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# 2012 Regional Greenhouse Gas Initiative (RGGI) Annual Report

Maine Department of Environmental Protection

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STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

March 2, 2012

Senator Michael D. Thibodeau, Chair  
Representative Stacey Allen Fitts, Chair  
Members of the Joint Standing Committee on Energy, Utilities and Technology  
2 State House Station  
Augusta, ME 04333

Senator Thomas B. Saviello, Chair  
Representative James M. Hamper, Chair  
Joint Standing Committee on Environment and Natural Resources  
2 State House Station  
Augusta, ME 04333

RE: Regional Greenhouse Gas Initiative (RGGI) Annual Report

Dear Senator Thibodeau, Senator Saviello, Representative Fitts, Representative Hamper, and members of the Joint Standing Committees on Energy, Utilities and Technology and Environment and Natural Resources:

Public Law, Chapter 317 of the 123<sup>rd</sup> Legislature (replaced by Public Law, Chapter 372 of the 124<sup>th</sup> Legislature) directed the Department of Environmental Protection and the Efficiency Maine Trust (the "Trust" or "Efficiency Maine") to annually submit a joint report to the Joint Standing Committee on Energy, Utilities and Technology regarding implementation of the Regional Greenhouse Gas Initiative (RGGI). This letter serves as that report and addresses the seven elements the Legislature directed the Department and the Trust to review, and provides an update on the appropriateness of the number of allowances reserved in accordance with the voluntary renewable energy set-aside provisions. Because the RGGI program is only three years into the six-year initial emissions stabilization period, there are not yet meaningful statistics for certain items required to be addressed in the report. Subject to that qualification, the following is our report for 2011.

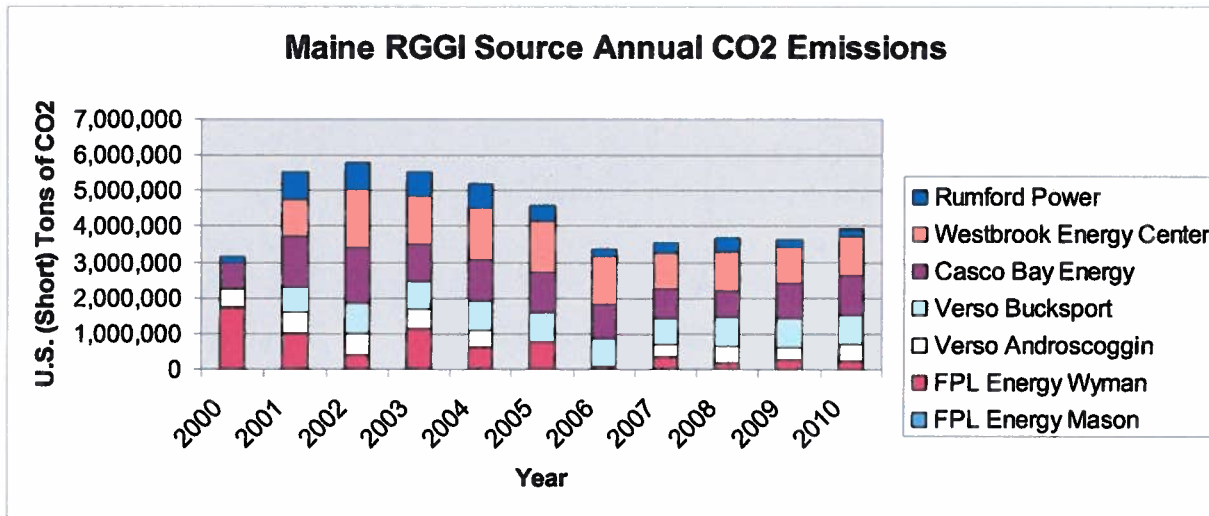
**A. The reductions of greenhouse gas emissions from carbon dioxide budget units, conservation programs funded by the Regional Greenhouse Gas Trust Fund and Efficiency Maine Trust pursuant to Title 35-A, section 10109 and carbon dioxide emissions offset projects.**

**Reductions of greenhouse gas emissions from carbon dioxide budget units.** The RGGI program is designed to stabilize carbon dioxide (CO<sub>2</sub>) emissions from the CO<sub>2</sub> budget units (RGGI units) in the region from 2009 through 2014 until the annual cap begins to be reduced in 2015.

Maine and the RGGI region have experienced reductions in CO<sub>2</sub> emissions from the baseline period (2000 to 2005) before and since the program began with the first auctions in 2008 (see Tables 1 and 2).

The tables below contain CO<sub>2</sub> emissions data from Maine's RGGI units from 2000 thru 2010. Emissions data for 2011, projected to be somewhat lower than 2010 emission levels, will not be complete until sometime in the second quarter of 2012, and are not included with this report.

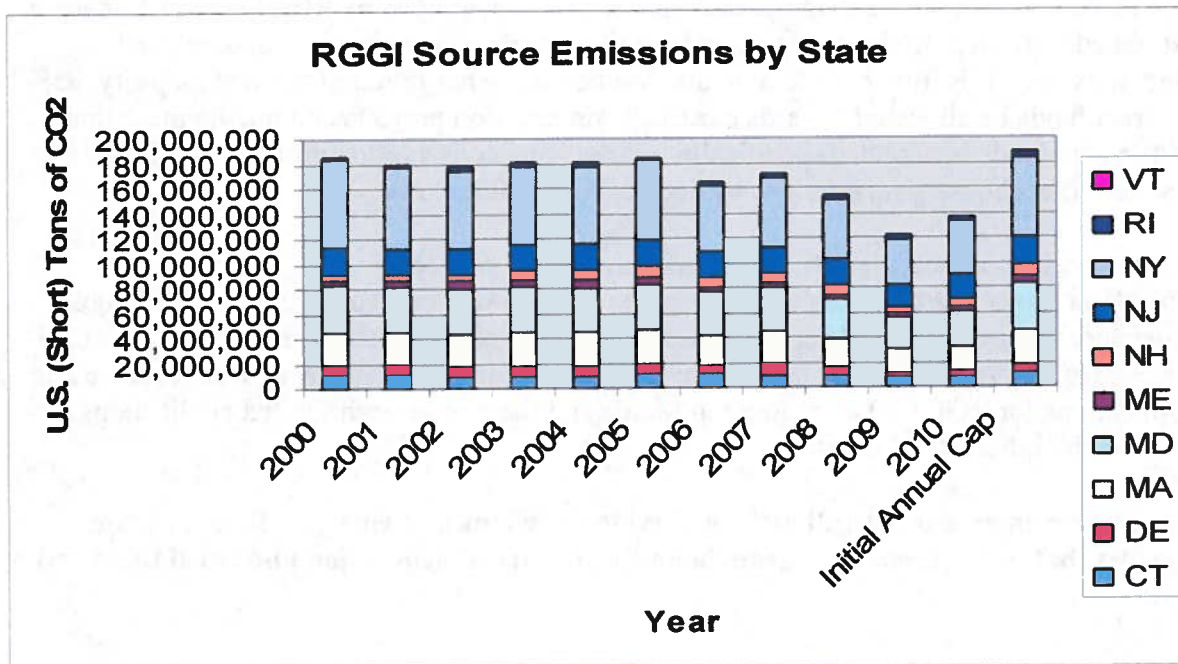
**Table 1**



Year	Maine RGGI Source Annual CO <sub>2</sub> Emissions (U.S. Tons)						Annual Totals
	FPL Energy Wyman	Verso Androscoggin	Verso Bucksport	Casco Bay Energy	Westbrook Energy Center	Rumford Power	
2000	1,731,846	519,770	0	744,689	0	153,306	3,149,611
2001	1,010,729	565,951	731,450	1,402,914	1,042,637	762,634	5,516,315
2002	397,062	608,960	829,490	1,582,011	1,580,945	782,900	5,781,368
2003	1,119,510	571,181	778,527	1,025,612	1,358,157	661,740	5,514,727
2004	616,030	472,481	810,749	1,178,901	1,412,282	701,496	5,191,939
2005	788,209	1,019	792,796	1,153,173	1,419,619	432,298	4,587,114
2006	70,853	24,826	780,609	946,041	1,341,636	207,857	3,371,822
2007	357,638	349,532	708,412	831,251	991,719	294,645	3,533,197
2008	185,915	481,163	796,139	730,736	1,090,087	407,238	3,691,278
2009	242,371	357,730	809,077	995,235	1,015,132	223,948	3,643,493
2010	198,691	489,273	813,064	1,130,402	1,079,445	232,583	3,943,458

*Note: Emissions from the former Mason Station in Wiscasset are not included in this table because it has not operated since 2003 and is not a RGGI Source.*

**Table 2**



RGGI Source Annual CO2 Emissions by State (U.S. Tons)											
Year	CT	DE	MA	MD	ME	NH	NJ	NY	RI	VT	10 STATE ANNUAL TOTALS
2000	11,977,434	7,308,248	25,452,680	38,446,856	3,156,292	5,178,731	21,954,959	69,809,356	2,959,594	24,914	186,269,063
2001	11,005,310	7,612,368	25,400,430	36,980,555	5,517,285	4,862,445	20,177,621	65,553,672	1,782,110	22,015	178,913,809
2002	9,842,414	7,616,896	25,278,273	37,084,544	5,784,563	5,556,992	21,145,667	61,367,406	3,254,015	5,171	176,935,941
2003	9,273,759	7,628,367	27,218,204	37,064,738	5,515,325	8,478,382	20,543,331	62,129,292	2,668,990	12,094	180,532,482
2004	9,989,119	7,884,001	26,369,630	36,281,466	5,191,939	8,812,538	21,133,145	62,612,353	2,219,100	14,779	180,508,070
2005	11,323,844	8,300,628	26,840,945	37,263,686	4,587,114	8,972,027	21,937,521	62,718,683	2,692,228	7,781	184,444,457
2006	10,761,759	7,561,295	23,449,199	35,233,070	3,371,822	7,568,884	20,224,255	53,638,129	2,625,422	6,337	164,440,172
2007	10,052,782	8,744,154	25,366,733	35,700,194	3,533,197	7,314,954	21,515,622	55,717,151	3,161,200	6,112	171,112,099
2008	8,988,858	7,615,966	21,438,041	32,383,517	3,691,278	7,095,147	20,601,805	48,348,177	3,292,517	2,559	153,457,865
2009	7,322,364	3,708,331	18,661,076	25,572,943	3,643,493	5,769,881	16,359,443	37,700,661	3,416,783	1,965	122,156,140
2010	8,526,608	4,299,269	19,804,384	27,958,958	3,943,457	5,899,447	19,681,308	41,930,455	3,504,392	3,756	135,552,034
Initial Annual Cap	10,695,036	7,559,787	26,660,204	37,503,983	5,948,902	8,620,460	22,892,730	64,310,805	2,659,239	1,225,830	188,076,976

*Note: Maine's emissions for the years 2000 to 2003 are slightly higher than in Table 1 because emissions from the former Mason Station in Wiscasset are included in this table as part of Maine's baseline emissions under RGGI.*

**Reductions of greenhouse gas emissions from conservation programs funded by the Energy and Carbon Savings Trust and Efficiency Maine Trust.**

The carbon dioxide savings from conservation programs funded by RGGI monies to-date is estimated at 1,331,581 short tons, from both direct fossil fuel reductions and reduced electricity use. It is important to note that Maine statute has required the vast majority, 85%, of Trust funds be allocated towards electrical conservation projects and that no more than 15% of the funds be targeted specifically to fossil-fuel conservation projects that directly decrease greenhouse gas emissions by decreasing fossil fuel use.

**Reductions of carbon dioxide emissions from offset projects.**

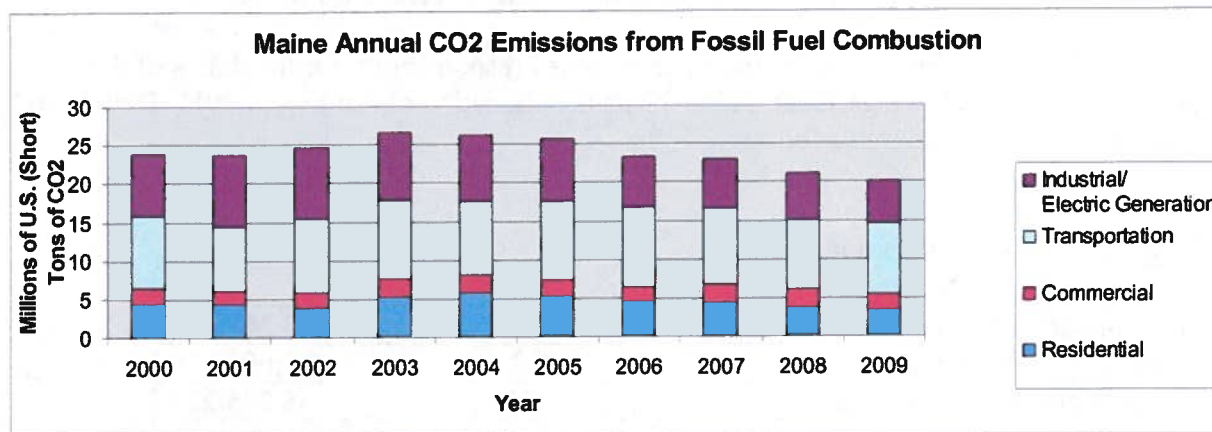
The offset project certification and application process was implemented in June of 2009. Independent third-party verifier status has been approved for a private entity in three RGGI states. No third-party verifier has sought approval in Maine to date. Maine has received no applications for RGGI offset projects in Maine and there have been limited applications received by other RGGI states.

**B. The improvements in overall carbon dioxide emissions and energy efficiency from sources that emit greenhouse gases including electrical generation and fossil fuel fired units.**

Improvements in overall CO<sub>2</sub> emissions from sources that emit greenhouse gases are indicated in Table 3.



**Table 3**



Sector	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Industrial/ Electric Generation	8.04	9.21	9.19	8.63	8.46	8.06	6.50	6.29	6.03	5.35
Transportation	9.45	8.44	9.64	10.26	9.59	10.33	10.37	9.98	9.13	9.37
Commercial	2.08	1.74	1.98	2.49	2.39	2.30	1.98	2.39	2.39	2.00
Residential	4.29	4.26	3.83	5.12	5.72	5.09	4.42	4.23	3.54	3.28
Total	23.86	23.65	24.64	26.50	26.16	25.78	23.27	22.89	21.09	20.00

*Note: Emissions data for calendar year 2010 are not yet available, but are expected to be slightly higher than 2009 levels.*

**C. The maximization of savings through systemic energy improvements statewide**

Efficiency Maine’s programs are described in more detail in section E.

**D. Research and support of new carbon dioxide offset allowance categories for development in the State.**

With the supply of CO<sub>2</sub> allowances in the RGGI program being substantially greater than the current demand, and consequently CO<sub>2</sub> allowance prices hovering slightly below \$2 per allowance, there has not been a demand for offset allowances (or the projects that create them). As such, work on developing offset projects within the RGGI region has been put on hold.

**E. Management and cost-effectiveness of the State's energy conservation and carbon reduction programs and efforts funded by the Energy and Carbon Savings Trust and Efficiency Maine Trust established pursuant to Title 35-A, section 10109.**

On July 1<sup>st</sup> of 2010, Efficiency Maine Trust assumed responsibility for the duties of the Energy and Carbon Savings Trust. Table 4 lists the allocation of funding in 2011. Details on each of these major programs follow.

**Table 4: Funding Allocations.**

<b>Program</b>	<b>2011 Funding*</b>
Competitive Program	\$ 3,367,157
Business Incentive Program	\$ 1,690,177
Residential Lighting Program	\$ 345,227
Residential Appliance Rebate	\$ 560,680
Administration	\$ 504,300
<b>Total</b>	<b>\$ 6,467,541</b>
*Competitive program funds are allocated in 2011; all other funds were spent in 2011	

*The Efficiency Maine Business Program*

In 2011, \$1,677,615 was invested through the Efficiency Maine's Business Incentive Program. This program provides education, technical assistance, quality control and financial incentives for energy upgrades to businesses of all sizes. The financial incentives are delivered to these business customers through either the Prescriptive Program or the Custom Program. The purpose of Efficiency Maine's Prescriptive Program is to provide financial incentives for a portion of the incremental cost of efficient electric equipment relative to standard equipment. Prescriptive rebates are offered at fixed amounts for a prescribed list of the most common efficient electric equipment that can be used in nearly every business: lighting, lighting controls, refrigeration, HVAC units, variable speed drives, and equipment related to agricultural industry. Efficiency Maine's Custom Program also provides incentives as well as technical assistance for the purchase and installation of premium-efficiency electrical equipment that is not on the prescribed list of the Prescriptive Program. The equipment in the 11 Custom Program incentives may be used for new construction projects, renovation projects, or for the replacement of functioning, but less efficient, existing equipment.

*Efficiency Maine Residential Lighting Program*

Lighting accounts for 5-10% of total energy use in the average American home and costs \$50 to \$150 per year in electricity. Compact fluorescent light bulbs (CFLs) use 75% less electricity for the same light output and last 6-10 times longer than traditional incandescent bulbs. CFLs save enough in electricity that they pay for themselves in a matter of months. However, due to CFLs' higher initial cost and lack of consumer awareness, most people still buy incandescent bulbs. Efficiency Maine's Residential Lighting Program works to overcome these barriers by collaborating with ENERGY STAR lighting manufacturers and retailers to lower the price of CFLs and educate consumers on the benefits of efficient lighting. This program is used by customers of all income levels.

In 2011, the program reimbursed retailers for lowering their CFL prices. In addition, Efficiency Maine's field team visits retailers throughout the state to educate retail staff and consumers. In a change from prior years, the 2011 implementation strategy reallocated all of the television advertising budget into further reducing the purchase price on store shelves, and the impact was significant. During a time when CFLs lost market share nationally, Mainers purchased nearly twice as many CFLs than in any prior year – 1.9 million CFLs in total. The program was able to do this while decreasing program costs per bulb compared to prior years.

#### *Efficiency Maine Residential ENERGY STAR Appliance Rebate Program*

Efficiency Maine worked with appliance retailers throughout the state to educate sales staff on the benefits of ENERGY STAR appliances and offer rebates for customer purchases of new, qualified units. The \$25-50 rebates function as a prompt for consumers to ask why a particular appliance qualifies while others do not, which creates an opportunity for sales staff to explain the long-term financial benefits of efficient appliances.

Advances in residential appliance technology give homeowners the opportunity to save significant amounts of energy and water when they are in the market to purchase a new unit. ENERGY STAR clothes washers, for example, consume about 37% less energy and 50% less water than regular washers, saving consumers about \$135 per year on utilities. Likewise, an ENERGY STAR refrigerator uses 20% less than a non-ENERGY STAR unit and saves \$100 per year compared to a 1980's refrigerator. ENERGY STAR dehumidifiers use 15% less energy than a conventional one and can save users \$20 per year.

#### *Competitive Bid Program*

In 2011, Efficiency Maine's Competitive Bid Program (formerly called Large Impact Projects) provided grants for large-scale kilowatt-hours (kWh) reduction projects. The focus of the program is to leverage private investment to achieve significant electrical savings and to stimulate economic growth in Maine. These grants are targeted at many of the biggest energy consumers in the state. They are selected based on the quantity of electric energy, measured in kWh, saved per program dollar invested by Efficiency Maine. By and large these companies and institutions have limited capital budgets with many competing needs. As a result, the payback requirements for capital projects are short. This reality creates a significant market barrier to approval and installation of large energy efficiency projects. The grants from Efficiency Maine's Competitive Bid Program help buy-down the up-front capital cost of large energy upgrade projects, helping the projects meet corporate Return on Investment requirements and gain approval. This makes the projects possible, frees up operating budgets and returns cash to the businesses in a difficult economy.

These grants were awarded primarily on the basis of annual kilowatt-hour per dollar of grant funds, while project readiness, economic viability and other factors were also considered. The grants awarded in 2011 ranged from \$100,000 to \$500,000 per project. In December 2011, 12 grants were awarded totaling \$3.8 million and leveraging \$6 million in private matching funds. Since the award, one of the projects has withdrawn, leaving \$3.3 million in grants and \$45.5 million in matching funds. The summary tables will reflect the latter number. The types of projects funded through the Competitive Bid Program include cost-effective on-site generation, innovative process enhancements, and efficient drives and pumps.



**Table 5: Program Results**

<b>Program</b>	<b>Funds in 2011</b>	<b>Annual kWh Savings</b>
Business Incentive	\$1,690,177	10,746,381
Competitive Program	\$3,367,157	38,431,018
Residential Lighting	\$345,227	4,817,741
Residential Appliance Rebate	\$560,680	326,738
Administrative	\$504,300	
<b>Total</b>	<b>\$6,467,541</b>	<b>54,321,879</b>

**F. The extent to which funds from the Regional Greenhouse Gas Initiative Trust Fund established pursuant to Title 35-A, section 10109 serve customers from all classes of the State's transmission and distribution utilities.**

Funding from the Trust was used to provide programs for residential, commercial and industrial customer classes, including transmission and sub-transmission customers, as set forth in previous sections of this report.

**G. The revenues and expenditures of the Regional Greenhouse Gas Initiative Trust Fund, established pursuant to Title 35-A, section 10109.**

Revenues from the sale of Maine's allowances under RGGI have totaled \$28.7 million as of the end of 2011 (\$5.6 million in 2008, \$9.6 million in 2009, \$8.3 million in 2010, and \$5.2 million in 2011). Expenditures of the Regional Greenhouse Gas Initiative Trust Fund are described in section E of this report.

**Voluntary Renewable Energy Set-aside**

At this time, the Department recommends keeping the amount of the set-aside of CO<sub>2</sub> allowances for the Voluntary Renewable Energy set-aside program at 2% on an annual basis. Although the first year of RGGI only resulted in the retirement of approximately 0.2% of Maine's annual budget of CO<sub>2</sub> allowances, the voluntary purchase of renewable energy is expected to grow over the next several years and the Department believes the 2% will remain appropriate at least over the next few years.

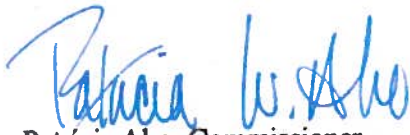
**Recommendations**

The statutory reporting requirement also provides for the Department and Efficiency Maine to propose changes for the committee to consider that could be made to improve the program.

Neither the Department nor Efficiency Maine recommends changes to the program at this time.

The Department and Efficiency Maine will be available to present our report, and answer any questions you may have.

Respectively submitted,



Patricia Aho, Commissioner  
Department of Environmental Protection



Michael Stoddard, Executive Director  
Efficiency Maine Trust

CC: Director Ken Fletcher