

The Regional Greenhouse Gas Initiative (RGGI) and Energy Efficiency Helping Maine Madison Paper Industries

Case
Study

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“With the assistance from RGGI-funded grants we have been able to pursue these energy-saving projects in the current difficult business climate.”

– Joe Clark, Reliability Engineer,
Madison Paper Industries



Madison Paper expects to save \$2 million on its energy costs annually thanks to help from RGGI-funded efficiency grants. “These savings will help secure the future of an established paper mill facing difficult economic pressures,” stated Joe Clark, Reliability Engineer at Madison. “With the grant funds we have been able to pursue these energy saving projects in the current business climate.” Madison Paper employs 240 people in Somerset County. Because of these energy efficiency improvements, Madison Paper will save enough money to support the retention of jobs at the Madison mill and strengthen the economic stability of the area.

For more case studies in this series, visit www.nrcm.org/issue_cleanenergy.asp

RGGI and Energy Efficiency Helping Business



At a glance

Goals

- Reduce fuel oil and electricity consumption in mill
- Reduce operating costs, while retaining jobs
- Increase MPI's global competitiveness by reducing energy costs and reinvesting in the Maine mill

Challenges

- Energy intensive process
- Capital investment during tough economic times

Solutions

- White Water Heat Recovery
- New Pressurized Grinder Stones

Financial Analysis

White Water Heat Recovery:

Project Cost: \$510,000

RGGI-funded Efficiency Maine

Incentive: \$357,000

Projected Savings: \$911,100 per year
(538,800 gallons of No. 6 fuel oil per year)

Payback Period: 2 months

Energy Reduction: 100%

New Pressurized Grinder Stones

Project Cost: \$1.4 million

RGGI-funded Efficiency Maine

Incentive: \$725,000

Projected Savings: \$1.4 million per year
(18.5 million kWh per year)

Payback Period: 6 months

Energy Reduction: 20%

Madison Paper Industries, Madison

Madison Paper Industries is a Maine-based company that has been operating in the state for more than 30 years. Today, the company employs 240 people in Somerset County and has set international standards for papermaking. To combat the effects of strong global competition, the mill continuously looks for opportunities to improve its process efficiency and reduce its operating costs. Energy efficiency projects, made possible through RGGI-funded grants, reduced operating costs of the facility while protecting jobs and reinvesting capital that helps secure the future of this paper mill, which is facing increasingly difficult economic pressures.

What They Did

Madison Paper was awarded two RGGI-funded energy efficiency grants, totaling over \$1 million. These two grants helped fund projects that are significantly reducing the mill's annual energy costs. The projects had been put on hold when the paper market dipped and the RGGI funds were critical to their completion.

White Water Heat Recovery: Saving Oil

Steam required for the papermaking process was being produced by burning No. 6 fuel oil in three oil-fired boilers. The White Water Heat Recovery project eliminated a portion of the fuel needed to create steam. Instead, already hot "white water" (120° F) produced from the paper machine press is redirected to be used for this purpose.

New Pressurized Grinder Stones: Saving Electricity

Utilizing new manufacturing technology, Madison Paper will be saving 20% of their average amount of energy consumed in the wood grinding process. Thanks to another RGGI-funded efficiency grant, Madison Paper was able to invest in new, more efficient grinding stones, which are used to produce groundwood pulp for making paper.



Results

Madison Paper expects to save \$2 million annually thanks to help from these RGGI-funded efficiency projects—annually saving approximately 538,000 gallons of No. 6 fuel oil and more than 18 million kilowatt hours of electricity. These savings are enough to heat 572 homes and power 2,966 homes for a year. Because of these energy efficiency improvements, Madison Paper will save enough money to support the retention of several jobs at the mill and strengthen the economic stability of the area.

This is just the beginning. There are many additional efficiency projects that Madison Paper would like to explore—they see many more opportunities to save oil and energy costs in their mill. Strengthening RGGI and having well-funded programs at Efficiency Maine is vital to the mill's ability to utilize energy efficiency to its fullest potential.

RGGI and Energy Efficiency Saving Jobs



The Regional Greenhouse Gas Initiative (RGGI) is a ten state program that reduces global warming pollution from power plants using a market-based approach that spurs investment in energy efficiency. Maine joined RGGI in 2006, and today it is delivering a cleaner, more efficient electric sector and a more energy-independent and competitive economy for Maine.

Contractors Hired by Madison Paper

- AMEC, Portland
- A C Electric Corp, Auburn
- CCB, Inc, Old Town
- Horizon Lighting & Energy Services, Portland
- Kennebec Supply, Division of FW Webb, Waterville
- Millennium Power Services, Fairfield
- New England Controls, Inc, Bangor
- Sullivan & Merritt Constructors, Hinckley
- Trask-Decrow Machinery, S. Portland
- Zampell Refractories, Auburn

Employment Impact

Several full time positions and many local jobs have been secured because of the efficiency projects. These jobs will also provide ongoing economic stability to the immediate area, supporting many other jobs in the area.

Other Madison Paper Efficiency Projects

Through Efficiency Maine's Business Program, which is partially funded by RGGI, Madison Paper has also received \$87,000 to install an energy-efficient air compressor and lighting. These improvements will save Madison Paper an additional \$93,000 annually.

Lighting Project through Efficiency Maine Business Program

- Project Cost: \$48,891
- Efficiency Maine Incentive: \$16,483
- Projected Savings: \$24,212 per year (302,655 kWh per year)
- Payback Period: 1.3 years

Air Compressor Project through Efficiency Maine Business Program

- Project Cost: \$161,891
- Efficiency Maine Incentive: \$70,827
- Projected Savings: \$68,419 per year (855,242 kWh per year)
- Payback Period: 1.3 years

Future of RGGI

RGGI delivers significant benefits to Maine and the region. However, future prospects are uncertain. Maine, so far, has done a good job protecting the revenue from RGGI to be invested in cost-saving energy efficiency. To deliver maximum benefits to ratepayers, Maine should continue to dedicate RGGI revenue to energy efficiency investments, and ensure the program continues to succeed.

2010 RGGI Industrial Beneficiaries

RGGI Grant Recipient	Grant Amount
Bowdoin College, Brunswick	\$400,000
GAC Chemical, Searsport	\$314,000
Huhtamaki, Fairfield	\$400,000
Irving Forest Products, Dixfield	\$706,500
Jackson Laboratory, Bar Harbor	\$369,000
Madison Paper, Madison	\$1,082,000
Moose River Lumber, Jackman	\$450,000
Mt. Abram Ski Area, Greenwood	\$129,000
Prime Tanning Company, Hartland	\$667,500
SAPPI, Hinckley	\$301,000
State of Maine, Augusta	\$750,000
Stonyvale Farms, Exeter	\$650,000
Twin Rivers Paper, Madawaska	\$500,200
University of Maine, Orono	\$300,000
University of New England, Biddeford	\$154,000

To date, RGGI has generated \$8.8 million to be used in Maine's manufacturing sector alone. These funds have spurred an additional \$18.5 million in private investment and are generating tens of millions of dollars in annual energy savings.

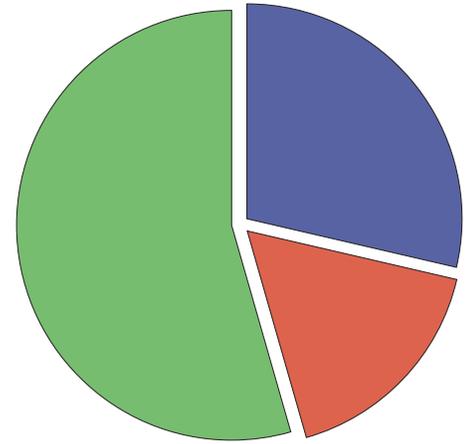
RGGI Saving Energy & Money in Maine

For Every RGGI \$1 Invested, Maine Consumers Save \$4

Since RGGI took effect in late 2008, Maine has invested approximately \$24 million from its sale of carbon credits in energy efficiency projects, generating \$110 million in energy savings for Maine people and businesses (the benefit-cost ration of these investments has averaged 4 to 1—the highest in the RGGI region).¹

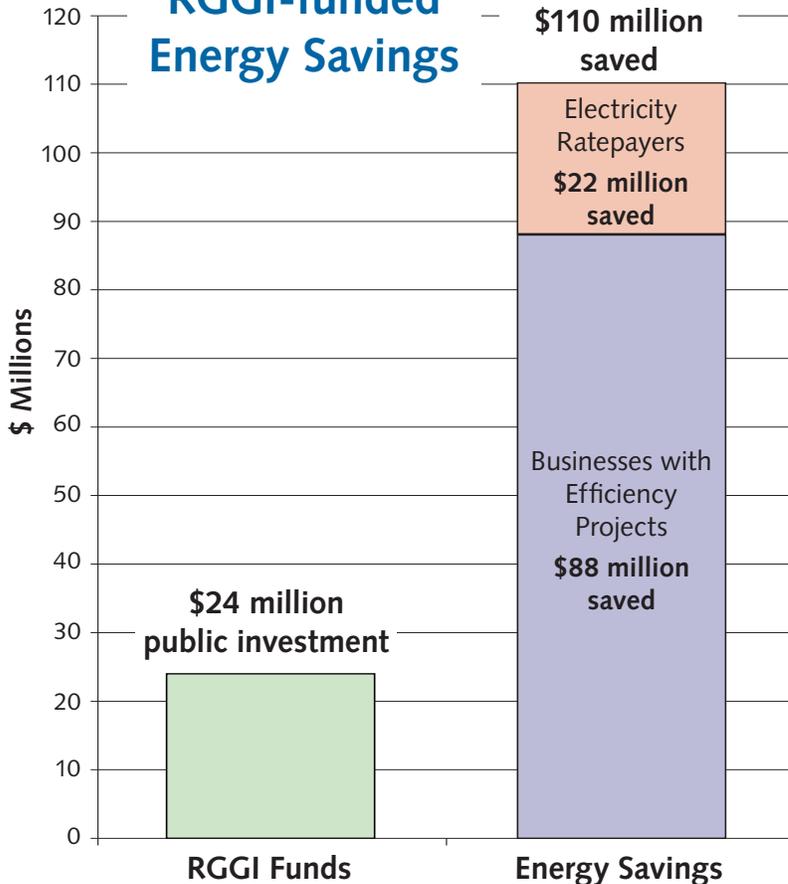
Efficiency Maine's Allocation of RGGI Funding

- Large Project Fund
\$7.1 million
- Business Program
\$13.5 million
- Residential Program
\$4.2 million



Source: Efficiency Maine

RGGI-funded Energy Savings



Maine Businesses and Ratepayers Have Saved \$110 Million on Energy Bills

In Maine, a third of RGGI funds were distributed as large grants to improve energy efficiency at industrial companies like Madison Paper Industries. Most of the remaining funds helped Efficiency Maine's Business Program serve other businesses, and a small amount supported residential energy efficiency improvements and low-income weatherization projects. In total, these investments will save Maine energy users more than \$110 million over the coming years—including about \$22 million in savings among all electricity ratepayers, and \$88 million for the scores of businesses that completed efficiency projects.

Because energy efficiency investments such as these keep money in Maine's economy, RGGI also produces economy-wide benefits. For every dollar invested in energy efficiency in Maine, there is a \$5 increase to the state's gross state product (GSP). So far, Maine's GSP has grown by \$115 million because of RGGI, and it is expected that about 135 jobs will be created for 10 years as a result.²

¹ "Economy-wide Benefits of RGGI", Environment Northeast, December 2010, Table 1

² Ibid.

For more information:

1. To save money in your home or business with energy efficiency, contact **Efficiency Maine**, at www.energymaine.com or call toll-free 1 (866) 376-2463.
2. Learn more about RGGI, energy efficiency opportunities and benefits, clean energy jobs, or additional case studies by visiting the **Natural Resources Council of Maine (NRCM) online** at www.nrcm.org/issue_cleanenergy.asp.
3. Please help support strong energy efficiency policies and programs in Maine. Stay informed by joining **NRCM's Action Network**: visit www.nrcm.org or contact Emmie Theberge at emmie@nrcm.org or (207) 430-0105.



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