
efficiency MAINE

# FY2015 ANNUAL REPORT

*Efficiency Maine is the independent administrator for energy efficiency programs in Maine. Efficiency Maine's mission is to lower the cost and environmental impacts of energy in Maine by promoting cost-effective energy efficiency and alternative energy systems. Efficiency Maine does this primarily by delivering rebates on the purchase of high-efficiency lights and equipment to help customers save electricity, natural gas, and heating fuels throughout the Maine economy. Efficiency Maine is governed by a stakeholder Board of Trustees with oversight from the Maine Public Utilities Commission.*




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## Message from the Executive Director

*This Annual Report describes the activity of the Efficiency Maine Trust in Fiscal Year 2015 (FY2015) — the second year of the Trust's Triennial Plan II. It also describes the first full year of program implementation of the provisions of the Maine Legislature's 2013 Omnibus Energy Act. That law stabilized the process for funding the Trust's electricity-saving programs and expanded critically important funding for programs that reduce heating demand and promote alternative heating systems. In FY2015, the Trust was able to roll out new programs and investments made possible by the Omnibus Energy Act, including home weatherization and other significant thermal energy efficiency investments.*

FY2015 marked the first full year of the new Home Energy Savings Program (HESP). Homeowners across the state installed high-efficiency heat pumps, insulation, pellet boilers, and other energy-saving technologies in record numbers. Since its launch in September, 2013, 16,199 projects have been completed through HESP. This Program is one of the most important ways in which the Trust is advancing Maine's statutory goals of weatherizing substantially all homes whose owners or occupants are willing to participate in, and share the costs of, cost-effective home weatherization and achieving 20% heating fuel savings across the state.

In addition to working with a growing network of home performance and heating contractors to deliver these energy-saving technologies to homeowners, the Trust collaborated with several organizations and communities to leverage program incentives with community-based initiatives, including bulk purchasing. The Island Institute, for example, coordinated air sealing and insulation efforts on several Maine islands, which enabled HESP to reach homeowners who experience higher energy costs but who, because of their remote location, have found it more challenging to weatherize their homes.

The Small Business Initiative had similar goals of targeting hard-to-reach areas and encouraging energy efficiency investments in a sector that traditionally experienced low efficiency program participation rates. The Initiative was designed to overcome the unique barriers to energy efficiency experienced by small businesses by bringing information and technical support to the customer's doorstep, offering enhanced financial incentives, and scheduling and executing energy upgrades using the "direct install" approach. The results were significant: 80% of the Aroostook county businesses receiving assessments undertook lighting upgrades. And the Initiative demonstrated significant energy efficiency opportunity in the sector: participating businesses will average $1,400 a year in reduced electricity costs as a result of high-efficiency lighting upgrades.

Thermal energy efficiency solutions were an important part of Efficiency Maine's Commercial and Industrial Programs as well. Using funds from the Regional Greenhouse Gas Initiative (RGGI), hundreds of businesses installed ductless heat pumps to more efficiently heat and cool office and retail spaces. Industrial customers also benefitted from RGGI-funded thermal efficiency investments, including a large pipe insulation project at Woodland Pulp and Paper that will save the facility $70,000 a year on process heating costs.

In addition, the Trust delivered Maine's least-cost energy resource – energy efficiency – to a record number of customers. The Trust coordinated with the business

community, the Maine Public Utilities Commission, the Office of the Public Advocate, the Governor's Energy Office, and several other groups to encourage homeowners and business leaders to implement energy efficiency solutions as a way to manage energy costs and future unpredictability in energy prices. The results of the campaign were impressive: 5,835 projects were completed at Maine businesses, homeowners performed 9,759 projects to reduce heating demand, and millions of efficient light bulbs were installed at homes across the state. In addition to the high levels of program participation, energy efficiency emerged as an established part of Maine's public discourse and was widely promoted as a means to achieve greater comfort, productivity, and predictability in energy costs while reducing climate forcing emissions.

FY2015 Business Incentive Program participation levels reached an all-time high: businesses recognized energy efficiency as the most cost-effective way to manage their energy costs, and many recognized LED technologies as a timely energy efficiency solution. As efficiency programs expand in the year ahead, the Trust will work to incorporate lessons learned from this surge in participation. In particular, FY2015 revealed that the Trust needs to be nimble in responding to changes in the marketplace and fluctuations in customer demand. Moving forward, the Trust will implement strategies to calibrate incentives and program management to enhance continuity and predictability in program availability.

The program activities and accomplishments that are described in this report would not have been possible without the guidance and oversight of the Trust's Board of Trustees and a very engaged group of stakeholders. We also appreciate the contributions to efficiency program planning and implementation from the Office of the Public Advocate; the Governor's Energy Office; MaineHousing; Community Action Agencies; the Maine Public Utilities Commission; and the Legislature's Energy, Utilities and Technology Committee. Working together to implement the Triennial Plan, we will continue to increase energy savings and reduce greenhouse gas emissions by expanding the use of cost-effective energy efficiency and other distributed energy resources. ▪

**Michael D. Stoddard**
*Executive Director*

# INTRODUCTION

*The Annual Report of the Efficiency Maine Trust (the "Trust" or "Efficiency Maine") describes activities during Fiscal Year 2015 (FY2015), which covered the period from July 1, 2014 to June 30, 2015. It includes the budgets, activities, and results for all programs and related activities administered by the Trust during FY2015.*

# Introduction

Some noteworthy estimates of the impacts of the Trust's FY2015 programs include:

- *Saving 3.6 million MMBtu over the full life of the measures installed, equivalent to more than 26 million gallons of oil*
- *Saving 2.1 billion kWh over the full life of the measures installed*
- *Avoiding more than $248 million in wasted energy costs*
- *Matching more than $77.7 million of incremental private investment with $58.4 million of program investment*
- *Delivering electricity savings at an average levelized cost of 4.2 cents/kWh compared with an average cost of supply of 7.6 cents/kWh*
- *Delivering heating fuel savings at an average levelized cost of $12.96/MMBtu, which is equivalent to $1.80 per gallon of oil*
- *Supporting 344 small businesses in reducing electricity costs through the Small Business Initiative*
- *Supporting 9,759 projects to install air sealing, insulation, ductless heat pumps, and heating systems through HESP*
- *Discounting 2.9 million high-efficiency bulbs*

The Efficiency Maine Trust was created by State statute in 2009.[1] The purposes of the Trust include:

- *Consolidating under one roof the funds for Maine's consumer efficiency programs for all fuel types – electric, natural gas, heating oil and wood – together with consumer alternative energy programs;*
- *Integrating delivery of electric and thermal efficiency measures so the customer can have a one-stop shopping experience;*
- *Acquiring energy resources (efficiency and alternative energy) that cost less than traditional energy supply to help individuals and businesses meet their energy needs at the lowest cost; and,*
- *Helping to transform the energy market in Maine so that energy efficient products, alternative energy equipment, and related energy services are more accessible and affordable to end-use customers.*

The Trust is managed by a nine member board of trustees. During FY2015, New Trustee Donald Lewis, of Nyle Systems, was appointed to the Board. Al Hodsdon, of A.E. Hodsdon Engineers, and David Barber, of AdvancePierre Foods, served as Chair and Vice-Chair, respectively. Brent Boyles, Assistant Adjutant General of the Maine Army National Guard and formerly of Maine Public Service, served as Treasurer and Kenneth Fletcher, formerly of the Governor's Energy Office served as Secretary. Lennie Burke, of Norway Savings Bank, and Scott Dunning, of the University of Maine, also served; Ex Officio members were Patrick Woodcock, Director of the Governor's Energy Office, and John Gallagher, Director of the Maine State Housing Authority.

FY2015 is the fifth year of program activity since the Trust assumed responsibility for administering Efficiency Maine programs, and the second year of the Triennial Plan II. In FY2015, the Trust leveraged significant foundational work completed in FY2014 to implement significant thermal efficiency programs made possible by the Omnibus Energy Act as well as invest larger electric efficiency budgets. Together these programs promoted electric and thermal energy efficiency, supported homeowners and businesses in managing energy costs, and reduced energy costs for Maine ratepayers.

## SECTORS SERVED

As the Trust continually streamlines and simplifies its programs for the benefit of program participants, programs and initiatives have merged and grown to serve multiple sectors. This Annual Report will describe the Trust's major programs, some of which have been renamed to reflect a more diverse group of program participants. The table below illustrates the sectors served by each Trust program.

## FUNDING

The Trust receives funds from a variety of sources including Maine ratepayers, RGGI, revenues from the Forward Capacity Market and a long term contract with Maine utilities. The Trust is directed by Maine statute to invest these funds to promote more efficient and affordable use of energy and customer-sited alternative energy systems. The following section briefly describes each funding source and shows how the funds are invested through Efficiency Maine programs.

1. See, Efficiency Maine Trust Act, Title 35-A, Maine Revised Statutes, Chapter 97.

**TABLE 1: SECTORS SERVED BY EFFICIENCY MAINE PROGRAMS**

| Programs | Commercial and Industrial | Small Businesses | Multifamily (5+ units) | Residential | Low-Income Households |
|---|---|---|---|---|---|
| Business Incentive Program | ✓ | ✓ | | | |
| Community Renewable Energy Demonstration Grants | ✓ | | | | |
| Consumer Products Program | ✓ | ✓ | ✓ | ✓ | ✓ |
| Home Energy Savings Program | | | | ✓ | ✓ |
| Large Customer Program | ✓ | | | | |
| Low-Income Direct Install Initiatives | | | | | ✓ |
| Maine Advanced Buildings | | ✓ | | | |
| Multifamily Efficiency Program | | | ✓ | | |
| Small Business Initiative | | ✓ | | | |

Note: Multifamily buildings with four units or less are considered part of the Home Energy Savings Program.

*Electric System Benefit Charge:* This funding stream comes from payments made by the utilities directly to the Trust for the procurement of cost-effective energy efficiency. The amount of funding the Trust receives is determined by the budget needed to capture the maximum achievable cost-effective (MACE) energy efficiency potential approved by the Maine Public Utilities Commission. The Trust typically offsets some of the budget necessary to capture MACE through the use of other funding sources.

Maine's largest electric customers, who take service at the transmission or sub-transmission (T&ST) level are ineligible for funding from the Electric System Benefit Charge.

*Maine Yankee Settlement:* The Maine Yankee Settlement funds stem from a settlement with the federal government for the storage of spent nuclear fuel. One of the ways in which the funds are distributed is through the Trust. These funds were allocated to electricity-saving programs to supplement the revenues from the Electric System Benefit Charge.

*Natural Gas Conservation Fund:* This funding stream comes from an assessment on natural gas local distribution companies. Similar to the standard used to establish the appropriate level of funding for electric efficiency, the amount of the assessment is based on the amount needed capture all the cost-effective natural gas energy efficiency that is achievable and reliable. In FY2015, Unitil was the only natural gas

**TABLE 2: PROGRAM FUNDING SOURCES**

| Programs | Electric System Benefit Charge | Maine Yankee Settlement | Natural Gas Conservation Fund | RGGI | MPRP Settlement | Forward Capacity Market | Long-Term Contract | Renewable Resource Fund | Federal/ Other |
|---|---|---|---|---|---|---|---|---|---|
| Business Incentive Program | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Community Renewable Energy Demonstration Grants | | | | | | | | ✓ | |
| Consumer Products Program | ✓ | ✓ | | ✓ | ✓ | ✓ | | | |
| Home Energy Savings Program | ✓ | ✓ | ✓ | ✓ | | ✓ | | | ✓ |
| Large Customer Program | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | |
| Low-Income Direct Install Initiatives | ✓ | | ✓ | ✓ | | | | | |
| Maine Advanced Buildings Program | | | | ✓ | | | | | |
| Multifamily Efficiency Program | | | | ✓ | | | | | |
| Small Business Initiative | ✓ | | | | | | | | |

utility assessed; during FY2015, only Unitil customers were eligible for funding from this fund.

*Regional Greenhouse Gas Initiative (RGGI):* RGGI is a nine-state regional program to limit carbon emissions from electricity generators. Maine joined RGGI in 2009 when the program was established. Under the program, large generators are required to purchase "carbon allowances" in an amount equal to their carbon emissions. Allowances are sold at quarterly auctions for this purpose. In Maine, proceeds from the auctions are transferred to the RGGI Trust Fund managed by the Trust.

The Trust uses RGGI funds for energy conservation programs that reliably reduce electricity consumption or greenhouse gas emissions. The Trust employed the statutory guidelines for allocating RGGI funds: 1) 50% to efficiency investments that reduce electricity consumption or reduce greenhouse gas emissions and that lower energy costs at commercial or industrial facilities; 2) 35% to efficiency investments that lower residential heating energy demand and reduce greenhouse gas emissions; and 3) 15% to the Maine Public Utilities Commission to be disbursed to electricity ratepayers.

*Maine Power Reliability Program (MPRP) Settlement:* The funds received by the Trust from the MPRP Settlement are governed by a May 7, 2010, stipulation approved by the Public Utilities Commission. Under the stipulation, in FY2015, the

Trust received $300,000 for the weatherization of low-income homes, $500,000 for efficiency projects for T&ST customers and $700,000 that can be used at the Trust's discretion. In FY2015, the Trust allocated its discretionary funds to the Business Incentive Program and the Consumer Products Program.

The $300,000 for the weatherization of low-income homes was carried forward into FY2016 and will be invested through HESP for the benefit of low-income households.

*Forward Capacity Market (FCM):* Forward Capacity Market funds are proceeds from the Trust's capacity that is bid into the ISO New England Markets. The compensation the Trust receives from the Forward Capacity Market is for the reduction of capacity provided through qualifying efficiency projects that are tracked and reported by the Trust.

*Long-Term Contract:* On October 2014, the Maine Public Utilities Commission approved a long-term contract between the Trust and Maine's two investor-owned transmission and distribution utilities for the purchase and sale of energy efficiency capacity resources. Only the Large Customer Program can use funds from the long-term contract. Per the order approving the long-term contract, the Trust will submit annual reports to the Commission indicating the savings from each individual large customer project funded by the contract.

## RESULTS

The Trust's overall program strategies and implementation were similar to those launched in FY2014; investments were far greater in FY2015, however. A significant portion of funds dedicated to new programs in FY2014 were not fully invested until FY2015. FY2015 results reflect the effects of completing a ramp-up to full program activity that was begun in the prior year. The customer demand for electricity-saving projects significantly exceeded what the programs experienced in prior years. In addition, growing awareness of, and participation in, thermal energy-saving measures and programs is indicative of the Trust's growing role in reducing all energy costs for Maine homeowners and business owners.

The programs administered by the Trust played a critical role in helping Maine businesses and homes take advantage of energy efficiency, educating consumers about product models that save energy, and helping them connect with vendors and contractors. The Trust's programs also provided financial incentives that spurred consumers to choose energy-efficient options over less-expensive, less-efficient options—a choice that will lower energy bills over the long term and put the Maine economy on a stronger footing.

The Trust's costs for acquiring energy efficiency have increased as programs have grown and energy efficiency opportunities and projects have become more complex. Yet energy efficiency remains the lowest cost energy resource in Maine. On a levelized basis, the cost to save electricity by investing in efficiency upgrades averaged 4.2 cents/kWh, and the cost to save heating fuels (heating oil, propane, natural gas, wood, and kerosene) by weatherizing and installing high-efficiency heating equipment averaged $12.96/MMBtu, which is equivalent to $1.80/gallon.

**TABLE 3: COSTS AND SAVINGS FOR ELECTRIC PROGRAMS**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (Lifetime) | Benefit-to-Cost Ratio |
|---|---|---|---|---|---|---|---|
| Business Incentive Program Electric Measures | 75,285,380 | 872,772,692 | $17,162,905 | $16,564,324 | $74,374,992 | $0.039 | 2.21 |
| Large Customer Program Electric Measures | 30,760,921 | 438,865,951 | $6,983,439 | $5,124,783 | $25,297,712 | $0.028 | 2.09 |
| Small Business Initiative | 5,409,349 | 70,201,736 | $2,732,147 | $551,767 | $6,330,554 | $0.047 | 1.93 |
| Consumer Products Program | 102,318,679 | 550,577,702 | $10,817,327 | $20,287,640 | $49,871,614 | $0.056 | 1.60 |
| Home Energy Savings Program Electric Measures | 9,032,603 | 162,586,854 | $3,564,434 | $1,079,128 | $16,426,509 | $0.029 | 3.54 |
| Low-Income Direct Install Initiative Electric Measures | 1,534,180 | 14,065,348 | $1,232,373 | $0 | $1,249,631 | $0.088 | 1.01 |
| Cross-Cutting Strategies Electric | | | $863,415 | | | | |
| Administration - Electric | | | $2,136,542 | | | | |
| TOTAL | 224,341,112 | 2,109,070,284 | $45,492,581 | $43,607,642 | $173,551,012 | $0.042 | 1.95 |

Tables 3 and 4 illustrate the total energy savings and lifetime avoided energy costs associated with each of the programs administered by the Trust in FY2015.[2] Each table also shows the summary of the Trust's costs. These figures include the financial incentives given to customers ("participants") and the participants' incremental cost of the energy upgrades. The costs also factor in the Trust's efforts to manage the programs, provide public information and outreach, hold training sessions and provide technical support, and conduct quality control of each program. The benefit-to-cost ratio indicates the ratio of the financial benefits (from the lifetime avoided energy costs) to the costs of the Trust and the incremental costs of the participants.

Table 5 provides a summary of the Trust's payments during FY2015. As discussed in the Finance and Administration section of this report, the Trust invested over $58 million in FY2015 to fund the programs described above. ■

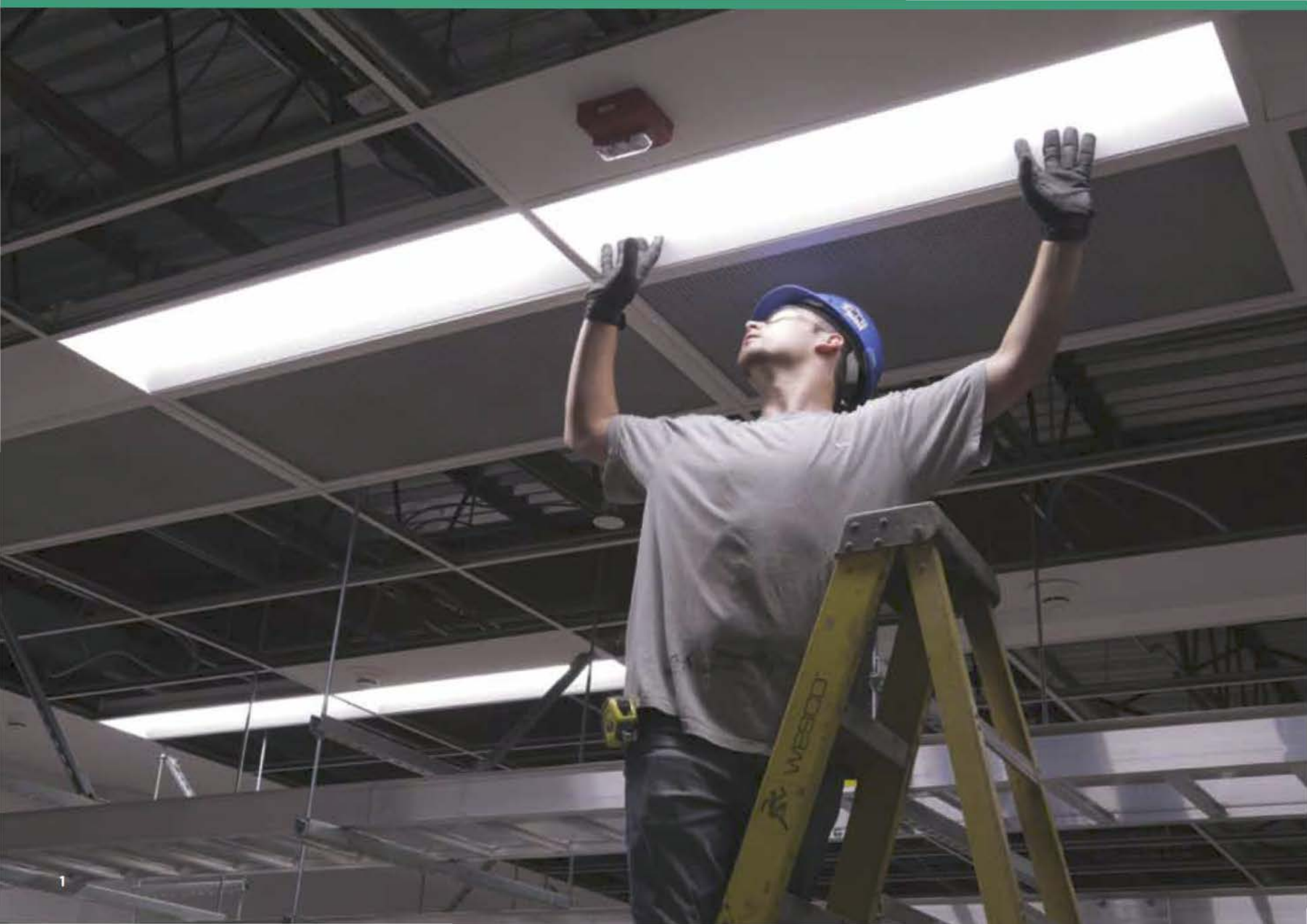
2. Savings values reported in the program summary tables and individual program tables are "adjusted gross savings," unless otherwise indicated. Adjusted gross savings is the change in energy consumption and/or demand that results directly from program-related actions taken by participants in an Efficiency Maine program, regardless of why they participated, adjusted by factors developed through program evaluations. Periodically, Efficiency Maine enlists independent third-party contractors to evaluate the savings impacts of major programs. The evaluations develop factors to improve the accuracy of gross savings calculations based on installation rates and in situ-verified savings rates. The evaluations also analyze program attribution, including identifying program participants who would have installed the same or equivalent efficiency measures on their own even if the program had not been offered ("free-ridership") and the percentage of efficient equipment installed due to program influences even though no incentive or technical assistance was received ("spillover"). Factoring in free-ridership and spillover delivers "net savings," which quantifies the savings directly (adjusted gross – free-ridership) and indirectly (spillover) attributable to the program. Efficiency Maine publishes estimated free-ridership and spillover factors in the Technical Reference Manuals.

## TABLE 4: COSTS AND SAVINGS FOR ALL FUELS AND NATURAL GAS PROGRAMS

| Program | Annual MMBtu Savings | Lifetime MMBtu Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/MMBTu (Lifetime) | Benefit-to-Cost Ratio |
|---|---|---|---|---|---|---|---|
| Business Incentive Program Natural Gas Measures | 13,057 | 260,887 | $242,991 | $66,294 | $1,666,517 | $1.19 | 5.39 |
| Low-Income Direct Install Initiative Natural Gas Measures | 636 | 12,728 | $76,138 | $0 | $95,369 | $5.98 | 1.25 |
| Home Energy Savings Program Natural Gas Measures | 5,581 | 127,018 | $307,737 | $1,100,862 | $2,945,103 | $11.09 | 2.09 |
| Maine Advanced Building Program | 1,642 | 32,833 | $113,734 | $106,360 | $335,424 | $6.70 | 1.52 |
| Multifamily Efficiency Program | 15,909 | 276,179 | $1,414,082 | $1,762,481 | $4,815,091 | $11.50 | 1.52 |
| Business Incentive Program Other Fuels Measures | 31,244 | 409,193 | $1,095,388 | $6,211,805 | $10,017,712 | $17.86 | 1.37 |
| Large Customer Program GHG Measures | 26,266 | 374,124 | $1,808,033 | $1,272,598 | $6,212,210 | $8.23 | 2.02 |
| Low-Income Direct Install Initiative Other Fuels Measures | 13,700 | 246,606 | $700,600 | $1,270,337 | $4,547,475 | $7.99 | 2.31 |
| Home Energy Savings Program Other Fuels Measures | 83,224 | 1,894,231 | $6,309,776 | $22,334,064 | $43,920,697 | $15.12 | 1.53 |
| Renewables-Demonstration Projects | | | $220,923 | | | | |
| Cross-Cutting Strategies All Fuels | | | $170,894 | | | | |
| Administration - All Fuels | | | $496,969 | | | | |
| TOTAL | 191,258 | 3,633,797 | $12,957,266 | $34,124,801 | $74,555,598 | $12.96 | 1.58 |

## TABLE 5: FY2015 PAYMENTS MADE

| Use of Funds | Amount ($) |
|---|---|
| **Administration-General** | **2,220,441** |
| **Residential Programs** | **23,913,161** |
| – Administration-Res. Program | 229,793 |
| – Low Income | 4,390,447 |
| – Non-Low Income | 19,292,921 |
| **Business Programs** | **29,865,449** |
| – Administration-Bus. Program | 249,884 |
| – Small/Medium | 23,138,575 |
| – Large Custom | 6,476,990 |
| **Cross-Cutting and Alternative Strategies** | **1,119,422** |
| – Administration-C.C. Program | 88,239 |
| – Education and Awareness | 27,498 |
| – Evaluation | 707,203 |
| – Alternative Energy Program | 220,926 |
| – Innovation | 75,556 |
| **Other Payments** | **1,747,101** |
| **Total Use of Funds-EMT** | **58,865,574** |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# EFFICIENCY MAINE
# PROGRAMS

*The following section of the Annual Report provides a short description of each of the programs. Each description generally includes a statement of the main purpose of the program, a brief explanation of the activities undertaken to implement the program, and a summary of any quantifiable results.*

# BUSINESS INCENTIVE PROGRAM

The Business Incentive Program provides education, technical assistance, quality control, and financial incentives for energy upgrades and retrofits to Maine commercial, industrial, municipal, nonprofit, and institutional customers of all sizes. The Program incentivizes proven "off-the-shelf" equipment that is widely available, represents significant energy-savings opportunity, and has practical applications across the state and across sectors. In FY2015, 5,348 projects were completed through the Program. The Trust distributed more than $16 million in financial incentives through this Program in FY2015.

**SECTORS SERVED**

- *Commercial – including non-profit organizations and government*
- *Industrial*

**FUNDS INVESTED**

- *Electric System Benefit Charge*
- *Maine Yankee Settlement*
- *RGGI Funds*
- *Natural Gas Conservation Fund*
- *Forward Capacity Market*
- *MPRP Settlement*
- *Federal/Other*

## FY2015 ACTIVITIES

In FY2015, the Program offered fixed-price incentives covering the most common efficient equipment used in Maine businesses, including lighting and lighting controls; refrigeration; heating, ventilation, and air conditioning (HVAC) units; variable speed drives; premium-efficiency boilers; furnaces and heaters (and their associated controls); and efficient gas-fired commercial kitchen equipment. The financial incentives, provided in the form of rebates, were used to reduce the barrier associated with the incremental cost of efficiency measures. The incentives encouraged businesses to retrofit or install more energy-efficient equipment than they would have otherwise. Businesses that participate in the program not only experience lower energy costs but often realize savings in other areas, such as lower maintenance costs or improvements in business processes.

Table 6 shows the number of projects conducted under the Business Incentive Program in FY2015. Although lighting projects were the primary program driver, Maine businesses also invested in upgrades to other systems in their facilities, including HVAC, compressed air, and refrigeration efficiency projects.

Lighting, including exterior lighting, was the most popular upgrade among Maine businesses in FY2015. High-efficiency light-emitting diode (LED) lights were a growing area of the Program. LED prescriptive measures in FY2015 included linear LED fixtures of interior space lighting, horizontal LED refrigerator case lighting and

**TABLE 6: FY2015 BUSINESS INCENTIVE PROGRAM PROJECTS COMPLETED**

| Description | # of Projects | # of Participants |
|---|---|---|
| **Prescriptive** | | |
| – Prescriptive Agriculture | 7 | 7 |
| – Prescriptive Compressed Air | 49 | 45 |
| – Prescriptive Ductless Heat Pump | 441 | 414 |
| – Prescriptive HVAC | 81 | 72 |
| – Prescriptive Lighting New Construction | 388 | 330 |
| – Prescriptive Lighting Retrofit | 4,257 | 2,771 |
| – Prescriptive Refrigeration | 30 | 23 |
| – Prescriptive Variable Speed Drive | 20 | 15 |
| – Prescriptive Natural Gas | 48 | 41 |
| **Custom** | | |
| – Custom Compressed Air | 4 | 4 |
| – Custom HVAC | 3 | 3 |
| – Custom Lighting | 11 | 8 |
| – Custom Miscellaneous | 6 | 6 |
| – Custom Natural Gas | 1 | 1 |
| **Total** | **5,347** | **3,741** |

high-bay LED fixtures, and exterior building and site lighting. Although prescriptive projects constitute the majority of program activity, Maine businesses also completed custom projects through the Business Incentive Program.

The Program began FY2015 with a sizeable carryforward of electrical budget from the prior year. In order to invest those funds, the Trust raised incentives and ramped up marketing and outreach efforts. This outreach was primarily accomplished by expanding and supporting the Qualified Partner (QP) network. Over the course of the year, a network of more than 700 contractors identified potential customers, developed project opportunities, and submitted electronic applications. These independent QPs are the program's primary marketers by working with their customers and identifying new customers for energy-efficient equipment. The Program communicates with the QPs through a dedicated website and a monthly electronic newsletter. The Trust also hosted three Qualified Partner Advisory Group sessions to share information and gather input from the QP network on changes to the Business Incentive Program.

In addition, the Program participated in supplier open houses and met with professional associations and groups. For the first time in many years, the Program also marketed directly to potential customers, including advertising in trade and business publications, participating at targeted trade shows, and presenting to relevant business groups.

In the spring of 2015, the Program announced that it would reduce LED incentives to reflect dropping LED prices and consumer demand that was fast exhausting the available Program budget. In the fourth quarter of FY2015, incentives were suspended for the prescriptive electricity measures to reflect the fact that the authorized budget for this Program had been committed. This suspension did not affect the availability of prescriptive natural gas and all-fuels measures.

### TABLE 7: BUSINESS INCENTIVE PROGRAM ELECTRIC (KWH) RESULTS

| Business Incentive Program Electric Measures | |
|---|---|
| Total Participants | 3,286 |
| Total Projects | 4,858 |
| Annual kWh Savings | 75,285,380 |
| Lifetime kWh Savings | 872,772,692 |
| Efficiency Maine Costs | $17,162,905 |
| Participant Costs | $16,564,324 |
| Lifetime Energy Benefit | $74,374,992 |
| Benefit-to-Cost Ratio | 2.21 |

### TABLE 8: BUSINESS INCENTIVE PROGRAM THERMAL (MMBTU) RESULTS

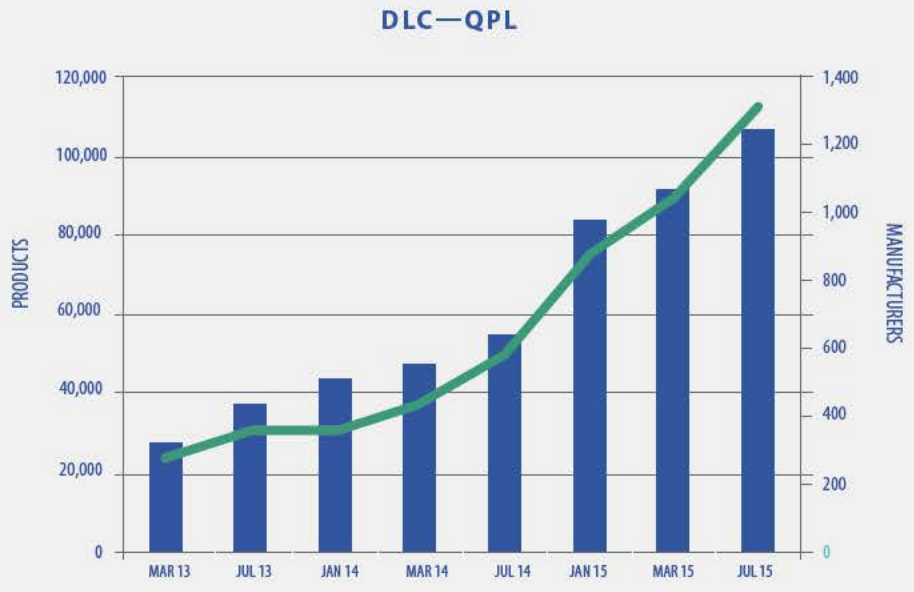
| Business Incentive Program Thermal Measures | | |
|---|---|---|
| | Natural Gas | Other Fuels |
| Total Participants | 42 | 414 |
| Total Projects | 49 | 441 |
| Annual MMBtu Savings | 13,057 | 31,244 |
| Lifetime MMBtu Savings | 260,887 | 409,193 |
| Efficiency Maine Costs | $242,991 | $1,095,388 |
| Participant Costs | $66,294 | $6,211,805 |
| Lifetime Energy Benefit | $1,666,517 | $10,017,712 |
| Benefit-to-Cost Ratio | 5.39 | 1.37 |

## FY2015 RESULTS

Table 7 shows the results for the electricity-saving projects incentivized through the Business Incentive Program. During FY2015, the program completed 4,858 projects for a total lifetime savings of more than 872 million kWh. The savings resulted in a benefit-to-cost ratio of 2.21. Many businesses not only enjoyed the energy savings granted by switching to high-efficiency lights but also the additional security stemming from a well-lit storefront and increased employee productivity and comfort. The interactive effects of efficient lights on heating load are reflected in the participant costs and benefit-to-cost ratio.

Table 8 shows the results for the natural gas and other fuel-reduction measures incentivized through the Business Incentive Program. During FY2015, the Program completed 490 projects in more than 400 businesses for a total lifetime savings of 670,080 MMBtu. These savings resulted in a benefit-to-cost ratio of 5.39 for natural gas measures and 1.37 for other fuel savings. Collaborative initiatives by the delivery team and the Trust's management team enabled the program to achieve extraordinary savings while at the same time reducing delivery costs relative to FY2014.

FIGURE 1: GROWTH IN THE LED PRODUCT MARKET




## FY2015 ANALYSIS

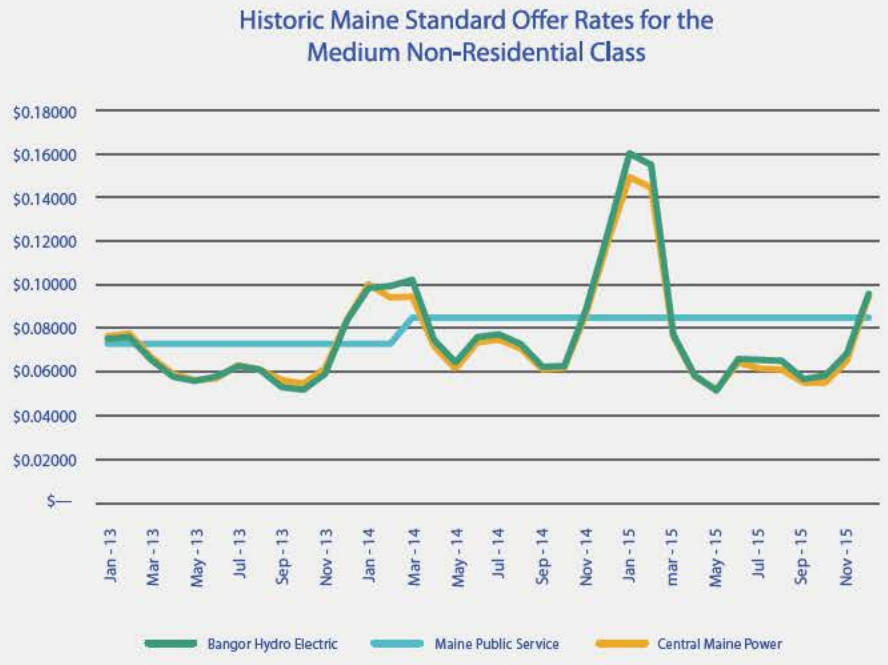
The Business Incentive Program experienced an unprecedented spike in activity in the second half of FY2015, notably with LED lighting upgrades. FY2015 saw significant growth in the number of LED products available in the marketplace and in the number of manufacturers producing these products. The DesignLights Consortium (DLC), a project of the Northeast Energy Efficiency Partnerships (NEEP), added thousands of LED products to their "Qualified Products List" (QPL), a benchmark for efficient lighting. Figure 1 provides a snapshot of the growth in the LED technology. The Trust relies on the DLC's QPL as a tool for determining eligibility of lighting measures promoted through the Program.

Maine customers and contractors responded to the rapid increase in the number of available products and dropping prices – as well as to the expectations of higher electricity prices, the incentive increases, and the marketing push – with a surge in demand for high-efficiency equipment and Efficiency Maine incentives. Initially, the rising demand was on track with expectations and the available budget. Increased customer demand was vigorously promoted by the Trust's marketing efforts, which included multiple earned media stories in daily newspapers and a prominent presence and message delivery at the MaineBiz Momentum Convention and various regional chambers of commerce. These marketing efforts were complemented by public statements from state energy officials encouraging Maine's business customers to manage rising energy costs through increased energy efficiency. Figure 2 illustrates historical electricity rates for the medium non-residential class, including a spike in rates during the winter of 2015.

In the second half of the fiscal year, a newfound urgency for undertaking projects was exacerbated by confusion and concern in the marketplace about the future reliability of the Trust's budgets. This situation stemmed principally from the extensive press coverage of the Maine Public Utilities Commission's rulemaking, and subsequent debates at the Legislature, regarding a cap on electricity ratepayer funding for conservation programs.

At the time, the Program was also relying on broad measure categories to set incentive levels. In retrospect, the Trust learned that the categories were overbroad,

**FIGURE 2: HISTORICAL STANDARD OFFER RATES**




and did not sufficiently capture differences in prices across different products within each measure category. This approach made it difficult to tailor incentive amounts to the measure cost applicable to each product in a category. The Trust also did not move quickly enough to adjust incentives to reflect market developments as they transpired. The Trust learned from this experience that it needs to design its prescriptive lighting programs to better capture the range of choices, set appropriate incentive levels, and monitor more frequently the change in product prices over time.

Taking advantage of the simplicity of a prescriptive incentive list and leveraging the efforts and customer relationships of independent contractors are important ways to keep this Program's administrative costs low. To maintain the availability of this Program's incentives in the face of big swings in customer demand, the Trust anticipates implementing a number of program design changes when commercial lighting measures are relaunched in FY2017. Potential program design changes may include establishing more granular incentive levels to reflect specific product types and efficacies, performing periodic reviews of the appropriateness of incentive levels and making adjustments as needed, applying shorter deadlines for project completion, instituting caps on the amount of incentives each business can receive in a year, setting a maximum percentage of the total project cost, and moving from one-to-one replacement retrofits to lighting design concepts. These modifications will help ensure that program budgets are judiciously invested without causing market disruptions from prematurely exhausting or, on the other hand, underspending the budget during the course of the fiscal year.

While the Program experienced unprecedented levels of activity in lighting measures, it was not able to entice enough activity in natural gas or fuel-saving measures to fully invest the budgets for those measures. The Trust introduced new measures to save gas and oil in FY2015 and has launched a significant outreach effort in FY2016 to drive more program participation.

## FY2016 PLANS

The Trust will continue to explore ways to enhance access to and participation in thermal energy-saving measures and will prioritize outreach on these fuel-saving opportunities over the next fiscal year. One promising market for the program is new customers

that have already decided to transition to natural gas. These customers are in the process of purchasing new equipment to accommodate a different fuel source, and the Trust believes the natural gas program offers an excellent opportunity to encourage these businesses to purchase more efficient equipment then they would otherwise. The Trust began laying the foundation for the program's expansion to all natural gas utility territories and utility customers in FY2015 and will roll out natural gas conservation programs to all territories during FY2016.

All of this Program's electricity-saving measures will remain suspended for FY2016; however, the Program will continue to process projects that were preapproved in FY2015. When the Program relaunches lighting, HVAC, refrigeration, and other measures, the select program design changes described above will be implemented. Program activity and savings from natural gas measures and all-fuels measures will continue in FY2016 as before, with the exception that custom projects will be handled through the delivery channel of the Commercial and Industrial (C&I) Custom Program. ■


*Thousands of Maine businesses upgraded to high-efficiency lighting in 2015, including the Dunn Furniture Company. The switch to LEDs helped make the furniture showroom more inviting and will significantly reduce lighting costs.*

# COMMUNITY RENEWABLE ENERGY DEMONSTRATION GRANTS

The Community Renewable Energy Demonstration Grants Program provides grants toward promotion, research, design, and demonstration of emerging clean energy technologies. The grants are funded by voluntary contributions from retail customers of electric utilities to the Renewable Resource Fund. The types of projects in progress under the program in FY2015 ranged from solar hot air wall systems to biomass boilers for district heating.

**SECTORS SERVED**

- *Commercial*

**FUNDS INVESTED**

- *Renewable Resource Fund*

## FY2015 ACTIVITIES

In May 2014, the Trust awarded six demonstration grants. These projects were selected through a competitive bidding process; grant awards are provided for applications of renewable energy technologies that demonstrate uses for renewable technologies and support community facilities.[3]

Community Renewable Energy Demonstration Grants were awarded to the Lincolnville Community Library; City of Biddeford Public Works; Towns of Mapleton, Castle Hill, and Chapman Fire Station; Town of Wells Public Works; Western Maine Community Action/ Northern Forest Center; and Casco Bay Solar Ice, LLC. For each of the grants, the Trust provides oversight, guidance, and grant management. The solar energy projects in Lincolnville and Wells were completed during FY2015, as was the pellet boiler project in Mapleton. The Northern Forest grant, which provides incentives for and installation of pellet boilers, was extended through FY2016. The Casco Bay Solar Ice project was completed in August 2015 (in FY2016) and the Biddeford Public Works solar hot air installation was completed in November 2015. Due to the limited revenues from the voluntary contributions, the Program did not issue any new requests for proposals (RFPs) for projects in FY2015. Similarly, no grants were awarded for research and demonstration, and no rebate initiative was offered under this Program in FY2015.

3. The cost-effectiveness of Community Renewable Energy Demonstration Grants is determined using the Modified Participant Cost Test. This approach contrasts with all other Efficiency Maine Trust programs that determine cost-effectiveness using the Total Resource Cost test.

As required by statute, 35% of the Renewable Resource Fund revenues received during the year were passed through to the Maine Technology Institute to help promote businesses engaged in research and development of renewables.

## FY2015 RESULTS

Table 9 highlights the six projects that were in progress in FY2015. The Trust does not record any savings associated with projects previously awarded through the demonstration initiative.

## FY2015 ANALYSIS

The Trust determined that FY2015 Renewable Resource Fund revenues were insufficient to conduct a meaningful procurement, and funds were held for a larger competitive solicitation for proposals in FY2016. Over the course of the year, Trust staff toured and participated in a number of community events at the installations listed above. In particular, the pellet boiler installation and open house at the Towns of Mapleton, Castle Hill, and Chapman Fire Station sparked a significant local conversation about pellet heat and pellet fuel distribution networks. Located close to a pellet manufacturer, local officials saw the project as an important demonstration of the viability of a locally sourced fuel.

## FY2016 PLANS

The Trust plans to generate case studies and other information about the demonstration projects for posting on its website and other channels. Future revenues for the Renewable Resource Fund will be directed through competitive solicitations to community demonstration installations of renewable energy technologies and research and development projects. The Renewable Resource Fund received slightly more than $50,000 in total revenue in FY2015; a similar amount of revenues is forecast for FY2016. Thirty-five percent of the revenues, as directed by statute, will be passed through to the Maine Technology Institute to help promote research and development of renewables. With limited revenue, activities over the next year will be targeted to projects that will have the greatest impact on demonstrating the lowest cost renewable energy options with the greatest end-user payback in community facilities. The Trust plans to issue an RFP in early 2016 and award one or more grants by the close of FY2016. ■

### TABLE 9: DEMONSTRATION GRANTS AWARDED

| Project Recipient | Description | Grant Amount | Status |
|---|---|---|---|
| Lincolnville Libary | 8 kW PV System on low energy use library | $15,000 | Complete |
| MCC Fire Station | Pellet boiler installation on fire station shared by three towns in Aroostook County | $20,800 | Complete |
| Wells Public Works | PPA of 36 kW PV on Public Works Building | $31,620 | Complete |
| Biddeford Public Works | 3,200 sq foot Solar Hot Air Panel Array | $62,500 | In Process |
| Northern Forest | Pellet boiler incentives and promotion for light commercial pellet boiler installations | $80,000 | In Process |
| Casco Bay Solar Ice | PPA 66 kW PV on Community Ice Rink in high electrical use district | $50,000 | In Process |

# CONSUMER PRODUCTS PROGRAM

This Annual Report uses updated terminology to refer to the initiatives and programs that offer incentives for residential and commercial consumer products through retail stores, wholesalers, and food pantries. In the past, these initiatives had been labeled as "retail" or "residential"; while the majority of energy efficiency products incentivized through this Program are sold at retail stores for use in residential settings, some are also installed in commercial settings. The channels for these products have also diversified; many are now discounted at distributors as well as on retail shelves. The Consumer Products Program now refers to the channel that the Trust generally uses to provide incentives for measures that sell in relatively high volumes and achieve relatively predictable net savings when properly installed.

## Appliance Rebate Initiative

**SECTORS SERVED**

- *Residential*
- *Low-Income*
- *Commercial*

**FUNDS INVESTED**

- *Electric System Benefit Charge*
- *Maine Yankee Settlement*
- *MPRP Settlement*
- *RGGI*
- *Forward Capacity Market*

The Appliance Rebate Initiative offers rebates on energy-efficient appliances and water heaters for Maine residents, as well as a small number of businesses. The Initiative works with retailers, wholesalers, and installers statewide to connect Mainers with ENERGY STAR® appliances and information on energy-efficient purchases. In FY2015, the Initiative incentivized air purifiers, clothes washers, dehumidifiers, and heat pump water heaters.

### FY2015 ACTIVITIES

The Initiative supported Maine residents (and a small number of businesses) who purchased high-efficiency models of common appliances, including heat pump water heaters. These appliances were selected by the Initiative because of the significant energy savings between high-efficiency (ENERGY STAR®-certified) and conventional models. For example, residents can experience significant energy savings when moving from a conventional electric water heater to a heat pump water heater. The Initiative facilitated

*Jim Robinson of Mainely Plumbing and Heating is one of the many plumbers telling homeowners about the benefits of heat pump water heaters and installing high-efficiency water heaters in record numbers.*

these upgrades by reducing the upfront financial investment of the more-efficient unit at the point when the consumer's existing water heater must be replaced. The variety of products in the Initiative also addresses different purchasing needs and price points to allow for broad participation. To support these purchases, the Initiative worked with major retailers to encourage the availability of high-efficiency appliance models and to ensure informational materials are available at the point of purchase.

In FY2015, the Initiative particularly focused on outreach around heat pump water heaters, given that they remain a relatively new and unfamiliar technology for many Mainers. Outreach included training for in-store personnel, in-store demonstrations and informational materials, and educational materials for residents and installers. The Trust developed a new video on heat pump water heater technologies and installation success stories and made additional informational materials available online.

Research conducted by the Trust found that about two-thirds of heat pump water heaters are purchased in retail locations and the other one-third at distributors; two-thirds of heat pump water heaters are installed by plumbers and the other one-third are self-installed. This diversity of purchasing decisions and installation options required the Initiative to market to both residents and installers and to support both retail and distributor locations. A concerted effort in targeting plumbers through direct outreach resulted in a growing list of contractors familiar with the technology.

Lastly, the Initiative piloted an in-store markdown of heat pump water heaters (similar to the approach used in the Lighting Initiative) combined with a mail-in rebate. The goal was to minimize the out-of-pocket expense for customers with the markdown, while still capturing participant information for program evaluation with the mail-in rebate form. The combination resulted in a significant increase in heat pump water heater sales at participating locations. That said, with the wide range of channels (retailers, wholesalers, Internet sites, etc.), it was difficult to ensure that the markdown was universally available. During the year, the Initiative team concluded that the mail-in rebate was a better fit for the heat pump water heater technology.

**TABLE 10: APPLIANCE REBATE INITIATIVE MEASURES INCENTIVIZED**

| Description | # of Rebates | Annual kWh Savings per Appliance |
|---|---|---|
| Clothes Washer | 5,124 | 372 |
| Dehumidifier | 1,002 | 109 |
| Heat Pump Water Heater | 2,325 | 1,687 |
| Room Air Purifier | 671 | 745 |

**TABLE 11: APPLIANCE REBATE INITIATIVE (KWH) RESULTS**

| Appliance Rebate Initiative | | |
|---|---|---|
| | Total Participation | Low-Income Participation |
| Total Participants | 8,689 | 695 |
| Total Appliances | 9,122 | 730 |
| Annual kWh Savings | 7,299,525 | 583,962 |
| Lifetime kWh Savings | 75,481,932 | 6,038,555 |
| Efficiency Maine Costs | $1,225,276 | $98,022 |
| Participant Costs | $858,590 | $68,687 |
| Lifetime Energy Benefit | $7,495,584 | $599,647 |
| Benefit-to-Cost Ratio | 3.60 | 3.60 |

## FY2015 RESULTS

The Trust incentivized 671 air purifiers, 5,124 clothes washers, 1,002 dehumidifiers, and 2,325 heat pump water heaters in FY2015. The number of heat pump water heaters incentivized through the Program increased from 2,035 in the previous year. In total, the appliances installed through the Program are projected to result in 75.5 million kWh of energy savings over the life of the equipment.

## FY2015 ANALYSIS

Consumer awareness of and satisfaction with heat pump water heaters grew in FY2015. Despite this growing interest, conventional resistance water heaters remain the most commonly sold electric water heaters in Maine; there remains significant opportunity to encourage more Mainers to purchase high-efficiency models. Unlike air purifiers and dehumidifiers, which are familiar technologies, most residents and many plumbers are unfamiliar with heat pump water heating technology.

Analysis of the retail locations that sold the greatest number of heat pump water heaters revealed the high degree of influence in-store sales personnel have on consumer decision making. Stores with in-store personnel who are enthusiastic adopters of heat pump water heater technology had significantly more sales than others; continuing to train in-store personnel and installers on heat pump water heater technology was and will remain a major focus for the program. The Program also focused on direct outreach to plumbers during the fiscal year and found that a more diverse set of installers participated in the Program than in FY2014; installation contractors also expressed fewer concerns about the new technology and applicability in Maine homes.

## FY2016 PLANS

The Trust will continue to focus outreach and education efforts on the less familiar heat pump water heater technology, while still offering other lower-price-point products that provide energy savings. These outreach and education efforts will continue to target residents and installers. As with other programs and measures, the best advocates for heat pump water heaters are happy customers, and the Trust will continue to explore ways to leverage success stories through educational campaigns and referral programs. The Trust will also focus increased attention on wholesalers and helping motivate them to educate their customers on efficient water heating options.

In addition to existing measures, the Trust will explore adding other technologies to the list of eligible measures offered through this Initiative, such as thermostatically controlled shower heads. These measures may require different channel approaches, such as online sales or delivery via mail. This continues the ongoing evolution of the program in terms of measures, incentive amounts, incentive types, marketing approaches, and sales channels. ■

# Lighting Initiative

**SECTORS SERVED**

- *Commercial*
- *Industrial*
- *Low-Income*
- *Residential*

**FUNDS INVESTED**

- *Electric System Benefit Charge*
- *Maine Yankee*
- *MPRP Settlement*
- *Forward Capacity Market*

The Lighting Initiative of the Consumer Products Program reaches more participants than any other Efficiency Maine initiative by supporting residents and businesses across the state installing high-efficiency bulbs. The purchasing decision for most screw-in lighting is made at the store. To influence the customer to choose an energy-efficient product model, this Initiative deploys in-store discounts and point-of-purchase information, including in-store displays, customer demonstrations, and training for store personnel.

## FY2015 ACTIVITIES

In FY2015, the Initiative focused on providing financial incentives for a growing list of LED bulb types, including specialty bulbs. LED technology is changing rapidly and prices for LED bulbs dropped significantly over the course of the fiscal year. This drop in price allowed the Initiative to incentivize more types of LED bulbs, and more total units of LED bulbs, than in years past and to meet a growing interest in LEDs on the part of consumers looking for lighting products.

As in previous years, supporting customers at the point of purchase, typically at major retailer stores, was a primary focus for the Initiative. The Initiative facilitated in-store demonstrations and promotions, and trained more than 4,000 retail personnel in more than 400 retail locations. This in-store information was complemented with educational materials on lighting choices and lighting terminology and other resources on the Efficiency Maine website and social media platforms.

While most Initiative activity occurred at major retailers, the Program also added lighting distributors as a distribution channel in FY2015.

FY2015 also marked a transition for the Program's outreach to low-income Mainers. In the past, the Program was able to benefit from the Good Shepherd Food Bank's warehouse and distribution network to help deliver efficient bulbs to low-income customers. However, space constraints at the food bank necessitated that Efficiency Maine distribute bulbs directly to food pantries in FY2015. The switch to an Efficiency Maine-directed distribution network was smooth and the program was able to distribute 422,356 bulbs, without requiring a customer co-pay, to food pantry customers.

## FY2015 RESULTS

In FY2015, the Lighting Initiative distributed almost 3 million discounted bulbs through retailers, lighting distributors, and food banks. These energy-efficient bulbs are projected to generate more than 476.3 million kWh in lifetime savings. The low price point of bulbs, the easy access to product at store shelves throughout the year, and the high savings rate per dollar of investment has resulted in broad distribution of benefits across all income levels and geographic areas of the state. The program design and measure selection promoted through this Initiative has achieved the most equitable application of funds of any program offered by the Trust.

As the Initiative has included more LEDs, the price per bulb incentivized has increased. But falling LED prices enabled the Initiative to incentivize as many bulbs as in years past. The lifetime energy savings resulting from CFLs and LEDs have dropped as the Lighting Initiative has been affected by federal standards (Energy Independence and Security Act [EISA] standards) regulating the energy efficiency of the lighting industry. EISA has caused efficiency programs to assume more efficient bulb sets as the baseline when making energy-saving calculations (improving from the old incandescent bulb baseline to a halogen bulb baseline). These changes have dropped the energy savings claimed per bulb. Nonetheless, energy-efficient lighting remains a cost-effective energy efficiency investment.

## FY2015 ANALYSIS

The Initiative achieved significant energy savings per investment dollar despite an anticipated drop in energy savings due to the price difference between LEDs and CFLs and reduced lifetime energy savings per bulb resulting from EISA standards. Consumer satisfaction

**TABLE 12: LIGHTING INITIATIVE: RETAIL (KWH) RESULTS**

| Lighting Initiative: Retail | | |
|---|---|---|
| | Total Participation | Low-Income Participation |
| Total Bulbs | 2,754,743 | 790,204 |
| Annual kWh Savings | 74,451,431 | 21,101,079 |
| Lifetime kWh Savings | 372,867,737 | 105,667,715 |
| Efficiency Maine Costs | $7,942,083 | $1,972,075 |
| Participant Costs | $15,306,264 | $4,138,255 |
| Lifetime Energy Benefit | $33,715,869 | $9,602,747 |
| Benefit-to-Cost Ratio | 1.45 | 1.57 |

**TABLE 13: LIGHTING INITIATIVE: DISTRIBUTOR (KWH) RESULTS**

| Lighting Initiative: Distributor | |
|---|---|
| Total Bulbs | 144,332 |
| Annual kWh Savings | 20,618,745 |
| Lifetime kWh Savings | 103,444,893 |
| Efficiency Maine Costs | $1,649,968 |
| Participant Costs | $4,122,786 |
| Lifetime Energy Benefit | $8,660,161 |
| Benefit-to-Cost Ratio | 1.50 |

with LEDs is high, but program participants encounter a diverse array of lighting choices at the store. While LED technology and product design has shifted to mimic the look and feel of traditional incandescent bulbs, consumer confusion remains. The Trust works with retailers to continue to overcome a lack of education about lighting choices and the benefits of energy-efficient lighting.

A successful modification in FY2015 was to include handling of simple bulb replacement measures, whether for C&I customers or residential customers, through the channel of "upstream" distributors. Previously, screw-in LEDs that were intended for installation in Maine's C&I customers had been incentivized through the Business Incentive Program; the Trust found that the application process through that channel was intended to handle more-sophisticated lighting retrofit proposals. In the situation where contractors were seeking to install simple one-for-one screw-in bulb replacements, the administrative process of the Business Incentive Program was sometimes unnecessarily burdensome. Furthermore, past program evaluations revealed that some bulbs purchased in retail locations were installed in commercial settings, and also that bulbs purchased at distributors were installed in both commercial and residential settings. Rather than dividing lighting incentives by market sector, the Trust modified the Lighting Initiative to serve all screw-in lighting customers, which resulted in valuable administrative efficiencies.

## RETAIL LIGHTING EVALUATION

Periodically, Efficiency Maine commissions independent, third-party evaluations of its major programs. A comprehensive evaluation of the process and impact of the Retail Lighting Program (now the Lighting Initiative of the Consumer Products Program) was published in FY2015, confirming the successful energy savings and cost-effectiveness of the program. The evaluation team reviewed program data, including savings assumptions and program-tracking databases; surveyed customers; interviewed retail partners; collected on-site data through visits to homes; estimated energy and demand savings; and assessed program results. Looking exclusively at the economics of the electricity savings, the evaluation determined that, in FY2014, the program achieved a Total Resource Cost (TRC) benefit-cost ratio of 6.71.

In addition, the evaluation found that Maine residents are more satisfied with CFLs and LEDs than had been measured in past evaluations, and more Maine residents are participating in the program. Participating retail stores and food pantries indicated that they were pleased with the resources, training, and support provided through the Program. Despite the upward momentum for purchases of efficient bulbs, the evaluation found that 48% of residential light sockets in Maine remain filled with a screw-in incandescent or halogen bulb and have the potential to be converted to a cost-effective, high-efficiency bulb. About half of the sockets that are candidates for upgrades were found to house specialty bulbs, and the other half were found to contain standard screw-in bulbs. The evaluation found

that Efficiency Maine has begun to transform these standard sockets: incandescent bulb usage in standard sockets has decreased from 58% to 41% since the last lighting evaluation, which was performed in 2011.

The evaluation also found that the net-to-gross ratio rose from 66.0% in the 2011 evaluation to 79.4% in the 2015 evaluation for CFLs. LEDs were not included in the 2011 evaluation, so a comparison is not possible. The evaluation found a net-to-gross ratio for LEDs of 76.8% in the 2011 evaluation. The net-to-gross ratio is assessed by analyzing the impact of the program on consumer choice. For a major retail buy-down program, a reliable way to assess program influence, and therefore attribution, is to analyze the price elasticity of the efficiency measures as the incentive level changes. An elastic product is defined as any good or service for which the quantity demanded is responsive to changes in its price. Retail light bulbs are a very elastic product. By analyzing the changes in sales volume at various incentive levels, the evaluators are able to project what the sales would be in the absence of the Program incentives. The ratio of sales projected to occur without the Program compared to the actual Program sales defines the free-ridership ratio – the percentage of program participants whose decision was not influenced by the incentive because they would have purchased the same bulb anyway. Price elasticity analysis is a well-established means of estimating free-ridership, though it does have some limitations. Potentially one of the most influential shortcomings is that price elasticity cannot account for program influence beyond financial incentives and therefore will treat as free-riders those participants whose purchase choice was influenced by other program aspects, such as education, product availability, and product placement. It is likely that this limitation contributes to overestimating the free-ridership ratio.

As the Trust has reported in prior annual reports, the shift to high-efficiency bulbs causes a reduction in the waste heat that is generated by inefficient lights. During heating season in Maine, this reduction in waste heat is presumed to be compensated for by increasing the heating load of a home's primary heating system. During cooling season, it reduces air conditioning load. The Trust asked the evaluation team to quantify these interactive effects and to provide factors by which the Trust could adjust electric savings and quantify heating costs and the benefit-to-cost ratio. The evaluation report recommended that the Trust assume that 0.0019 MMBtu of heating energy load would be increased for every 1 kWh of savings attributed to the installation of efficient indoor lighting. The cost of this heat load increase is reflected in the "Participant Costs" and the benefit-to-cost ratio reported in the summary tables.

The evaluation also recommended that the Trust transition away from specialty CFL incentives in exchange for specialty LEDs and continue to add more LED offerings for all bulb types. Finally, the evaluation encouraged the Trust to continue to focus on food pantries and continue that channel as a way to serve the low-income sector.

## FY2016 PLANS

A recent residential baseline study estimated that at least 6 million bulbs will be replaced in Maine's residential sector each year for the next several years. The study found that 28% of residential sockets were outfitted with CFLs and 9% with LEDs, exhibiting penetration levels for high-efficiency bulbs that are attributable to the impacts of past Initiative activity. Yet those numbers also indicate that there remains significant energy-saving opportunity for high-efficiency lighting in the residential sector with additional opportunities for screw-in bulbs in the commercial sector.

As described above, the Trust is implementing several of the suggestions made by the evaluation team, including phasing out specialty CFLs and increasing the number and diversity of LEDs incentivized through the Initiative. In addition, the Trust will continue to focus on distributing bulbs to low-income Mainers through the Initiative in FY2016. Finally, the Trust will carefully monitor how the national standards affect local markets over time and the implications on the cost-effectiveness of lighting investments. ▪

# HOME ENERGY SAVINGS PROGRAM

HESP serves as the framework for market-based weatherization and heating demand reduction achieved through a combination of rebates, financing, and customer education. HESP is designed to raise awareness about the benefits of home weatherization and to encourage Maine homeowners to make energy efficiency upgrades.

### SECTORS SERVED

- *Residential (including low-income homes and multifamily homes up to four units)*

### FUNDS INVESTED

- *RGGI*
- *Forward Capacity Market*
- *Electric System Benefit Charge*
- *Maine Yankee Settlement*
- *Natural Gas Conservation Fund*
- *Federal/Other*
- *MPRP Settlement*

## FY2015 ACTIVITIES

FY2015 marked the first full year of Phase 2 of HESP.[4] HESP targets residential customers, including single family homes, multifamily homes with up to four units, new construction, and low-income households. Program activity in FY2015 fell into one of three categories of measures: supplemental heating systems, central heating systems, and building envelope improvements.

Program activity was generally high through the course of the year, although it slowed during the late winter and early spring months. To maintain customer awareness and demand, the program undertook modest outreach campaigns, particularly in the spring when home energy efficiency project activity typically declines. The Program delivered targeted outreach to Unitil natural gas utility customers; published advertisements in the home improvement section of Maine newspapers; and also continued its robust, highly cost-effective web campaign, advertising with online media channels, including Hulu, YouTube, Pandora Radio, and Google ads.

4. Starting in 2010, the Trust administered Phase 1 of HESP using federal funds from the American Recovery and Reinvestment Act (ARRA). The ARRA funds used to pay insulation and heating system rebates through HESP were exhausted by 2011. The program design has evolved modestly from Phase 1 to Phase 2. The main change was the introduction of a prescriptive menu of measures and the elimination of the requirement to model threshold savings on each project.

The HESP delivery team also made routine visits to communities, attended public events throughout the state, and generated earned media by conducting media interviews on the benefits of the program and of energy efficiency in general. The delivery team engaged the home performance contractor community directly through phone and email communications, as well as through the use of monthly webinars. Over the past year, input received helped identify program design improvements.

In addition to direct rebate incentives, HESP maintained a variety of loan product offerings in FY2015. These loan products included PACE, PowerSaver, and unsecured energy loans.

In late FY2015, the Trust also launched an initiative for low-income customers. Funded through MPRP Settlement funds, this initiative paired increased incentives for weatherization measures with smaller micro-loans. This approach leveraged the full network of Efficiency Maine contractors to reach low-income residents, including renters and Mainers who are Low Income Heating Energy Assistance Program (LIHEAP)-eligible but who have not applied for fuel assistance. In addition, the loans made available through this low-income pilot allowed for a greater debt-to-income ratio than other unsecured energy loans.

*Efficiency Maine's Dana Fischer joins Lee Nelson on WCSH6's Morning Report to discuss home heating solutions and the Home Energy Savings Program.*

**TABLE 14: HOME ENERGY SAVINGS PROGRAM (MMBTU) RESULTS**

| Home Energy Savings Program Thermal Measures | | |
|---|---|---|
| | Natural Gas | Other Fuels |
| Total Participants | 217 | 3,234 |
| Total Projects | 239 | 3,566 |
| Annual MMBtu Savings | 5,581 | 83,224 |
| Lifetime MMBtu Savings | 127,018 | 1,894,231 |
| Efficiency Maine Costs | $307,737 | $6,309,776 |
| Participant Costs | $1,100,862 | $22,334,064 |
| Lifetime Energy Benefit | $2,945,103 | $43,920,697 |
| Benefit-to-Cost Ratio | 2.09 | 1.53 |

**TABLE 15: HOME ENERGY SAVINGS PROGRAM (KWH) RESULTS**

| Home Energy Savings Program Electric Measures | |
|---|---|
| Total Participants | 5,787 |
| Total Projects | 5,954 |
| Annual kWh Savings | 9,032,603 |
| Lifetime kWh Savings | 162,586,854 |
| Efficiency Maine Costs | $3,564,434 |
| Participant Costs | $1,079,128 |
| Lifetime Energy Benefit | $16,426,509 |
| Benefit-to-Cost Ratio | 3.54 |

## FY2015 RESULTS

As with the first year of program activity, heat pumps remained the most popular program measure; Maine homeowners installed more than 6,200 mini-split, ductless, cold climate heat pumps in FY2015. There was also significant interest in pellet boilers: 287 were installed in Maine homes through the program year. Activity in high-efficiency wood and pellet stoves was lower than anticipated, and the incentives on those solutions were increased in the fall of 2015 to spur greater activity.

In FY2015, Efficiency Maine provided 518 loans supporting $4.7 million worth of home energy upgrade projects; unsecured loans accounted for 70% of dollar volume and 79% of the total number of loans administered by the Trust. The average amount financed per loan was $9,000. (Since the Trust started offering loans for home energy upgrades, more than 1,400 projects have been financed; total funds lent exceed $15 million). Fewer than 1% of loans of any type offered under HESP are more than 60 days delinquent, and none have been classified as in default.

Table 14 summarizes the thermal energy-saving results of HESP. In FY2015, the program also completed 3,451 home energy upgrades for a projected lifetime energy savings of $46.9 million. These energy-saving projects will save Mainers more than 2.0 million MMBtu (equivalent to nearly 14.5 million gallons of heating oil) over the lifetime of the measures. These savings will significantly lower current and future energy costs throughout Maine.

Table 15 summarizes the electricity reduction results of HESP. In FY2015, the program also completed 5,954 ductless heat pump installations for a projected lifetime energy savings of $16.4 million. This initiative resulted in a benefit-to-cost ratio of 3.54.

## FY2015 ANALYSIS

As in FY2014, the Program was popular and continued to spur significant co-investment on the part of Maine residents. The Trust's push to add unsecured energy loans to the loan portfolio in FY2014 paid dividends throughout the year, with more and more homeowners financing smaller energy projects through the Trust.

Most participants in FY2015 chose only one of the energy improvements eligible for a rebate under the Program. The ductless heat pump was one of the most popular solutions. The Trust is exploring modifying incentive amounts and incentive caps to spur homeowners to undertake more than one improvement at a time. Given increasing numbers of returning customers, it appears that the Program's efforts toward supporting a staged approach to home energy upgrades are working. As noted above, last year showed low numbers of applications for high-efficiency wood and pellet stoves; the Program instituted an incentive change to promote greater uptake of these measures and selection of higher efficiency systems.

## FY2016 PLANS

HESP plans to roll out enhanced incentives to low-income homeowners for participation in the program. The Program will also initiate marketing to homeowners in Bangor Natural Gas and Maine Natural Gas utility territories as they become eligible for efficiency program participation in FY2016. The program will continue to monitor the rate of measure uptake and budget use, and will consider whether changes to incentives or measure eligibility are warranted. This review will include assessing whether market-based rebates, enhanced for low-income customers and paired with micro-loans, are effectively serving the low-income market.

The Program also will continue robust marketing and outreach to maintain program activity and to counteract any reduced demand due to lower costs of heating fuels. In FY2016, the Program plans to continue use of the broad array of marketing channels currently being used. In particular, the Program will increase Efficiency Maine's presence on social media to provide education and tips, and facilitate friends and neighbors sharing success stories and energy-saving results. ▪

# LARGE CUSTOMER PROGRAM

The Large Customer Program includes energy efficiency projects involving site-specific applications that involve unique engineering analysis and/or projects with energy conservation measures that are not covered in the prescriptive incentive offerings. This program is designed to overcome the barriers confronting Maine's businesses and institutions when making investments in complex or uncommon energy efficiency and distributed generation projects. These projects enable participating customers to make important facility improvements and free up operating budgets.

### SECTORS SERVED

- *Commercial*
- *Industrial*

### FUNDS INVESTED

- *RGGI*
- *Maine Yankee Settlement*
- *MPRP Settlement*
- *Forward Capacity Market*
- *Electric System Benefit Charge*

## FY2015 ACTIVITIES

In FY2015, the Program focused on attracting new customers to the program and helping customers who had previously expressed interest in developing new complex projects at their facilities. The budget allocated to this Program was the largest it had been in the past three years. Maine businesses relied on outside contractors and vendors to identify energy efficiency opportunities. However, most of these projects require site-specific engineering beyond what most energy contractors or vendors are willing to explore on speculation. In FY2015, the Trust's customer outreach was targeted to overcome this lack of site-specific assessment and expertise by providing free scoping audits to identify projects. The program offered free scoping audits to customers to attract new customers and focused the marketing of those audits to customers lacking in-house expertise. In FY2015, the program completed 23 scoping audits. Three of these resulted in a more in-depth study and 17 resulted in custom projects or referrals to the Business Incentive Program for projects that resulted in prescriptive measures and smaller custom projects completed in FY2015. The costs and benefits of the energy upgrades processed through the Business Incentive Program are included in the results of that program, not here under the Large Customer Program. However, for purposes of analyzing the value of the scoping audits, it bears reporting that of the more than 1,300 annual MWh of savings generated by completed projects that had been identified through the scoping audits, more than 400

MWh, or about 30%, were ultimately processed as referrals to the Business Incentive Program.

In addition, the Trust administered technical assistance grants. These grants were used to expand private sector business development activities around complex energy efficiency and distributed generation projects. The Program approved 10 technical assistance incentives over the course of the year. Of nine studies completed across the past two fiscal years (FY2014 and FY2015), five projects were approved for investment and one was completed in FY2015. The Trust anticipates that three more of these technical assistance grantees will follow through with viable project installation applications in FY2016.

Over the course of the year, the Trust worked closely with several key groups with large facilities, including the Maine Healthcare Association. In addition, Trust staff and the program team spent considerable time evaluating very large efficiency projects. In the course of normal outreach activities, the team encountered large projects that would result in transformational savings for two businesses and a significant positive impact on Maine ratepayers. The team spent time with these major employers to identify energy efficiency opportunities that could fit into the long-term contract model; the delivery costs associated with identifying and developing these projects are reflected below, but the savings will not be reported until the projects are completed.

**TABLE 16:** ECONOMIC SUMMARY OF PROJECTS RESULTING FROM SCOPING AUDITS

| | Annual Energy Impacts | | | | Economics | |
|---|---|---|---|---|---|---|
| **Measure Category** | **MWh** | **Winter Peak (kW)** | **Summer Peak (kW)** | **$CO_2e$ (Tons)** | **Incentive** | **Lifetime Savings** |
| Large Custom Projects | 926 | 68 | 92 | 496 | $317,663 | $1,383,597 |
| Small Custom Projects (<$100,000 incentive) | 241 | 89 | 8 | 0 | $52,161 | $399,926 |
| Prescriptive Projects | 180 | 21 | 21 | 0 | $29,320 | $215,383 |
| **Total** | **1,346** | **178** | **121** | **496** | **$453,144** | **$1,998,906** |

**TABLE 17: LARGE CUSTOMER PROGRAM (KWH) RESULTS[5]**

| Large Customer Program Electric Measures | |
|---|---|
| Total Participants | 19 |
| Total Projects | 21 |
| Annual kWh Savings | 30,760,921 |
| Lifetime kWh Savings | 438,865,951 |
| Efficiency Maine Costs | $6,983,439 |
| Participant Costs | $5,124,783 |
| Lifetime Energy Benefit | $25,297,712 |
| Benefit-to-Cost Ratio | 2.09 |

**TABLE 18: LARGE CUSTOMER PROGRAM (MMBTU) RESULTS**

| Large Customer Program Greenhouse Gas Measures | |
|---|---|
| Total Participants | 5 |
| Total Projects | 5 |
| Annual MMBtu Savings | 26,266 |
| Lifetime MMBtu Savings | 374,124 |
| Efficiency Maine Costs | $1,808,033 |
| Participant Costs | $1,272,598 |
| Lifetime Energy Benefit | $6,212,210 |
| Benefit-to-Cost Ratio | 2.02 |

## FY2015 RESULTS

Tables 17 and 18 show the results for the Large Customer Program, separated into savings of electricity (measured in kWh) and savings of other energy (measured in MMBtu), most notably oil and natural gas. During FY2015, the program awarded incentives to 26 projects for a total lifetime savings of approximately 439 million kWh and 374,124 MMBtu. The savings resulted in a benefit-to-cost ratio of 2.09 for electric measures and 2.02 for greenhouse gas reduction projects. Incentives paid by the Trust leveraged more than $6.3 million in incremental private investment.

## FY2015 ANALYSIS

Streamlining the Program's process for identifying projects and reviewing applications through Program Opportunity Notices (PONs) this year enabled the Trust to reach more customers and diversify the pool of businesses applying for the Program. The Trust was also able to identify some of the largest efficiency projects ever considered in Maine. Although those projects exceed annual budget amounts, the Trust will pursue additional long-term funding contract mechanisms with those businesses.

The Program requires a long time horizon for project planning and execution. A number of scoping audits and technical studies that were begun or funded in FY2014 resulted in successfully completed projects in FY2015 (several more that were started at that time are still under way in FY2016). Many of the scoping audits and technical studies funded in FY2015 are anticipated to result in projects in FY2016. The number of projects resulting from scoping audits and technical assistance studies suggests that the Program's approach of dedicating resources to those activities is both important and effective. The multi-year project planning horizon can be supported with consistent funding and a planning process that can accommodate a project in one fiscal year or the next.

## FY2016 PLANS

The Program opens FY2016 with 21 potential projects in various stages of planning and execution. In FY2016, the Trust anticipates maintaining the Program strategy and activities consistent with what was done in FY2015. Marking a small change in program design, the Trust is instituting a transition of the program name which, going forward, will be called the "C&I Custom Program." This shift reflects the fact that the defining characteristics of this program relate to developing and screening custom projects. Eligibility is open to medium-sized C&I customers, as well the large customers that traditionally have been the focus of outreach in this program.

5. At the time of publication, the Trust has reason to believe that one project funded through the Large Customer Program in FY2015 may not continue operating and will not produce the savings that was forecasted when the project was approved. The Trust's cost of the project are reflected above but the report assumes no savings from that project. In the event that the project returns to operation, the Trust estimates that lifetime program savings would exceed 1.5 billion kWh and the benefit to cost ratio would increase to 3.71

In another change, going forward the Program will be used as a channel for investing a portion of the Natural Gas Conservation Fund for custom projects that save natural gas transported through local gas utilities. C&I natural gas customers will use this channel, for example, to develop efficiency projects related to use of natural gas for industrial process heating. It is also worth noting that, although no Natural Gas Conservation Funds were used to support the Large Customer Program in FY2015, nonetheless the Program did expend $400,200 on measures that cost-effectively saved 23,536 MMBtu of natural gas per year for the life of the measures. In FY2015, the Trust paid the costs associated with these projects using RGGI funds or, where there was also an electricity savings (as in the case of certain combined heat and power projects), with electricity conservation funds.

In the event that future project proposals show potential for significant, cost-effective electricity savings yet fall outside of parameters of the existing program guidelines and criteria contained in the open PONs (i.e., by requiring a financial incentive that exceeds the cap in a PON), the Trust may work with customers to bring specific funding requests to the Public Utilities Commission for consideration of funding through a long-term capacity contract. ■


*Maine Machine is a leader in precision manufacturing at its 65,000 square foot, state-of-the art facility in South Paris where it makes products used in the aerospace, defense and energy industry for distribution throughout the U.S. With support from Efficiency Maine, the company installed high-efficiency lighting fixtures that consume less power while providing better light to the production floor. Maine Machine also installed HVAC controls that are projected to save up to 50% on heating and cooling costs.*

# LOW-INCOME DIRECT INSTALL INITIATIVES

The Efficiency Maine Trust delivers energy-saving opportunities to low-income customers through several programs and initiatives. This section of the Annual Report describes the Trust's initiative to install efficiency measures directly at the customer's home — called the "direct install" approach. The other programs that provide benefits to low-income customers — the Lighting Initiative (including food pantry light bulb distribution) and the Appliance Rebate Initiative of the Consumer Products Program and HESP for weatherization and heating system upgrades (descriptions of these programs can be found in other sections of this report) — are delivered using a market-based approach. The participation of low-income customers in those market-based programs is reflected in the other report sections, not in this section.

**SECTORS SERVED**

- *Low-Income*

**FUNDS INVESTED**

- *Electric System Benefit Charge*
- *RGGI*
- *Natural Gas Conservation Fund*

In FY2015, Low-Income Direct Install included two separate initiatives. The first invested RGGI, Electric System Benefit Charge, and Maine Yankee funds in electric- and thermal-saving measures. These measures included heat pump water heaters and ductless heat pumps, which were installed in low-income households throughout the state. The second initiative invested funds from the Natural Gas Conservation Fund in gas-saving measures in low-income households located in Unitil territory.

As a general rule, at least 10% of electricity and natural gas program budgets are allocated to programs that benefit low-income customers. The budget investments described below are limited to those funds invested in direct installation projects.

## FY2015 ACTIVITIES

In FY2015, the Low-Income Direct Install Initiatives were implemented through a partnership between the Trust and Community Action Agencies (CAAs) to install high-efficiency supplemental heating systems (ductless heat pumps) in eligible homes.[6] The Trust also added funds to the program to capture electricity-saving measures. Beginning in January 2015, the CAAs also began to replace operating, inefficient electric water heaters with heat pump water heaters. These installations were bundled with other electricity-saving measures, including low-flow shower heads and CFLs.

6. Eligibility was defined as LIHEAP-eligible and with annual heating bills in excess of $2,500.

**TABLE 19: LOW-INCOME DIRECT INSTALL INITIATIVE (KWH) RESULTS**

| Electric Measures | |
|---|---|
| Total Participants | 635 |
| Total Projects | 635 |
| Annual kWh Savings | 1,534,180 |
| Lifetime kWh Savings | 14,065,348 |
| Efficiency Maine Costs | $1,232,373 |
| Participant Costs | $0 |
| Lifetime Energy Benefit | $1,249,631 |
| Benefit-to-Cost Ratio | 1.01 |

**TABLE 20: LOW-INCOME DIRECT INSTALL INITIATIVE (MMBTU) RESULTS**

| Non-Electric Measures | | |
|---|---|---|
| | Natural Gas | Other Fuels |
| Total Participants | 7 | 223 |
| Total Projects | 29 | 223 |
| Annual MMBtu Savings | 636 | 13,700 |
| Lifetime MMBtu Savings | 12,728 | 246,606 |
| Efficiency Maine Costs | $76,138 | $700,600 |
| Participant Costs | $0 | $1,270,337 |
| Lifetime Energy Benefit | $95,369 | $4,547,475 |
| Benefit-to-Cost Ratio | 1.25 | 2.31 |

Efficiency Maine Trust reimbursed the CAAs a fixed-price incentive for each installed measure.

The initiative targeting natural gas conservation in low-income households invested $76,138 in natural gas-saving measures, including air sealing, insulation, and high-efficiency heating systems. The program upgraded apartment buildings inhabited by low-income tenants in Unitil's service territory.

## FY2015 RESULTS

The Low-Income Direct Install Initiatives installed 223 heat pumps in low-income households experiencing high heating costs. These installations are projected to save 13,700 MMBtu, equivalent to 98,563 gallons of oil over the life of the measure and more than $4.5 million in heating costs. Although the heat pump water heater and other electrical conservation measures were added to the program only halfway through the fiscal year, 635 high-efficiency heat pump water heaters replaced inefficient electric resistance water heaters. These heat pump water heaters and other electricity-saving measures will save participating households more than 14.0 million kWh over the lifetime of the measures.

The Initiatives will also help low-income natural gas customers in Unitil territory save 12,728 MMBtu and reduce heating costs by $95,369 over the life of the installed measures.

## FY2015 ANALYSIS

Efficiency Maine Trust developed the direct install initiatives in collaboration with the CAAs and using existing CAA procurement practices where possible. The CAAs are in regular contact with eligible homeowners and renters in their areas as the conduit for LIHEAP requests, and Efficiency Maine is able to locate and identify eligible households across the state through this network. The CAAs use of their existing networks and intake procedures, and their competitive procurement practices, tend to reduce the Program's delivery and installation costs.

Ductless heat pumps and heat pump water heater installations can reduce energy costs in many low-income households. While the technologies are not suitable for all situations (for example, heat pump water heaters are best installed in basements), these measures significantly reduced the operating expenses for the participating low-income households. Because the project cost of these measures was less than what would be required to perform comprehensive energy upgrades (including full weatherization of the building envelope), the Program was able to provide benefits to more households than would otherwise have been possible. This menu-based direct-install approach complements CAA programs that undertake whole-house weatherization projects.

*Michael Bush, Director of the Penobscot Nation Housing Department, poses next to a heat pump recently installed in a Penobscot Nation home.*

Nonetheless, this Program is not as cost-effective as other Efficiency Maine programs due to a variety of factors. Notably, this Program undertakes replacements of existing, operational equipment in homes, constituting a "retrofit" scenario. This means the efficiency measure bears the full cost of the new equipment plus all associated labor costs for program delivery and equipment installation. Considering the amount of time required to travel to a home, install replacement equipment, and remove old equipment, the resulting energy savings is modest compared to what might be achieved from a similar investment of time for a bigger project, such as one might find at a business. Moreover, the retrofits are significantly more costly than measures that replace a failed or failing piece of equipment, where labor costs are excluded from consideration and the measure cost is limited to the increment between the costs of the baseline unit and the efficient unit.

In the case of a low-income customer shopping to replace an old light or appliance that has failed, the Trust is able to incentivize the incremental cost of a high-efficiency model through rebates offered in its market-based programs. As noted above, pursuing retrofits before the lighting or appliance has failed is significantly more expensive to deliver. The higher cost associated with the direct install approach limits the number of low-income households served through Trust's programs and strains the Program's ability to achieve cost-effectiveness on small projects. In recent years, analysis of retrofit opportunities

in low-income homes, especially for measures to save natural gas or electricity, has found very few measures that qualify as "cost-effective." Those that are cost-effective, including heat pump water heaters, have a high price point. The combination of the high price point and the high measure cost means that the budget allocated to Low-Income Direct Install Initiatives is consumed on fewer projects. While the direct install approach has certain benefits, such as improving the likelihood that the budget will be fully invested and that quality work will be secured using competitive bidding, it also is more expensive and thus results in benefitting fewer customers than if the funding were invested through market-based channels.

## FY2016 PLANS

The Trust will continue its efforts to design and implement low-income initiatives in a way that equitably distributes cost-effective energy savings to as many homes as possible within budget constraints.

For direct install initiatives, the Trust will continue to consider CAAs as an option to locate appropriate cost-effective energy-saving measures that complement existing CAA weatherization programs. Efficiency Maine Trust will also compare the cost-effectiveness of these initiatives with the low-income weatherization initiative being piloted through HESP (see earlier description). That channel leverages the full network of Efficiency Maine contractors and may reach low-income homeowners and renters who are LIHEAP-eligible but who have not applied for fuel assistance. Whether market-based programs and newly available micro-loans can more effectively serve more low-income households than the direct install program will be a question explored through that initiative.

As described elsewhere in this report, as more natural gas service territories begin to participate in efficiency programs, the Trust will expand low-income programs to serve more natural gas customers across the state. At the outset, the Trust will attempt to service the low-income natural gas customers through HESP. That program provides enhanced incentives for verified low-income participants. However, if uptake through that market-based channel is insufficient to fully invest the budget allocation for the low-income natural gas initiatives, then the Trust will revert to using the direct install pathway for retrofits. ■

# MAINE ADVANCED BUILDING PROGRAM

The Maine Advanced Buildings Program (MAB) for commercial new construction offers comprehensive prescriptive strategies to help Maine property owners, developers, architects, and engineers design new buildings and major renovations that will achieve significant energy savings. MAB offers education and financial incentives to promote and encourage a whole building integrated design approach. The program provides an alternative to the often used "design-build" approach.

**SECTORS SERVED**

- *Commercial*
- *Industrial*

**FUNDS INVESTED**

- *RCGI*

## FY2015 ACTIVITIES

The Program promoted the New Buildings Institute Core Performance Guide, which promotes high-performance building design and the installation of energy-efficient systems and materials, including building envelope, lighting, heating, and ventilation systems. Many of these measures are similar to and promoted through the Business Incentive Program; however, MAB incentivizes the whole building integrated design. This includes systems that employ new energy-efficient equipment technologies and enhanced building envelope construction. It offers flexibility in the design based on site requirements, encouraging strategies such as passive energy solutions, including daylighting and natural ventilation. Through MAB, buildings can save 30% or more energy than a code-compliant building.

The Trust rolled out the current version of the program at the end of FY2014 and undertook significant outreach around the program in FY2015. The Trust focused marketing efforts on Maine's architectural and engineering community. This included outreach to architect and engineer professional associations and to the primary architecture and engineering firms. These firms, in turn, marketed the program during project proposals and in initial conversations with clients. Most high-performance building projects must start at the earliest stages of conceptual design to meet energy standards. The Trust has found that the best way to be sure that the Program is "at the table" during the design phase of new construction projects is to promote it through the work of design professionals.

## FY2015 RESULTS

Through the focused outreach and educational support in FY2014, one building that began in FY2014 was completed in FY2015. This new building, a Hampton Inn hotel in Lewiston, represents more than 50,000 square feet of new energy-efficient accommodations. By following the MAB guidelines, the hotel owners will realize 32,833 MMBtu in lifetime energy savings at a benefit-to-cost ratio of 1.52.

Additionally, the program's outreach and support efforts yielded five new projects that were begun in FY2015 and are on track to finish in FY2016. These projects include a police department, a community center, a medical office building, and two high school additions. The projects are projected to result in more than approximately 214,000 square feet of high-performance construction that will realize more than 7.0 million MMBtu of lifetime energy savings.

## FY2015 ANALYSIS

The relaunched program achieved satisfactory consumer uptake in FY2015. Given that there is a long planning and construction timeline for many new buildings, the Program team was pleased with the number of new projects in the pipeline, as well as with the increased number of architectural and engineering firms that began to work with their clients and Efficiency Maine Trust. The energy savings achieved indicate that promoting cost-effective energy efficiency through the integrated design process will result in the highest-performance buildings.

As described above, the Program uses the Maine Advanced Buildings program and standards which are products of the New Buildings Institute, to deliver energy efficiency strategies for new construction. Feedback from participating design teams and building owners indicate that these standards continue to serve the Program well. The prescriptive pathway offers discrete guidance with enough flexibility so as not to be daunting to building owners and project teams. These standards also enable the Program to easily estimate energy savings resulting from an integrated design process.

## FY2016 PLANS

The Trust plans to continue marketing the current version of the program and will explore new ways to create interest in energy efficiency among Maine's construction and development community. At present, the MAB pathway is based on the New Buildings Institute's Tier 2 standards. Program staff will consider offering pathways based on higher tiers: higher-performance goals could be incentivized at a higher level than Tier 2 projects. Additionally, the Trust will monitor any changes to the Maine Uniform Building and Energy Code and will modify program requirements, as warranted, to ensure that financial incentives are used only for measures that exceed what is already required by code. ■

**TABLE 21: MAINE ADVANCED BUILDINGS PROGRAM (MMBTU) RESULTS**

| Maine Advanced Buildings Program | |
|---|---|
| Total Participants | 1 |
| Total Projects | 1 |
| Annual MMBtu Savings | 1,642 |
| Lifetime MMBtu Savings | 32,833 |
| Efficiency Maine Costs | $113,734 |
| Participant Costs | $106,360 |
| Lifetime Energy Benefit | $335,424 |
| Benefit-to-Cost Ratio | 1.52 |

# MULTIFAMILY EFFICIENCY PROGRAM

The Multifamily Efficiency Program provides financial incentives for building owners to install energy efficiency measures in multifamily buildings that have five or more units. This fiscal year, the program was funded by RGGI funds, which enabled the program to target cost-effective energy-saving projects through an approach that was fuel neutral and reduced electric, oil, propane, and natural gas consumption across the building portfolio.

**SECTORS SERVED**

- *Multifamily*

**FUNDS INVESTED**

- *RCGI*

## FY2015 ACTIVITIES

The Multifamily Efficiency Program was originally launched in FY2013 using federal grant funds. In FY2015, the Program discontinued the practice of offering free benchmarks and shifted its focus to promoting prescriptive measures, obviating the need for energy modeling. The application process was streamlined and the prescriptive measure list expanded to make the Program accessible to more building owners, at lower cost and with less hassle. Additionally, the Program spent significant time and effort reaching out to building owner groups and holding informational sessions to drive demand. The Program also worked to recruit a more diverse community of trade allies to participate in the Program; the program design was modified to accept applications through either Residential Registered Vendors or Business Program Qualified Partners.

The prescriptive list included a number of measures, ranging from ductless heat pumps and insulation to central boilers. In FY2015, building owners were particularly interested in installing ductless heat pumps in individual apartments to reduce energy costs from central heating systems and to increase tenant control and comfort.

## FY2015 RESULTS

The Multifamily Efficiency Program incentivized energy-saving measures in 163 buildings comprising 3,250 apartments. More apartments were touched than in years past in part because the program

**TABLE 22: MULTIFAMILY EFFICIENCY PROGRAM (MMBTU) RESULTS**

| Multifamily Efficiency Program | |
|---|---|
| Total Participants | 163 |
| Total Apartments | 3,250 |
| Annual MMBtu Savings | 15,909 |
| Lifetime MMBtu Savings | 276,179 |
| Efficiency Maine Costs | $1,414,082 |
| Participant Costs | $1,762,481 |
| Lifetime Energy Benefit | $4,815,091 |
| Benefit-to-Cost Ratio | 1.52 |

moved to a prescriptive menu and in part because the requirement to show a minimum 20% savings was removed. The upgrades supported through Program activities in FY2015 are projected to save approximately 276,179 MMBtu in lifetime energy savings, more than 15,909 MMBtu/yr.

## FY2015 ANALYSIS

The results from the Program's earlier use of benchmarking and delivering custom incentives allowed the Multifamily Efficiency Program to develop a robust menu of prescriptive measures and fixed-price incentives. The data from those prior results were used to generate a list of measures and their associated energy savings that present the most significant potential to capture cost-effective projects for multifamily property owners. The prescriptive list made the Program simpler for participating building owners and contractors. It also allowed for a more diverse set of contractors and energy professionals to leverage the Program.

Marketing the Program by disseminating case studies and hosting peer-to-peer networking events was effective: staff discovered that multifamily building owners were more likely to invest in energy efficiency after learning about a peer's efficiency project or seeing the savings in a comparable building portfolio. The pool of Maine contractors equipped to perform modeling of custom efficiency projects in multifamily buildings is limited. The Program achieved increased and more diverse program participation in FY2015 by eliminating benchmarks, allowing for prescriptive measures without modeling, increasing prescriptive incentives to match the incentives for the same or similar custom measures, streamlining the rebate process, increasing marketing, and expanding the contractor list to include all trade allies.

## FY2016 PLANS

There remains a significant cost-effective energy-saving opportunity in the multifamily sector. More than 60,000 apartments are located in multifamily buildings with five or more units.[7] Since inception, the Trust's Multifamily Efficiency Program has helped property managers perform efficiency upgrades in 5,232 apartments.

Given the advantages of shifting to the prescriptive approach in FY2015, in FY2016, the Program will be delivered by "piggybacking" the marketing, technical support, and processing of rebates through the same program delivery channel that is used to run the Business Incentive Program. Many of the measures incentivized through the Multifamily Efficiency Program are similar to those in the prescriptive incentive list. This will further streamline participation and incentive processing for the contactor community. Efficiency Maine will also be able to reduce program administration costs through the integration. ■

7. Source: U.S. Census Bureau, 2008–2012 American Community Survey.

# SMALL BUSINESS INITIATIVE

The objective of the Small Business Initiative is to deliver cost-effective lighting retrofits directly to small businesses. The Initiative pairs local marketing with streamlined delivery to incentivize customers in a targeted geographic area to act quickly to replace inefficient lights with high-efficiency models. This approach is designed to overcome the unique barriers to energy efficiency that small businesses experience. These barriers include the lack of time and expertise to analyze energy options in-house and the perceived "hassle" of making arrangements to purchase and install upgraded equipment. For businesses operating close to the line of profitability, investing in outsourced services for analysis, advice, and general contracting of project management may seem like a luxury they cannot afford. This Initiative endeavors to overcome these barriers by bringing information and technical support to the customer's doorstep, offering enhanced financial incentives (compared to the incentives in the Business Incentive Program), and scheduling and executing energy upgrades using the "direct install" approach. Since upfront costs tend to be the critical barrier to moving forward, the Initiative pays the incentive directly to the contractor upon project completion, eliminating the need for the customer to wait for the incentive payment.

**SECTORS SERVED**

- *Small Businesses (Up to 100 kW)*

**FUNDS INVESTED**

- *Electric System Benefit Charge*

## FY2015 ACTIVITIES

In FY2015, the Small Business Initiative targeted four regions:

- *Region 1: Fort Kent, Madawaska, Caribou, and VanBuren*
- *Region 2: Houlton*
- *Region 3: Norway, Oxford, South Paris, Mechanic Falls, and Poland*
- *Region 4: Waterville, Oakland, Fairfield, and Winslow*

The Trust delivered direct contact marketing in each region by hosting in-person meet-and-greet events to introduce area businesses to the Initiative. It also collaborated with local chambers of commerce and economic development entities and posted advertisements in local newspapers to raise awareness of and generate activity in the program. Additionally, the Trust completed a few projects with well-known ("iconic") local businesses prior to program launch as case studies and invited those business owners to share their program experiences with others at events.

Interested customers received a site visit and lighting assessment by the participating local contractor(s) to determine eligibility and scope of work. This visit was followed by turnkey installation by the contractor. Incentives from the Initiative were applied directly to the contractor's invoice, allowing the participating business to pay only the remaining portion of the


*Brian Cole (right) and Efficiency Maine's Rick Meinking inspect the recently completed lighting upgrade at Cole's Shoes. The switch to high-efficiency lights reduced energy costs and created a beautifully-lit shoe repair workspace and sales room in their Houlton store.*

project. This approach removed the barrier a customer often faces of fronting the full payment for an energy upgrade and then waiting for the incentive payment.

## FY2015 RESULTS

A total of 460 projects were completed in FY2015. The Trust estimates that this will result in more than 70 million kWh of lifetime energy savings. Three hundred forty-four businesses participated from the four regions, representing a significant majority of the small businesses in those areas. In fact, nearly 80% of businesses in Region 1 and Region 2 that requested a lighting assessment and identified energy savings participated in this initiative.

The average project completed in Regions 1 and 2 achieved 11,048 kWh savings for the first year. On average, participating businesses reduced their energy costs by $1,436 annually, or $120 per month as a result of the work completed.[8]

**TABLE 23: SMALL BUSINESS INITIATIVE (KWH) RESULTS**

| Small Business Initiative | |
|---|---|
| Total Participants | 344 |
| Total Projects | 460 |
| Annual kWh Savings | 5,409,349 |
| Lifetime kWh Savings | 70,201,736 |
| Efficiency Maine Costs | $2,732,147 |
| Participant Costs | $551,767 |
| Lifetime Energy Benefit | $6,330,554 |
| Benefit-to-Cost Ratio | 1.93 |

**TABLE 24: REGION 1 AND 2 PROJECT DETAILS**

| Region 1&2 | Region Total | Average Project |
|---|---|---|
| Project Cost | $2,305,946 | $5,413 |
| Incentive | $1,870,875 | $4,392 |
| Annual kWh Savings | 4,706,625 | 11,048 |
| Annual $ Savings | $611,861 | $1,436 |
| Monthly $ Savings | $50,988 | $120 |

8. The Trust assumed a blended rate of $0.13 per kWh.


*Hundreds of Aroostook County businesses like Cole's Shoes participated in the Small Business Initiative. Most participants reported that they would not have undertaken an efficiency upgrade if not for the targeted program and outreach in their area. Participating businesses in Houlton and elsewhere are expected to reduce their electricity costs by an average $1,400 a year.*

## FY2015 ANALYSIS

The Initiative was launched as a pilot program in FY2013 and FY2014 to test the effectiveness of integrating marketing and direct installation of measures to improve the accessibility of energy efficiency opportunities for Maine's small businesses. The Trust made numerous changes to the pilot in FY2014 in order to gather as much information as possible about what would increase customer participation. The pilot discovered that small businesses face a number of obstacles to installing energy-efficient measures: they lack in-house capacity to develop or manage efficiency projects, many don't own their building, and most lack the capital for major upgrades. And the pilot determined that the direct install method of program delivery was well suited to the small business sector. By targeting specific geographic regions for limited periods of time, the pilot was able to achieve significant economies of scale through incentivizing and pre-ordering a limited number of energy-efficient lighting options and working with contractors in a small area.

The pilot transitioned to a program at the end of FY2014 and was formally launched in FY2015 in Aroostook County, incorporating the lessons learned. The recipe for success determined from the pilot included targeted outreach to businesses in a region and collaboration with local chambers of commerce and other conveners. The pilot also demonstrated that it was best to work with local

area contractors on installation and to work with suppliers to ensure availability of high-efficiency lighting products for quick installation. Significantly, the pilot demonstrated that projects can drop out of the process between project steps – assessment, installation, and incentive payment. The Initiative streamlined that process in order to provide turnkey services from assessment to installation to incentive with the same customers. The Initiative calibrated incentives so that most participating businesses were able to recoup their investment with a year to a year-and-a-half, a critical time frame for many main street businesses. These incentives, available only for a limited time, prompted many businesses to undertake efficiency projects they wouldn't have undertaken otherwise.

The results from the Initiative in FY2015 were positive. Most participants reported that they would not have undertaken an efficiency project were it not for the turnkey assessment, installation, and incentive process. Because payback periods were around one year, business owners were able to justify the investment.

Partnering with local "iconic" businesses, chambers of commerce, and other local organizations was an important way the Trust was able to spark participation and create a local "buzz": as with many other Trust programs, word of mouth is a key driver in program participation. Knowing a local business owner who had experienced savings or a better quality of light helped business owners commit to a lighting upgrade. Program participation was higher than expected in Regions 1 and 2, and the Trust undertook only modest outreach efforts to reach potential businesses in Regions 3 and 4. As described above, 80% of businesses that received an assessment completed a lighting project. Regions 3 and 4 continue to be served in FY2016 to accommodate demand.

## FY2016 PLANS

Significant cost-effective energy efficiency opportunity exists in the small business sector. Approximately 75,000 businesses in the state receive utility service on the "small business" rate. Whether a gift shop, office, or restaurant, the success of the Initiative in FY2015 indicates that others in the sector could benefit from retrofits to bring in high-efficiency lighting. The program is especially warranted in regions located outside of traditional energy efficiency supply chains or traditionally underserved by the contractor community.

Many of the projects begun in Region 4 in FY2015 carried over to FY2016. Due to the high volume of participation in that region, the Small Business Initiative will target only one or two smaller regions in FY2016, although the Trust could alternatively target other areas experiencing grid constraint if directed to do so. In FY2016 and beyond, the Trust will explore adding measures other than lighting to the Small Business Initiative delivery model, including ductless heat pumps and heating and refrigeration solutions. Incentives may also be paired with financing as a pilot through this program. ▪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# STRATEGIC INITIATIVES

*The Trust's programs to acquire cost-effective energy efficiency and distributed resources are complemented by several strategic initiatives. These include evaluation, measurement, and verification (EM&V); innovation; and public information and outreach.*

# Evaluation, Measurement, and Verification

The purpose of the Trust's EM&V strategy is to provide data-driven research and analysis to inform program design and delivery strategies, verify program results, and ensure ongoing program and organizational improvement. The Trust carries out this strategy using a combination of in-house initiatives and subcontracted, independent third-party reviews performed by firms that specialize in the evaluation of energy efficiency programs.

Independent evaluations of the Trust's programs are designed to:

1. *Document and verify the program impacts on energy savings, demand savings, and program cost-effectiveness relative to goals*
2. *Understand why certain effects occur and identify opportunities for program improvement*
3. *Assess program effects on the marketplace*
4. *Inform allocation of resources*

With a focus on delivering rigorous and objective results, the third-party contractors rely on industry-standard evaluation methods and practices to evaluate the Trust's programs. Each program evaluation typically employs both qualitative and quantitative data and methods, such as in-depth interviews with program delivery team members and stakeholders; telephone surveys of program participants and non-participants; engineering review and analysis of participant data and project files; and site visits, entailing on-site inspection, spot measurements, and/or equipment metering to gather data.

## FY2015 ACTIVITIES

*EM&V:* In FY2015, the Trust finalized the Retail Lighting Evaluation. The results of this evaluation are summarized above in the in the Retail Lighting section.

The Trust's other significant EM&V activities during FY2015 included enhancing the Trust's project-tracking database, called "effRT"; demonstrating compliance with Forward Capacity Market measurement and verification rules; revising the Technical Reference Manuals (TRMs) for each of the residential, commercial, and multifamily program sectors; and gathering performance data on distributed generation installations.

Specific to the effRT database, the database platform manages the data for all of the Trust's active programs and ensures consistent and accurate estimates of energy savings. The effRT database also improves program activity tracking and data integrity. The system also enables contractors (such as QPs) to expedite the processing of incentives, significantly reducing and in some cases eliminating paperwork. The Trust added relevant project information from the Small Business Initiative, HESP, and Low-income Direct Install Initiatives into effRT for the first time during FY2015.

The Trust's Residential and Commercial TRMs provide documentation for the Trust's calculation of energy and demand savings from energy efficiency measures. Each TRM serves as a central repository and common point of reference for the methods, formulas, assumptions, and sources that are used to estimate savings from energy efficiency measures, and provides a common platform for analyzing energy savings across measures and programs. For each measure, the TRM provides a measure overview and documentation of gross energy and demand savings algorithms; efficiency assumptions for the baseline and efficient measure; deemed parameter values or instructions for inputs to savings algorithms; measure life and cost; and impact factors for calculating adjusted gross savings and net savings.

In F20Y15, the Trust began gathering data on its distributed generation projects. To reliably obtain the amount of electricity generated by distributed generation assets installed under the Large Customer Program, the Trust contracted with Tilson Technology Management to install independent meters capable of automatically uploading 15-minute interval data directly to the effRT database. The metering suite consists of a 3-phase voltage and amperage meter; data acquisition server; and cellular modem allowing autonomous, independent, continuous data

communications between the generator and effRT. In locations not suitable for cellular communications, the data acquisition server is connected to the local network configured to provide direct access to the effRT database.

Table 25 shows all of the evaluation projects in FY2015. The table also shows the cost for each evaluation and its funding source.

In addition to the standard, ongoing activities directly related to EM&V, the Trust also actively participated in two significant research and analysis projects in FY2015: the Avoided Energy Supply Component Study for 2015 (2015 AESC Study) and a collection of studies for use in developing the third Triennial Plan for FY2017–FY2019.

**TABLE 25: FY2015 EVALUATION PROJECT ACTIVITY**

| Subject | Type | Prime Contractor | Total Project Budget | FY2015 Expenditures | Funding Source(s) | Project Start Date | Project End Date |
|---|---|---|---|---|---|---|---|
| TRM Support and FCM M&V Compliance | Technical Services & Evaluation | Cadmus Group | $290,320 | $100,689 | Electric Conservation, FCM | Jan-13 | Aug-15 |
| Residential Appliance Program (2014) and Retail Lighting Program (2015) | Impact & Process Evaluation | NMR Group and Nexant | $449,661 | $42,966 | Electric Conservation | Jul-13 | Apr-15 |
| Low-Income Multifamily Weatherization | Impact & Process Evaluation | NMR Group | $199,986 | $132,963 | Electric Conservation | Apr-14 | 2016 |
| Distributed Generation | Metering | TILSON Technology Management | $36,322 | $16,188 | FCM | Sep-14 | 2016 |
| Large Customer Program | Impact & Process Evaluation | Nexant | $142,346 | $15,819 | Electric Conservation | Mar-15 | 2016 |
| Business Incentive Program | Impact & Process Evaluation | Nexant | $189,713 | $21,748 | Electric Conservation | Mar-15 | 2016 |

*2015 AESC Study:* During FY2015, the Trust participated in the AESC Study Group, which partnered with Tabors Caramanis Rudkevich (TCR) to conduct a study of marginal energy supply costs that will be avoided due to reductions in the use of electricity, natural gas, and other fuels resulting from energy efficiency programs offered to customers throughout New England. The 2015 AESC Study forms one of the foundations of the Trust's cost-benefit analysis because the avoided costs from the study are used by the Trust to calculate the lifetime benefit from installed measures. These avoided costs represent the amount that would have been paid for the marginal energy and capacity consumed if not for the savings of energy efficiency and distributed energy resources installed through the Trust's programs.

The study is sponsored by a diverse group of electric utilities, gas utilities, and other efficiency program administrators, including the Trust. The group also includes stakeholders from other non-utility parties and government departments.

In FY2015, the Trust updated effRT with the avoided costs from the 2015 AESC Study. This process involves replacing the 2013 AESC Study's avoided costs in effRT's cost-benefit analysis tool with the updated avoided costs from the 2015 AESC Study. As a result of the study and the effRT update, the electric capacity avoided costs are higher relative to 2013; electric energy avoided costs are lower relative to

2013; and the avoided costs for natural gas, heating oil, and other heating fuels are lower relative to 2013. The AESC Study is typically revised every three years in addition to a mid-term update, which is performed between each major revision.

*Triennial Plan Studies:* The Triennial Plan studies consist of an updated electric potential study, a residential baseline assessment, and a commercial baseline assessment.

*Potential Study:* In preparation of the development of the Triennial Plan III, the Trust contracted with GDS Associates to update and enhance the 2012 Baseline and Opportunities Study (the "potential study"). The objective of the potential study is to estimate the amount of statewide sector- and program-specific cost-effective electrical energy efficiency. To accomplish this objective, GDS created a series of unique models of the amount of energy efficiency resources that could potentially be delivered through each Trust program. The potential study began in FY2015 and will be finalized in FY2016 prior to the Trust's filing of the Triennial Plan III. The methodology and results of the potential study will be filed with the commission alongside the plan and posted on the Trust's website.

*Residential Baseline Assessment:* In preparation of the development of the Triennial Plan III, the Trust contracted with the NMR Group to perform the Single-Family Residential Baseline assessment. The objective of the assessment was to develop a representative baseline for single-family homes in Maine. The assessment involved 164 telephone surveys and 41 on-site inspections of single-family homes. The results of the assessment will be incorporated into the potential study.

The residential baseline assessment began in FY2015 and will be finalized in FY2016 prior to the Trust's filing of the Triennial Plan III. The methodology and results of the potential study will be filed with the commission alongside the plan and posted on the Trust's website.

*Commercial Baseline Assessment:* In preparation of the development of the Triennial Plan III, the Trust contracted with Retroficiency and Cadmus to perform the Commercial Building Interval Meter Data Analytics Study ("commercial baseline assessment"). This assessment will be used to complement the Trust's 2012 study of the commercial baseline. The new commercial baseline assessment uses interval data analytics to make a deep analysis of a sample of more than 500 buildings across eight commercial sectors within Central Maine Power's service territory. The sampled customers represent more than 158 GWh of annual consumption. The results of the assessment will be incorporated into the potential study.

The commercial baseline assessment began in FY2015 and will be finalized in FY2016 prior to the Trust's filing of the Triennial Plan III. The methodology and results of the potential study will be filed with the commission alongside the plan and posted on the Trust's website.

## FY2016 PLANS

In 2016, the Trust will complete evaluations of the Low-Income Multifamily Weatherization Program, the Business Incentive Program, and the Large Customer Program. The Trust also will initiate evaluations of the Small Business Initative and HESP. Both of the new evaluations will review program results from activities performed in FY2015 and FY2016. Other FY2016 research and evaluation project activity will include the Annual Forward Capacity Market Measurement and Verification Compliance Review, finalization of the Residential TRM and the Commercial TRM for FY2016, and development of updated TRMs for FY2017.

The FY2016 and long-term plans for the database platform includes improving reporting and tracking, using effRT to assist in short- and long-term forecasting, and streamlining program processing in the database.

# Innovation

Technological improvements are a cornerstone of energy efficiency, and early investments in technology innovation can pay off over time in terms of future energy savings and economic development. The Trust's Innovation Program provides funding for pilot projects that demonstrate new types of energy efficiency or alternative energy measures. In past years, the Innovation Program has established criteria requiring that proposed technologies must be commercially available and show significant potential to provide cost-effective energy savings but that remain in need of further demonstration in the Maine marketplace. It is understood that these energy measures may or may not prove to be cost-effective or popular, or that their performance may not satisfy customers' needs. One purpose of the Innovation Program is to use smaller pilot projects to make such findings before committing to larger investments on incentives and program administration.

## FY2015 ACTIVITIES

In FY2015, the Trust continued to manage the Smart Thermostat Innovation Pilot begun in FY2013. In that year, the Trust selected three pilot projects that were designed to explore how interval data could be used to find efficiency and conservation opportunities in Maine. The Smart Thermostat Innovation Pilot installed more than 160 smart thermostats in a diverse group of the Trust's commercial customers, including office buildings, convenience stores, and retail outlets. Using an online interface that the smart thermostats provide, customers can monitor or adjust the temperature as needed, and set the thermostats to automatically turn on and off. Pilot participants found these units to be an easy way to control energy usage without expensive climate control or building automation systems. The online tools also let customers view their interval data along with the temperature settings. The Trust hopes this level of detail will let customers know how their heating and cooling systems affect their electricity usage and lead to more energy-efficient decision making.

## FY2016 PLANS

The Trust will continue the innovation work around smart data launched in FY2013 by exploring distributed energy resources through the Innovation Program. In Maine, there is rising concern about, and sensitivity to, prices, grid reliability, and air emissions during periods of peak demand. Expanding the use of distributed energy resources, including demand response and distributed generation, by Maine customers has the potential to lower individual customer's costs while at the same time depressing peak demand prices, benefiting others on the grid. Increased use of cost-effective distributed energy resources also has the potential to improve grid reliability and reduce carbon emissions. The Trust will consider new, emerging application of smart grid capabilities to increase the value of distributed energy resources.

A particular example of a potential application of smart grid capabilities to emerging end-use equipment technology is found in heat pump water heaters. In addition to being more efficient than a standard water heater, these new units also have the capability of using two-way communications and controls that allow the heater to be turned on and off and the water temperature to be adjusted remotely. One potential pilot project under consideration by the Trust is to demonstrate the ability to remotely, or through automated controls, adjust the operations of heat pump water heaters, and to measure the costs and benefits of reducing load at a given time or place.

# Public Information and Outreach

The Trust targets potential customers through tailored marketing and outreach campaigns across its various programs. These efforts are complemented by the Trust's work to provide general energy information and education to help consumers considering the installation of energy efficiency measures. Through its Public Information and Outreach initiatives, the Trust seeks to help boost energy savings through increased general awareness of the benefits of cost-effective, customer-sited energy resources and of specific efficient technologies, operating practices, and behaviors, as well as basic guidance on how to access Efficiency Maine programs. Through numerous communications channels, the Trust urges consumers who are planning to purchase new lighting, appliances, heating systems, and other equipment to consider buying one of the more energy-efficient models available.

Information is disseminated through the Trust's website, printed flyers and brochures, traditional advertising, social media, and other multimedia tools. The Trust also manages targeted training sessions and attends industry events, such as forums and symposiums. The public information and outreach materials address saving energy and the co-benefits of energy-efficient choices. Co-benefits include saving money, time, and resources; price suppression for grid-supplied energy; increased home comfort; promoting energy independence; reducing harm to the environment and human health; helping the Maine economy through job creation and job retention; and reducing a business's operating and maintenance costs.

## FY2015 ACTIVITIES

The Trust engaged in a wide range of activities related to public information and outreach in FY2015. These activities are discussed below and can be broken into the following categories: Events and Training, Call Center, Website, Social Media, and Marketing and Awareness. A major theme of FY2015 was targeted outreach to the business community to discuss energy efficiency as an effective way to manage energy costs. The Trust also continued to expand its reach in new media, including digital ads and social media.

*Events and Training:* The Trust hosted workshops and symposiums on energy technologies, efficiency programs, and successful case studies several times in FY2015. The audiences ranged from customers to contractors and vendors to policy makers. The Trust also was invited to participate as a panelist before gatherings of Maine businesses and residents. Typically, Trust staff reported on energy-efficient technologies and the Trust's programs at these events. Hosts for these events included several regional chambers of commerce, the Maine Municipal Association Annual Meeting, the leadership of Maine Hospitals, the Industrial Energy Consumers Group, E2Tech, and numerous local citizen "energy committees." In January 2015, the Trust held its annual symposium and awards ceremony for contractors and customers, "Working with Maine Businesses and Homeowners to Manage Energy Costs."

The Trust's programs require appropriate licenses and certifications for certain efficiency measures to be eligible for incentives. In FY2015, the Trust offered scholarships for advanced heat pump installation training to support the contractor community in effectively adopting installation best practices for this new technology. The Trust also offered building operator and advanced building operator certification training to ensure continued energy savings through effective energy management in large buildings across the state. Through these trainings, the Trust helped reduce market barriers confronting adoption of the measures.

*Call Center:* An important public information tool at the Trust's disposal is its Call Center. In FY2015, the Trust's Call Center was staffed by professional operators, located in Waldo County, at the toll-free number 866-ES-MAINE. The Call Center was used to handle inbound and outbound calls related to all of the Trust's programs. The Call Center was staffed during normal working hours, and customer service agents were trained to provide the basic information on all programs. Where detailed or more technical

information was needed, the customer service agents made live transfers to Trust staff or specified delivery team contractors. The Trust continually oversaw the Call Center to make sure questions were answered appropriately and used feedback received by Call Center representatives to improve program resources and rebate processing. The Trust sent out an RFP for call center services in the spring of FY2015, and the project was awarded to a new provider, based in Brunswick, for FY2016.

*Website:* Increasingly, printed matter is being complemented and in some cases supplanted by posting information online. For that reason, in FY2015, the Trust invested considerable time and money in enhancing the Efficiency Maine website at www.efficiencymaine.com. These investments advanced the Trust's goal of serving as a "go to" information resource on customer-oriented issues around controlling energy use and energy costs in Maine. The Efficiency Maine website now supplies energy information, online calculator tools, a library of printed and video case studies, tutorials on new energy technologies (such as ductless mini-split heat pumps), and searchable databases of home energy contractors and commercial contractors. In FY2015, the Trust refined many of its online resources, including rebate information, detailed information on energy technologies, and energy-saving tips.

*Social Media:* Social media now provides an increasingly important way for the Trust to provide information and education to potential customers. It is also a channel for the Trust staff to field questions about programs. In FY2015, the Trust focused its use of social media on promoting HESP.

*Marketing and Awareness:* The Trust's marketing efforts are focused largely on educating potential customers about a specific energy-efficient technology or energy-saving solution executed through a specific program area. However, the Trust did engage in a large marketing and public relations effort to raise awareness of how energy efficiency can help homeowners and businesses manage energy costs. As described above, participation in the Business Incentive Program, the Small Business Initiative, and the Large Customer Program reached unprecedented levels. Some activity in those programs can be attributed to this increased marketing and to discussion of energy efficiency and energy efficiency funding in the media.

## FY2016 PLANS

The Trust will undertake a systematic review and redesign of its website to coincide with the new Triennial Plan period. The Trust will also work to support program outreach goals. In particular, all natural gas customers will be served through Trust programs beginning in FY2016 and new low-income initiatives will be launched. The Trust anticipates focusing new marketing and outreach on those efforts. In addition, the Trust will expand its reach on social media through campaigns that will invite homeowners to reflect on their experiences with energy efficiency technologies.

The Trust will plan to host its annual symposium in early 2016 and will plan to participate in other symposiums, conferences, and industry meetings to share program information with efficiency professionals and potential customers. ▪

# FINANCE & ADMINISTRATION

*The independent certified public accountant Runyon, Kersteeen, Ouellette, Inc. (RKO) issued multiple audit reports on the Trust's activities for the year ended June 30, 2015. The reports covered: the Trust's internal control over financial reporting and compliance with government accounting standards, compliance and internal control over compliance for federal grants as required by Office of Management and Budget (OMB) Circular A-133, and financial statements. The reports were unanimously accepted by the Board of Trustees on September 30, 2015.*

## WRITTEN POLICIES AND PROCEDURES

Since its inception in 2009, the Trust has developed and instituted written policies and procedures to ensure standardized implementation of various financial and administrative practices associated with administering programs. During FY2015, the Trust did not develop or amend any policy or procedure.

## ADMINISTRATION

In FY2015, the Trust's lease for office space in Augusta expired. The Trust moved to a nearby office space, outfitted with a small conference room that can accommodate the Board meetings and other small gatherings, located at 168 Capitol Street in Augusta.

## AUDIT RESULTS

### *Audited Report on Internal Control Over Financial Reporting*

The audit reported that, "The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under Government Accounting Standards."[9]

### *A-133 Audit Report*

The audit reviewed the Trust's compliance with the types of requirements described in the OMB Circular A 133 Compliance Supplement that could have a direct and material effect on each of the Trust's major federal programs for the year ended June 30, 2015. The auditors reported, "In our opinion, Efficiency Maine Trust complied, in all material respects, with the types of compliance requirements … that could have a direct and material effect on each of its major federal programs…." [10] The summary of the auditor's results indicated that, as to the Trust's basic financial statements, the audit issued an "unmodified" report. The audit of the Trust's internal control over financial reporting identified no material weaknesses and reported no significant deficiencies or noncompliance material to financial statements. As to the Trust's internal control over major programs using federal awards (grants), the auditor again issued an "unmodified" report, indicating that it identified no material weaknesses and reported no significant deficiencies. The report indicated that the Trust was qualified as a "low-risk auditee."[11]

### *Audited Financial Report*

The report of the audit of the Trust's financial statements provided the following opinion from the auditor:

> *In our opinion, the financial statements … present fairly, in all material respects, the respective financial position of the governmental activities, the major fund, and the remaining fund information of Efficiency Maine Trust, as of June 30, 2015, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.*[12]

As reported in the audit, the Trust's revenues and expenditures presented in the FY2015 Statement of Revenue, Expenditures, and Change in Fund Balance – Governmental Fund are $51.4 million and $58.7 million, respectively, plus another $135,450 sent to state agencies resulting in a decrease to fund balance of $7.5 million. The Trust's Governmental Fund balance, as of June 30, 2015, is $43.6 million, of which $23.1 million is restricted for operations and programs and $20.5 million is restricted for grant and revolving loan activity. Encumbrances of $17.4 million, as of June 30, 2015, representing existing contracts, will carry over into FY2016. The majority of these encumbrances reflect larger energy projects, proposed by medium and large businesses, that were approved in the latter part of FY2015 but that will not be completed and paid out until FY2016.

The Trust's revenues, expenditures, and fund balance for the 12 months of FY2015 are summarized in Table 26.[13] ■

9. RKO, "Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Accounting Standards," September 30, 2015, at 2.
10. RKO, "Independent Auditor's Report on Compliance for Each Major Program and on Internal Control over Compliance Required by OMB Circular A-133," September 30, 2015, at 4.
11. Ibid., at 8.
12. Efficiency Maine Trust, "Annual Financial Report for the Year Ended June 30, 2015," prepared by RKO, September 30, 2015, at 2.
13. Ibid., Statement 4, at 16.

**EFFICIENCY MAINE TRUST**

# Statement of Revenues, Expenditures and Changes in Fund Balance
## *Governmental Fund*

FOR THE YEAR ENDED JUNE 30, 2015

| | |
|---|---|
| **REVENUES** | |
| **Intergovernmental** | |
| System Benefit Charges | $15,189,657 |
| Alternative Compliance Mechanism | $3,811 |
| Federal Grants | $25,000 |
| **Interest Income** | |
| Investments | $73,135 |
| Loans | $467,604 |
| **Other Income** | **$796,764** |
| **Renewable Resource** | **$78,079** |
| **Long-Term Contracts** | **$1,019,137** |
| **Maine Power Reliability Program Settlement Proceeds** | **$1,500,000** |
| **Maine Yankee Settlement Proceeds** | **$16,269,564** |
| **Forward Capacity Market Credits** | **$4,738,843** |
| **Regional Greenhouse Gas Initiative Proceeds** | **$11,239,224** |
| **TOTAL REVENUES** | **$51,400,818** |
| **EXPENDITURES** | |
| **Administrative** | **$2,220,441** |
| **Residential Programs** | |
| Program Administration | $229,793 |
| Low-Income | $4,390,447 |
| Non-Low-Income | $19,292,921 |
| **Business Program** | |
| Program Administration | $249,884 |
| Small/Medium | $23,138,575 |
| Large | $6,476,990 |
| **Cross-Cutting Strategies** | |
| Program Administration | $88,239 |
| Education And Awareness | $27,498 |
| Alternative Energy Program | $220,926 |
| Innovation | $75,556 |
| Evaluation | $707,203 |
| **Other Payments** | **$1,611,651** |
| **TOTAL EXPENDITURES** | **$58,730,124** |
| **DEFICIENCY OF REVENUES UNDER EXPENDITURES** | (7,329,306) |
| **OTHER FINANCING USES** | |
| Intra-Entity Grants — State Agencies | (135,450) |
| **NET CHANGE IN FUND BALANCE** | (7,464,756) |
| **FUND BALANCE, BEGINNING OF YEAR** | $51,069,304 |
| **FUND BALANCE, END OF YEAR** | $43,604,548 |

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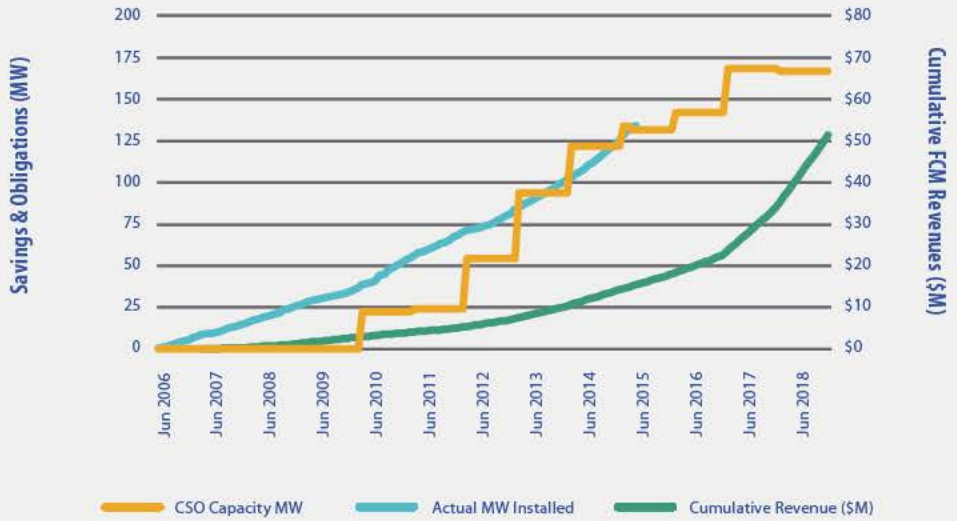
# OTHER INITIATIVES

## ISO-New England's Forward Capacity Market

The Trust has participated in ISO-New England's (ISO-NE) Forward Capacity Market since the market was launched in 2006. The Forward Capacity Market ensures that there is sufficient capacity in the ISO-NE region for reliable electric grid system operation. The Trust provides demand resources by helping develop energy efficiency and distributed generation projects in Maine that may be used to satisfy regional capacity needs. The Trust and other providers of demand resources offset the need for generation capacity during periods of peak demand, thus allowing transmission planners to meet a portion of forecasted capacity needs through demand resources instead of traditional central station generators. Each year, ISO-NE forecasts the size of the peak demand three years in the future and then holds an auction to procure the amount of capacity needed to meet the forecasted demand. In the auction, one megawatt of capacity demand reduction is given the same value as one megawatt of capacity supplied by a generator. As a market participant, the Trust is responsible for reporting on progress in meeting its existing capacity obligations from prior auctions and showing ISO-NE that the Trust's program results satisfy the ISO-NE measurement and verification protocols.

The Trust reported to ISO-NE on the increasing amount of capacity that the programs delivered to

FIGURE 3: SUMMARY OF THE TRUST'S FCA ACTIONS



date every month of FY2015. All measures installed with the Trust's incentives are recorded in its project database. The database contains information about how often, and at what time of day, energy-efficient equipment is in operation, and aggregates these data for reporting to ISO-NE. To ensure the accuracy of this report, ISO-NE requires an annual independent certification to review the processes behind the Trust's monthly reports. All aspects of the Trust's tracking, verification, and reporting activities are reviewed and certified for compliance with the rigorous requirements of ISO-NE's measurement and verification manual.

In FY2015, the Trust pursued limited participation in the ninth Forward Capacity Auction (FCA). In the auction, the Trust took on an obligation to supply 4 MW of summer peak demand savings, for which it will be paid a price of $9.55 per kW per month. The Trust also made preparations for the tenth FCA, which will be held February 2016. To date, the Trust has delivered or taken obligations for a total of 167 MW of summer peak demand savings. As a result, the Trust's programs have lowered future energy prices for Mainers. Figure 4 summarizes the Trust's delivered savings and future obligations. ■

## RGGI Reporting

Each year the Trust contributes to the RGGI Annual Report. The report is collaboratively prepared by the Department of Environmental Protection, the Public Utilities Commission, and the Trust. The report is submitted to standing committees of the legislature having jurisdiction over natural resources and utilities and energy matters.

In the most recent RGGI Annual Report, the Trust described how it invested $9.2 million of RGGI funds in FY2014. The RGGI funds are projected to result in annual savings of 14.9 million kWh, 70,796 MMBtu, and 13,358 tons of carbon dioxide. The report is available at the website of the Maine Department of Environmental Protection. ■

*Stakeholders gather at a briefing on the Efficiency Maine Trust's Triennial Plan III.*

## Legislative Recommendations

The Trust's authorizing statute provides that the Annual Report should include "[a]ny recommendations for changes to the laws relating to energy conservation."[14]

*RGGI Funds:* The Trust recommends that the legislature consider whether it wishes to amend the law to indicate specific allocations of RGGI revenues that should apply after FY2016. When the RGGI Trust Fund was created, the statute established the requirement that the funds be used "to fund conservation programs … that reliably reduce greenhouse gas production by fossil fuel combustion … or reliably reduce the consumption of electricity…"[15] The statute also states that the "size of a project funded by the trust fund is not limited as long as funds are awarded to maximize energy efficiency and support greenhouse gas reductions and to fully implement the triennial plan."[16] In the Omnibus Energy Bill of 2013, the legislature made multiple amendments to the statute relating to energy and conservation. One such change was a prescription that for three years – FY2014, FY2015, and FY2016 – the Trust must allocate the RGGI funds received during those years as follows:

- *50% to uses at commercial or industrial facilities*
- *35% for measures that lower residential heating energy demand*
- *15% to the Maine Public Utilities Commission to be disbursed to the ratepayers of electricity utilities*
- *These specific allocations will expire at the end of FY2016.*[17]

*Natural Gas Conservation Programs:* In 2015, the legislature directed the Trust to perform a study to "examine alternatives for promoting and securing cost-effective natural gas conservation and efficiency improvements for [ ] large volume customers" and to submit a report, together with any recommendations, to the legislature's committee of jurisdiction.[18]

The Trust will present the report to the legislature by December 31, 2015, which the legislature may use in considering future legislation regarding natural gas conservation programs. ▪

## Low-Income Weatherization Assistance Program by Maine Housing

The statute requires that the Trust include in the annual report:

> *Total funds received and expended by the State on energy efficiency and weatherization pursuant to the Weatherization Assistance for Low-income Persons Program of the United States Department of Energy and the Low-income Home Energy Assistance Program of the United States Department of Health and Human Services.*[19]

In Maine, these federally funded efficiency and weatherization initiatives are administered by the Maine State Housing Authority (MaineHousing). The budgets and expenses of these initiatives are summarized in the following table, which was prepared by MaineHousing. ▪

14. 35-A MRS §10104(5)(C).
15. 35-A MRS §10109(4)(A).
16. Ibid., §10109(4)(E).
17. Ibid., §10109(4)(A).
18. 127th Session of the Maine Legislature, Resolves, Chapter 39 (LD 946), 2015.
19. 35-A MRS §10104(5)(B)(4).

## TABLE 27: MAINEHOUSING WEATHERIZATION INITIATIVES

| | Grant Year/Period | | Production Budget | Production Expenses | Units | Comments |
|---|---|---|---|---|---|---|
| **LIHEAP Weatherization**<br>Weatherization efforts to maximize energy savings and reduce fuel burden; minimal health/safety per unit of $800 and minimal incidental repairs (15% of weatherization costs) to make installation of weatheriization materials effective; funds allocated to CAAs, then paid directly to contractor for services; per unit average max of $7,105. | 2013 | 10-01-12/09-30-13 | $2,382,477 | $1,729,410 | 268 | Production Complete |
| | 2014 | 10-01-13/11-30-14 | $3,965,811 | $3,383,916 | 436 | Production Complete<br>Contract extended to 11/30/2014 |
| | 2015 | 10-01-14/03-31-17 | $7,350,793 | $7,350,793 | 900 Projected | Production in Process<br>Contract extended to 03/31/2017 |
| | 2016 | 10-01-15/09-30-16 | TBD | TBD | TBD | Funding not yet announced |
| **DOE/WX**<br>Weatherization efforts to maximize energy savings and reduce fuel burden; minimal health/safety per unit of $800 and minimal incidental repairs (15% of weatherization costs) to make installation of weatherization materials effective; funds allocated to CAAs and then paid directly to contractor for services; per unit average max $7,105. | 2012 | 04-01-12/06-30-13 | $1,998,648 | $1,901,076 | 283 | Production Complete<br>Grant period extended to continue production through 06/30/2013. |
| | 2013/2014 | 04-01-13/03-31-15 | $2,637,114 | $1,344,984 | 201 | Production Complete<br>Grant for 2013 and 2014 combined by DOE<br>$1.3 million in funding carried over to PY 2015 |
| | 2015 | 04-01-15/03-31-15 | $3,418,208 | $3,418,208 | 394 Budgeted | Production in Process |
| **Weatherization Supplement**<br>Weatherization efforts to maximize energy savings and reduce fuel burden; minimal health/safety per unit of $800 and minimal incidental repairs (15% of weatherization costs) to make installation of weatherization materials effective; funds allocated to CAAs and then paid directly to contractor for services; per unit average max $6,769. | 2013 | 01-01-13/12-31-13 | $909,117 | $870,875 | 172 | Production Complete<br>Funded by MaineHousing |
| | 2014 | 01-01-14/12-31-14 | $1,174,186 | $1,062,803 | 175 | Production Complete<br>Funded by MaineHousing |

MaineHousing
Maine State Housing Authority

# APPENDICES

# APPENDIX A

Table 28 and Table 29 illustrate the total energy savings [20] and lifetime avoided energy costs associated with each of the programs administered by the Trust in FY2015. Each table also shows the summary of the Trust's costs. These figures include the financial incentives given to customers ("participants") and the participants' cost-share to install energy upgrades. The costs also include the Trust's efforts to manage the programs; provide public information and outreach; hold training sessions and provide technical support; and conduct quality control, measurement and verification, and evaluation of each program. The benefit-to-cost ratio indicates the ratio of the financial benefits (from the lifetime avoided energy costs) to the combined costs of the Trust and the participants.

**TABLE 28: FY2015 PROGRAM IMPACTS: ELECTRIC PROGRAMS**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (Lifetime) | Benefit-to-Cost Ratio |
|---|---|---|---|---|---|---|---|
| Business Incentive Program Electric Measures | 75,285,380 | 872,772,692 | $17,162,905 | $16,564,324 | $74,374,992 | $0.039 | 2.21 |
| Large Customer Program Electric Measures | 30,760,921 | 438,865,951 | $6,983,439 | $5,124,783 | $25,297,712 | $0.028 | 2.09 |
| Small Business Initiative | 5,409,349 | 70,201,736 | $2,732,147 | $551,767 | $6,330,554 | $0.047 | 1.93 |
| Consumer Products Program | 102,318,679 | 550,577,702 | $10,817,327 | $20,287,640 | $49,871,614 | $0.056 | 1.60 |
| Home Energy Savings Program Electric Measures | 9,032,603 | 162,586,854 | $3,564,434 | $1,079,128 | $16,426,509 | $0.029 | 3.54 |
| Low-Income Direct Install Initiative Electric Measures | 1,534,180 | 14,065,348 | $1,232,373 | $0 | $1,249,631 | $0.088 | 1.01 |
| Cross-Cutting Strategies Electric | | | $863,415 | | | | |
| Administration - Electric | | | $2,136,542 | | | | |
| **Total** | **224,341,112** | **2,109,070,284** | **$45,492,581** | **$43,607,642** | **$173,551,012** | **$0.042** | **1.95** |

20. Savings values reported in the program summary tables and individual program tables are "adjusted gross savings," unless otherwise indicated. Adjusted gross savings is the change in energy consumption and/or demand that results directly from program-related actions taken by participants in an Efficiency Maine program, regardless of why they participated, adjusted by factors developed through program evaluations. Periodically, Efficiency Maine enlists independent third-party contractors to evaluate the savings impacts of major programs. The evaluations develop factors to improve the accuracy of gross savings calculations based on installation rates and in situ-verified savings rates. The evaluations also analyze program attribution, including identifying program participants who would have installed the same or equivalent efficiency measures on their own even if the program had not been offered ("free-ridership") and the percentage of efficient equipment installed due to program influences even though no incentive or technical assistance was received ("spillover"). Factoring in free-ridership and spillover delivers "net savings," which quantifies the savings directly (adjusted gross – free-ridership) and indirectly (spillover) attributable to the program. Efficiency Maine publishes estimated free-ridership and spillover factors in the Technical Reference Manuals.

**TABLE 29:** FY2015 PROGRAM IMPACTS: ALL FUELS AND NATURAL GAS PROGRAMS

| Program | Annual MMBtu Savings | Lifetime MMBtu Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/MMBtu (Lifetime) | Benefit-to-Cost Ratio |
|---|---|---|---|---|---|---|---|
| Business Incentive Program Natural Gas Measures | 13,057 | 260,887 | $242,991 | $66,294 | $1,666,517 | $1.19 | 5.39 |
| Low Income Direct Install Initiative Natural Gas Measures | 636 | 12,728 | $76,138 | $0 | $95,369 | $5.98 | 1.25 |
| Home Energy Savings Program Natural Gas Measures | 5,581 | 127,018 | $307,737 | $1,100,862 | $2,945,103 | $11.09 | 2.09 |
| Maine Advanced Building Program | 1,642 | 32,833 | $113,734 | $106,360 | $335,424 | $6.70 | 1.52 |
| Multifamily Efficiency Program | 15,909 | 276,179 | $1,414,082 | $1,762,481 | $4,815,091 | $11.50 | 1.52 |
| Business Incentive Program Other Fuels Measures | 31,244 | 409,193 | $1,095,388 | $6,211,805 | $10,017,712 | $17.86 | 1.37 |
| Large Customer Program GHG Measures | 26,266 | 374,124 | $1,808,033 | $1,272,598 | $6,212,210 | $8.23 | 2.02 |
| Low-Income Direct Install Initiative Other Fuels Measures | 13,700 | 246,606 | $700,600 | $1,270,337 | $4,547,475 | $7.99 | 2.31 |
| Home Energy Savings Program Other Fuels Measures | 83,224 | 1,894,231 | $6,309,776 | $22,334,064 | $43,920,697 | $15.12 | 1.53 |
| Renewables-Demonstration Projects | | | $220,923 | | | | |
| Cross-Cutting Strategies All Fuels | | | $170,894 | | | | |
| Administration - All Fuels | | | $496,969 | | | | |
| **Total** | **191,258** | **3,633,797** | **$12,957,266** | **$34,124,801** | **$74,555,598** | **$12.96** | **1.58** |

Table 30 and Table 31 report benefit-to-cost ratios based on adjusted gross and net savings for two different cost tests. Adjusted gross savings represent verified measure performance. Gross savings are adjusted based on evaluated program results, taking installation rates and in situ realized savings into account. Net savings estimate the amount of adjusted gross savings that can be directly and indirectly attributed to a program based on program participants' motivation. Participants who, in the determination of the evaluators, would have installed equivalent efficiency measures independent of the program and its incentives are considered "free-riders." To calculate net savings, the impacts of savings attributed to free-riders are excluded. By contrast, savings realized by program participants through the installation of additional efficiency measures due to program influences, even though no incentive or technical assistance was received ("spillover"), are added. The combined impacts of free-ridership and spillover relative to the adjusted gross savings are referred to as the net-to-gross ratio. Programs that have not yet been evaluated have a default net-to-gross ratio of 1.

Two different cost tests are used to assess a program's cost-effectiveness from the perspective of all utility customers (total resource cost test or TRC) and the perspective of the program administrator (program administrator cost test or PACT). The criteria for the two cost tests are defined below.[21]

**TRC: Perspective of all utility customers (participants and non-participants)**
Comparison of program administrator plus customer costs to utility resource savings. The TRC measures the benefits of the energy efficiency program for the service territory/region as a whole. Costs included in the TRC test are costs to purchase and install the energy efficiency measure, including the costs incurred by program participants and costs of running the energy efficiency program. The benefits included are the avoided costs of energy.

**PACT: Perspective of utility, government agency, or third party implementing the program**
Comparison of program administrator costs to supply-side resource savings. A positive PACT (greater than 1) indicates that an energy efficiency program is a lower-cost approach to meeting load growth than a wholesale energy purchase and new generation resources (including delivery and system costs). The PACT includes only costs incurred by the program administrator and not customer contributions. ■

TABLE 30: BENEFIT-COST RATIOS: ELECTRIC PROGRAMS

| | Adjusted Gross Benefit-to-Cost-Ratio | | | Net Benefit-to-Cost-Ratio | | |
|---|---|---|---|---|---|---|
| Programs | TRC | PACT | Last Evaluation | Net to Gross Ratio | TRC | PACT |
| Business Incentive Program Electric Measures | 2.21 | 4.33 | Note 2 | 0.71 | 1.83 | 3.08 |
| Large Customer Program Electric Measures | 2.09 | 3.62 | Note 2 | 0.79 | 1.85 | 2.86 |
| Small Business Initiative | 1.93 | 2.32 | Note 1 | 1.00 | 1.93 | 2.32 |
| Consumer Products Program | 1.60 | 4.61 | 2015 | 0.75 | 1.44 | 3.47 |
| Home Energy Savings Program Electric Measures | 3.54 | 4.61 | Note 1 | 1.00 | 3.53 | 4.61 |
| Low-Income Direct Install Initiative Electric Measures | 1.01 | 1.01 | Note 1 | 1.00 | 1.01 | 1.01 |
| Total | 1.95 | 3.81 | | 0.78 | 1.70 | 2.96 |

**TABLE 31: BENEFIT-COST RATIOS: ALL FUELS AND NATURAL GAS PROGRAMS**

| | Adjusted Gross Benefit-to-Cost-Ratio | | | Net Benefit-to-Cost-Ratio | | |
|---|---|---|---|---|---|---|
| Programs | TRC | PACT | Last Evaluation | Net to Gross Ratio | TRC | PACT |
| Business Incentive Program Natural Gas Measures | 5.39 | 6.86 | Note 3 | 0.66 | 3.48 | 4.51 |
| Low-Income Direct Install Initiative Natural Gas Measures | 1.25 | 1.25 | 2014 | 1.00 | 1.25 | 1.25 |
| Home Energy Savings Program Natural Gas Measures | 2.09 | 9.57 | 2011 | 1.00 | 2.08 | 9.57 |
| Maine Advanced Building Program | 1.52 | 2.95 | Note 2 | 1.00 | 1.52 | 2.95 |
| Multifamily Efficiency Program | 1.52 | 3.41 | Note 3 | 0.90 | 1.44 | 3.06 |
| Maine Advanced Building Program | 1.52 | 2.95 | Note 1 | 1.00 | 1.52 | 2.95 |
| Business Incentive Program Other Fuels Measures | 1.37 | 9.15 | Note 3 | 1.00 | 1.37 | 9.15 |
| Low Income Direct Install Initiative Other Fuels Measures | 2.31 | 6.49 | Note 3 | 1.00 | 2.17 | 6.49 |
| Home Energy Savings Program Other Fuels Measures | 1.53 | 6.96 | Note 3 | 1.00 | 1.52 | 6.96 |
| **Total** | **1.58** | **5.75** | | **0.97** | **1.54** | **5.57** |

*Note 1* *New program, not yet evaluated. Program evaluation of FY2016 anticipated with report published in 2017.*

*Note 2* *Currently being evaluated. Results are to be published in 2016.*

*Note 3* *Evaluation not scheduled.*

21. TRC and PACT defined in accordance with "Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers, A Resource of The National Action Plan for Energy Efficiency," November 2008, http://www.epa.gov/cleanenergy/documents/suca/cost-effectiveness.pdf.

# APPENDIX B

**TABLE 32: ELECTRIC PROGRAM EXPENDITURES**

| Program | Incentive | Delivery | Total |
|---|---|---|---|
| Business Incentive Program Electric Measures | $15,642,304 | $1,520,601 | $17,162,905 |
| Large Customer Program Electric Measures | $6,439,194 | $544,245 | $6,983,439 |
| Small Business Initiative | $2,366,729 | $365,418 | $2,732,147 |
| Consumer Products Program | $8,809,467 | $2,007,860 | $10,817,327 |
| Home Energy Savings Program Electric Measures | $3,086,300 | $478,134 | $3,564,434 |
| Low-Income Direct Install Initiative Electric Measures | $1,105,121 | $127,252 | $1,232,373 |
| Cross-Cutting Strategies Electric | | $863,415 | $863,415 |
| Administration - Electric | | | $2,136,542 |
| **Sub Total** | **$37,449,114** | **$5,906,924** | **$45,492,581** |

**TABLE 33: NATURAL GAS AND ALL FUELS PROGRAM EXPENDITURES**

| Program | Incentive | Delivery | Total |
|---|---|---|---|
| Business Incentive Program Natural Gas Measures | $170,847 | $72,144 | $242,991 |
| Low-Income Direct Install Initiative Natural Gas Measures | $62,304 | $13,834 | $76,138 |
| Home Energy Savings Program Natural Gas Measures | $275,207 | $32,530 | $307,737 |
| Maine Advanced Building Program | $51,500 | $62,234 | $113,734 |
| Multifamily Efficiency Program | $1,036,508 | $377,574 | $1,414,082 |
| Business Incentive Program Other Fuels Measures | $976,200 | $119,188 | $1,095,388 |
| Large Customer Program GHG Measures | $1,383,469 | $424,565 | $1,808,033 |
| Low-Income Direct Install Initiative Other Fuels Measures | $650,600 | $50,000 | $700,600 |
| Home Energy Savings Program Other Fuels Measures | $4,104,196 | $2,205,579 | $6,309,776 |
| Renewables-Demonstration Projects | $220,923 | $0 | $220,923 |
| Cross-Cutting Strategies All Fuels | | $170,894 | $170,894 |
| Administration - All Fuels | | | $496,969 |
| **Sub Total** | **$8,931,754** | **$3,528,542** | **$12,957,266** |

# APPENDIX C

**TABLE 34: EFFICIENCY MAINE TRUST FY2016 AMENDED BUDGET AS OF 9/30/2015**

| | EMT ADMIN FUND | RGGI FUND | ELECTRICITY CONSERVATION FUND | MPRP SETTLEMENT FUND | FORWARD CAPACITY MARKET FUND | NATURAL GAS FUND | RENEWABLE RESOURCE FUND |
|---|---|---|---|---|---|---|---|
| REVENUES AND FUNDING | 1,511,993 | 20,268,157 | 28,804,406 | 4,193,773 | 6,289,324 | 2,333,981 | 367,487 |
| **EXPENDITURES** | | | | | | | |
| **Administration** | | | | | | | |
| Board Meeting Expenditures | 11,250 | | | | | | |
| Personnel Costs & Staff Support | 959,309 | 48,324 | 139,185 | | 13,934 | 6,564 | |
| Office Rent & Operations | 336,328 | 4,613 | 15,966 | | 354 | 623 | |
| Corp Dues | 3,500 | | | | 5,000 | | |
| Sponsorship & Dues | - | | 20,000 | | | | |
| Communications | 182,856 | | | | | | |
| Travel | 4,500 | | 1,000 | | | | |
| Meals | 1,250 | | 350 | | | | |
| Technical Consultancy& Support | - | | 390,128 | | 611,156 | 24,336 | |
| **Subtotal Administration** | **1,498,993** | **52,937** | **566,629** | **-** | **630,444** | **31,523** | **-** |
| **Residential Programs** | | | | | | | |
| Program Admininstration | - | 82,802 | 138,318 | - | 11,929 | 9,467 | |
| Low Income - Initiatives | - | 587,983 | 2,948,637 | 1,056,053 | | 274,661 | |
| HESP | - | 4,854,096 | 2,050,481 | 60,472 | 755,789 | 639,665 | |
| Retail Initiatives | - | - | 8,420,555 | 411,726 | 1,701,024 | - | |
| Loan Loss Reserve | - | 300,000 | | | | | |
| Revolving Loan Support | - | | | | | | |
| **Subtotal Residential Programs** | **-** | **5,824,881** | **13,557,991** | **1,528,251** | **2,468,742** | **923,793** | |

| | LONG TERM CONTRACTS | ARRA BETTER BUILDING FUND | SMALL BUSINESS REVOLVING LOAN FUND | SEI REVOLVING LOAN FUND | SEP REVOLVING LOAN FUND | FISCAL YEAR 2016 TOTAL BUDGET |
|---|---|---|---|---|---|---|
| REVENUES AND FUNDING | 2,753,101 | 478,000 | 10,000 | 1,000 | 1,000 | 67,012,222 |
| **EXPENDITURES** | | | | | | |
| **Administration** | | | | | | |
| Board Meeting Expenditures | | | | | | 11,250 |
| Personnel Costs & Staff Support | | - | | | - | 1,167,316 |
| Office Rent & Operations | | 43,000 | 4,000 | | - | 404,884 |
| Corp Dues | | | | | | 8,500 |
| Sponsorship & Dues | | | | | - | 20,000 |
| Communications | | - | | | - | 182,856 |
| Travel | | | - | | - | 5,500 |
| Meals | | | | | - | 1,600 |
| Technical Consultancy& Support | | | | | | 1,025,620 |
| **Subtotal Administration** | | **43,000** | **4,000** | | **-** | **2,827,526** |
| **Residential Programs** | | | | | | |
| Program Admininstration | | - | | | - | 242,516 |
| Low Income - Initiatives | | | | | | 4,867,334 |
| HESP | | - | | | - | 8,360,503 |
| Retail Initiatives | | | | | - | 10,533,305 |
| Loan Loss Reserve | | | | | | 300,000 |
| Revolving Loan Support | | 435,000 | | 1,000 | 1,000 | 437,000 |
| **Subtotal Residential Programs** | | **435,000** | **-** | **1,000** | **1,000** | **24,740,658** |

**TABLE 34: EFFICIENCY MAINE TRUST FY2016 AMENDED BUDGET AS OF 9/30/2015 — *CONTINUED***

| | EMT ADMIN FUND | RGGI FUND | ELECTRICITY CONSERVATION PROGRAM FUND | MPRP SETTLEMENT FUND | FORWARD CAPACITY MARKET FUND | NATURAL GAS FUND | RENEWABLE RESOURCE FUND |
|---|---|---|---|---|---|---|---|
| **EXPENDITURES** | | | | | | | |
| **Business Programs** | | | | | | | |
| Program Administration | | 59,309 | 184,924 | - | 8,512 | 4,257 | - |
| Business Incentive Program | - | 1,156,902 | 6,663,828 | 270,331 | - | 923,394 | |
| Large Customer Projects | - | 7,595,690 | 4,653,917 | 2,353,191 | 1,917,798 | 128,095 | |
| Maine Advanced Building | - | 845,684 | - | - | - | - | - |
| Small Business Initiatives | - | - | 1,010,917 | | | | |
| State House Energy Project | | 76,747 | 76,747 | | | | |
| Maine High Performance Schools | | | 51,142 | | | | |
| MultiFamily Retrofits | - | 1,603,276 | - | | | 141,610 | |
| Commercial Loan Support | - | | - | | | | |
| **Subtotal Business Programs** | **-** | **11,337,608** | **12,641,475** | **2,623,522** | **1,926,310** | **1,197,356** | **-** |
| **Cross-Cutting Strategies** | | | | | | | |
| Program Administration | | 45,439 | 105,813 | - | 23,601 | 4,609 | - |
| Energy Education | | - | 100,594 | | 64,948 | | |
| Training | | | 164,202 | | | | |
| Innovation Pilots | | 41,926 | 186,111 | | 559,261 | | |
| Research and Analsis | | 30,000 | 209,702 | | 282,616 | | |
| Independent Program Evaluation | | - | 536,721 | | 100,000 | | |
| **Subtotal Cross-Cutting Strategies** | **-** | **117,365** | **1,303,143** | **-** | **1,030,426** | **4,609** | **-** |

| | LONG TERM CONTRACTS | ARRA BETTER BUILDING FUND | SMALL BUSINESS REVOLVING LOAN FUND | SEI REVOLVING LOAN FUND | SEP REVOLVING LOAN FUND | FISCAL YEAR 2016 TOTAL BUDGET |
|---|---|---|---|---|---|---|
| **EXPENDITURES** | | | | | | |
| **Business Programs** | | | | | | |
| Program Administration | - | - | - | - | - | 257,002 |
| Business Incentive Program | | | | | - | 9,014,455 |
| Large Customer Projects | 2,753,101 | | | | - | 19,401,792 |
| Maine Advanced Building | - | - | - | - | - | 845,684 |
| Small Business Initiatives | | | | | - | 1,010,917 |
| State House Energy Project | | | | | | 153,494 |
| Maine High Performance Schools | | | | | | 51,142 |
| MultiFamily Retrofits | | | | | - | 1,744,886 |
| Commercial Loan Support | | | 6,000 | | - | 6,000 |
| **Subtotal Business Programs** | **2,753,101** | **-** | **6,000** | **-** | **-** | **32,485,372** |
| **Cross-Cutting Strategies** | | | | | | |
| Program Administration | - | - | - | - | - | 179,462 |
| Energy Education | | | | | - | 165,542 |
| Training | | | | | | 164,202 |
| Innovation Pilots | | | | | - | 787,298 |
| Research and Analsis | | | | | | 522,318 |
| Independent Program Evaluation | | | | | - | 636,721 |
| **Subtotal Cross-Cutting Strategies** | **-** | **-** | **-** | **-** | **-** | **2,455,543** |

**TABLE 34:** EFFICIENCY MAINE TRUST FY2016 AMENDED BUDGET AS OF 9/30/2015 — *CONTINUED*

| | EMT ADMIN FUND | RGGI FUND | ELECTRICITY CONSERVATION PROGRAM FUND | MPRP SETTLEMENT FUND | FORWARD CAPACITY MARKET FUND | NATURAL GAS FUND | RENEWABLE RESOURCE FUND |
|---|---|---|---|---|---|---|---|
| **EXPENDITURES** | | | | | | | |
| **Alternative Energy** | | | | | | | |
| Renewables-Demonstration Projects | - | - | - | | - | | 331,437 |
| **Subtotal Alternative Energy** | **-** | **117,365** | **1,303,143** | **-** | **1,030,426** | **4,609** | **-** |
| **Other Items** | | | | | | | |
| Payments to/for State Agencies | 13,000 | 404,663 | 204,837 | 15,000 | 34,000 | 156,396 | 36,050 |
| 15% Rate fund | | 1,971,190 | | | | | |
| InterFund Transfers Out | | 559,513 | 530,331 | 27,000 | 199,402 | 20,304 | |
| **Subtotal Other Items** | **13,000** | **2,935,366** | **735,168** | **42,000** | **233,402** | **176,700** | **36,050** |
| **TOTAL EXPENDITURES** | **1,511,993** | **20,268,157** | **28,804,406** | **4,193,773** | **6,289,324** | **2,333,981** | **367,487** |

| | LONG TERM CONTRACTS | ARRA BETTER BUILDING FUND | SMALL BUSINESS REVOLVING LOAN FUND | SEI REVOLVING LOAN FUND | SEP REVOLVING LOAN FUND | FISCAL YEAR 2016 TOTAL BUDGET |
|---|---|---|---|---|---|---|
| EXPENDITURES | | | | | | |
| **Alternative Energy** | | | | | | |
| Renewables-Demonstration Projects | | | | | - | 331,437 |
| **Subtotal Alternative Energy** | **-** | **-** | **-** | **-** | **-** | **331,437** |
| **Other Items** | | | | | | |
| Payments to/for State Agencies | - | | | | - | 863,946 |
| 15% Rate fund | | | | | | 1,971,190 |
| InterFund Transfers Out | | | | | - | 1,336,550 |
| **Subtotal Other Items** | **-** | **-** | **-** | **-** | **-** | **4,171,686** |
| **TOTAL EXPENDITURES** | **2,753,101** | **478,000** | **10,000** | **1,000** | **1,000** | **67,012,222** |

# APPENDIX D

## TABLE 35: PUBLIC UTILITIES COMMISSION ASSESSMENTS AND REVENUE COLLECTIONS

| PUC Assessments and Revenue Collections - FY 2015<br>System Benefit Charge (SBC) | | | | | |
|---|---|---|---|---|---|
| Assessment Quarter: | Apr-Jun 2014 | July-Sep 2014 | Oct-Dec 2014 | Jan-Mar 2015 | |
| Billing Date: | 16-Jul-14 | 15-Oct-14 | 7-Jan-15 | 2-Apr-15 | |
| Collected during the Quarter: | July-Sep 2010 | Oct-Dec 2010 | | | |
| **NAME** | | | | | **TOTAL — FY15** |
| Central Maine Power Co | $2,556,898.00 | $2,887,691.00 | $2,635,380.00 | $2,952,100.00 | **$11,032,069.00** |
| Eastern Maine Electric Coop | $32,884.00 | $33,436.00 | $32,332.00 | $38,796.00 | **$137,448.00** |
| Emera (Bangor Hydro/MPS) | $576,807.00 | $646,601.00 | $636,629.00 | $693,475.00 | **$2,553,512.00** |
| Fox Island Electric Coop | $3,191.00 | $4,102.00 | $3,431.00 | $3,610.00 | **$14,334.00** |
| Houlton Water Co | $23,264.00 | $22,961.00 | $24,193.00 | $29,641.00 | **$100,059.00** |
| Kennebunk Light & Power | $36,179.99 | $39,414.92 | $35,521.41 | $42,801.09 | **$153,917.41** |
| Madison Electric Works | $9,641.00 | $9,546.00 | $10,282.00 | $12,453.00 | **$41,922.00** |
| Swan's Island Electric | $668.00 | $907.00 | $709.00 | $743.00 | **$3,027.00** |
| Van Buren Light & Power Co | $4,751.75 | $4,531.23 | $5,270.64 | $6,475.13 | **$21,028.75** |
| **TOTALS** | **$3,244,284.74** | **$3,649,190.15** | **$3,383,748.05** | **$3,780,094.22** | **$14,057,317.16** |

| **STATE BUDGET PROJECTIONS** | **FY2015** | **FY2016** |
|---|---|---|
| Central Maine Power Co | $11,032,069 | $14,554,452 |
| Eastern Maine Electric Coop | $137,448 | $179,959 |
| Emera (Bangor Hydro & MPS) | $2,553,512 | $3,357,682 |
| Fox Island Electric Coop | $14,334 | $18,700 |
| Houlton Water Co | $100,059 | $130,212 |
| Kennebunk Light & Power | $153,917 | $204,622 |
| Madison Electric Works | $41,922 | $47,186 |
| Swan's Island Electric | $3,027 | $4,003 |
| Van Buren Light & Power Co | $21,029 | $3,183 |
| | | $19,550,006 |

| PUC Assessments and Revenue Collections - FY 2015<br>Natural Gas | | | | | |
|---|---|---|---|---|---|
| Assessment Quarter: | Apr-Jun 2014 | July-Sep 2014 | Oct-Dec 2014 | Jan-Mar 2015 | |
| Billing Date: | 16-Jul-14 | 15-Oct-14 | 7-Jan-15 | 2-Apr-15 | |
| Collected during the Quarter: | July-Sep 2010 | COLLECTED | 0-Jan-00 | | |
| **NAME** | | | | | **TOTAL — FY15** |
| Northern Utilities - Unitil | $248,385.73 | $169,871.27 | $294,292.46 | $419,790.18 | **$1,132,339.64** |
| Bangor Natural Gas | $- | $- | $- | $- | **$-** |
| Maine Natural Gas | $- | $- | $- | $- | **$-** |
| Summit Natural Gas | $- | $- | $- | $- | **$-** |
| **TOTALS** | **$248,385.73** | **$169,871.27** | **$294,292.46** | **$419,790.18** | **$1,132,339.64** |
| **FY15 PROJECTION** | | | | | **$1,913,941.00** |
| **FY16 PROJECTION** | | | | | **$1,696,490.00** |

TABLE 36: ALTERNATIVE COMPLIANCE MECHANISM REVENUES

| Alternative Compliance Mechanism (ACM ) | | | | | |
|---|---|---|---|---|---|
| Assessment Quarter: | July '14-June '15 | | | | |
| Billing Date: | 16-Jul-14 | | | | |
| **NAME** | | | | | **TOTAL — FY15** |
| Mint Energy, LLC | $130.56 | $- | $- | $- | **$130.56** |
| Conedison Solutions, Inc. | $3,680.04 | $- | $- | $- | **$3,680.04** |
| **TOTALS** | **$3,810.60** | **$-** | **$-** | **$-** | **$3,810.60** |

# FY2015 BY THE NUMBERS

# $30,300,095

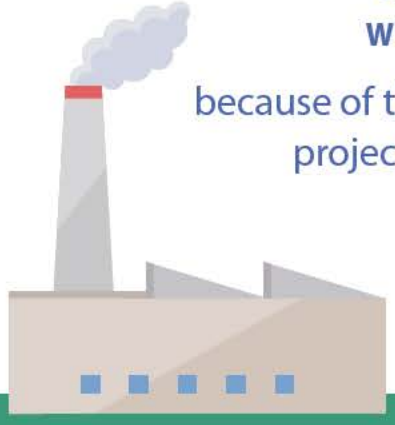
**IN LOWER ANNUAL ENERGY BILLS FOR PARTICIPATING HOMES AND BUSINESSES**

**THE EQUIVALENT OF**

## 26,142,422

**GALLONS OF OIL**
**WILL BE AVOIDED**

because of thermal energy efficiency projects installed in 2015



Annual avoided GHG emissions in 2015:

## 21,383,368

**TONS OF CO2**

Amount invested by Efficiency Maine in 2015:

## $58,449,846

Private dollars leveraged for 2015 projects:

## $79,732,443

**EFFICIENCY PROJECTS IN MAINE INSTALLED SINCE 2006 DELIVERED THE EQUIVALENT OF A**

# 124MW

**power plant operating on the hottest day of the summer in 2015, accounting for 6% of Maine's generating capacity during summer peak.**

**1,208** businesses in our network of contractors and other energy efficiency professionals

## Total number of energy saving projects installed in businesses

**5,835**


## Jobs created from 2015 investments

**544**


## Total amount loaned for home energy projects

**$4.67 million**

for **518 loans** made in FY2015

## In 2015 Mainers saved enough electricity to power

**36,514**

homes

NUMBER OF HEAT PUMPS INSTALLED THROUGH EFFICIENCY MAINE PROGRAMS IN 2015 — **7,499**

TOTAL NUMBER OF AIR SEALING AND INSULATION PROJECTS — **3,809**

TOTAL HEAT PUMP WATER HEATERS INSTALLED — **2,960**


**EFFICIENCYMAINE.COM**

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