

# MAINE STATE LEGISLATURE

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**Saving energy for Maine**

**2003 Annual Report**



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## **Dedication**

It is with a deep sense of gratitude that we dedicate this, our first annual report, to Philip Hastings, the initial director of Efficiency Maine, who passed away earlier this year. Despite his brief tenure at the Commission, Phil established a strong foundation for Efficiency Maine that will benefit the people of our State for years to come.

## Introduction and Summary

When the Maine Legislature enacted “An Act to Strengthen Energy Conservation,” (the Act) in 2002, it gave the Public Utilities Commission (Commission) responsibility for the planning and delivery of energy efficiency programs. This was consistent with the Legislature’s general approach to electric restructuring, under which the utilities were required to divest all of their generation assets and were allowed to engage in only limited electricity marketing activities in their service territories. In addition to effectively transforming the utilities into delivery-only companies, the Legislature took the unique step of vesting in the Commission, and not the utilities or their affiliates, responsibility for procuring standard offer service. Thus, it was logical for the Legislature also to charge the Commission with developing and implementing energy conservation programs. Nonetheless, this approach is sufficiently novel that others around the country are following the progress of Efficiency Maine with considerable interest.

This report describes Efficiency Maine’s activities during the past year pursuant to the requirements of the Act. It provides an overview of the actions we have taken in response to the firm directives in the Act, and how we have attempted to accommodate the Act’s less quantifiable guidelines.

The Act directs the Commission to develop and implement conservation programs that are cost effective and consistent with an overall strategy developed by the Commission. We are broadly required to consider programs that increase consumer awareness of energy conservation, create more favorable market conditions for efficiency, and promote sustainable economic development and reduced environmental damage. The Act contains other directives on allocating funds among programs, considering public input, contracting with service providers, evaluating programs, distributing services, and developing the overall program funding level. Recognizing that it would take us time to address all the requirements of the Act, and to avoid “significant delay in the implementation of conservation programs,” the Legislature directed us to implement “interim” energy conservation programs to conclude by December 31<sup>st</sup> of 2003. The interim programs were not required to satisfy all of the requirements of the Act.

The Commission responded by initiating the regulatory proceedings necessary to meet the requirements of the Act while, at the same time, implementing ten interim programs. Six of the programs were implemented in calendar year 2002 and four in 2003. Though not required by the legislation, all interim programs were designed to meet the full requirements of the Act. This will allow us to roll interim programs into full-scale, ongoing efficiency program with minor adjustments.

Each interim program and its achievements are briefly described in this report. Pages 21 and 22 identify our intended ongoing programs and provide our best assessment of how those programs will unfold given our present assumptions about future program funding. Extensive Commission proceedings and public input are required to develop the infrastructure needed to run these programs and to meet the requirements of the Act. A summary of these proceedings is provided on pages 23 and 24.

We are pleased with the progress we made this year. In the past, Maine's energy efficiency programs had a reputation for effectiveness and innovation, and we are endeavoring to live up to that tradition. As a part of state government, we are uniquely positioned to work with other state agencies in ways that allow us to utilize existing resources for energy efficiency purposes. For example, through a cooperative effort of Efficiency Maine and the Department of Transportation, Maine has become the first state to comprehensively retrofit its traffic signals from incandescent to more efficient LED technology.

In addition to partnering with other state agencies, we are endeavoring to utilize Maine's considerable private sector expertise in energy conservation. Indeed, one of the Act's objectives is to promote sustainable economic development by creating an energy efficiency infrastructure within the State. Toward that end, the Commission's new purchasing rule gives preference to local firms or to firms employing local individuals. The rule has already had an effect, as three of our four competitively selected contractors are Maine based companies. By drawing on in-state expertise developed under past energy conservation programs, we are able to offer new opportunities to local enterprises while enhancing the effectiveness of the programs we now deliver.

Environmental benefits have always been a "soft," or at least unquantifiable, reason to implement efficiency programs, but Maine's Act expressly acknowledges environmental improvement as a goal. Thus, for the first time in Maine, we are providing the estimated environmental benefits of our programs in this report. Energy savings from last year's programs avoid the emission of close to 5,000 tons of carbon, 22 tons of sulphur dioxide, and 6 tons of nitrogen oxides per year, and if we achieve our targets for next year, we will more than triple these numbers. In the coming year, we will coordinate our efforts with those of the Maine Department of Environmental Protection and, hopefully, find ways to use these environmental savings as offsets to achieve additional state goals.

Our accomplishments have only been possible because we have strong support internally from the Commission and its staff, good working relationships with utilities, and support from stakeholders and the administration. The coming year will not lack for new challenges, but with continued support from all who have helped in the past, we are confident that we will be able to respond.

## Impacts of 2003 Efficiency Programs

Interim Program	Market Segment	2003 Program Costs	Annual Participant Benefits	Societal Benefit-Cost Ratio	Annual Emission Reductions
<b>Residential Lighting</b>	All residential	\$507,000	\$192,000	1.3	1,262 tons CO <sub>2</sub> 11,500 lbs SO <sub>2</sub> 3,200 lbs NOx
<b>Low Income Refrigerator Replacement</b>	Residential Customers below 150% of the federal Poverty guidelines	\$300,000	\$38,000	1.4	251 tons CO <sub>2</sub> 2,290 lbs SO <sub>2</sub> 636 lbs NOx
<b>Small Business</b>	Businesses with less than 50 FTEs	\$579,000	\$107,000	1.9	706 tons CO <sub>2</sub> 6,444 lbs SO <sub>2</sub> 1,790 lbs NOx
<b>Building Operator Certification (BOC)*</b>	Public school & State buildings	\$65,800	N/A	5.9	
<b>Traffic Signal Replacement</b>	Municipalities	\$220,000		7	826 tons CO <sub>2</sub> 7,538 lbs SO <sub>2</sub> 2,094 lbs NOx
<b>Commercial &amp; Industrial**</b>	All businesses				
<b>State Buildings</b>	State	\$1,200,000		1.4	1,578 tons CO <sub>2</sub> 14,400 lbs SO <sub>2</sub> 4,000 lbs NOx
<b>New Schools**</b>	Municipalities				
<b>Existing Schools</b>	Municipalities	\$15,000	\$26,000	2.9	171 tons CO <sub>2</sub> 1,562 lbs SO <sub>2</sub> 434 lbs NOx
<b>Energy Conservation Loan Program</b>	Businesses with less than 50 FTEs	\$35,000***	\$7,150	1.6	43 tons CO <sub>2</sub> 396 lbs SO <sub>2</sub> 110 lbs NOx
<b>Total</b>		<b>\$2,921,800</b>	<b>\$370,150</b>		<b>4,837 tons CO<sub>2</sub></b> <b>44,130 lbs SO<sub>2</sub></b> <b>12,264 lbs NOx</b>

\* Evaluation by Northwest Energy Efficiency Alliance

\*\* New programs with insufficient data

\*\*\* Loan has been repaid in full



## ENERGY STAR® Residential Lighting Program

Efficiency Maine launched an ENERGY STAR Residential Lighting Program in February 2003. The ultimate goal of the program is to create a self-sustaining, robust market for efficient lighting in Maine. The goal will be achieved by increasing the sale of energy efficient lighting, consumer awareness of efficient lighting, and the availability of efficient lighting products. The program is coordinated with the US Environmental Protection Agency's effort to promote its ENERGY STAR brand of efficient products.

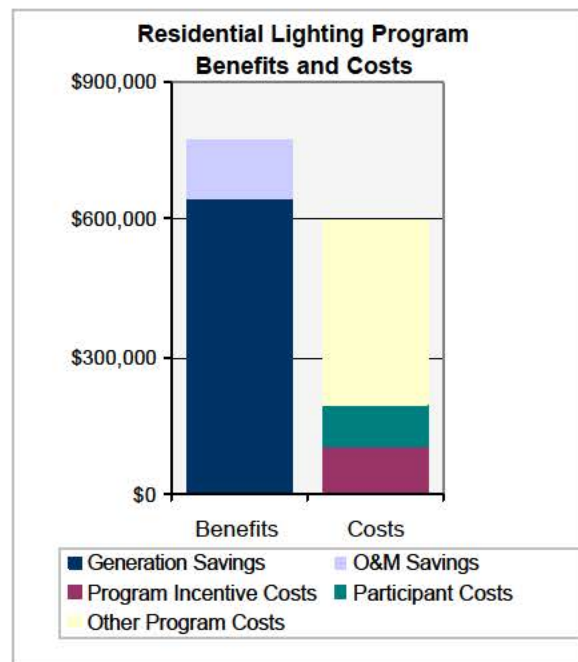
Lighting accounts for about 10-15% of total household electricity use with typical households spending about \$110 per year on energy for lighting. By choosing ENERGY STAR labeled products, consumers can reduce electricity bills and improve the environment. In the case of lighting, ENERGY STAR labeled compact fluorescent lamps (CFLs) are four times more efficient at converting electricity to light than incandescent bulbs. Thus they use fewer watts to produce the same amount of light. For example, a 27-watt CFL provides about 1800 lumens, compared to 1750 lumens from a 100-watt incandescent bulb.

Efficiency Maine's Residential Lighting Program relies on a competitively selected contractor to work through a network of 147 participating retailers who sell energy efficient lighting products directly to Maine residents. The contractor supports the retail stores by educating the sales staff, developing product displays, and ensuring that rebate coupons are available for the appropriate products. Participating retailers deduct the rebate from the consumer's bill at the store and

Efficiency Maine reimburses the retailer through a coupon-processing contractor.

The program has helped sell more than 30,000 ENERGY STAR efficient lights. The lights will save an estimated 1.6 million kWh per year for each year of their lives. Maine homeowners will save approximately \$192,000 per year in energy costs. Program benefits exceed costs by a margin of 1.3 to 1 and will improve with the increase in lighting sales from a recent torchiere turn-in promotion. Program environmental benefits include the annual avoidance of 1,262 tons of CO<sub>2</sub> emissions and 11,520 and 3,200 pounds of SO<sub>2</sub> and NO<sub>x</sub> respectively.

Efficiency Maine will continue and expand the program beyond 2003 by supporting the increased sales and use of energy efficient ENERGY STAR lighting and appliances through continued incentives and a public awareness campaign.



*"This lighting efficiency campaign is a great way to get Mainers thinking about ways to conserve energy, save money and help the environment."*

Robert W. Varney  
Region 1 Administrator, U.S. EPA



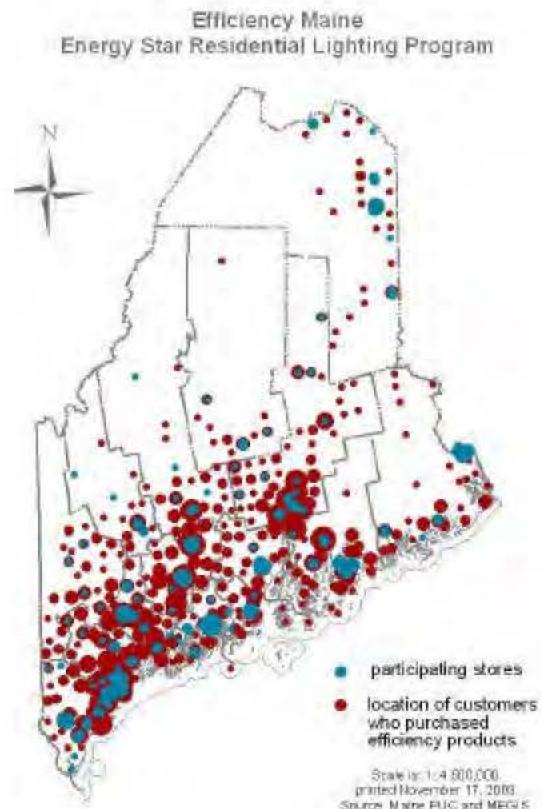
Governor Baldacci helps kick off Efficiency Maine's Torchiere Turn-in promotion during fire safety month.

*"This a great program, not only for the citizens of Portland, but for all of Maine. Not only are we taking an item that we in the Fire Department believe to be dangerous out of people's homes, we are bringing in a safe product. The exchange program is a win-win situation for everyone."*

John Beatty,  
Public Information Officer  
Portland Fire Department



ENERGY STAR lighting products display at a True Value store in Bar Harbor.



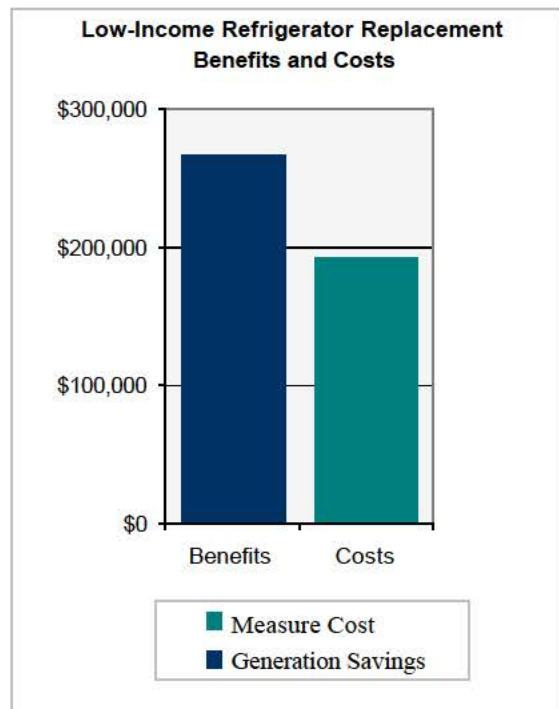
## Low Income Refrigerator Replacement Program

Efficiency Maine's Low Income Refrigerator Replacement Program was designed to replace old and inefficient refrigerators in the homes of low-income consumers. The program goals are to increase the affordability of electricity services to low-income customers, to reduce the consumption of electricity, and to provide environmental benefits. Programs for these customers are important because while they may use less electricity per household than other customers, their energy costs consume a much greater percent of their incomes.

Administrative costs for the program are minimized by piggybacking on an existing federal program being delivered through the Maine State Housing Authority (MSHA) in partnership with the Community Action Programs (CAPs). The United States Department of Energy (USDOE) provides energy audits and weatherization services for families or individuals with household incomes below 150% of federal poverty guidelines. In Maine, approximately 150,000 households fall into the low income guidelines. The USDOE program is delivered through a partnership between MSHA, which administers the grants, and Maine's CAPs, which deliver the services. Efficiency Maine was able to complement the services being offered by MSHA and the CAPs through a memorandum of understanding with the Maine State Housing Authority. Under the MOU, CAP energy auditors and weatherization specialists estimate the efficiency of the refrigerators in homes they are auditing. When the auditors find that a refrigerator replacement will save 750 or more kWh per year, Efficiency Maine funds may be used to purchase new, more energy efficient

models. While on site, the auditors may also install energy efficient compact fluorescent lamps in locations where they will provide the greatest savings.

Since August of 2002, Maine's CAPs have delivered over 240 refrigerators to consumers who will each save about \$150 per year on their electricity bills. Altogether, the refrigerators should save about 318 MWh per year. Preliminary data indicates the program is cost effective with benefits exceeding costs by a 1.4 to 1 margin. The program avoids on an annual basis 251 tons of CO<sub>2</sub> and 2,290 and 636 pounds of SO<sub>2</sub> and NO<sub>x</sub> respectively. This program is working well and will be continued as an ongoing program in 2004.





**“Replacing an old, inefficient refrigerator saves energy and money. It’s a smart long-term idea for everyone, but is especially important for those with low incomes.”**

Peter Merrill  
 Director, Division of Administration  
 Maine State Housing Authority



***Community Action Agencies in all of Maine’s 16 counties have replaced refrigerators in low-income customers’ homes.***

## Small Business Program

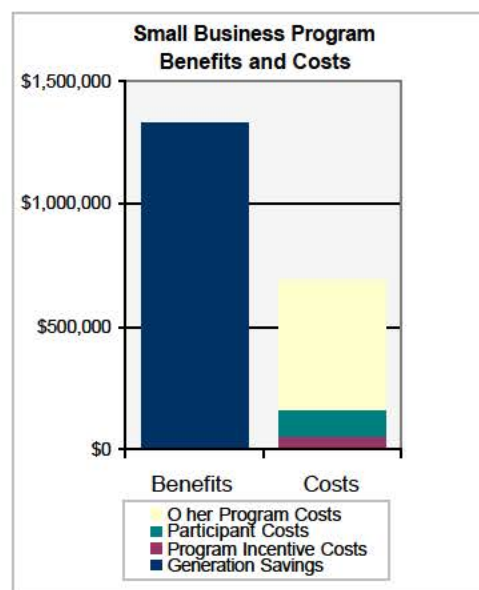
The Efficiency Maine Small Business Program is available to all small businesses, non-profit organizations, public and private kindergarten through twelfth grade schools, and municipalities. The program provides financial incentives for energy efficient electric products and self-survey tools to help identify and evaluate electricity savings opportunities. The program also provides training programs for small businesses and contractors, and advice and information on purchasing more efficient electric equipment. In addition to advice on how to save energy, program advisors may offer customers information on how to improve productivity. The program helps businesses locate participating suppliers and contractors that can provide, install, and maintain energy efficient electric equipment and assists companies in applying for program financial incentives. The program is available for both retrofit projects and new construction. Incentives are capped at \$10,000 per application and \$20,000 per business.

Efficiency Maine selected a Maine based company to serve as the program implementation contractor through a competitive bid process, and the program became available to Maine businesses on April 16, 2003. On that date, businesses could apply for an array of prescriptive incentives for specific efficiency products such as lighting, heating, ventilating and air conditioning, appliances, and motors. A process also was put in place to customize incentives for more complicated efficiency projects. Program marketing materials became available on the Efficiency Maine web site, and a Maine based call center was set up to receive inquiries from interested vendors and potential participants.

Training programs, organized by the Maine Small Business Development Center, have been offered in every county, and almost 100 trade allies have been recruited to promote the program to their customers. The allies supply

equipment such as lighting, HVAC, motors, variable speed drives, occupancy sensors, commercial refrigeration, and commercial washers. Marketing materials promoting the program and the benefits of energy efficiency have been distributed statewide. The information includes a program brochure, technology fact sheets, savings analysis worksheets and a quarterly newsletter.

The program has granted incentives to 62 small businesses resulting in 895,334 kWh per year of electricity savings and \$107,000 per year in cost reductions. Current data indicates the societal benefit to cost ratio of the program is 1.9 to 1. Environmental benefits include the annual avoidance of 706 tons of CO<sub>2</sub> emissions, and 6,444 and 1,790 pounds of SO<sub>2</sub> and NO<sub>x</sub>, respectively. The program is working well and responds to the legislative directive to address the needs of small businesses. It will be continued in 2004 as an ongoing program.

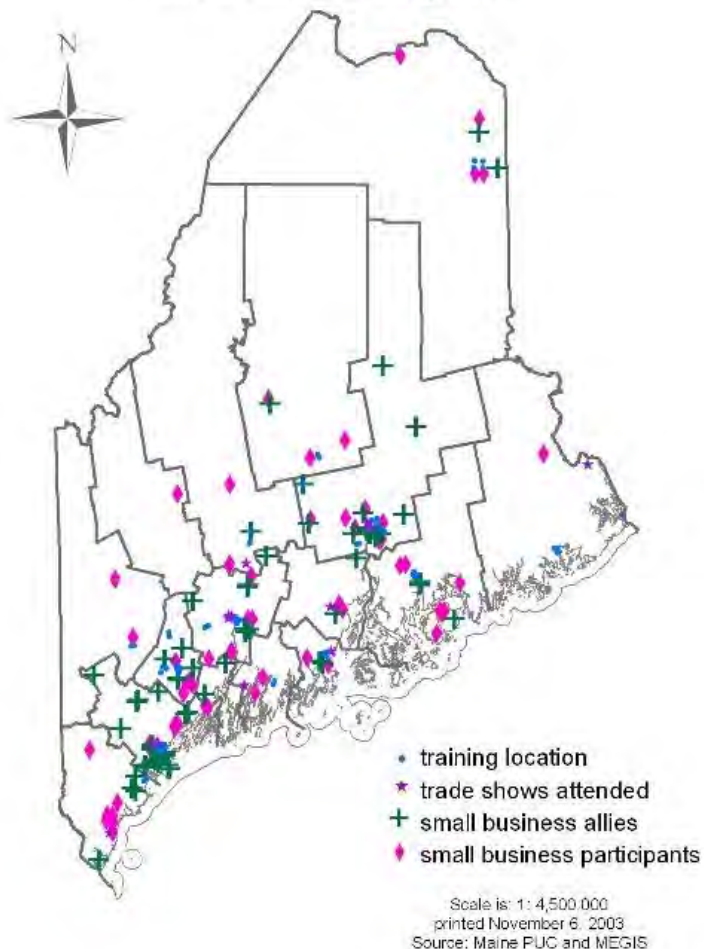


**“We had a 75hp old-style compressor that was a real energy drain. It was clear that an energy efficient compressor with a variable speed drive was the way to go. The cash incentive made the project even more attractive.”**

Jim Lynch  
VP of Operations  
Maine Commercial Tire Co.  
Herman, Maine



### Efficiency Maine Small Business Program



## Building Operator Certification Program

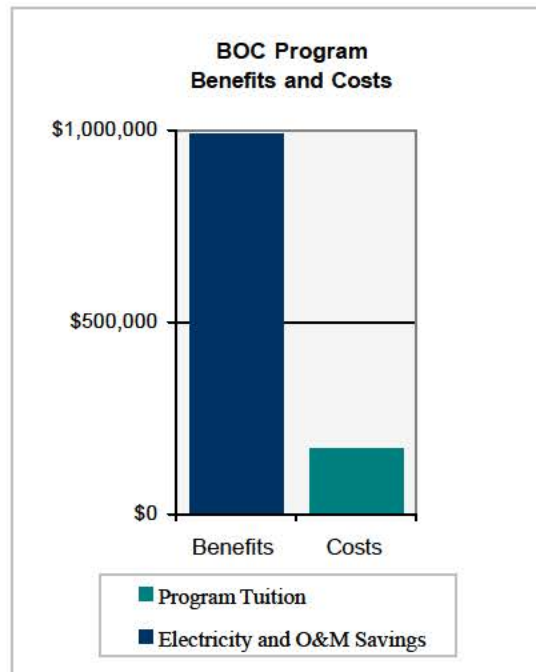
Efficiency Maine's Building Operator Certification (BOC) program is provided in cooperation with the Northeast Energy Efficiency Partnerships (NEEP). Electricity use in commercial and government buildings can be reduced by 15 percent or more if building operators manage and maintain their structures and building systems more effectively. The BOC program provides building operation and maintenance staff the training they need to improve energy efficiency and reduce maintenance costs in existing buildings. The program is also used to increase the effectiveness of other Efficiency Maine programs.

The BOC program serves the needs of kindergarten through twelfth grade schools across the State. Efficiency Maine pays the course tuition for building operators. Since July 2002, three of the eight-week BOC courses have been delivered to school personnel. In an attempt to reach building operators across the State, three courses were offered - one in Portland, one in Bangor, and one split between Presque Isle and Houlton. Additional sessions are scheduled for Calais and York. In addition, a session of the course was provided for building operators of State, University of Maine System, Technical College System, and Maine Maritime Academy buildings. Efficiency Maine has provided the course for schools across the State to reduce energy costs to municipalities. By targeting State buildings, Efficiency Maine hopes to reduce operating costs in the State's budget.

BOC training also complements other program offerings. Building operators of facilities participating in the "State Buildings" or "High Performance Schools" programs are encouraged to participate in the

BOC program, while BOC participants are informed of other energy efficiency programs .

A recent survey of course graduates indicates that eighty-four percent have been able to improve the comfort or productivity of their building occupants or saved money or energy as a result of what they learned. All respondents said they would recommend the BOC program to people doing the same type of work as them. Because the course appears to be cost effective and due to the positive survey results received, Efficiency Maine will continue the BOC program as part of the long-term Program Plan.



**“Thanks for funding this program; it was worth the money you invested. Anyone that gets a chance to go should go; it was really THAT good!”** David Conley  
Washburn, Maine



BOC courses have been held in Portland, Bangor, Augusta, Presque Isle and Houlton, allowing building managers throughout Maine to attend. BOC will soon be offered in Calais and York.



## Traffic Signal Replacement Program

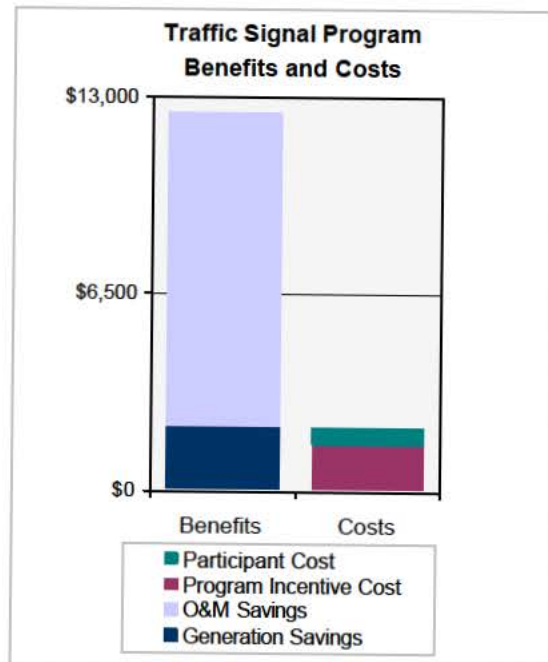
Efficiency Maine's Traffic Signal Replacement Program exemplifies cooperation in state government. In August 2002, the New England Governors and Eastern Canadian Premiers agreed to address climate change. Their resolution specifically mentioned achieving carbon reductions through the replacement of traffic lights with more efficient light emitting diode (LED) technology. The Maine Public Utilities Commission and the Maine Department of Transportation (MDOT) responded to this resolution by developing a cost effective traffic signal replacement program as an interim conservation program funded through Efficiency Maine. Within two months, the agencies developed a memorandum of understanding (MOU) outlining responsibilities for the program. Under the MOU, the MDOT markets the program to town officials and ensures the equipment is ordered and installed properly. The Commission provides a grant that compensates towns for two-thirds of the costs for traffic signal retrofits.

LED signals are up to ten times more efficient than incandescent signals, so they reduce both pollution and energy costs. In addition, the LED signals have a fifteen-year life compared to a one-year life for incandescent signals, so towns save the maintenance cost of replacing burned out bulbs.

The program provides multiple benefits. Participating towns will benefit from reduced maintenance costs and electricity bills. Motorists will enjoy a safer driving experience since LED traffic lights gradually fade instead of suddenly "burning out." Maine will fulfill its part of the resolution of the Governors and Premiers to reduce pollution.

The program has been successful. In just one year, every Maine town with traffic signals has enrolled. Equipment to upgrade 285 intersections is on order and will be installed as rapidly as contractor availability will allow.

Based on preliminary data, the program seems cost effective from avoided energy costs alone, but when the avoided maintenance costs to towns are included, benefits exceed costs by more than 7 to 1. If all intersections with LED retrofits save comparable amounts of energy to the intersection for which we have data, this program will avoid the annual emission of over 826 tons of CO<sub>2</sub> and will reduce emissions of sulphur dioxide and nitrous oxides by 7,538 and 2,094 pounds per year respectively. This program has achieved its objective and is no longer necessary.



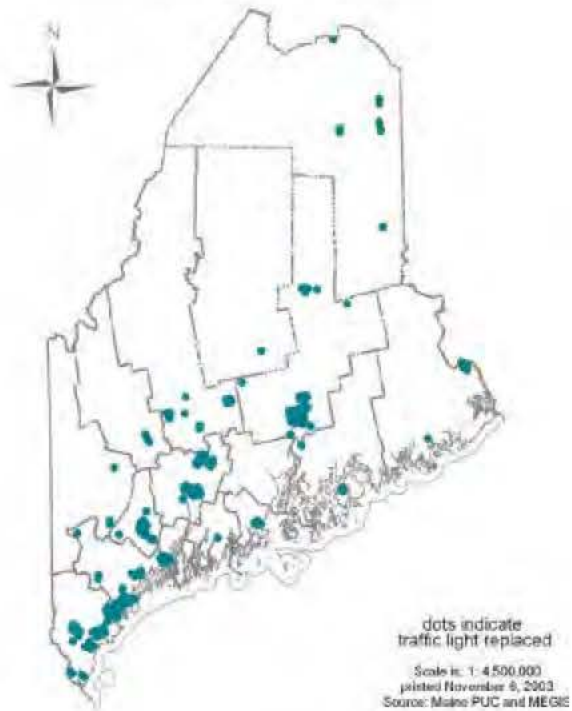


*The Statehouse dome, behind LED traffic signals installed with the help of Maine's Department of Transportation and Efficiency Maine*

"We're very pleased with the program. We converted two intersections and we've seen a better than 50% reduction in our power bills for each."

Roger Mosley, Public Works Director,  
Town of Standish

Efficiency Maine  
Traffic Light Replacement Program



## Commercial and Industrial (C&I) Program

Efficiency Maine's Commercial and Industrial (C&I) Program provides a combination of services, including energy efficiency information and training, business practice assistance, and direct financial incentives in the form of grants. The components of the program are designed to encourage businesses to adopt energy efficient business practices, to include consideration of energy costs and energy efficiency in their business decisions, and to purchase and install energy efficient products. This program is available to all commercial businesses. Businesses with 50 or fewer full-time equivalent employees may participate in this program or the Efficiency Maine Small Business Program, which is specifically designed for smaller businesses.

The C&I Program includes three components: business practices training, information and end-use training opportunities, and financial grants to assist in the purchase of energy efficient equipment.

(1) Business Practices Training: Efficiency Maine is conducting a pilot program to offer 20 business practice training sessions with individual businesses. Ten sessions are targeted at large users (over \$350,000 of annual energy use) and the other ten to medium sized users (\$50k - \$349k annual energy use). Training sessions for large users include initial energy diagnostic and feedback, action planning and follow-up coaching, and advice. Medium users are offered a facilitated streamlined version of the larger program. This program is still in the initial diagnostic phase but participant response has been positive to date.

(2) Information and End-use Training: In 2003, Efficiency Maine hosted two, and co-sponsored several other, training opportunities under the Commercial and Industrial Program. In June, Efficiency Maine cooperated with the US Department of Energy, the Consortium for Energy Efficiency and Maine Industries of the Future to bring the nationally recognized Compressed Air Challenge training program to Maine where 32 facility managers received training on the fundamentals of compressed air. Then in October, Efficiency Maine and Kennebec Valley Community College hosted the Association of Energy Engineers Certified Energy Manager (CEM) course. The CEM course is a five day training class and certification exam designed to help managers of larger facilities sharpen their focus and improve their understanding of energy issues. Fourteen of the attendees successfully completed the exam and are eligible to be considered for the CEM designation.

(3) Financial Grants: On November 1, 2003, Efficiency Maine launched the grant portion of the C&I Program. Businesses are eligible to receive financial incentives to help purchase and install premium efficient equipment. Projects involving the multiple technologies eligible for the program must be pre-approved by Efficiency Maine, but the application process is simple and many applications are expected. Public briefing sessions introduced the program in Presque Isle, Bangor, and Portland during the week of November 17<sup>th</sup>. Efficiency Maine is offering this program with the assistance of a Maine company selected through a competitive bid process.

## State Buildings Program

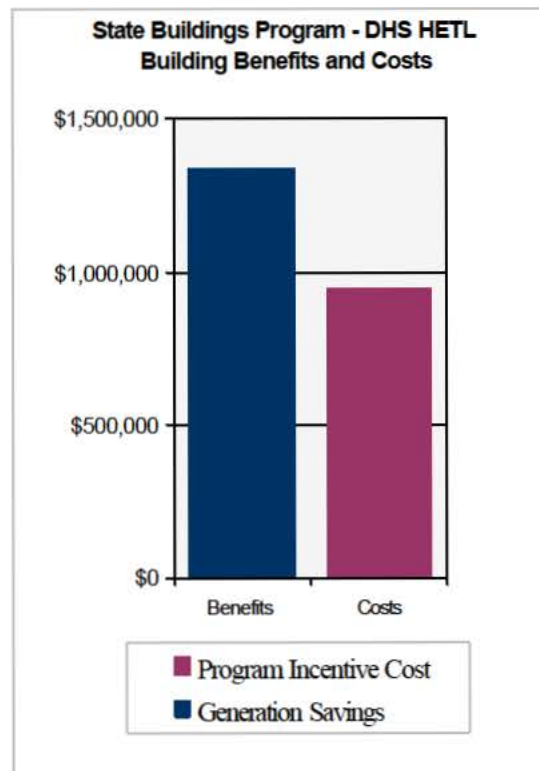
The Maine Public Utilities Commission and the Maine Department of Administrative and Financial Services (DAFS) developed a Memorandum of Understanding (MOU) to improve the energy efficiency of State buildings. The program will fund renovations that enhance electrical efficiency. It will also fund an energy survey of all state buildings to identify opportunities for energy efficiency. Under the MOU, DAFS identifies potential projects and Efficiency Maine reviews the proposed projects for cost effectiveness. If the projects are cost effective, they are developed and managed by DAFS and financed through the funds administered by Efficiency Maine.

During 2002, the Department of Human Services' Health Engineering and Testing Laboratory (HETL) building was identified as eligible for funding under this program. An energy audit revealed a number of cost effective energy efficiency measures that could remedy known ventilation problems and increase occupant comfort and safety. DAFS has contracted with an architectural and engineering firm to design and oversee the agreed upon improvements to the HETL building. The project is expected to save over 2,000,000 kWh per year in electricity consumption.

Two other cost effective building projects were identified and received preliminary funding approval during 2003. Major renovations to the Baxter School for the Deaf on Mackworth Island in Casco Bay could save 92,000 kWh per year. Renovations to buildings on the Augusta Mental Health Institute campus may increase facility efficiency by nearly 35,000 kWh per year.

Energy audits on buildings over 10,000 square feet in floor area constructed prior to 2000, and which use electricity, began in August. Three hundred and twenty buildings meet these criteria and will be audited by December. DAFS and the Commission will jointly report on the audit findings, and recommend ways to pursue cost effective energy savings discovered.

Renovations to the HETL building are cost effective by a ratio of more than 1.4 to 1. The annual air emissions avoided from the projected energy savings are approximately 1,578 tons of CO<sub>2</sub>, 14,400 pounds of SO<sub>2</sub>, and 4,000 pounds of NO<sub>x</sub> per year. This program has been continued as an ongoing program.



## Maine High Performance Schools Program

Maine Department of Education's (MDOE) School Facilities Services Team, supported by the Maine Bureau of General Services (BGS), oversees the design and construction of approximately 5 to 10 new public school projects per year. Ensuring that these schools are built with high standards of energy efficiency is important. America's schools spend more than \$6 billion each year on energy, and the U.S. Department of Energy (USDOE) estimates they could save 25 percent of that money—\$1.5 billion nationally—through better building design, available energy efficient and renewable energy technologies, and improvements to operations and maintenance. Funding for school construction in Maine is limited, and some cost effective energy efficient measures may not be included in new school designs.

To address this problem, Efficiency Maine developed the Maine High Performance Schools program to reduce energy consumption, lower operation and maintenance costs, and change the MDOE and BGS review process for new school construction to accelerate the adoption of equipment and technologies that exceed the current building codes for energy efficiency.

The program provides financial and technical assistance to new schools to pursue energy efficient designs and install energy efficient equipment at new facilities. The program provides financial assistance to participating schools in the form of design, implementation, and LEED/ENERGY STAR® certification grants. The interim program is available to school districts that are on the MDOE list for major capital facilities in 2003/2004 and others that are in the early concept design phase but have not held a public

referendum. The program is also available to other schools in the early design phase that rely on local funding and are outside MDOE's Major Capital Improvement process.

Efficiency Maine selected a Maine based company to serve as a Program Technical Advisor (PTA) through a competitive bid process. The PTA will review plans and specifications for participating schools and provide technical advice and assistance in energy efficiency to MDOE and BGS. This program is a broad partnership involving the combined efforts of Maine Department of Education, Bureau of General Services, and the Maine School Management Association (MSMA). The USDOE is also involved through a Rebuild America grant awarded to MSMA to help promote the program. This partnership ensures that the grants provided by the program are well integrated into the process the USDOE has established to provide State funding to the new schools being built in the State.

MSMA offered three workshops on High Performance Schools during 2003 geared towards local school officials and architect and engineering firms building new schools in the State. Two hundred people have attended these workshops and to date, thirteen schools have expressed an interest in participating in the program. Since the process of approving and constructing a new school is lengthy, there are no schools that have yet gone through the entire design and construction process.

Efficiency Maine and its partners plan to continue this program in 2004.

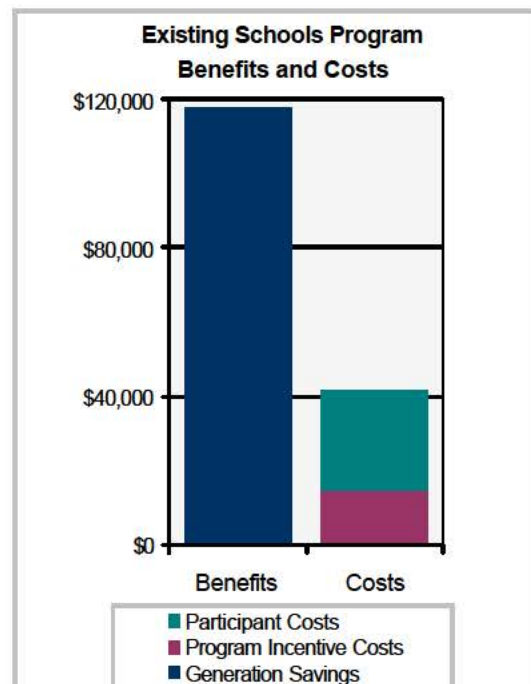
## Existing School Efficiency Program

Efficiency Maine's Existing School Efficiency Program was designed to assist Maine schools become more energy efficient. Schools face significant barriers to implementing energy efficiency. There is intense competition for administrators' time, and energy costs often do not represent a large enough share of their budgets to command attention. School building operators who control the building energy systems do not pay the fuel and utility bills and thus may lack knowledge regarding the value of energy efficiency. Even if administrators or building operators are aware of the benefits efficiency can bring to their facilities, they may lack capital for investment or be deterred by the risk associated with new or unfamiliar technology.

Efficiency Maine's Building Operator Certification (BOC) Program was implemented to address one of the market barriers to energy efficient schools, the building operator's lack of knowledge. When these operators were asked what other help they would like to see from Efficiency Maine, they requested access to funds so they could implement the energy efficiency projects they discovered as part of the BOC process. Upon reviewing these requests, the Commission determined that an Existing School Efficiency Program could utilize the infrastructure created for the Efficiency Maine Small Business Program to deliver the financial assistance necessary to help the schools invest in more efficient technologies. Acting on this information, the Commission directed Efficiency Maine to develop a program to serve this niche market. Program costs are kept low by using BOC

graduates to market the program and by using the Small Business Program infrastructure to process incentive applications.

Since August 5, 2003, four schools have completed energy efficiency projects and received incentive checks from Efficiency Maine for approximately \$15,000, allowing them to achieve annual energy savings in excess of 217,000 kWh. The benefits of these projects exceed their costs by a margin of nearly three to one. The program annually avoids 171 tons of CO<sub>2</sub> and 1,562 and 434 pounds of SO<sub>2</sub> and NO<sub>x</sub>, respectively. The program complements the BOC course and will be continued as an ongoing program in 2004.



## Energy Education Programs

There are two energy education programs operating in Maine. One program, the Maine Energy Education Program (MEEP), provides education on energy issues to kindergarten through twelfth grade students in the Bangor Hydro-Electric and Central Maine Power service territories. A second program, operated by Maine Public Service Company, offers educational programs in the Maine Public Service territory. Both programs strive to increase consumer knowledge of energy efficiency - a fundamental market barrier to economically efficient behavior. The programs provide school children with information on issues such as electricity production, its use and conservation at home and at school, and the effects of energy use on the environment and the economy. Lessons learned in school spill over into the home environment, improving energy awareness and energy use habits.

The MEEP program combines general awareness classroom training activities with practical skills that allow students to monitor their school building's energy use. A third component is the recruitment of student volunteers to serve as school "Energy Patrols." The patrols consist of older students who increase teacher and student awareness of energy issues through classroom skits, distribution of informational materials, and reminders to turn off computers and lights that are not in use. MEEP has gathered data showing that the schools with active Energy Patrols have reduced their energy consumption. Between January and May of last year, MEEP was able to provide classroom training and develop Energy Patrols in 16 schools across the State.

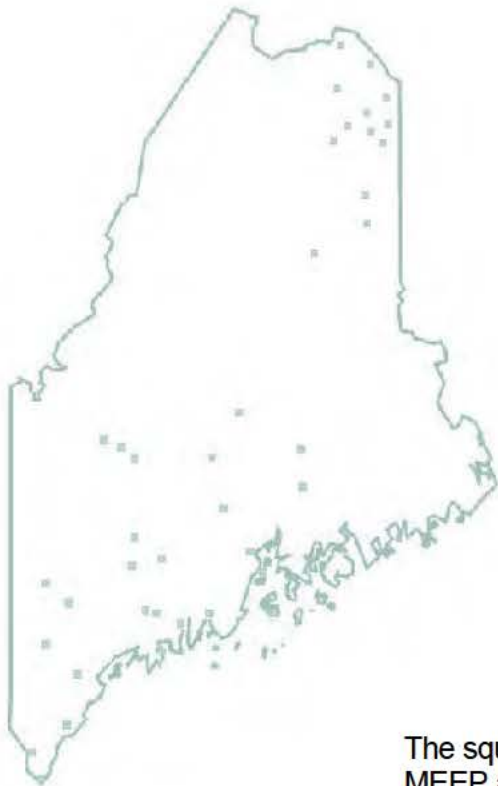
Maine Public Service's Energy Education Program dates back to the 1970's. The program has changed to reflect modern energy issues, and now includes two components. The Energy Eagle Patrol is a team of students who raise the awareness of energy issues within the schools through the distribution of materials and by reminding fellow students and teachers to turn off lights that are not in use. The patrol program includes presentations on how to read electric meters, the advantages of fluorescent lighting, and the energy use of computers. Maine Public Service's BE Energy Wise (BEEP) program is part of a larger, national energy education effort. BEEP materials are designed to fulfill educational learning standards in most disciplines and at all grade levels. Portfolios of student work developed through the program are entered into a national competition. Through the third quarter of 2003, Maine Public has conducted 31 educational presentations and reached over 600 students.

Consumer education is an integral part of market transformation. Both of these programs will be continued as part of the Commission's ongoing programs.

*"On behalf of the National Energy Education Development (NEED) Project Board of directors and staff, I congratulate you and your students on an outstanding energy education project. I'm pleased to announce that Gateway Elementary School of Van Buren receives top honors for the State of Maine! You and your students are invited to attend the NEED National Recognition Ceremonies scheduled for June 20 - 23, 2003 in Washington, D.C."*

Mary E. Spruil, Program Director the NEED Project

MPS's energy education program has attracted national attention, as shown in this quote.



The squares on the map above show schools that MEEP and MPS have visited since mid-2000, to deliver their energy education programs.



## Efficiency Maine's Ongoing Program Plan

Maine's Energy Efficiency Program Plan (the Maine Plan) describes the actions the Commission will take to comply with the Conservation Act after the interim program period has ended. During the past year, the Commission initiated a number of rulemakings and investigations to provide the foundation for the Maine Plan. Each of the proceedings was conducted using a consultative process to gather input from stakeholders.

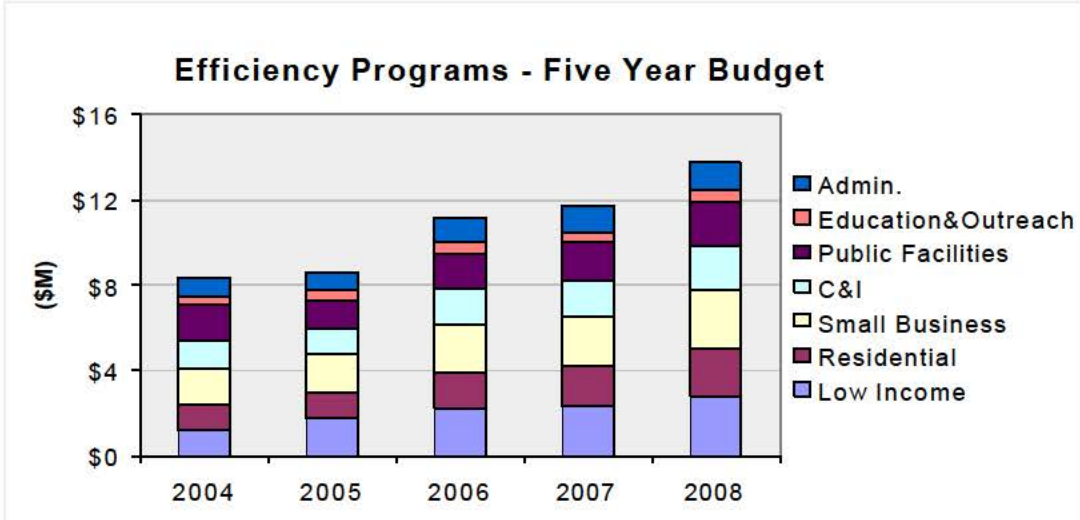
On October 20, 2003, the Commission approved the Maine Plan. The Plan provides a five-year estimate of energy savings that can be expected from individual programs given current budget projections. The Plan is not a static document. Certain elements of the Plan are required by legislation (e.g. a review of existing utility programs and a 20% allocation of funds to the small business and low income sectors). Others, such as the individual programs, are in response to guidelines in the Act and input from stakeholders and allow a level of flexibility. The Commission may change individual program designs to keep them current and improve their effectiveness and it may add new programs as additional opportunities are identified. In keeping with the Conservation Act, the Commission will hold at least one public hearing and invite comments and suggestions from interested parties prior to substantially revising individual programs or the objectives and strategy of the overall Plan. In addition, the Commission will annually convene an open program review session with stakeholders to discuss program implementation issues.

The projected budget is based on the most current projection of revenues available from utility assessments, expectations of prior conservation contract payouts, and the areas of energy saving opportunities identified in Commission proceedings. There is a high degree of uncertainty associated with these budget projections. The prior contractual commitments of Central Maine Power Company's Power Partner's program consume approximately half of the available conservation program fund for 2003. Although the commitments decrease in subsequent years, they continue to represent a substantial portion of the available budget for the next five years. Significant changes in the patterns of Power Partner's program payouts could, therefore, have significant effects on the overall budget.<sup>1</sup> Revenue projections will also be uncertain until the Commission finalizes assessment levels for Consumer Owned Utilities (COUs).<sup>2</sup>

The following charts are from page two of the plan. They summarize the projected program expenditures for the years 2004 through 2008. The full text of the plan is available on the Efficiency Maine web site.

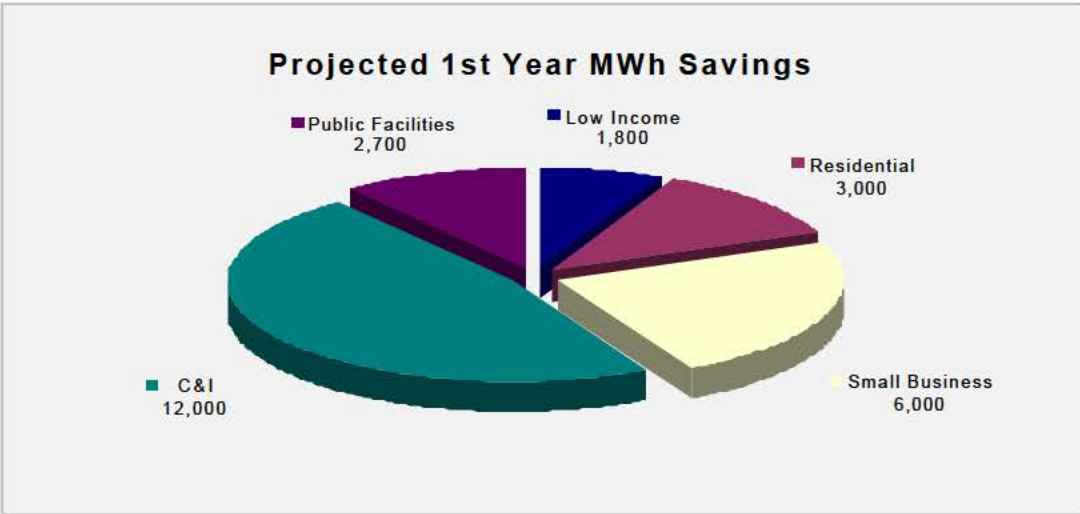
<sup>1</sup> The Commission has initiated an investigation of the Power Partners program contracts pursuant to the Act.

<sup>2</sup> In May 2003, the Commission opened Docket No. 2003-348 to investigate whether there are circumstances that would justify conservation assessments for consumers of COUs at levels less than those imposed on consumers of Investor Owned Utilities.



Customer Segment	2004	2005	2006	2007	2008
Low Income	\$1,200,000	\$1,719,269	\$2,218,861	\$2,331,525	\$ 2,757,198
Residential	\$1,252,679	\$1,289,451	\$1,718,861	\$1,831,525	\$ 2,257,199
Small Business	\$1,670,238	\$1,719,269	\$2,218,861	\$2,331,525	\$ 2,757,198
Commercial/Industrial	\$1,252,679	\$1,289,451	\$1,664,146	\$1,748,644	\$ 2,067,899
Public Facilities	\$1,722,917	\$1,289,451	\$1,664,146	\$1,748,644	\$ 2,067,899
Education & Outreach	\$ 417,560	\$ 429,817	\$ 500,000	\$ 500,000	\$ 500,000
Market Research	\$ 167,024	\$ 171,927	\$ 221,886	\$ 233,153	\$ 275,720
Administration	\$ 668,095	\$ 687,707	\$ 887,544	\$ 932,610	\$ 1,102,879
<b>Total</b>	<b>\$8,351,192</b>	<b>\$8,351,192</b>	<b>\$8,596,343</b>	<b>\$11,657,626</b>	<b>\$13,785,992</b>

Projected first year energy savings are displayed below. Savings in future years will escalate as program activity increases.



## **Implementing the Conservation Act – Commission Activities**

To implement the Conservation Act, the Commission has carried out a series of activities to establish goals, cost effectiveness criteria and definitions, to implement infrastructure, and to approve efficiency programs. Most of these activities were carried out through formal proceedings that included written comments, public hearings, and Commission decision-making deliberations. This section summarizes significant Commission activities that have occurred since the enactment of the Act.

### **Extension of Utility Programs**

**April 8, 2002**

In April 2002, the Commission issued an order directing T&D utilities to continue operating their existing energy conservation programs in a manner consistent with recent program operations until such time as they were directed to do otherwise by the Commission. Docket No. 2002-161.

### **Approval of Interim Programs**

**June 13, 2002**

In June 2002, the Commission approved a number of interim conservation programs pursuant to Section 7 of the Act. Docket No. 2002-161. To avoid delay in implementing conservation programs, interim programs did not have to satisfy the Act's requirements for ongoing programs. However, the portfolio of programs generally targeted a wide range of customer groups, was estimated to be cost effective using current criteria, and carried out the goals of the Act. We also stated that we would consider which of the utility programs to continue funding through the Conservation Program Fund, after we implemented the interim programs. Interim programs would terminate no later than December 31, 2003. The Commission has subsequently developed and implemented all interim programs approved in the decision.

### **Investigation into Ongoing Programs – Study of Potential Savings**

**July 23, 2002**

In July 2002, the Commission issued an Order establishing procedures and schedules for developing conservation programs pursuant to the Act. Docket No. 2002-162. We stated that we would decide funding and economic potential issues, conclude a rulemaking to define cost effectiveness, and then decide upon a program plan for ongoing programs. We directed interested persons to file economic potential studies, and a technical conference was held in October to discuss those studies. The Office of Public Advocate submitted the only studies on conservation potential.

### **Established Goals, Objectives, and Strategies**

**September 24, 2002**

The Commission established goals, objectives, and strategies as required by 35-A M.R.S.A. § 3211-A (2). Docket No. 2002-162. These goals, objectives, and strategies govern the plan for ongoing programs that would henceforth be called the Maine Energy Efficiency Program Plan.

### **Definition of Low Income and Small Business Consumer**

**December 4, 2002**

In August 2002, we opened a rulemaking to revise Chapter 380 and to define the terms "low income consumers," and "small business consumers" for conservation program purposes, as required by 35-A M.R.S.A. § 3211-A (1)(B)(1) and (2). A final Rule went into effect in December 2002.

### **Establishment of Cost Effectiveness Criteria**

**December 4, 2002**

The Rule that defined low income and small business consumers also established a Modified Societal Test as the cost effectiveness standard that would govern the Commission's selection of conservation programs, as required by 35-A M.R.S.A. § 3211-A(2).

**Determination of Utility Assessment****April 4, 2003**

In April 2003, the Commission decided to assess all T&D utilities in the state at the statutory maximum rate, 1.5 mils/kWh, for funding conservation programs. Docket No. 2002-162. Utilities paying less than the maximum would phase in over time. The Commission found that the potential for energy efficiency is relatively proportional across T&D service territories in Maine. The Commission also found that the achievable potential energy savings is several times greater than the savings that could be achieved at the maximum funding level, inferring a legislative intent in such an instance to fund at the maximum level. An investigation was opened to further investigate consumer-owned utility assessments. Docket 2003-348.

**Redesign of Transmission-Level Rates****July 23, 2003**

The Commission opened an investigation to determine whether non-distribution level and special contract customers pay for conservation expenses in their rates, whether rates should change, and whether these customers should be allowed to participate in Efficiency Maine programs.

**Transfer of Utility Contracts to the Commission****August 5, 2003**

The Commission opened an investigation to examine requiring T&D utilities to transfer to the Commission the administration of contracts associated with utility-sponsored programs, as required by P.L. 2002, ch. 624, § 8.

**Establishment of Procedures to Select Service Providers****October 9, 2003**

The Commission conducted a rulemaking to determine the procedures it would follow when selecting service providers, as required by 35-A M.R.S.A. § 3211-A(3). The final Rule requires the Commission to use a competitive bid process except when sole-source contracting is the most efficient means to deliver a program.

**Approval of Ongoing Program Plan****October 20, 2003**

In September 2002, the Commission issued a request for input on the design of energy efficiency programs that should be included in the portfolio of ongoing programs. Docket No. 2002-162. The Commission requested that parties include summaries of the proposed programs describing the target market, goals and objectives, market barriers to overcome, measurable outcomes, and estimated program costs. The Commission also requested the inclusion of cost effectiveness estimates for proposed programs along with their effectiveness in meeting the overall goals, objectives, and strategies established in its September 24, 2002 Order. Parties were asked for references to similar programs in operation elsewhere. The Commission received written comments and held a technical conference. The Staff issued a report and proposed Maine Energy Efficiency Program Plan for comment in September 2003 in Docket No. 2003-517 and held a deliberative session in October. The Commission issued its Order approving a final Program Plan in October 2003.

**Hiring****2002-2003**

The Conservation Act authorizes the Commission to hire three additional employees to carry out the requirements of the Act. Between July and December 2002, the Commission hired a Program Director and two Program Administrators. In addition, approximately eight existing Commission staff members have allocated a portion of time to efficiency activities. All staff time is compensated from the Administrative Fund established by the Act.

**Regional Participation****2002-2003**

The Commission has joined the Northeast Energy Efficiency Partnerships, Inc. (NEEP), a regional cooperative that has provided direct program implementation, general consulting services, and Maine-specific research support.

**Identity Branding****2002**

The Commission chose "Efficiency Maine" to encompass all program activities. Under the Efficiency Maine name, the Commission has developed a comprehensive web site ([www.energymaine.com](http://www.energymaine.com)) and promotional materials.

Efficiency Maine is a statewide effort to promote the more efficient use of electricity, help Maine residents and businesses reduce energy costs, and improve Maine's environment. Efficiency Maine is funded by electricity consumers and administered by the Maine Public Utilities Commission.

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This Report was published by the Maine Public Utilities Commission, Division of Energy Programs. This publication is printed under appropriation #014-65A-0966-01.