix of grants and loans up to $5 million are available for selected projects, with financial support awarded on a rolling basis.

Projects are evaluated using a scoring system developed by DEP and EDA. The scoring system evaluates the degree to which a proposed project is projected to reduce greenhouse gas emissions, the cost effectiveness of the project in reducing greenhouse gas emissions, benefits provided to electricity ratepayers (based on projected grid electricity savings or electricity supplied to the grid, including the portion of electricity savings or generation during peak demand periods), co-benefits

[xxiv] See December 21, 2010, New Jersey Register at 41 N.J.R. 4776.

provided through reduced emissions of other pollutants, and responsiveness to the New Jersey Energy Master Plan goals and the DEP Global Warming Response Act recommendations report.

Through 2010, $29.6 million in funding has been awarded to 12 projects, including CHP facilities and commercial-scale solar photovoltaic systems, with the majority of funding provided through no-interest loans. The 12 CHP and solar photovoltaic projects represent 29.6 megawatts of new, clean electric generation capacity. These projects are projected to generate more than 167,000 megawatt-hours of electricity per year, enough to meet the equivalent annual electricity needs of more than 19,600 typical New Jersey households, and are projected to avoid 84,000 metric tons of CO_2 emissions per year and 1.7 million metric tons of CO_2 emissions over the lifetime of the projects.

Low- and Moderate-Income Energy Assistance

Twenty percent of the CO_2 allowance proceeds in the Global Warming Solutions Fund are allocated to the BPU to assist limited-income households with their electric bills through direct bill payment assistance or programs to reduce electricity demand. Proceeds from CO_2 allowance auctions through 2009 are being dedicated to a Residential Electric Limited Income Emergency Fund (RELIEF) to provide bill payment assistance to low- and moderate-income residential electricity ratepayers. Grants are provided to programs that reduce electricity costs for customers with limited incomes by providing direct financial assistance toward the payment of electricity bills. Customers are eligible for financial assistance if they are: (1) in the low- and moderate-income residential sector (defined as households with an income that does not exceed 400 percent of the federal poverty level); (2) not enrolled in or eligible for either the BPU Universal Service Fund program or the Low-Income Home Energy Assistance Program; and (3) are facing crisis situations that include a documented notice of overdue payment for electric service. Through 2009, BPU has awarded $9.9 million to New Jersey Shares (NJ SHARES) to distribute to limited-income households requiring bill payment assistance. NJ SHARES is a 501(c)(3) not-for-profit organization that provides year-round energy assistance to individuals and families that are experiencing a financial crisis, have exhausted other available sources of assistance, and have demonstrated a good faith effort to pay their energy bills.

Implementation of the program is being accompanied by targeted communications efforts to help low- and moderate-income households reduce their energy costs. Contact information for customers receiving direct financial assistance is provided to the administrators of New Jersey Clean Energy Program residential energy efficiency programs, such as Home Performance with ENERGY STAR. This provides for targeted implementation of existing residential energy efficiency programs to better serve low- and moderate-income households.

Local Government Greenhouse Gas Reduction

Ten percent of CO_2 allowance proceeds in the Global Warming Solutions Fund are allocated to the DEP to support local government efforts to reduce greenhouse gas emissions. The DEP program will support local government efforts to plan, develop, and implement measures that reduce greenhouse gas emissions through energy efficiency, renewable energy, distributed energy, and sustainable land use planning.[xxv] Initial eligible measures or programs include:

- Greenhouse gas action planning and implementation
- Land use planning and transportation
- Transportation system efficiency
- Green infrastructure, sequestration, and resource conservation

[xxv] Implementation of this program is currently pending as a result of the one-time diversion of CO_2 allowance proceeds to the State General Fund as part of the New Jersey 2011 State budget.

- Strengthening local economies (e.g., local food production and gardens; “buy local” programs that reduce vehicle miles travelled)
- Outreach and education campaigns
- Other (e.g., highly warming greenhouse gas capture; micro-grants to community organizations; innovative programs)

Local governments need to demonstrate how proposed projects would result in measurable reductions in greenhouse gas emissions or energy demand. For projects that involve planning, such as a local greenhouse gas emissions inventory and reduction plan, the governing body of the locality needs to include in the project application a resolution to implement at least 50 percent of actions identified through the inventory and plan.

Grants are expected to be available up to $300,000 for one local government agency and up to $700,000 for joint projects involving two or more local government agencies from different municipalities. Eligible local government agencies include municipal, county, and local authorities, which include local boards of education and county colleges.

Forest and Tidal Marsh Stewardship and Restoration

Ten percent of the CO_2 allowance proceeds in the Global Warming Solutions Fund are allocated to the DEP to support DEP-administered programs to enhance stewardship and restoration of forests and tidal marshes to maintain and improve carbon sequestration by these natural resources. Proceeds are to be used to support activities such as forest carbon inventories and the development of sustainable forest management plans on state land and nonprofit, local government, and private lands.

Program Administration

The Global Warming Solutions Fund Act allows a total of up to eight percent of annual proceeds in the Global Warming Solutions Fund to be used to cover costs associated with administering the CO_2 Budget Trading Program and associated consumer benefit programs. These administration funds (four percent to DEP, two percent to BPU, and two percent to EDA) are allocated from the Global Warming Solutions Fund to implementing agencies prior to allocation of the remaining proceeds for a respective program area.

4.8 New York

In New York, proceeds from the sale of CO_2 allowances are to be invested according to the Operating Plan for Investments in New York under the CO_2 Budget Trading Program and the CO_2 Allowance Auction Program. The original Operating Plan (Original Plan) was approved by the New York State Energy Research and Development Authority (NYSERDA) Board of Directors on April 27, 2009. On March 1, 2010, a number of revisions to the Operating Plan were presented to and approved by NYSERDA's Board for inclusion in a revised Operating Plan (Revised Plan), and an updated version of the full Revised Plan was completed in June 2010.

These revisions were made to reflect new legislation, current market prices for CO_2 allowances, and the availability of economic stimulus funds. The Revised Plan includes a modified projection of CO_2 allowance proceeds and commits $112 million in CO_2 allowance proceeds to weatherization and job training programs called for in the Green Jobs/Green New York Act of 2009. The Revised Plan also accounts for the budget deficit reduction measures enacted in 2009 and commitments pursuant to a consent decree that resolved a legal challenge to the State's Regional Greenhouse Gas Initiative program.

Both versions of the Operating Plan were developed by NYSERDA, the Department of Environmental Conservation (DEC), and the Public Service Commission (PSC) and were informed by comments and feedback from an Advisory Group and other stakeholders.

NYSERDA and its partner agencies intend to conduct the annual update of the Operating Plan in early 2011. Among other things, the revised plan will include a lower program planning budget that accounts for the recent trend towards lower CO_2 allowance proceeds. As described below, this process will include stakeholder engagement. The remainder of this summary addresses the programs that are described in the June 2010 Revised Plan.

Investment Plan: Summary and Categorization

The Revised Plan outlines how New York plans to use CO_2 allowance proceeds to complement its existing energy programs and policies and to develop programs that address additional opportunities to reduce greenhouse gas emissions across all fuels and sectors. In particular, the plan includes programs that work in concert with the System Benefits Charge (SBC), Energy Efficiency Portfolio Standard (EEPS), and Renewable Portfolio Standard (RPS).

CO_2 allowance proceeds are invested to address residential, commercial, industrial, and transportation sector energy efficiency; research, development, and deployment of clean and renewable technologies; workforce development; capacity building; and educational initiatives. While the majority of programs are designed to reduce greenhouse gas emissions in the near-term, approximately 28 percent of program funds are invested to develop technologies, processes, and infrastructure needed to reduce greenhouse gas emissions over the long-term. This two-pronged strategy is designed to deliver immediate, cost-effective environmental and consumer benefits, while supporting the aggressive carbon reduction framework needed for a stable climate and a clean energy economy.

The following criteria were considered in developing the portfolio of programs included in the Revised Plan:

- Cost-effectiveness measured by quantity of CO_2-equivalent greenhouse gas emissions reduced per dollar invested

- Long-range potential for the technology or investment to reduce greenhouse gas emissions in New York
- Potential to reduce the costs of achieving the emission reduction requirements of the CO_2 Budget Trading Program
- Other benefits to New York, such as the potential to create jobs, leverage capital investment in New York to promote economic development, provide health and environmental benefits, and enhance municipal capacity to further reduce greenhouse gas emissions
- Opportunities to reduce the disproportionate energy cost burden and environmental impacts on low-income families and environmental justice communities
- Need for funds based upon availability from other funding sources

Table 1 summarizes the investments described in the Revised Plan and shows how those investments are apportioned across regional program categories for comparison.

Table 1: Summary of Revised Operating Plan[xxvi]

State Program	Percent Allocated in State Plan	Regional Program Category
Residential Space and Water Heating Efficiency	36.6%	Energy Efficiency (95%) Renewable Energy (5%)
Commercial, Industrial, Municipal and Institutional Energy Efficiency Programs	19%	Energy Efficiency (95%) Renewable Energy (5%)
Transportation Efficiency	9.5%	Energy Efficiency (100%)
Electric Power Supply and Delivery	14.9%	Renewable Energy (82%) Other GHG Reduction Programs (18%)
Sustainable Agriculture and Bioenergy	1.3%	Renewable Energy (82%) Other GHG Reduction Programs (18%)
Multi-Sector Programs	6.7%	Energy Efficiency (34%) Renewable Energy (33%) Other GHG Reduction Programs (33%)
Administration and Evaluation	12%	Program Administration (60%) Evaluation (40%)

Program Descriptions

Programs funded under the Revised Operating Plan are categorized as follows:

Residential Space and Water Heating Efficiency

Programs in this category are designed to focus on fossil fuel energy efficiency activities not fully addressed through the SBC, EEPS, RPS, and federally-funded energy efficiency activities. This will allow a variety of programs to pursue a "whole-building" approach to improving energy use within homes in New York. RGGI funding will expand the number of households served, increase opportunities for carbon reduction measures in the building sector, and support technical training and workforce development related to fossil fuel energy efficiency technologies. A substantial portion of the funds in this category will be used to support energy efficiency improvements in low-income housing. Seventy percent of the $112 million Green Jobs/Green New York budget has been allocated to this sector to cover the energy audits, workforce development, outreach, financing initiatives and other activities outlined in the Act.

[xxvi] The June 2010 Operating Plan assumed that $342.6 million would be available over three years to implement, administer and evaluate the programs in the plan. The percentages in Table 1 above are calculated using this figure for the denominator. The percentage breakdown shown for New York in Table 3 of Section 1 (page 11) are based upon $282.3 million in auction proceeds through December 31, 2010.

Buildings and Facilities Energy Efficiency

Programs in this category are designed to cover a variety of energy efficiency measures in industrial, municipal and institutional facilities. For instance, one program supports infrastructure projects at water and wastewater facilities that promote energy efficiency improvements and carbon emission reductions. Also, thirty percent of the $112 million Green Jobs/Green New York budget has been allocated to this sector to cover the energy audits, workforce development, financing initiatives, and other activities outlined in the Act for small businesses in New York. In addition, a Competitive Greenhouse Gas Reduction Pilot that is focused on the industrial sector will foster innovative cost-effective emission reductions within the sector. Furthermore, an initiative to empower and enable municipalities to design and realize smart growth objectives is included.

Transportation Efficiency

Programs in this category are designed to reduce greenhouse gas emissions from the transportation sector by accelerating deployment of proven but underutilized technologies that reduce petroleum use and, where feasible, increase the efficiency of electric mass transit. These objectives can be achieved by improving the efficiency of vehicles and transportation infrastructure and expanding the use of electricity and renewable fuels in the sector.

Renewable Energy and Advanced Power Technology

Programs in this category are designed to develop, demonstrate, and deploy technologies needed to ensure sustained reductions in greenhouse gas emissions in the long-term. Programs include initiatives to foster the development and market introduction of promising renewable energy technologies; support the demonstration of technologies that integrate renewable resources, smart-grid capability, advanced meters, energy storage systems, demand-management strategies, and high-efficiency power delivery technologies; and programs to asses and demonstrate the use of carbon capture and sequestration technologies in New York.

Sustainable Agriculture and Bioenergy

This program is designed to expand sustainable non-food biofuel feedstocks; reduce greenhouse gas emissions derived from the agriculture, forestry and waste management sectors; and characterize the potential for carbon sequestration in New York's terrestrial ecosystem. Program priorities will be guided by findings and recommendations from the ongoing *Renewable Fuels Roadmap and Sustainable Biomass Feedstock Supply Study for New York.*

Multi-Sector Programs: Climate Research, Industrial Clean Technology Development, and Climate Research and Analysis

Programs in this category are designed to build the capacity to develop and implement new climate change mitigation and risk management solutions and to realize a clean energy economy in New York. Some funds will be used to build upon New York's existing technology innovation assets and leverage federal funding for, among other things, "Energy Innovation Hubs" established by the U.S. Department of Energy. Business development programs that will provide support for seed- and early-stage clean energy companies and established companies bringing new clean energy products to market are also included. In addition, funds are also provided for conducting research on climate change impacts, mitigation, and adaptation in New York.

Stakeholder Engagement

NYSERDA, the DEC, and PSC are engaging a variety of stakeholders in the design, implementation and evaluation of the State's energy efficiency and renewable energy programs. An Advisory Group consisting of industry, environmental, research and development, environmental justice and other organizations has been convened to advise and inform the New York agency partners on

development and implementation of the plan for investing CO_2 allowance proceeds in a clean energy economy. Stakeholders, including trade associations, unions, regional planning boards, utilities, consumers, non-profits, and community-based organizations, are consistently engaged in the development of the Operating Plan. Beyond the development of the plan, stakeholders will also play an important role in assisting with program implementation.

For instance, CO_2 allowance proceeds are helping build effective partnerships for reducing greenhouse gas emissions. The Climate Smart Communities program, for example, engages local governments to implement effective municipal greenhouse gas emission reduction strategies. The program connects local governments with regional planning boards, Municipal Planning Organizations (MPOs), and other consortia that can provide senior staff, technical platforms, and best practices to help local governments:

- Inventory and reduce greenhouse gas emissions
- Invest in smart growth and the clean energy economy
- Plan for community resiliency in the face of a changing climate

Similarly, under the Green Jobs/Green New York program, New York will work with state and local chapters of industry groups and trade associations, such as the Building Performance Contractors Association, Empire State Petroleum Association (ESPA), Multiple Intervenors, and Manufacturers Association of Central New York (MACNY), to develop comprehensive job training initiatives across the state. Training will be deployed through NYSERDA partnerships with the State Department of Labor, community-based organizations, colleges, trade associations, unions, and professional associations.

4.9 Rhode Island

Rhode Island is investing CO_2 allowance proceeds to expand cost-effective energy efficiency programs administered by the state's primary electric utility, National Grid. Programs are designed to deliver maximum benefits to residential consumers, small businesses, low-income communities, local governments, small non-profit agencies, and institutions of higher education. The state is also investing proceeds to support innovative financing and partnership opportunities to accelerate program development and deployment.

Investment Plan: Summary and Categorization

Rhode Island, through the Office of Energy Resources (OER) in consultation with the Department of Environmental Management (DEM) and the Energy Efficiency and Resources Management Council (EERMC), has issued a plan for the allocation and distribution of CO_2 allowance proceeds.

Table 1 summarizes the investments specified in Rhode Island's Plan for the Allocation and Distribution of Regional Greenhouse Gas Initiative Auction Proceeds (March 2009) and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Rhode Island's Plan for the Allocation and Distribution of Regional Greenhouse Gas Initiative Auction Proceeds (March 2009)

State Program	Percent Allocated in State Plan	Regional Program Category
Least-Cost Energy Efficiency Utility Account	60%	Energy Efficiency (100%)
Innovative Financing and Partnership Account	40%	Energy Efficiency (100%)
Program Administration	Up to 5.0% or $300,000 annually, whichever is less	Program Administration (100%)

Program Descriptions

Utility-Administered Energy Efficiency Programs

CO_2 allowance proceeds dedicated to this program area are directed to a Least-Cost Energy Efficiency Utility Account for expansion of utility-administered energy efficiency programs. Current programs include: loans and grants to small commercial and industrial companies that provide least-cost energy efficiency services, low-cost financing for residential energy audits and energy efficiency retrofits, marketing to provide one-stop easy access to information about utility-administered energy efficiency initiatives, Energy Information Report Systems to benchmark the energy performance of municipal and non-profit buildings, energy efficiency job training programs for contractors and facility managers, and financial assistance for non-profits that provide energy efficiency services to low-income consumers but are not covered by utility incentive programs.

Research and Deployment of Innovative Energy-Efficient Techniques and Technologies

CO_2 allowance proceeds dedicated to this program area are directed to an Innovative Financing and Partnership Account at National Grid for the sole purpose of investing in research, partnerships, pilot programs, and innovative financing options that accelerate energy efficiency program development.

Administration

Rhode Island may allocate up to 5 percent of CO_2 allowance proceeds or $300,000 annually, whichever is less, to cover costs associated with administering the CO_2 Budget Trading Program and associated consumer benefit programs.

4.10 Vermont

Vermont is investing nearly all of its CO_2 allowance proceeds to implement heating and process fuel efficiency programs administered by Efficiency Vermont. Half of the state's CO_2 allowance proceeds are invested to provide energy efficiency services to low-income consumers.

Investment Plan: Summary and Categorization

Proceeds from the sale of CO_2 allowances are allocated according to Title 30, Chapter 5, Section 255: Regional Coordination to Reduce Greenhouse Gases (Title 30, Chapter 5, Section 255), which directs 100 percent of proceeds to programs that support whole-building heating and process energy efficiency and facilitate appropriate fuel switching. Fifty-percent of CO_2 allowance proceeds support programs that are tailored to low-income energy consumers.

Table 1 summarizes the investments specified in Title 30, Chapter 5, Section 255 and shows how those investments are apportioned among regional program categories for comparison.

Table 1: Summary of Title 30, Chapter 5, Section 255

Program	Percent Allocated in State Plan	Regional Program Category
Heating and Process Energy Efficiency Programs (50% of CO_2 allowance proceeds are invested to benefit low-income energy consumers)	100%	Energy Efficiency (100%)
Program Administration	Currently 2%	Program Administration (100%)

Program Descriptions

Vermont is investing the vast majority CO_2 allowance proceeds to expand heating and process energy efficiency programs administered by Efficiency Vermont, the nation's first ratepayer-funded energy efficiency utility providing energy efficiency services statewide. Efficiency Vermont has a proven track record of implementing cost-effective energy efficiency programs for commercial and residential energy consumers. In 2009, Efficiency Vermont's programs resulted in incremental energy savings of more than 85,000 megawatt-hours and generated an estimated $65.3 million in lifetime economic benefits for the state of Vermont.[76] In 2009, Efficiency Vermont's residential and commercial programs generated $2.4 in benefits for every dollar invested.[77]

Programs currently supported by CO_2 allowance proceeds include the Vermont Community Energy Mobilization (VCEM) Project, a volunteer-based program to install simple, cost-effective energy-saving measures in homes across the state, and the Home Performance with ENERGY STAR service, a program to provide incentives of up to $2,500 for comprehensive retrofits that address both electric and non-electric energy efficiency needs.

In 2009, Vermont also invested CO_2 allowance proceeds to provide improved incentives for energy efficiency retrofits for lower- and middle-income consumers.

Administration

Vermont may use CO_2 allowance proceeds to cover costs associated with administering the CO_2 Budget Trading Program and associated consumer benefit programs. Through December 2010, approximately 2 percent of the state's total CO_2 allowance proceeds have been used for this purpose.

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