# EFFICIENCY MAINE TRUST

# TRIENNIAL PLAN
# FOR FISCAL YEARS 2014-2016

# DRAFT

# SEPTEMBER 1, 2012

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# 1. Executive Summary

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# 2. Context

## A. Regulatory Framework

### i. Purpose of Trust

As enumerated in the Efficiency Maine Trust Act (or "the statute"), the Trust's purpose is to:

- Provide uniform, integrated planning, program design and administration of programs;
- Reduce energy costs and improve security of the state and local economies;
- Administer cost-effective energy efficiency programs to help individuals and businesses meet their energy needs at the lowest cost and generally to improve the economic security of the State;
- Ensure that all expenditures of the trust are cost-effective in terms of avoided energy costs; and
- Actively promote investment in cost-effective energy efficiency measures and systems that use alternative energy resources that reduce overall energy costs for consumers in the State. [1]

In order to develop and administer programs that will help meet Maine's energy needs at the lowest cost and improve its economic security, the statute identifies several goals for the Trust to pursue:

(1) Maximizing the use of cost-effective weatherization and energy efficiency measures, including … systems that rely on alternative energy resources;

(2) Reducing economic insecurity from overdependence on price-volatile fossil fuels;

(3) Increasing new jobs and business development to deliver energy efficiency and alternative energy resources, products and services;

(4) Enhancing heating benefits for households of all income levels through implementation of cost-effective efficiency programs, including weatherization programs, that will produce comfort, improve indoor air quality, reduce energy costs … and reduce the need for future fuel assistance;

(5) Simplifying and enhancing consumer access to technical assistance and financial incentives relating to energy efficiency and the use of alternative energy resources by merging or coordinating dispersed programs under a single administrative unit possessing independent management and expertise; and

(6) Using cost-effective energy efficiency investments to reduce greenhouse gas emissions.[2]

[1] 35-A-MRSA Chapter 97, § 10103(1)

[2] 35-A MRSA §10103(1)(B).

ii. Program Funds – Objectives, Funding, and Implementation Requirements

The Trust is the designated recipient and administrator of several funding streams. As described in more detail below, the Trust is directed by statute to use these funding streams to promote the more efficient use of energy and the increased use of small, customer-sited alternative energy systems.

Several of these funding streams are recurring. Statute also provides, however, that the Trust may apply for grants from public or private sources, deposit the proceeds of bonds into program funds, collect revenue from the Forward Capacity Market (FCM) or other capacity payments, and accept funds from the energy infrastructure benefits fund as well as any "other funds received by or from any entity with which the Trust has an agreement or contract."[3]

An important feature of the Trust is its fiduciary responsibility. The funds it receives from electric and natural gas ratepayers, and from the Regional Greenhouse Gas Initiative, are required to be held in trust for the benefit of the energy consumers who ultimately pay for the funds.

(a) Electric Efficiency and Conservation Fund

The Electric Efficiency and Conservation Fund is dedicated to programs designed to reduce inefficient use of electricity. The goal of programs in this Fund is to help reduce energy costs for electricity consumers. The objectives enumerated in statute for the use of this Fund are to:

- Increase consumer awareness of cost-effective options;
- Create favorable market conditions for increased use of energy efficiency;
- Promote sustainable economic development and reduce environmental damage;
- Reduce the price of electricity over time for all consumers by reducing demand during peak use periods; and,
- Reduce total energy costs for electricity consumers.[4]

The principal revenue stream for this Fund is called the Base Assessment. It is a system benefit charge (SBC), fixed at a rate of 0.145 cents per kilowatt-hour (kWh), that is assessed on every unit of electricity consumed in the state.[5] The rate of the Base Assessment has remained constant since it was established in 2002 to replace the former Demand Side Management programs operated by the electric utilities. In recent years, the Base Assessment has generated revenues for this Fund of between $13 million to $14 million per year.

In addition to the foundational Base Assessment, policymakers adopted a provision to periodically adjust the total revenue stream for the Electric Efficiency and Conservation Fund. The provision contemplates adding up all available revenues to be used for electric savings programs, including those from the Base Assessment, the Forward Capacity Market, the RGGI Fund, and any other predictable sources (such as grants or settlement payments), and then establishing an assessment for whatever

[3] 35-A MRSA 10103(4).
[4] [CITE]
[5] Approximately 75 of the very largest electric customers in the state, served by the utilities at the Transmission and Sub-Transmission voltage levels, are exempt from the Base Assessment and are not eligible for use of the Electric Efficiency and Conservation Funds.

additional amount would be needed to reach the full, achievable potential for harvesting energy savings that is cheaper than supply. The statute provides that "the [Public Utilities Commission] shall assess each transmission and distribution utility … as necessary to realize all available energy efficiency and demand reduction resources … that are cost-effective, reliable and feasible…"

While pursuing the enumerated objectives, the Trust allocates budgets and deploys strategies for the Electric Efficiency and Conservation Fund with the target of ensuring a reasonable opportunity for all customers to participate. The statute expressly directs the programs paid for through this Fund to:

- Target at least 20% of Base Assessment to Low Income residential customers;
- Target at least 20% of the Base Assessment to Small Business customers; and,
- Apportion the remaining Base Assessment among customer groups and geographic areas in a manner that allows all other customers to have a reasonable opportunity to participate in programs

(b) Natural Gas Conservation Fund

The Natural Gas Conservation Fund is established in statute with the goal of promoting the efficient use of natural gas. Objectives for the use of the fund are to:

- Increase consumer awareness of cost-effective options for conserving natural gas;
- Create more favorable market conditions for the increased use of efficient natural gas products and services; and,
- Promote sustainable economic development and reduce environmental damage through the more efficient use of natural gas.[6]

Revenues to the Natural Gas Conservation Fund derive principally from an assessment of not less than three percent (3%) of the gas utility's delivery revenues. Assessments charged to gas utilities under this section are considered just and reasonable costs to be reflected in the rates of gas utilities. In recent years, the total revenues from this assessment have averaged $530,000. The statute further provides that "In accordance with the Triennial Plan, the Commission may assess a higher amount." [7] At the time of this writing, the statute limits the assessment to those gas utilities serving at least 5,000 residential customers. At this time, only customers in the territory served by Unitil pay the assessment for this Fund and only those customers are eligible for its use. Bangor Gas Company and Maine Natural Gas Company customers do not participate in the programs paid from this Fund.

Consistent with the statute, the Trust targets the funds of the Natural Gas Fund so that a reasonable percentage will go to low income residential customers and to small business customers, and so that remaining funds "allow all other consumers [of participating utilities] to have a reasonable opportunity to participate" in the programs.

[6] 35-A MRSA Sec. 10111(1)
[7] 35-A MRSA Sec. 10111(2)

### (c) Heating Fuels Efficiency and Weatherization Fund

In 2009, the statute was amended to add a new Heating Fuels Efficiency and Weatherization Fund with two overlapping goals to:

- reduce heating fuel consumption consistent with the purpose and targets of the Trust and the Triennial Plan to achieve the following goal, and
- by 2030, provide cost-effective energy efficiency measures to substantially all homes and businesses whose owners wish to participate.[8]

The statute specifies that this Fund may be used for programs that provide cost-effective energy efficiency and weatherization measures.

The statute also provides that the Trust may accept and deposit into this Fund revenues collected from an assessment on heating fuels, federal funds targeted for the purposes of this Fund, proceeds of any bonds issued for the purposes of the Fund, or any other funds from public or private sources.[9] Throughout the period of the first Triennial Plan (Fiscal Years 2011-2013), the Trust used federal funds from the American Recovery and Reinvestment Act (ARRA) to promote weatherization of homes and upgrades to higher efficiency heating systems. This included funding for efficient replacement heating systems, rebates for whole house energy upgrades (including weatherization), and a revolving loan fund for whole house energy upgrades. Beyond the revolving loan fund, however, there is no policy in place that is predicted to generate a sustained revenue stream for the Heating Fuels Fund during the period of the instant Triennial Plan.

### (d) Renewable Resource Fund

The Renewable Resource Fund was originally established to support research and development (R&D) and demonstration projects for renewable energy.[10] In 2011 the law was modified to expand the allowable use of the Fund to include the offer of rebates for small, customer-sited, commercialized renewable energy equipment meeting a cost-effectiveness test. Then in 2012, a bill from the Governor modified the bill again, allowing voluntary contributions made to the fund to be used for energy efficiency projects (in addition to renewable energy projects) and changing the name of the fund to the Energy Efficiency and Renewable Resource Fund.

At various times during the First Triennial Plan period, this Fund received revenues from voluntary contributions from electric consumers, alternative compliance payments from electricity suppliers as a means to complying with their requirements to supply renewable energy, and from a System Benefit Charge in the amount of 0.005 cents/kWh for every unit of electricity consumed in Maine. In 2010, the System Benefit Charge sunset and was not reauthorized by the legislature. By 2011, electricity suppliers had essentially discontinued making alternative compliance payments. For the period covered by this Triennial Plan, funding for this fund will be limited to revenues from voluntary contributions. The Trust

[8] 35-A MRSA Sec. 10119.
[9] CITE.
[10] *See, e.g.*, 35-A MRSA Sec. 10121 and 35-A MRSA Sec. 3210(9)(B).

estimates that the annual revenues deposited to the Fund will be approximately $100,000, consistent with contributions made during the First Triennial Plan.

### (e) RGGI Fund

The Regional Greenhouse Gas Initiative (or "RGGI) is a 10-state regional program to limit carbon emissions from electricity generators. Maine joined RGGI in 2009 at the time 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 at which allowances are sold are transferred to the RGGI Trust Fund managed by the Trust.[11] The statute expressly emphasizes that the Trustees have a fiduciary duty to the customers of the electric utilities and that the funds are to be held in trust for the purposes of benefiting those customers.

The RGGI Trust Fund is to be used for energy conservation programs that reliably reduce electricity consumption or greenhouse gas emissions, giving priority to measures with the highest benefit-to-cost ratio. In contrast to the situation with the Electric Efficiency and Conservation Fund, the state's largest electricity consumers are eligible for funding from the RGGI Trust Fund.

The price per ton of carbon, and the total number of tons of carbon sold, have varied greatly during the first three years of RGGI auctions. In the initial years of RGGI, annual auction revenues to Maine's RGGI Trust Fund were more than $11 million per year. However, the combination of reduced electricity consumption during the economic recession and a major switch by generator from oil to natural gas, carbon emissions dropped, contributing to a glut of carbon allowances. In the period governed by this Triennial Plan, the Trust is projecting revenues from RGGI at $3.76 million per year.

### (f) Federal Energy Programs

Regarding the use of funds received from the federal government, the statute provides that :

> The Trust shall oversee and administer:
>
> A. The US DOE State Energy Program
> B. Other federally funded programs and projects related to Trust programs.[12]

During the period of the first Triennial Plan, the Trust administered programs funded by six separate federal grants totaling more than $93 million. Nearly all of this amount came through one-time grants from the American Recovery and Reinvestment Act (ARRA) which, except for certain revolving loan funds, will not be available for programs during the period of this second Triennial Plan. The lone exception was from the recurring State Energy Program formula grant, totaling less than $250,000 annually, and which in recent years has only had enough funds for approximately $20,000 per year for the Trust to invest in energy programs.

[11] 35-A MRSA Sec. 10109.

[12] 35-A MRSA Sec. 10115(1).

As with any federal grants, the allowable uses are set by the federal offering and whatever contract terms are agreed to between the Trust and the relevant federal agency.

iii. Long-Term Targets

As noted above, each individual funding stream established by statute has its own goals, objectives, targets, as well as specific requirements and restrictions as to the fund's use. While these fund-specific directives govern the funding and implementation of programs from day to day and year to year, the Trust is also guided by several over-arching targets that play out over a period of 10 to 20 years. The long-term targets enumerated in statute are:

(1) Weatherizing 100% of residences and 50% of businesses by 2030;

(2) Reducing peak-load electric energy consumption by 100 megawatts by 2020;

(3) Reducing the State's consumption of liquid fossil fuels by at least 30% by 2030;

(4) By 2020, achieving electricity and natural gas savings of at least 30% and heating fuel savings of at least 20% as defined in and determined pursuant to the measures of performance ratified by the commission under section 10120;

(5) Capturing all cost-effective energy efficiency resources available for electric and natural gas utility ratepayers;

(6) Saving residential and commercial heating consumers not less than $3 for every $1 of program funds invested by 2020 in cost-effective heating and cooling measures that cost less than conventional energy supply;

(7) Building stable private sector jobs providing clean energy and energy efficiency products and services in the State by 2020; and

(8) Reducing greenhouse gas emissions [10% below 1990 levels by 2020] from the heating and cooling of buildings in the State...[13]

iv. Other Statutory Directives

(a) The PACE Act

The PACE Act was enacted in Maine in 2010 to facilitate financing of energy saving improvements in Maine homes.[14] The PACE Act establishes underwriting standards for small loans to homeowners and authorizes the Trust to administer a program of marketing, financing and servicing loans for energy upgrades.

[13] 35-A MRSA Sec. 10104(4)(F).

[14] 35-A MRSA Sec. 10151 *et seq*.

(b) Capacity Resource Adequacy

In recent years, the Maine legislature enacted a provision authorizing the Public Utilities Commission (Commission or PUC) to approve long term contracts for capacity and energy under specific circumstances.[15] The purposes of this provision include:

- To reduce electric prices and price volatility for the State's electricity consumers and to reduce greenhouse gas emissions from the electricity generation sector; and

- To develop new capacity resources to reduce demand or increase capacity so as to mitigate the effects of any regional or federal capacity resource mandates.[16]

Among other things, the Commission may contract with the Trust to deliver energy efficiency capacity resources and available energy associated with such resources through a competitive solicitation process administered by the Trust.[17]

v. Rules

The regulatory framework in which the Trust operates starts with the statutory provisions outlined above. This framework is given more detailed explanation through a series of rules that the Trust (or the PUC, the Trust's predecessor in administering Efficiency Maine programs) have adopted.

At Section 95-648 of the Code of Maine Rules,[18] the following rules for the Efficiency Maine Trust can be found:

| Chapter | Rule Title |
|---|---|
| 1 | Contracting Process for Service Providers and Grant Recipients |
| 2 | Administration of (RGGI) Trust, Budgeting, Project Selection Criteria and Procedures, Monitoring, and Evaluation Requirements |
| 103 | Renewable Resource Fund Regulations: Selection Criteria for Demonstration Projects, Cost-effectiveness Requirements for Renewable Energy Rebates and Quality Assurance System |
| 110 | PACE Program Regulations: Loan Underwriting Standards, Consumer Disclosure Requirements, Terms and Conditions of Participation and Quality Assurance System |
| 380 | Electric Energy Conservation Programs |
| 480 | Natural Gas Conservation Program |

[15] 35-A MRSA Sec. 3210-C.
[16] *Id.,* Sub-sections (2)(B) and (2)(C).
[17] *Id.,* Sub-section (6)(A).
[18] http://www.maine.gov/sos/cec/rules/90/chaps90-.htm

### B. Past Successes

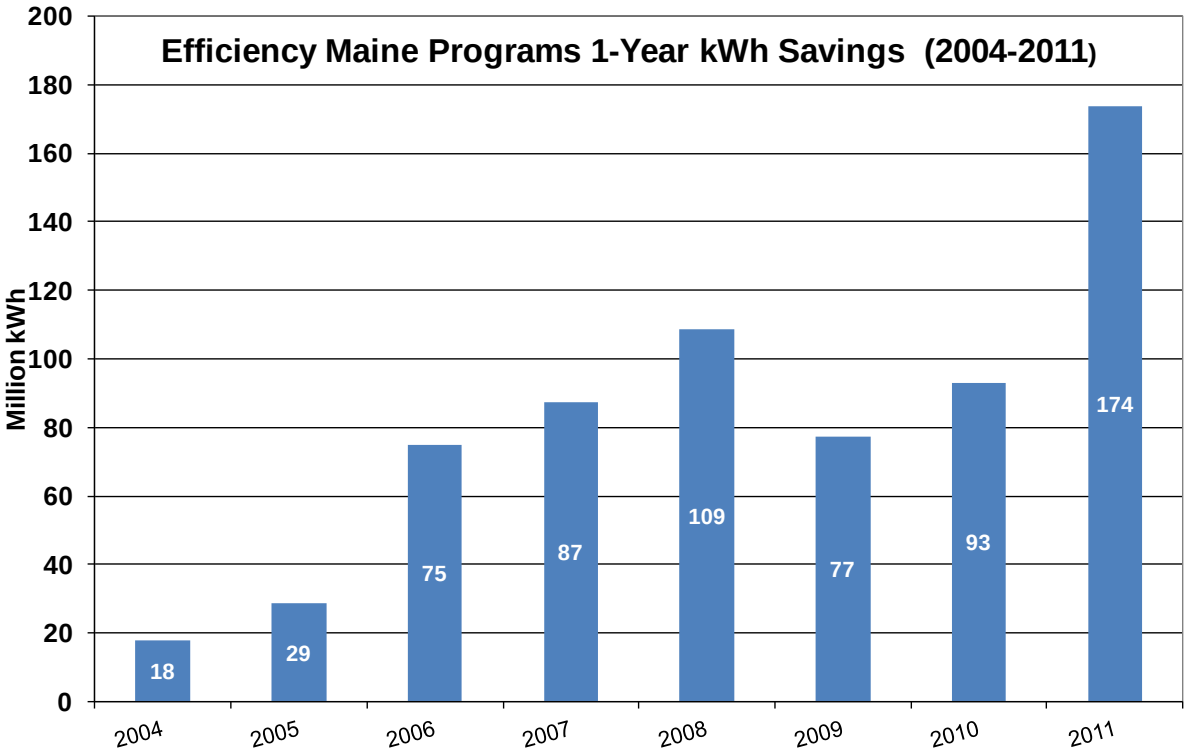
This document constitutes only the second Triennial Plan put forward by the Trust. This should not be understood to mean that energy efficiency programs are a recent or untested phenomenon in Maine.

Before the restructuring of Maine's electric utilities in 2000, the integrated utilities -- Central Maine Power, Bangor Hydro Electric and Maine Public Service – offered among the first energy efficiency programs in the country for their customers. These initiatives were referred to as Demand Side Management programs. Showing their commitment to providing Maine ratepayers with low-cost energy efficiency, Central Maine Power proposed and the Commission approved budgets of well more than $20 million per year in the early- and mid-1990s.

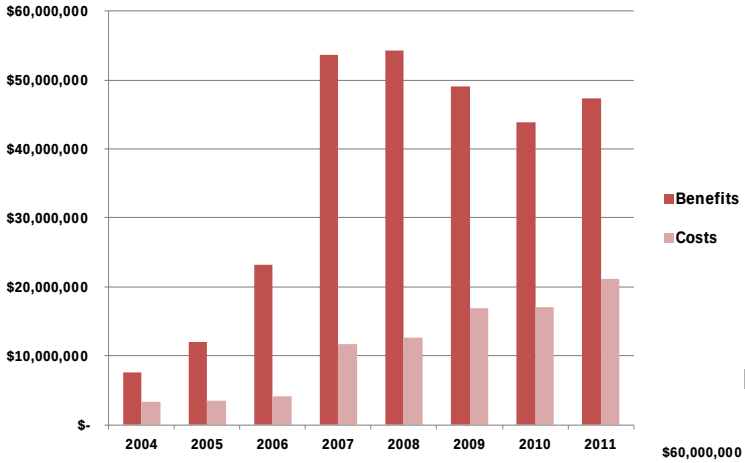
Starting in 2002, the Public Utilities Commission assumed responsibility for administering statewide energy efficiency programs funded with the System Benefit Charge. Over eight years, the programs grew from a handful of small educational and training initiatives to a full-fledged efficiency program, branded as "Efficiency Maine," offering energy saving measures from the smallest low-income residential setting to the largest paper mills. Under PUC management, the Efficiency Maine programs adopted a market-based approach that relied on developing a network of trade allies, electrical and plumbing contractors, equipment suppliers, architects and engineers, who are referred to as "Qualified Partners" or "QPs." Efficiency Maine also targeted residential and business lighting, among the most cost-effective opportunities for energy savings, and significantly transformed the market to high-efficiency compact fluorescent bulbs and high-performance T-8 linear fluorescent tubes. During this period, the Efficiency Maine programs were funded at about $9 million per year in the middle of the decade and then grew to between $14 million - $15 million by 2009.

In 2009, legislation shifted responsibility for administering Efficiency Maine programs to a newly established, independent trust – the Efficiency Maine Trust. The Trust consolidated responsibility for administering multiple revenue streams, including the Electric Conservation Funds, the Natural Gas Conservation Funds, the newly created Regional Greenhouse Gas Initiative Fund (formerly the Energy and Carbon Savings Trust), the Renewable Resource Fund, and the State Energy Program funded with federal grants. Part of the assignment to the new Trust was to begin coordinating and integrating delivery of both electric and thermal efficiency programs.

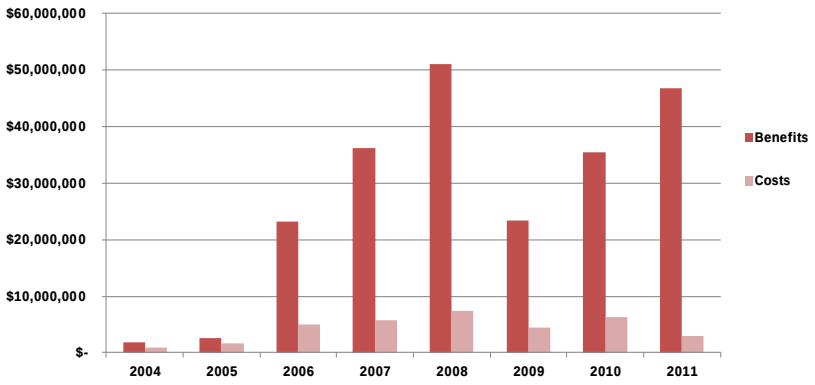
The initial Triennial Plan of the new Trust covered fiscal years (FY) 2011, 2012 and 2013, which began on July 1, 2010. The results from FY 2011 constituted a record for the most electrical savings from a single year of programs in Maine. At the time of this writing, the results from FY2012 have not been finalized and FY13 has not yet completed its first quarter. Looking at the results of the electric savings program, the following figures show that Efficiency Maine has been steadily delivering energy savings and lowering energy costs to Maine's electric utility customers. The first figure shows the 1-year sum of electrical savings from all of Efficiency Maine electric saving programs from FY 2004 to FY2011. On average, electric equipment upgrades last more than a decade, so it should be understood that the total savings over the lifetime of these measures would be multiplied across many years. The subsequent figures highlight the lifetime economic savings associated with the two largest and most popular programs – the Business Incentive Program and the Residential Lighting Program from FY2004 to FY2011. The figures also compare these economic benefits to the total costs – combining the program cost paid by Efficiency Maine and the investment made by the participating customer.




**Business Incentive Program Benefits (lifetime) vs Costs**




**Residential Lighting Benefits (lifetime) vs Costs**



## C. The Efficiency Maine Trust

### i. Independent Trust and Staff

Efficiency Maine is an independent trust that has a fiduciary duty to promote the best interests of energy customers in the state and to fulfill public purposes laid out in statute. On July 1, 2010, pursuant to the Efficiency Maine Trust Act, responsibility for the fund accounts and administration of energy efficiency and small renewable energy programs transferred from the Maine Public Utilities Commission to the Trust.

Day to day operations of the Trust are managed by a staff of approximately 15 full-time employees. Staff handles program design and program management, financial accounting and reporting, grant compliance, and various marketing and communications. Staff's management of programs consists primarily of managing multiple teams of contractors who perform the actual implementation (or "delivery") of programs – educating and marketing to customers, training other contractors and suppliers, providing technical support and engineering analysis, handling in-bound calls, processing applications, calculating and paying financial incentives, servicing loans, performing quality control, and calculating energy savings. Where appropriate, the Trust staff may fulfill elements of program delivery.

### ii. Stakeholder Board of Trustees

The Trust is governed by a nine-member Board of Trustees. The Board consists of the 9 voting members as follows:

(1) The director of the Governor's Energy Office (*ex officio*);
(2) The director of the Maine State Housing Authority (*ex officio*); and
(3) Seven other members appointed by the Governor, who "adequately represent the interests of commercial energy consumers, industrial energy consumers, small business energy consumers, residential energy consumers and low-income energy consumers" and among whom there is knowledge of and experience in financial matters, consumer advocacy, management, conservation fund programs, carbon reduction programs, or relevant policy.

Appointees to the Board are reviewed by the joint standing committee of the Legislature having jurisdiction over energy matters and confirmed by the Senate.

The Board generally meets monthly in Augusta in meetings that are open to the public.

### iii. Oversight from the Public Utilities Commission

The Commission has oversight of the Trust's program planning and administration. First, as mentioned above, the Triennial Plan must ultimately be approved by the Commission, and this must occur before funds from assessments made on electric and natural gas ratepayers may be spent during the period covered by the Triennial Plan. The Commission's oversight includes reviewing and ratifying that energy savings targets in the Plan match the targets spelled out in the statute, and also performance metrics for

assessing progress toward the targets. The Commission will ratify the performance metrics if they conform with the statute's "principles of program administration" (described more below) and are in the public interest.[19]

Second, the Commission is tasked with overseeing the Trust's compliance with statutory or any other requirements related to the funds paid from assessments on electric and gas utility customers. The Commission may open an investigation and issue appropriate orders to address concerns of non-compliance.

Third, the Commission is empowered to establish a fund to cover the costs of providing oversight and evaluation responsibilities.

#### iv. Legislature

The Trust has an ongoing relationship with its committee of jurisdiction in the Maine Legislature – the Energy, Utilities and Technology Committee. On December 1 of each year, the Trust presents to the Committee the annual report of the prior year's activities, results, and financials. By practice, the Trust typically also provides a briefing on the annual report and plans for the year ahead to the Committee early in the year for each legislative session. Periodically through the course of a session, the Committee will request a briefing or written information about energy issues. When a Triennial Plan is being developed, the Trust provides an opportunity for the members of the Committee to ask questions and give input. The assessments on electric and natural gas ratepayers are presented to the Committee in each biennial State of Maine budget and the Trust appears before the Committee, and also the Appropriations Committee, to explain the budget. Pursuant to the statute, an increased assessment on electric ratepayers would, if it were to be requested, require approval from the legislature before it could take effect.

### D. The Triennial Plan

#### i. Purpose

The main purposes of having a strategic plan for the Trust's programs are to:

- Serve as a guide for Staff working to implement the programs;
- Help Board Trustees tracking the progress of Staff's program implementation;
- Indicate the direction the Trust's programs are taking to customers, vendors, and contractors in the marketplace, and also to advocates and policymakers; and,
- Satisfy the statutory requirement to present a document containing targets, objectives, performance metrics, strategies and budget allocations for the Board and the Public Utilities Commission to review.

[19] 35-A MRSA 10120(1).

The Efficiency Maine Trust Act specifies that, every three years, the Trust should prepare a strategic plan and that the Trust's programs should be administered by the Trust consistent with that plan. Pursuant to the statute, this plan, referred to as the "Triennial Plan" must:

- Be a detailed, triennial, energy efficiency, alternative energy resources and conservation plan;
- Include efficiency and conservation program budget allocations, objectives, targets, measures of performance, program designs, program implementation strategies, timelines and other relevant information;
- Provide integrated planning, program design and implementation strategies for all energy efficiency, alternative energy resources and conservation programs administered by the Trust;
- Include provisions for the application of appropriate program funds to support workforce development efforts; and
- Be consistent with the comprehensive state energy plan.[20]

ii. Process and Timeline

The process for approving the Triennial Plan culminates with review and approval or rejection by the Public Utilities Commission. The statute provides that the standard of review for Commission approval is whether the Triennial Plan reasonably explains how its proposed use of funds would achieve:

- the objectives and the implementation requirements of each statutory Fund (described above), and,
- the measures of performance (or "metrics) for each program funded by those Funds.[21]

Before the plan gets to the Commission, however, it undergoes several steps. In the case of this Triennial Plan, the Staff and Trustees started by reviewing recent past performance, worked on a basic outline of priorities and budget allocations, identified issues needing further analysis, and laid out a process and timeline. During this period, Staff requested and received data and market research from the utilities to help formulate program targets and strategies. Staff also commissioned an economic analysis of the maximum achievable potential for harvesting cost-effective energy efficiency in Maine, which helped Staff assign estimates of budgets that would be necessary to capture all efficiency resources that are reliable, feasible, and costs less than supply.

Next, the Staff prepared draft components of the plan and held a dozen workshops, organized by program area, at which stakeholders asked questions and offered recommendations. Staff then presented a draft of the Triennial Plan at two public meetings – one in Bangor and one in South Portland – providing an opportunity for the public to ask questions and offer comments. Staff also provided a briefing on the draft plan to the legislative committee of jurisdiction.

After considering and incorporating input from stakeholders, policymakers and the public comments, the Staff will present a final Draft of the Triennial Plan at a meeting of the Board of Trustees. Once

[20] 35-A MRSA Sec. 10104(4).
[21] *Id.,* Sub-section (4)(D).

satisfied that the document comports with the objectives, targets, requirements and restrictions of the statute and provides a suitable explanation of the program strategies, the Board may approve the Plan by a two-thirds vote. The Plan will then be submitted to the Commission for its review.

The Staff began discussions with the Board in January of 2012. The data requests from the utilities and the study of maximum cost-effective potential was undertaken in late spring of 2012, and the stakeholder process commenced in late June. Stakeholder meetings were held throughout July and into early August. Drafts of the program descriptions and budget allocations were developed in August and presented at two public meetings and before the legislature in the first week of September. The final Draft Triennial Plan was presented to the Board at its regularly scheduled September Board Meeting.

The accelerated timeline for this process is aimed at ensuring a smooth transition to any desired program design changes and delivery contractors by July 1, 2013 which marks the start of the new Triennial Plan period. Allowing the PUC two to three months to review and approve the Plan, then a month to prepare and issue competitive solicitations (RFPs) for program delivery services, then two months for contractors to respond, and another month to select winning bidders and arrange new contracts, will leave just one to two months for Staff and new contractors to get ready to make the transition.

### iii. Updates and Significant Changes to the Triennial Plan

By January 1 of each year, the Trust is required to submit to the Public Utilities Commission and the Legislature an "Annual Update Plan." The statute provides that the Annual Update Plan must describe "any significant changes to the triennial plan" and prohibits implementation of any significant changes until they are approved by the Trust Board and, "in the case of significant changes to programs using funds generated by assessments [on electric or gas utility customers], until the changes are also approved by the commission using the same standard as for the triennial plan."[22]

### iv. Program Implementation Principles and Priorities

In the run up to the decision to shift responsibility for administering programs to the new, independent Trust, there was robust debate about what principles should guide the implementation of programs. A consensus emerged and was endorsed by the then-active advisory Energy Conservation Board to increase the focus on customer's energy needs, promote independent and objective planning and decision-making, enhance nimbleness and flexibility in program management in order to adjust quickly to changes in energy prices and the emergence of new technologies or program strategies , and to promote efficient administration, transparency, and accountability.[23]

These industry best practices were later codified in the Efficiency Maine Trust Act, which directs the Trust to ensure that program design and implementation conform to enumerated "Principles of Administration," in order to be:

[22] 35-A MRSA §10104(6).

[23] Energy Conservation Board, "Principles for Consolidating Energy Efficiency Administration," March 30, 2009.

A. Consumer-oriented

Programs are consumer-oriented such that the processes for participation and program design are targeted to serve the multiple needs of energy consumers in this State;

B. Independent, Objective, Nimble

The effectiveness of programs is maximized by building up and centralizing expertise, addressing conflicts of interest, mitigating the influence of politics, promoting flexible, timely program management and providing a champion for funding cost-effective energy efficiency;

C. Efficient

The efficiency with which programs are planned, designed, overseen and delivered is maximized;

D. Sustainable

Sufficient checks and balances are provided to ensure consistency with public policy and accountability so that energy efficiency programs in the State are sustainable for the long term. [24]

In addition to best practices of administration and implementation, the Trust is also guided by certain priorities that are reflected in the choices made in the Triennial Plan regarding budget allocation and program design. Chief among these priorities are:

- Resource Acquisition – The strongest selling point for the Trust's programs is the fact that it delivers energy resources that cost less than conventional supply, and therefore are lowering energy costs and, in the case of electricity, actually suppressing the rise of energy and capacity charges and improving grid reliability. These benefits are essential if the Maine economy is to remain competitive with neighboring states and provinces and if it is to grow. By investing in energy efficiency projects that satisfy the stringent cost-effectiveness test of its Chapter 380 rule, Efficiency Maine is acquiring an energy resource for the benefit of the participating customer and the ratepayers on the system.

  As a general rule, the budget allocations and program designs in this Triennial Plan reflect the Trust's top priority, which is acquiring the most energy savings possible with the funds available. For several years, lighting upgrades – using compact fluorescent lights (CFLs) for residential customers and high-performance T8 linear fluorescents for business facilities – have offered among the greatest energy savings for the lowest cost. As such, a consistently large fraction of the budgets has been, and continues to be in this Triennial Plan, targeting lighting upgrades. With the recent availability of revenues from the RGGI Fund and from ARRA, the Trust was able to invest in much larger energy projects (having a minimum Trust investment of $100,000). Given the low transaction costs to manage these projects and the

[24] *See,* 35-A MRSA §10104(2).

large and long-lived savings that result, the cost-effectiveness of the Large Customer programs has proved to be very high. For this reason, the Large Customer program also remains a high priority for resource acquisition.

By contrast, certain programs that have been funded in the past are being discontinued because they do not save as much energy as alternative program options and, given limited resources, they do not advance the Trust's priority on resource acquisition or advance other principles or obligations. By way of example, the High Performance Schools initiative demonstrated very low cost-effectiveness. While school projects already in the pipeline are still being funded, no new projects are being accepted or funded. Similarly, providing free energy audits for small businesses was very costly and yielded little or no actual savings because there was no "skin in the game" for customers to move ahead with efficiency projects. When the Trust altered the program design to require a small co-payment from participating businesses, there were no takers. For this reason, the free energy audit program will not be continued in the second Triennial Plan.

- Market Transformation – A second priority of the Triennial Plan is to help transform the marketplace with regard to energy efficiency and cost-effective renewable energy resources. Market transformation in the Trust's programs takes several forms.

  One example is building economies of scale for newer, high-efficiency products such that they are stocked on store shelves, sales forces and technicians are familiar with and promote the products, and the retail price is driven down. A well-known example of this is the now ubiquitous CFL bulb, which when it first came into the marketplace cost greater than 1000% more than the bulb it sought to replace, provided dubious performance, and was not widely available. Now the CFL is the first item presented to customers as they walk in to every big box store in Maine, its quality has vastly improved, and its full price is very close to the price of the less efficient competition.

  Another example of market transformation comes through workforce development. The Triennial Plan put forward here intends to expand on past success of promoting training for key players in the energy efficiency supply chain. In the past years, Trust programs paid for and organized training for home energy auditors to learn sales skills when pitching their services to homeowners, for contractors seeking to learn about new mini-split heat pump space heaters, for sales staff at big box stores responsible for promoting EnergyStar appliances, and for big commercial contractors on advances in variable frequency drives, and for facility managers seeking to learn about best practices in all aspects of operation and maintenance for the energy systems in their buildings. In this Triennial Plan, the Trust continues that trend with an expectation of such offerings as helping architects and engineers learn about best practices when planning new commercial construction projects, and making energy efficiency training more broadly available for facility managers.

  A third area of activity that advances the priority of market transformation is the Trust's promotion of general energy education and awareness. The Trust maintains a website that helps both residential and business customers access information about available programs ( including technical support and financial incentives), but has gradually been expanding the website to include more generic information about energy efficiency and the options available to consumers considering a purchase of new lighting, heating or cooling systems,

electronics, appliances, motors, or controls. This Triennial Plan also contemplates adding more resources through the website, through printed materials, and workshops to help consumers better understand best practices for new construction or major renovations of their homes and commercial buildings.

Finally, market transformation includes activities to encourage the entry of new high efficiency products and alternative energy products into the marketplace. Because the cost-effectiveness of new products or practices is hard to demonstrate or predict, and because making such products or practices available on a broad scale, while maintaining quality control, may be challenging, the Trust's practice is to "walk before it runs." In this Triennial Plan, the Trust will continue to use the Innovation Program to pilot new products, or new applications of established products, as well as new approaches to running programs. The Trust also will retain its practice of funding Custom Projects through the Business Incentive Program. This element of the program enables contractors and their customers to take advantage of good energy saving opportunities even if the product has not yet achieved sufficiently wide use to make it onto the "Prescriptive List" for the most commonly used efficient products. It also enables the Program to support best practices in building design, industrial processes, and building operation so that, over time, these will become standard industry practice.

- Fairness – The Triennial Plan also reflects the priority of maintaining fairness in the way that budgets are allocated and programs are designed and implemented. At a minimum, a degree of fairness is achieved by ensuring that statutory minimum funding levels are allocated to low income customers (at least 20% of the Base Assessment for the Electric Efficiency and Conservation Fund and a similar percentage from the natural gas funds) and to small business customers (at least 20% of the Base Assessment). Beyond these statutory requirement for budget allocations, the Triennial Plan reflects the goal of promoting broad participation among customers and a reasonable distribution of project benefits throughout the state. As in the past, the Trust continues through this Triennial Plan to allocate funds from electric customers (from the Base Assessment and RGGI) and gas utility customers according to the percentage of total load represented by each customer class (*e.g.*, approximately 40% for residential customers and 60% for business/institutional customers of electric utilities). Whereas there are certain programs targeting a very few, very large projects that will acquire huge savings consistent with the resource acquisition priority, there are also programs (such as those that promote efficient lighting) that make small energy savings accessible to homeowners and businesses everywhere, even in more remote areas of the state. There are initiatives, such as the Small Business Direct Install program, where the Trust understands it will save less energy and incur greater cost. While these undertakings may be counter to the principle of maximizing resource acquisition, the Trust pursues them nonetheless because it is critical that customers from every sub-sector and every region of Maine have a reasonable opportunity to access the benefits of energy efficiency programs.

- Comprehensiveness – It is a priority of the Triennial Plan, over time, to promote more comprehensive solutions to Maine's energy consumer issues. In part, this is being advanced through program designs such as the Residential Low Income program and the PACE Loan program where measures that save electric energy are being integrated with measures to save thermal energy. Integrating the delivery of electric and thermal saving measures

promotes a kind of “one-stop shopping” that encourages looking at the home as an interactive system and implementing upgrades that save more energy at lower cost. Pursuing comprehensive solutions also means capturing “deeper” savings by encouraging customers to take advantage of the opportunity to make multiple upgrades while the work crews are already on-site and new equipment and systems are being installed, reducing transaction costs. While investment in deeper savings measures will drive up the total cost of a given project, it is a more affordable way to capture energy savings than harvesting only the “low hanging fruit” one year and postponing the harvest of more expensive, albeit still cost-effective energy savings for another day.

# 3. The Opportunity for Energy Efficiency to Lower Energy Costs in Maine

## A. Electric – Maximum Achievable Cost-Effective (MACE) Opportunity

In the spring and summer of 2012, the Trust contracted for a study of the 10-year opportunity to cost-effectively save electricity in Maine. The resulting 2012 Baseline and Opportunities Study developed a baseline estimate of the efficiency of products currently installed in homes and businesses across Maine. The study then identified the magnitude of the opportunity to achieve savings for a wide variety of efficient product models and estimated potential electrical savings by customer class – residential, commercial (including institutions, municipalities, and non-profits) and industrial. Contractors conducted 103 site visits to a sampling of commercial buildings and 30 site visits to a sampling of homes, and analyzed market penetration studies recently conducted by the electric utilities.

Examples of their findings about the baseline electric consumption, by end use, are shown in Figures __ and __, below.

**Figure __ -- Baseline Consumption of Commercial Customer Class, by End Use**

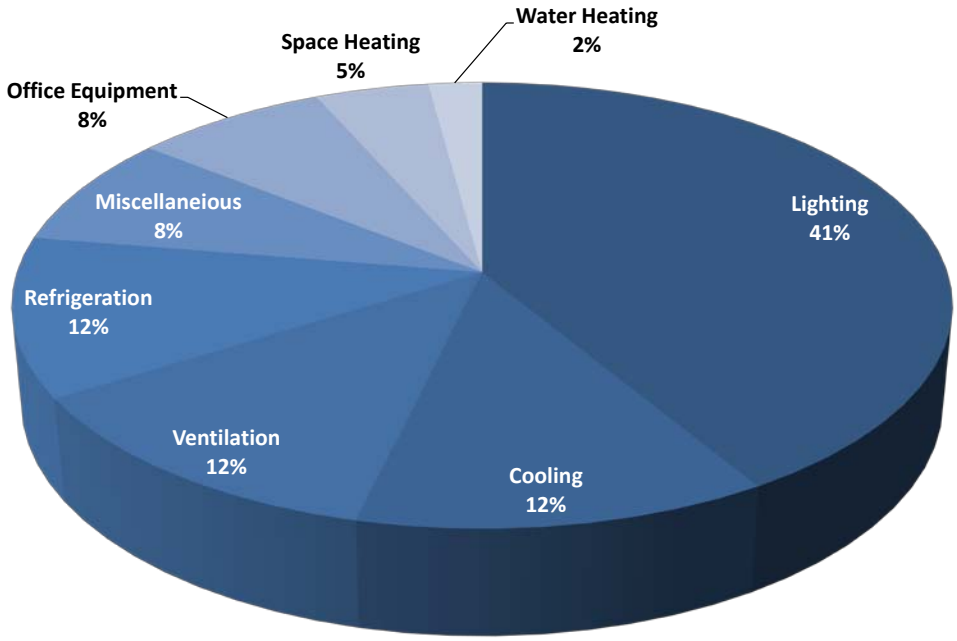
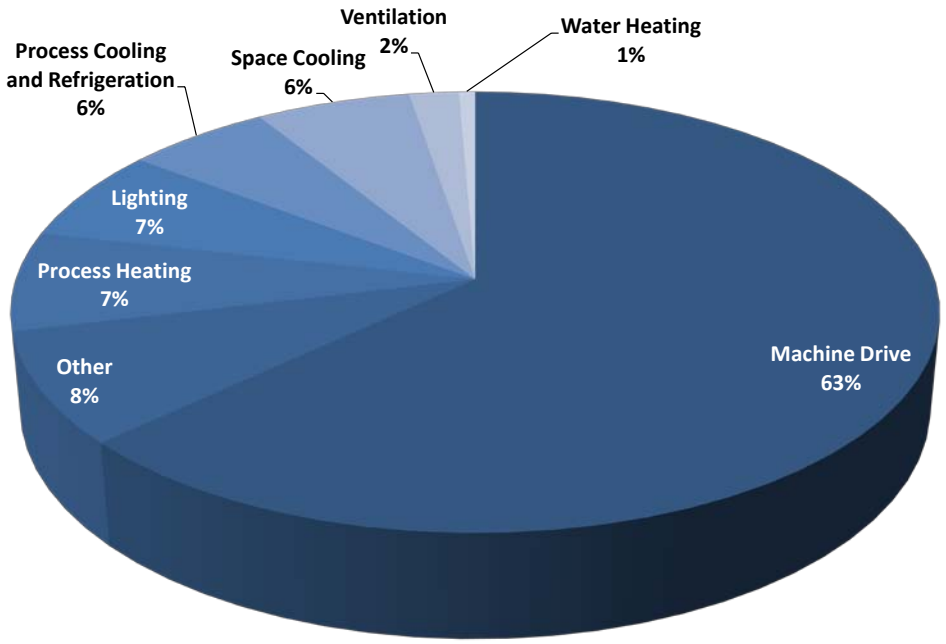
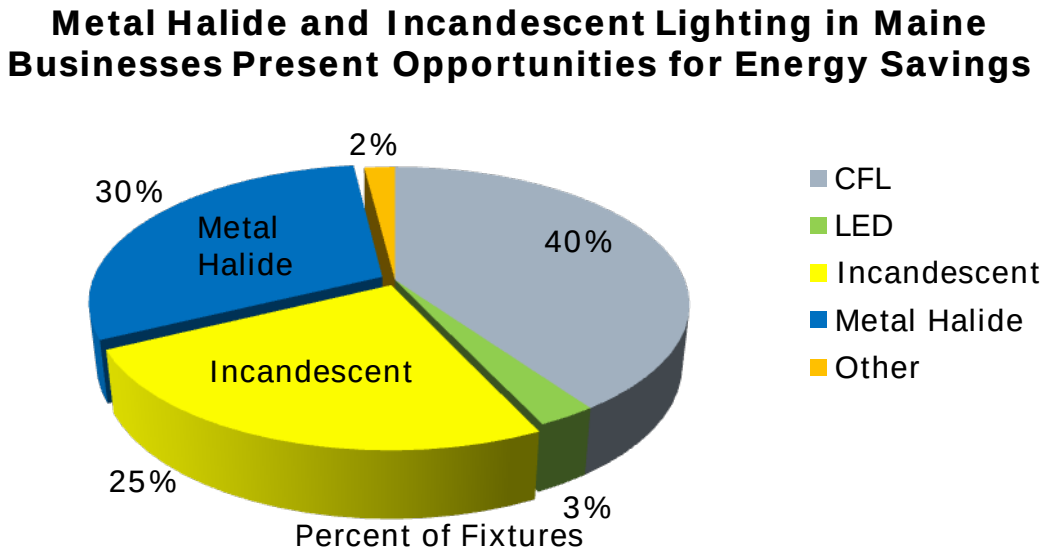


**Figure __ -- Baseline Consumption of Industrial Customer Class, by End Use**




The study next assessed the opportunity to upgrade from the baseline to higher-efficiency alternatives, using only those measures that would meet the Trust's cost-effectiveness test, i.e., having more financial benefit resulting from energy savings than the total combined cost of Efficiency Maine's investment and the customer's incremental cost to complete the project. One example of the study's findings, representing opportunity to upgrade widely available lighting in commercial buildings, is presented in Figure __.

Figure __ --



The Study first projected the growth rate and total annual electricity usage ("sales") over the next decade. The results show that compound growth rate is projected to be 1.24% per year, as shown in Table __.

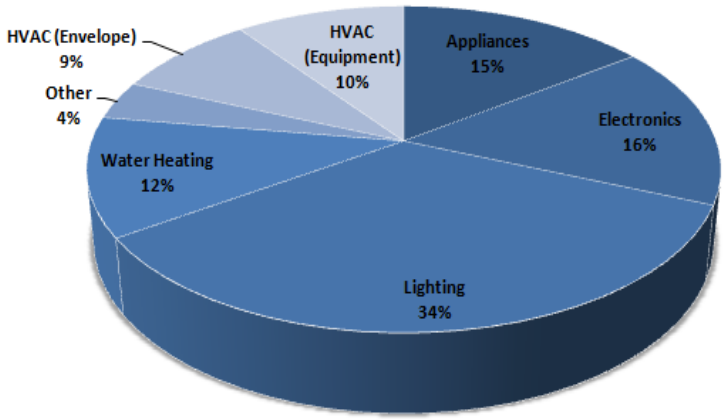
Table ___ --

| MWh Sales | | | | |
|---|---|---|---|---|
| **Year** | **Residential** | **Commercial** | **Industrial** | **Total** |
| 2012 | 4,478,574 | 4,115,596 | 3,148,120 | 11,742,290 |
| 2013 | 4,575,213 | 4,149,449 | 3,296,741 | 12,021,403 |
| 2014 | 4,691,369 | 4,194,002 | 3,275,798 | 12,161,169 |
| 2015 | 4,748,024 | 4,245,649 | 3,324,386 | 12,318,059 |
| 2016 | 4,796,604 | 4,302,556 | 3,323,117 | 12,422,277 |
| 2017 | 4,857,390 | 4,365,604 | 3,319,151 | 12,542,145 |
| 2018 | 4,930,704 | 4,425,867 | 3,312,448 | 12,669,018 |
| 2019 | 5,039,692 | 4,487,077 | 3,297,018 | 12,823,788 |
| 2020 | 5,139,027 | 4,555,940 | 3,288,649 | 12,983,616 |
| 2021 | 5,228,540 | 4,620,702 | 3,273,418 | 13,122,661 |
| ***Compound Annual Growth Rate*** | ***1.74%*** | ***1.29%*** | ***0.43%*** | ***1.24%*** |

After estimating the total "technical potential" to replace inefficient products with more efficient products, then discounting that amount to screen out opportunities that would not satisfy the Trust's strict cost-effectiveness test in the "economic potential," and then further discounting the savings potential to screen out opportunities that are considered impractical or otherwise not feasible, the study produced an estimate of the maximum cost-effective achievable (MACE) potential savings.

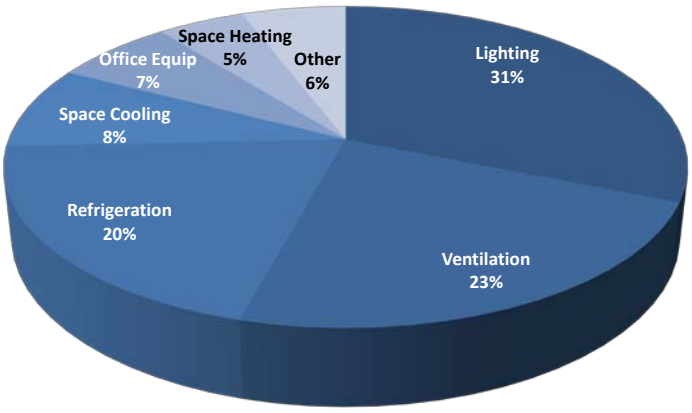
For the residential sector, the study showed the following opportunities to realize cost-effective, achievable savings in the year 2021 (accumulating savings from the prior nine years).

| Achievable Potential | |
|---|---|
| | **Energy (MWh)** |
| Appliances | 130,480,520 |
| Electronics | 141,156,312 |
| Lighting | 299,903,399 |
| Water Heating | 102,803,577 |
| Other | 33,362,290 |
| HVAC (Envelope) | 74,480,864 |
| HVAC (Equipment) | 88,655,007 |
| **Total** | **870,841,969** |
| *% of 2021 Residential Forecast Sales* | *16.7%* |



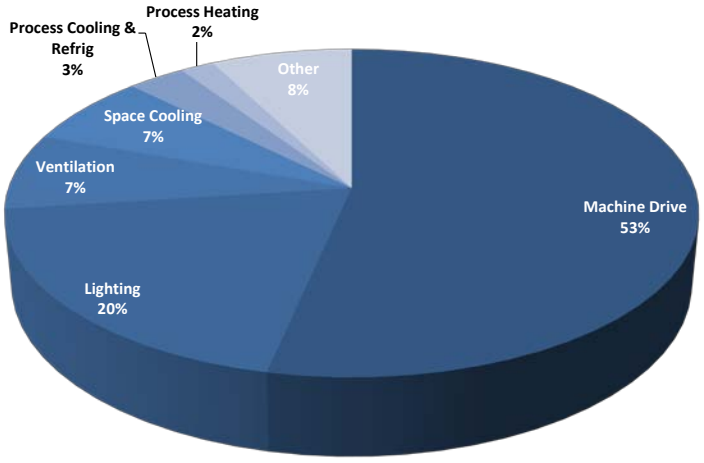
For the commercial sector, the study showed the following opportunities to realize cost-effective, achievable savings in the year 2021 (accumulating savings from the prior nine years).

| Achievable Potential | |
|---|---|
| | **Energy (MWh)** |
| Lighting | 266,330 |
| Ventilation | 196,768 |
| Refrigeration | 171,388 |
| Space Cooling | 71,262 |
| Office Equipment | 57,104 |
| Space Heating | 41,674 |
| Water Heating | 29,869 |
| Compressed Air | 12,395 |
| Other | 5,218 |
| Cooking | 2,153 |
| TOTAL | 854,162 |
| *% of 2021 Commercial Forecast Sales* | *18.49%* |

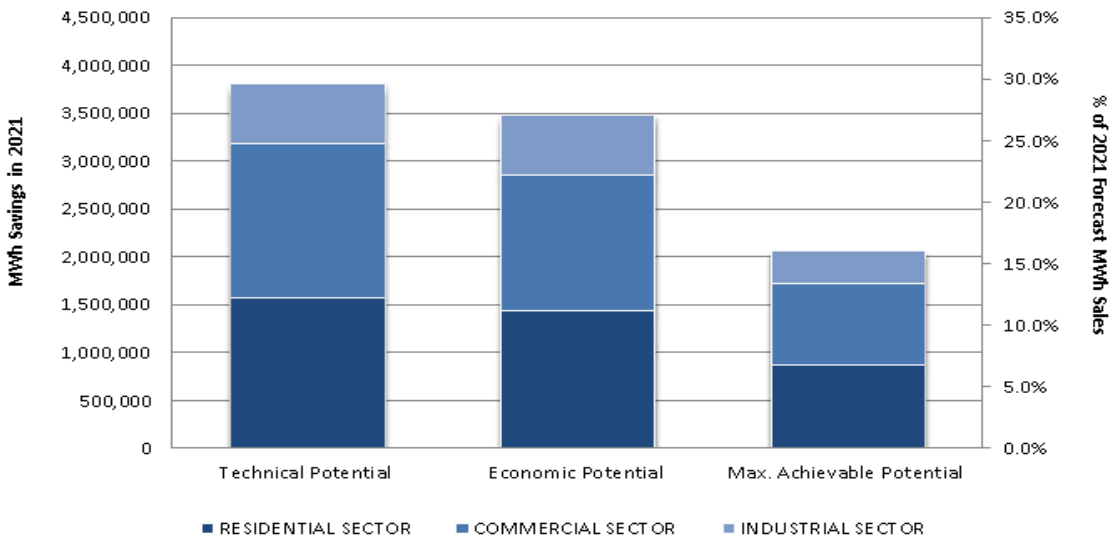



For the industrial sector, the study showed the following opportunities to realize cost-effective, achievable savings in the year 2021 (accumulating savings from the prior nine years).

| Achievable Potential | |
|---|---|
| | **Energy (MWh)** |
| Machine Drive | 171,307 |
| Lighting | 62,853 |
| Ventilation | 23,965 |
| Space Cooling | 22,507 |
| Process Cooling & Refrig | 9,988 |
| HVAC Controls | 7,942 |
| Office Equipment | 6,858 |
| Process Heating | 5,867 |
| Water Heating | 5,297 |
| Envelope | 2,245 |
| Other | 2,117 |
| TOTAL | 320,947 |
| *% of 2021 Commercial Forecast Sales* | *9.8%* |




The summary results for all three sectors, shown in Figure __, indicate that by 2021, capturing the full potential of this opportunity over each year of a 10-year period would have the cumulative effect of saving more than 15%, or 2 million megawatt-hours, of the forecasted sales in that year.




According to Staff's analysis, funding Efficiency Main programs at a level necessary to realize all available energy efficiency and demand reduction resources in this State that are cost-effective, reliable and feasible would have the benefit of saving 150,044,760 from the first year of programs in the new Triennial Plan, 291,695,341 kWh from the second year of programs, and 453,045,468 from the third year of programs, having a cumulative effect of saving 894,785,569 kWh by the third year of the Triennial Plan.

Finally, the analysis also estimated a range of Efficiency Maine budgets that would be the projected budget necessary to reach the maximum achievable cost-effective potential savings, or MACE. The "Low" cost MACE budget scenario assumes that Efficiency Maine continues to experience the same program costs to save electricity as it has in recent years. The "High" cost MACE budget scenario assumes that during the Triennial Plan period, the cost to save a kWh becomes slightly more expensive as the programs target savings that, while still cost-effective and cheaper than supply, nonetheless are harder to reach than in prior years. The results, by year, are shown for each scenario in Table __ below.

**Table __**

| Fiscal Year | Low Cost MACE Budget Scenario | High Cost MACE Budget Scenario |
|---|---|---|
| 2014 | $ 43,026,448 | $ 56,769,194 |
| 2015 | $ 55,542,444 | $ 69,258,453 |
| 2016 | $ 62,919,197 | $ 77,263,625 |

# 4. PROGRAM DESCRIPTIONS

This section of the Triennial Plan provides a description of each program that the Trust intends to offer in Fiscal Years 2014, 2015 and 2015. The descriptions are divided into four categories and presented below in this sequence:

- Business Programs;
- Residential Programs;
- Renewable Energy Programs; and
- Cross-Cutting Strategies.[25]

Each program description provides information according to the following template:

Program Name
Objectives
Opportunity
- Efficient Alternatives
- Market Barriers
- Program History

Program Design
- Measures Promoted
- Implementation Strategy
  - Marketing
  - Education and Training / Workforce Development
  - Technical Assistance
  - Financial Incentives
  - Quality Assurance / Quality Control (QA/QC)
- Future Program Evolution
  - Additional Funding Scenario

The Future Program Evolution section is designed to accomplish two goals. First, it gives an indication to the Board, the Commission, policymakers and stakeholders about the direction Staff sees things moving and the areas Staff expects, knowing what it knows at this time, to explore. It does this in the first instance assuming the Base funding scenario, i.e., the revenues projected under currently authorized finding streams). Second, this section discusses how program design might be adjusted under a scenario in which there is "additional funding," should such funding be authorized in the future.

Following the program descriptions is a section that describes the budget allocations under multiple scenarios and the projected savings (of energy and dollars) and the resulting benefit-to-cost ratio calculated using the Trust's strict cost-effectiveness test.

[25] Readers will note that in the first Triennial Plan and in recent Annual Reports, this category of programs was referred to at "Enabling Strategies."

**Program Name: BUSINESS INCENTIVE PROGRAM - ELECTRIC**

| | |
|---|---|
| **Objectives** | The Business Incentive program provides Commercial and Industrial (C&I) customers access to technical assistance and financial incentives for the installation of energy efficient equipment. Prescriptive incentives are offered at fixed amounts (calculated to be a percentage of the incremental cost) for a prescribed list of the most common efficient equipment and products installed during both new construction/replace on burnout and retrofit opportunities. Custom incentives are available for electricity-saving equipment that is not on the list of prescriptive incentives. |
| **Opportunity** | |
| Market | The target market includes all non-residential customers including commercial, industrial, municipal, non-profit, and institutional customers. There are approximately 90,500 non-residential electrical accounts in Maine segregated into the following energy use classes:<br><br>• 77,000 small C&I (less than 20 KW)<br>• 13,000 medium C&I (20 to 400 KW)<br>• 500 large C&I (over 400 KW)<br><br>The opportunity avails itself in the form of inefficient electrical equipment such as lighting, HVAC, refrigeration, and process equipment. |
| Efficient Alternatives | As described below under Program Design, this program targets a range of high efficiency models to replace or retrofit models of average or low efficiency in the categories of lighting and lighting controls, motors and drives, refrigeration, and HVAC. |
| Market Barriers | Market barriers for the C&I sector include the upfront cost of the efficiency improvement, limited access to working capital, lack of information, time limitations/production schedules, and lack of technical expertise. |
| Program History | The Business Incentive Program is a mature program well established in Maine. Incentive programs for energy efficient equipment have been available to Maine's C&I customers since the early 1980's when the programs were first offered by the electric utilities and Efficiency Maine has offered C&I incentives since 1993.<br>The program has evolved over time by recognizing improvements in technologies and design standards. The program offers a wide variety of incentive offerings for C&I participants. The Program is delivered through a program delivery contractor selected through a competitive bidding process. This delivery contractor also delivers the Business Program for natural gas efficiency measures. This ensures integrated program delivery for the business participant. |
| **Program Design** | |
| Measures | Eligible measures include efficient lighting equipment and controls, efficient |

<table>
<tr><td>Promoted</td><td>motor drive systems, efficient HVAC systems, compressed air systems, industrial process systems and controls, building controls, and demand controlled ventilation.<br><br>The following is a summary list of targeted end uses and recommended technologies. The incentives offered are adjusted from time to time and a current listing of incentives can be found on the Efficiency Maine website at www.efficiencymaine.com/at-work/business-programs/cash-incentives. At present, they range from $10 for each purchase of a screw-in or pin-based LED lamp to $750 for a new 6 horsepower Discuss Compressor refrigeration unit:<br><br>
<table>
<tr><th>End Use</th><th>Efficient Technology</th><th>Incentive</th></tr>
<tr><td>Lighting & Lighting Controls</td><td>Efficient Lamp, Fixture and Control Technologies</td><td rowspan="5">Each business is eligible for Efficiency Maine incentives up to $50,000 per business, per calendar year.<br><br>Custom projects must save at least 70,000 kWh per year.</td></tr>
<tr><td>Motors & Drives</td><td>Variable Frequency Drives</td></tr>
<tr><td>Refrigeration</td><td>Efficient Refrigeration Controls, Compressors, and Energy Star Coolers & Freezers</td></tr>
<tr><td>HVAC</td><td>Efficient HVAC Equipment</td></tr>
<tr><td>Site Specific Custom Measures</td><td>Efficient Custom Measures</td></tr>
</table>
<br>Eligible custom measures are often participant specific or process specific. Eligibility is contingent on establishing demonstrable electricity savings and not be on the prescriptive measure list.</td></tr>
<tr><td>Implementation Strategy</td><td>Marketing<br>The Efficiency Maine Qualified Partner (QP) network comprises over 400 contractors, vendors, suppliers, and energy professionals who have been trained to provide support to businesses interested in saving energy. They are critical partners to Efficiency Maine in marketing the program -- promoting, identifying, and delivering services to customers. Efficiency Maine established a QP specific web portal to enable QPs to easily submit and track the status of their incentive projects.<br><br>In addition to program specific information, the Business Program webpage also provides actual customer case studies in order to share project information.<br><br>Attendance and participation at targeted trade shows will also be included as part of the marketing outreach strategy.</td></tr>
<tr><td></td><td>Education and Training / Workforce Development<br>Targeted technical training for Qualified Partners will be held throughout the year</td></tr>
</table>

| | |
|---|---|
| | to increase the understanding in the C&I sector about the benefits of energy efficiency, how to use and maintain emerging high efficiency technology, best practices in energy efficient design, and resources available from Efficiency Maine. This may include training on technical topics for QPs or sales training to enable them to provide better information regarding project potential. |
| | **Technical Assistance**<br>Efficiency Maine will continue to offer a technical assistance cost-share of up to $10,000 for the review of a project-specific technology application. The TA project must be preapproved by Efficiency Maine and must be conducted by a qualified impartial third party. Efficiency Maine's contracted program delivery team is also available to provide independent, objective technical back-up on questions about high-efficiency equipment or system designs. |
| | **Financial Incentives**<br>Financial incentives will continue to play a significant role in this program in order to help bridge the incremental cost of an energy efficiency improvement. Incentive amounts will be periodically reviewed by program staff to ensure the cost share is balanced. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes review of incentive applications and site inspections of projects. |
| **Program Evolution** | |
| Base Funding | During FY14-FY16 additional program elements to be explored include:<br>• Pay for Performance – an initiative that takes a comprehensive approach to project design, implementation, and verification of energy savings.<br>• Market Sector Focus – sectors and measures identified in conjunction with the 2012 Baseline and Opportunities study will be assessed for market sector targeting. Two examples of target sectors would be the Healthcare and Retail sectors.<br>• Upstream Incentives – explore incorporating targeted upstream incentives for specific measures.<br>• Retro-commissioning – assess incorporating additional prescriptive measures commonly found in retro-commissioning projects.<br>• Street Lighting – continue to promote efficient street lighting technologies applicable to customer-owned municipal street lights.<br>• Design Lighting – assess program options for incorporating elements that promote better lighting design to achieve site specific quality lighting using fewer watts per square foot. |
| Additional Funding Scenario | Additional funding will enable the program to expand the offering of prescriptive incentives for other end uses such as heat recovery units, energy management systems and lighting design and, as appropriate, to offer deeper incentives for products already on the prescriptive menu. In order to better engage targeted |

| | |
|---|---|
| | market sectors, account managers will be deployed to work pro-actively with potential customers and their contractors to identify and promote comprehensive energy efficiency projects. |

**Program Name: BUSINESS INCENTIVE PROGRAM – NATURAL GAS**

<table>
<tr><td>Objectives</td><td>The Business Natural Gas Incentive program provides Commercial and Industrial (C&I) customers access to technical assistance and financial incentives for the installation of “top tier” energy efficient equipment. The program includes prescriptive incentives for customers of Unitil, and focuses on premium efficiency boilers, furnaces and heaters, and their associated controls, as well as efficient gas-fired commercial kitchen equipment.</td></tr>
<tr><td colspan="2">Opportunity</td></tr>
<tr><td>Market</td><td>The Target Market includes all non-residential customers including commercial, industrial, municipal, non-profit, and institutional customers in the Unitil Natural Gas service territory. There are approximately 8,000 non-residential natural gas accounts in Unitil’s service territory.</td></tr>
<tr><td>Efficient Alternatives</td><td>The following are examples of targeted end uses, recommended technologies, and incentives offered:
<table>
<tr><th>End Use</th><th>Criteria</th><th>Incentive</th></tr>
<tr><td>Natural gas-fired air furnace ≤ 300 MBtu/h</td><td>AFUE ≥ 95%</td><td rowspan="9">Incremental incentive to customers that upgrade from code compliant standard practice equipment to premium equipment for both existing and new facilities</td></tr>
<tr><td>Natural gas-fired non-condensing hot water boiler ≤ 300 MBtu/h</td><td>AFUE ≥ 85%</td></tr>
<tr><td>Natural gas-fired non-condensing hot water boiler<br>>300 MBtu/h and ≤500 MBtu/h</td><td>Thermal Efficiency ≥ 85%</td></tr>
<tr><td>Natural gas-fired non-condensing hot water boiler<br>>500 MBtu/h and ≤1,000 MBtu/h</td><td>Thermal Efficiency ≥ 85%</td></tr>
<tr><td>Natural gas-fired non-condensing hot water boiler<br>>1,000 MBtu/h and ≤1,700 MBtu/h</td><td>Thermal Efficiency ≥ 85%</td></tr>
<tr><td>Commercial Kitchen Fryer</td><td>ENERGYSTAR-qualified</td></tr>
<tr><td>Commercial Kitchen Broiler</td><td>Cooking Efficiency ≥ 30%</td></tr>
<tr><td>Commercial Kitchen Convection Oven</td><td>ENERGYSTAR-qualified</td></tr>
</table></td></tr>
</table>

| | | | |
|---|---|---|---|
| | Commercial Kitchen Combination Oven | Cooking Efficiency ≥ 40% | |
| | Commercial Kitchen Steamer | ENERGYSTAR-qualified | |
| | Commercial Kitchen Griddle | ENERGYSTAR-qualified | |

| | |
|---|---|
| Market Barriers | Market barriers for the C&I sector include the upfront cost of the efficiency improvement, limited access to working capital, lack of information, and lack of technical expertise. |
| Program History | The Business Natural Gas Incentive Program is a mature program well established in Maine. The program has evolved over time by recognizing improvements in technologies and design standards. The program offers a variety of incentive offerings for C&I participants. |
| **Program Design** | |
| Measures Promoted | Eligible measures include premium efficiency boilers, furnaces and heaters, and their associated controls, as well as efficient gas-fired commercial kitchen equipment. |
| Implementation Strategy | **Marketing**<br><br>The Efficiency Maine Qualified Partner network comprised of contractors, vendors, suppliers, and energy professionals who have been trained to provide support to businesses interested in saving energy. They are critical to the program by promoting, identifying, and delivering services to customers. Efficiency Maine established a QP specific web portal to enable QPs to easily submit and track the status of their incentive projects. The program is delivered through a program delivery contractor selected through a competitive bidding process. This delivery contractor also delivers the Business Program for electrical efficiency measures. This ensures integrated program delivery for the business participant.<br><br>In addition to program specific information, the Natural Gas Program webpage also provides actual customer case studies in order to share project information.<br><br>Attendance and participation at targeted trade shows will also be included as part of the marketing outreach strategy. |
| | **Education and Training/Workforce Development**<br>Targeted technical training for Qualified Partners will be held throughout the year. This may include training on technical topics for QPs or sales training to enable them to provide better information regarding the potential of the projects. |
| | **Financial Incentives**<br>Financial Incentives will continue to play a significant role in this program in order to help bridge the incremental cost of an energy efficiency improvement. The amount |

| | |
|---|---|
| | of incentive will be periodically reviewed by program staff to ensure the cost share is balanced. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of projects. |
| **Program Evolution** | |
| Base Funding | Over the next Triennial Plan period, the program will continue to explore additional prescriptive measures. In addition, we will assess the feasibility of adding a custom measure option. |
| Additional Funding Scenario | With additional funding, the program will expand the list of eligible measures and will add a custom measure option. Account managers will continue to engage customers and explore more comprehensive energy efficiency opportunities as part of an integrated program delivery approach. |

**Program Name: LARGE CUSTOMER PROGRAM**

| | |
|---|---|
| Objectives | The Large Customer Program provides funding to help mitigate the financial barriers which may be preventing Maine's largest energy electric utility customers from making investments in large energy efficiency and distributed generation projects. For purposes of this program, large electric utility customers are defined as those with over 400 KW in electrical demand. |
| **Opportunity** | |
| Market | The Baseline and Opportunity Study released by the Trust in August of 2012 confirmed the large customers are included in both the commercial and industrial sectors. The study determined there was an achievable electric energy savings potential of ____ MWh over ten years in the commercial sector and ___ MWh in the industrial sector. The study also looked at distributed generation across both sectors and found there to be at least ___MW of capacity as cost-effectively achievable in the next ten years.<br><br>The large customer class in Maine consists predominately of the manufacturing sector but also includes large office complexes, hospitals, institutions and government facilities. These large customers typically have many competing demands for their capital budgets. Experience has shown there are typically four different and sometimes competing demands on capitol at large facilities – production enhancements, environmental compliance, health and safety, and energy. In many cases the largest energy users are often large employers owned by national or global firms who are competing against other plants in their corporation's portfolio. These factors, combined with factors unique to each customer, lead to a challenging environment in which to sell efficient equipment, but also contribute to the wealth of cost effective opportunity in this sector. |
| Efficient Alternative | The Large Customer Program is tailored to projects larger than $200,000. Therefore, given the size of the customer's investment, typical projects will likely include retrofits of large end use equipment, such as process enhancements at industrial facilities and chiller retrofits in commercial facilities. They may also include replacement drives across an industrial facility or throughout a process, or large facility lighting retrofits. |
| Market Barriers | As noted above, the Large Customer class in Maine has many competing demands for capitol, including additional circumstances unique to each organization, thereby creating a challenging environment to sell efficient equipment. |
| Program History | The Trust has offered incentives on a competitive basis for large energy efficiency and distributed generation projects since 2009. The results show that an average project costs $612,708 and saves 2,308,943 kWh a year. The projects have included a broad diversity of measures. Many of the projects, however, involved variable frequency drive installations installed on motors and pumps and a number of projects were large lighting retrofits.<br><br>In 2010, the Trust contracted with Navigant to conduct an evaluation of the Large |

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| | Customer program. The impact evaluation found net total resource cost ratio of 7.8 and issued the following recommendations:<br>• Continued funding for this program, incorporating both electricity and Greenhouse Gas (GHG) focused projects, is worthwhile. This program generated a very strong Total Resource Cost (TRC) test result in addition to having high energy saving impacts. Participants were anecdotally pleased with the program.<br>• Continue performing significant technical review, similar to the Business Incentive Program review of custom projects. EMT should perform a technical review, specifically focused on the project definition, assumed baseline, and fuel savings type. This should include a follow-up call to discuss technical aspects of the project with the applicant. The existing review system is working well, preventing major errors in expected savings from occurring.<br>• Continue marketing this program to private industrial sites, especially paper mills. These sites have significant capital constraints, which have prevented many investments in energy efficiency from occurring. This means that there are more likely to be cost-effective projects available that generate large benefits relative to costs.<br><br>While the Trust's approach over the last three years has yielded very positive results in terms of benefits per dollar of Trust investment, stakeholders note that the Trust may suffer over the long term by harvesting the most cost effective projects making less cost effective projects more difficult to harvest in the future. These same stakeholders suggest that the Trust should adopt an account management approach that would provide large customers with multi-year plans for investment with negotiated incentives. This approach would aim to bundle shorter payback projects with the longer payback projects to reach deeper into facilities. |
| **Program Design** | |
| Measures Promoted | During FY14-FY16, the Trust anticipates following the same practices it has developed over the last four years of offering competitive incentives for large energy efficiency and distributed generation projects. The Trust has been developing an Enhanced Financing Plan concurrently with the drafting of this Triennial plan. Enhanced Financing would expand the incentive budget by monetizing the kWh savings through a long term contract with the Maine Public Utilities Commission (MPUC) and by offering a financing option. If the Trust is granted a long-term contract, it would then seek a multi-year contract. By securing a multi-year contract, it would send a consistent message to the large customers in the state that they could invest the time and money in developing large projects with the knowledge that there would be sufficient funding from the Trust to support the eventual investment. |
| Implementation Strategy | **Marketing**<br>With sustained funds from a multi-year long term contract, the Trust would be able to intensify its outreach to the Large Customer sector. Over the last four years, the Trust has relied on established relationships with energy managers at |

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| | these large facilities and with their vendors to identify and develop projects for the program. And in the Triennial plan period, the Trust will deepen its contact with these same individuals. EMT would continue to offer customers guidance on eligible projects, expected incentive levels, and planning a multi-year investment strategy based on program offerings. |
| | **Technical Assistance**<br>The Trust's implementation team will offer targeted technical assistance to customers with projects where the customer is able to invest the time and effort toward project development. This assistance is designed to help inform customers how to prioritize investments to best fit within EMT's program. |
| | **Financial Incentives**<br>The Trust will continue to offer competitive incentives of up to 50% of the project cost and financing for projects that meet the Trust's underwriting standards. |
| | **Quality Assurance/Quality Control**<br>The Trust's Program delivery team will monitor projects throughout construction. The delivery team will review invoices, conduct site visits and review design plans to ensure that each project is completed according to initial design specifications. If projects run over budget, the customer will be responsible for the overrun, placing the onus on private sector project managers to exert proper oversight over project costs. Upon project completion, the delivery team will conduct a site visit to confirm project savings. |
| **Program Evolution** | |
| Base Funding | Under the Base Funding scenario, the Trust proposes to continue allocating RGGI and SBC budgets at approximately the same levels as in the FY2013 budget, recognizing that the fixed funding level from the MPRP settlement will fall slightly consistent with the terms of the Settlement in that case. While the program design will remain essentially the same as in FY2013, in the Base Funding scenario Staff has assumed budget levels and savings projections to include a continuation of the Enhanced Finance initiative at a level of $5 million per year, in addition to the RGGI, SBC and MPRP allocations. |
| Additional Funding Scenario | Should the Trust receive a funding increase to capture all cost-effective energy efficiency in this sector, the Trust would ramp up account management. Ideally, the Trust would have account managers for every large customer in the state. These account managers would develop multi-year investment plans for each customer and negotiate incentives to capture all cost-effective energy efficiency at their facilities. |

**Program Name: SMALL BUSINESS DIRECT INSTALL PROGRAM - ELECTRIC**

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| Objectives | The majority of businesses across Maine are small businesses. Many business owners who want to save energy and money lack time and know-how to analyze options. Efficiency Maine will continue to reach out to these businesses through a turn-key Direct Install Program. |
| **Opportunity** | |
| Market | The program is targeted toward smaller C&I customers with a peak demand of 100 KW or less. Eligible customers include all non-residential customers, including commercial, industrial, municipal, non-profit, and institutional customers. There are more than 75,000 small business accounts in this target market. The initial focus of the program will be on the installation of energy efficient lighting measures. |
| Efficient Alternative | Lighting continues to offer significant savings opportunities in the small C&I sector. |
| Market Barriers | Market barriers for the small C&I sector include the up-front cost of the efficiency improvement, limited access to working capital, lack of information, and lack of technical expertise. |
| Program History | This program has been conducted as a Pilot Program in FY 2012-2013 with a $1M budget. Selection of the regions to pilot this program was based on utility data provided by the partnering electric utilities -- Bangor Hydro Electric Company, Maine Public Service Company, and Kennebunk Power and Light. The 100 KW cap was established so that sufficient data could be collected across a broad spectrum of Maine's small businesses, and to ensure there were enough potential participants in some of the less populated geographic areas of the state. The size cap will be evaluated as the pilot program progresses. The amount of project incentive was project specific and was tied to both the cost of the project and the projected energy savings. |
| **Program Design** | |
| Measures Promoted | Eligible measures include efficient lighting equipment and controls. During the pilot program, auditors will be collecting site specific data such as refrigeration, compressed air, and HVAC equipment in use for future program measures. |
| Implementation Strategy | The program is delivered through a program delivery contractor selected through a competitive bidding process. Through a turnkey program delivery model, the program consists of 4 elements:<br>1. Marketing and project identification complete with projected energy savings<br>2. Financing options including utility on-bill financing<br>3. Installation of the recommended measures<br>4. Quality assurance and quality control through on-site project verification. |

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| | **Marketing**<br>A multi-faceted customer acquisition plan will drive lead generation and direct sales to the small business customer. This program model offers the small business owner an initial free on-site lighting assessment, a proposal with recommended energy efficient lighting upgrades, and the installation of the energy efficient lighting measures. |
| | **Financing**<br>The cost of the project is partially covered by Efficiency Maine and the customer is offered the option of either financing the balance through their electric utility bill or paying the balance at the time of installation. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of projects. |
| **Program Evolution** | |
| Base Funding | Assuming the pilot program is successful and this program is continued, eligible measures will be expanded to cover a sub-set of those measures listed among the prescriptive measures offered through the Business Incentive Program. However, at a base funding level it is unlikely that the program can be offered simultaneously statewide; instead, the program will need to focus on geographically targeted markets for a period of time before moving to a new set of markets. |
| Additional Funding Scenario | With increased funding, the KW threshold may be modified to increase program participation and to make the program available statewide. In addition, the program will explore expanding the measure offerings to include refrigeration, HVAC, and site specific custom projects. |

**Program Name: COMMERCIAL NEW CONSTRUCTION PROGRAM**

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| Objectives | The Commercial New Construction Program is designed to provide support and incentives to participants for new construction and major renovation of commercial facilities. |
| **Opportunity** | |
| Market | The target market for this program are Maine owner-builders, developers, architects and engineers who are in the initial stages of either new construction or a major renovation project at a commercial building. |
| Efficient Alternative | In addition to the Commercial New construction energy efficient equipment incentives offered through the Business Incentive Program, Efficiency Maine offers technical guidance through the Maine Advanced Buildings Initiative. Maine Advanced Buildings was developed by the New Buildings Institute (NBI) and tailored to Maine by adapting the national guidelines to Maine's climatic zone, energy market and prevailing building styles. By following the Maine Advanced Buildings guidelines, new buildings will be designed to be 20-30% more energy efficient than the Maine Energy Code requires. |
| Market Barriers | Market barriers include lack of information regarding energy efficient alternatives and design, limited access to additional capital, and lack of technical expertise. |
| Program History | The Trust has offered Commercial New Construction incentives through the Business Incentive program since 2005. The Maine Advanced Building program was launched in 2009 using federal ARRA-SEP grant funds. With ARRA funds, the Trust was able to offer an incentive of $1.00 per square foot for participants who satisfied all of the necessary guidelines of the Maine Advanced Building program. It also enabled the program to take "credit" for non-electrical savings in the cost-effectiveness test. With the slow economy, the program experienced limited commercial new construction starts and significant "drop outs" who did not go through with the elements necessary to receive the incentive. |
| **Program Design** | |
| Measures Promoted | The Business Incentive program offers a suite of prescriptive commercial new construction incentives as well as a custom incentive track. Through the Maine Advanced Building program, Efficiency Maine offers technical advice in addition to incentives through the Business Incentive Program. |
| Implementation Strategy | The program is delivered through a program delivery contractor selected through a competitive bidding process. Efficiency Maine will continue to offer technical advice to the target community through the Maine Advanced Buildings program. |
| | **Technical Assistance**<br>The program delivery contractor will offer targeted technical assistance to customers with projects where the customer is able to invest the time and effort into project development. |

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| | **Financial Incentives**<br>The Trust will continue to offer incentives for eligible energy efficient equipment through the Business Incentive Program. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of projects. |
| **Program Evolution** | |
| Base Funding | FY14-FY16: The Trust will continue to offer technical advice and technical resources, including education and training about the benefits of pursuing best practices as described in the Maine Advanced Buildings guidelines. The Trust will also offer incentives for purchases of new, high-efficiency lights, equipment and controls as allowed by applicable funding sources through the Business Incentive Program, but is not likely to continue funding the per-square-foot incentive for projects meeting the MAB guidelines. |
| Additional Funding Scenario | Should the Trust receive a funding increase to capture all cost effective energy efficiency in this sector, the Trust would ramp up the technical assistance offerings to assist with the new construction projects. The program would also reinstitute incentives for full participation in the Maine Advanced Buildings program. |

**Program Name: RESIDENTIAL RETAIL PRODUCTS MARK DOWN PROGRAM- ELECTRIC**

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| Objectives | The goal of these programs is to promote the purchase of energy efficient electric products through the consumer retail channel. |
| **Opportunity** | |
| Market | The target market for these programs is all Maine residential consumers.<br><br>According to the 2010 US Census, there are 551,125 occupied residential homes (or apartment units) in Maine. The 2012 "Residential Lighting Program Evaluation" by The Cadmus Group found that the average home has 60 light bulb sockets which means that there are approximately 33 million residential light bulb sockets in Maine. The same study found that 76% of the sockets are standard screw-base sockets (as opposed to pin-based, or small screw based), suggesting that there are 25 million sockets that would benefit from efficient CFL or LED bulbs.<br><br>There are an estimated 16.5M target standard-base sockets that still have incandescent lamps in Maine homes.<br><br>Most lighting, appliances, and electronics products tend to be purchased as replacements. Efficient lighting is so economical (~6 month payback) that it makes economic sense to discard a working incandescent and install a CFL. However, this concept is so counterintuitive that this program only targets replace on burnout. One benefit is that this tends to drive replacement of the most used sockets first.<br><br>Supplemental heating systems and advanced power strips tend to be new purchases and can be purchased at any time. |
| Efficient Alternatives | • CFL's present a viable value proposition for indoor, non-dimming, standard socket bulbs. The offer a cheaper lifetime cost, fit well, and work well.<br>• LED's often are technically the best option in some sockets, but lack omni-directional capability in most lumen levels and cost considerably more in up-front purchase price than other options.<br>• ENERGY STAR-certified appliances, electronics and heating systems offer increased energy efficiency compared with products meeting minimum federal standards.<br>• Supplemental heating systems (ductless heat pumps, pellet stoves, wood stoves, and natural gas stoves) also offer significant energy savings over traditional units.<br>• Advanced power strips, though not eligible for ENERGY STAR certification, reduce phantom load of TV and PC peripherals by automatically shutting off power to them when the strip senses that the TV or PC has been powered off. These can be highly effective. |

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| Market Barriers | • For CFL's, first cost is the primary barrier, but concerns about mercury, delayed start, flickering, light color and fitting in fixtures also have been concerns. The program has demonstrated that first cost is the primary barrier.<br>• For LED's, first cost is also the primary barrier. Additional barriers are lack of omni-directional bulbs, appearance of the bulbs, fit in some sockets, and color of light.<br>• For appliances, first cost is the primary barrier.<br>• For heating systems, lack of information and first cost are both barriers. Too frequently, homeowners are not aware of efficient choices when a trade professional replaces an old unit with a similar (inefficient or incorrectly sized) new one.<br>• For advanced power strips, lack of information is the primary barrier. Very few retailers and fewer consumers understand the technology and it is difficult to expect a retailer to "assist the sale" for a low-priced product. |
| Program History | The Trust's Residential Lighting program has produced one of the highest penetrations of CFL's in the country. This program largely follows the national model with these additional best practices:<br><br>• Move from coupons to mark downs wherever possible to eliminate hassle<br>• Redirect all mass media advertising funds to price reduction<br>• Partner with food pantries to distribute CFL's (virtually identical costs as retail mark down)<br>• Co-merchandise with other EMT programs (Appliance Rebate Program participants were offered free CFL 6-packs)<br><br>Efficiency Maine also follows the common retailer rebate coupon approach for appliances. This has proven highly effective for appliances. |
| **Program Design** | |
| Measures Promoted | ENERGY STAR lighting, appliances, heating systems and electronics. |
| Implementation Strategy | **Marketing**<br>All marketing is in-store, "point of purchase" (POP) based on the learning that consumers aren't motivated to buy something as mundane as light bulbs by traditional mass media. It is more cost effective to target a consumer who is planning to make a purchase and convince them to buy an efficient product than it is to try to motivate someone to purchase something they're not currently interested in. The program is delivered through a program delivery contractor selected through a competitive bidding process. The program delivery team field representatives install and maintain all POP. |
| | **Education and Training/Workforce Development**<br>Field representatives conduct thousands of in-store trainings either via 1-on-1 conversations or by staffing demonstration tables to train consumers and store |

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| | personnel. |
| | **Technical Assistance**<br>In addition to in-store education and training, Efficiency Maine maintains technical information on its website to help consumers select the right product and store for their needs. The website also contains information about where CFLs can be properly recycled once they have burned out. |
| | **Financial Incentives**<br>Mark Down - Efficiency Maine enters into memorandums of understanding (MOU) with large retailers that promise to pay a fixed rebate to the store if it sells the product at an agreed upon discount to the non-program price.<br><br>In-Store Coupons - Smaller retailers who do not have the point-of-purchase systems to track and report marked down sales are reimbursed for submitting in-store coupons. The purchase is discounted at the time of purchase.<br><br>Mail-In Coupons – for larger items, such as appliances, consumers make the purchase, pay full price, and then mail a rebate claim form to Efficiency Maine. The Trust then mails a rebate check to the participant. |
| | **Quality Assurance/Quality Control**<br>Field representatives visit every big box store weekly to compare prices with the MOU and ensure POP materials are being used. |
| **Program Evolution** | |
| Base Funding | FY2014: Continue adding products and evaluating incentive amounts.<br><br>FY2015: The Trust will consider adjusting rebates for a given product based on its savings to maximize savings per rebate dollar. For example, the Trust will consider giving a higher rebate for the purchase of refrigerators meeting the very highest standards of efficiency, and more modest rebate for models that simply achieve the EnergyStar standard.<br><br>FY2016: Continue to evaluate measures, rebate amounts and efficiency within a given product line. |
| Additional Funding Scenario | • Allocate $2.5M/year to expand the appliance program<br>• Allocate $6M/year for a more complete appliance, heating system and electronics program<br>• Allocate $1.1M/year for distribution of CFLs to LILHEAP's 60,000 families, providing 6 CFL's each at a cost of $3/CFL.<br>• Allocate $1.2M/year increase to the Good Shepherd Food Bank to reach low income families<br>• Allocate $1M/year to find additional CFL distribution channels (fuel dealers, grass roots organizations, faith groups, non-profits, senior centers, etc.) |

**Program Name: RESIDENTIAL LOW INCOME PROGRAM - ELECTRIC**

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| Objectives | The objective of this program is to deliver cost-effective energy efficient measures and services to LIHEAP-eligible households in Maine. |
| **Opportunity** | |
| | This program targets inefficient electricity use by families eligible for Low Income Home Energy Assistance Program ("LIHEAP" or "Fuel Assistance"). These families do not need to be participating in LIHEAP, just eligible. It is estimated there are 120,000 eligible households (60,000 participating in LIHEAP, plus 60,000 in utility-paid subsidized housing or are otherwise eligible, but not participating).<br><br>Any cost-effective electric energy efficiency measure is eligible: lighting, appliances and electronics and high-efficiency upgrades to electric space and water heating. Whole house weatherization is also eligible for electrically heated single-family and multi-family homes. The current program focuses on multifamily weatherization and includes measures such as envelope improvements and the installation of heat pumps. |
| Efficient Alternatives | Because space heat comprises approximately 80% of residential energy use, focusing on ways to save heat or make it more efficiently in electrically heated homes is a high priority. The Trust also will include ways of encouraging the purchase of energy efficient appliances, electronics and electric water heaters with these households. |
| Market Barriers | The market barriers for this program are similar to those for other residential customers, but are more pronounced due to the lower income or asset levels experienced by most LIHEAP eligible households. These barriers include:<br>• First cost<br>• Lack of Information<br>• Lack of access to capital |
| Program History | The Trust has been running a highly successful retail markdown residential lighting program since 2004 and has recently begun a partnership with the Good Shepherd Food Bank to distribute CFL's at food pantries. The Trust also started a low-income, electric heat, multi-family weatherization program in January 2012 that considers all relevant efficiency measures. |
| **Program Design** | |
| Measures Promoted | The Trust's Low Income Program looks at all electric measures in a home. The most common measures are: building envelope air sealing and insulation, heat pumps, and lighting upgrades. |
| Implementation Strategy | **Marketing**<br>This program targets USDA-RD, HUD and Housing Authority building owners and |

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| | managers. The program is delivered through a program delivery contractor selected through a competitive bidding process. |
| | **Education and Training/Workforce Development**<br>The building energy audit, project bid and award, and project oversight is done by EMT's delivery team. All installation work is bid out to Participating Energy Advisors and PACE Registered Vendors. |
| | **Technical Assistance**<br>All technical assistance is provided by EMT's delivery team. |
| | **Financial Incentives**<br>The program covers 100% of all costs of the efficiency project including the audit, project management, project materials, and installation costs. |
| | **Quality Assurance/Quality Control**<br>The Delivery Team inspects all jobs on-site before and after the upgrade. |
| **Program Evolution** | |
| Base Funding | FY2014: Continue current program<br>FY2015 and 2016: Continue program and begin planning for a follow-on program once all electrically heated LIHEAP-eligible homes have been treated. The Trust will explore shifting the program toward promotion of higher efficiency, low-end appliances and electronics commonly used in low-income homes, and assess prospects for building upon the successful experience of reaching low income customers through the retail mark-down strategy at big box and hardware stores for the residential lighting program. |

**Program Name: RESIDENTIAL LOW INCOME PROGRAM – NATURAL GAS**

<table>
<tr><td>Objectives</td><td>The Low Income Gas Program objective is to provide funding for the installation of high efficiency natural gas space and water heaters in low income homes where Unitil gas lines are plumbed into the residential building.</td></tr>
<tr><td colspan="2">Opportunity</td></tr>
<tr><td>Market</td><td>The target market for this program includes all low income residential properties in Unitil natural gas territory, with a particular focus on multi-family units due to the lower transaction costs to treat multiple units. More than 90% of residential buildings have cost-effective weatherization opportunities which would be encouraged to occur at the same time as heating system upgrades to further maximize savings and the opportunity to make improvements.<br><br>Most Maine homes can benefit from targeted air sealing, increases in attic, wall and basement insulation, space and water heating system upgrades, and efficient lighting upgrades. In order to meet cost-effectiveness criteria, the Trust will seek out more to low-cost opportunities, including new construction or major renovation/replacement on burnout opportunities, and low-cost methods of delivery, so long as the price of natural gas stays near its recent historic lows.</td></tr>
<tr><td>Efficient Alternative</td><td>The following is a list of the most commonly installed high efficiency natural gas space and water heating equipment:<br><br>
<table>
<tr><th>End Use</th><th>Typical measure</th><th>Incentives and Finance</th></tr>
<tr><td>Natural Gas Space Heater</td><td>20K to 60K Btu direct vent space heater with AFUE efficiency exceeding 84%.</td><td rowspan="3">Low Income Natural Gas Program Rebates of up to $2,500 are available toward the installation of high efficiency natural gas space and water heating technologies.<br><br>Micro-loans may also be made available for low income participants to increase funding availability for projects with a larger scope that may include basic air sealing and insulation work.<br><br>Participants are also eligible for Residential</td></tr>
<tr><td>Natural Gas Instantaneous Water Heater</td><td>Wall mounted direct vent water heater providing hot water on demand and possibly heat depending on sizing and home heating distribution configuration.</td></tr>
<tr><td>Natural Gas Condensing Boiler</td><td>ENERGY STAR furnaces and boiler upgrades. Efficient space heating utilizing natural gas through conventional and existing heat distribution systems.</td></tr>
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| | | | Direct Install Incentives for completing air sealing in conjunction with a BPI energy audit. |
| Market Potential | Upgrade of heating systems in all low-income properties in Unitil territories currently estimated to be 1000 units. | | |
| Market Barriers | Market barriers for the Residential Low Income natural gas heating sector include the upfront cost of the heating system upgrade, access to financing and capacity to meet underwriting standards, and a lack of information. | | |
| Program History | Low Income Program efficiency funding was formerly used for weatherization of multi-family residential properties in Unitil territory. Previous programs were administered directly by Unitil. | | |
| **Program Design** | | | |
| Measures Promoted | Eligible measures include efficient space heaters, instantaneous water heaters, upgraded ENERGY STAR boilers and furnaces. | | |
| Implementation Strategy | **Marketing**<br>Program participation will be driven by direct mailings to Unitil customers as well as informational packages sent to General Assistance Program officers at municipalities and Community Action Programs within Unitil territories. | | |
| | **Education and Training/Workforce Development**<br>Information about the availability of funds for low income gas heated residential properties will be conveyed during monthly webinars and technical training for participating contractors held throughout the year. This includes opportunities for feedback on program design and opportunities for improvements to program delivery. Training on technical topics and sales training are encouraged with the contractor community to enable them to provide better information about weatherization and efficient heating to low income residents. | | |
| | **Technical Assistance**<br>Efficiency Maine will offer technical assistance to contractors and residents as needed. Each project that is financed through Efficiency Maine programs is reviewed for validity as it relates to best practices and projected savings. | | |
| | **Financial Incentives**<br>Payment of $2,500 per residential property will allow program participation upgrading heating systems in approximately 75 low-income units per year using Base funding levels. | | |

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| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of projects. |
| **Program Evolution** | |
| Base Funding | The program will continue to seek means of expanding the availability of weatherization and heating efficiency upgrades for Low Income natural gas customers, increasing opportunities for underserved segments of the population, and avenues to weatherize all residential properties in the state in coming decades. |
| Additional Funding Scenario | Additional funding will enable the program to expand and assist additional low-income natural gas participants in direct proportion to the increase in the funding. |

**Program Name: RESIDENTIAL WHOLE HOME IMPROVEMENT PROGRAM (INCLUDES NATURAL GAS)**

<table>
<tr><td>Objectives</td><td>The Home Energy Savings Program (HESP) is the umbrella program for all residential weatherization and home based energy efficiency activities. HESP leverages available funding for weatherization financing and incentives to encourage Maine residents in all income sectors to engage in projects that will reduce whole home energy consumption in a manner that is safe, durable and cost-effective. Residential activities are significantly bolstered by awareness campaigns, online tools, and the network of energy contractors practicing best weatherization industry practices.</td></tr>
<tr><td colspan="2">Opportunity</td></tr>
<tr><td>Market</td><td>The target market includes all residential properties with 1 to 4 living units, including all income levels in all regions of the state. There are approximately 550,000 existing residential properties in the state, and more than 90% of residential buildings have cost-effective weatherization opportunities.<br><br>Most Maine homes can benefit from targeted air sealing, increases in attic, wall and basement insulation, space and water heating system upgrades, and efficient lighting upgrades.</td></tr>
<tr><td>Efficient Alternatives</td><td>The following is a list of the most commonly installed weatherization measures, recommended technologies, and incentives offered:<br><br>
<table>
<tr><th>End Use</th><th>Typical measure</th><th>Incentives and Finance</th></tr>
<tr><td>Air Sealing</td><td>Basement sill joints, plumbing and chimney penetrations, air distribution ducts, attic hatches and wall junctions, insulating shim spaces around door and window frames.</td><td rowspan="3">FY 2013 program design provides for a Residential Direct Install (RDI) incentive of $600 toward initial costs of air sealing and insulation as recommended by a home energy assessment. Unitil participants receive an additional $300 for an RDI project.<br><br>PACE loans will provide up to $15,000 at 4.99% over 15-year terms for weatherization projects that are projected to save more than 20% of whole home energy consumption.</td></tr>
<tr><td>Insulation</td><td>Loose- and dense-pack cellulose in attics and wall spaces. Spray and rigid foam insulation in crawl spaces, basements, and knee walls.</td></tr>
<tr><td>Space Heating</td><td>ENERGY STAR furnaces and boiler upgrades. Efficient space heating utilizing pellets, natural gas, and air source heat</td></tr>
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<tr><td></td><td>
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<tr><td></td><td>pumps.</td><td rowspan="3">PowerSaver loans provide up to $25,000 for eligible energy measures for terms of up to 25 years on single-family owner occupied dwellings.<br><br>Participants of RDI are eligible for unsecured PowerSaver loans up to $7,500 for any eligible energy upgrade from insulation to heating equipment replacement.</td></tr>
<tr><td>Water Heating</td><td>Elimination of tankless coils and boilers without cold start capability. Upgrade to ENERGY STAR instantaneous water heaters and heat pump water heaters where applicable. Installation of pipe insulation and tank wrap.</td></tr>
<tr><td>Renewable Energy</td><td>Cost-effective solar electric PV and solar hot water and air systems installations.</td></tr>
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</td></tr>
<tr><td>Market Barriers</td><td>Market barriers for the residential weatherization sector include the upfront cost of the efficiency improvement, access to financing and capacity to meet underwriting standards, lack of information, and lack of technical expertise in broader trades.</td></tr>
<tr><td>Program History</td><td>The Home Energy Savings Program was initiated in 2010 with a $10M ARRA-SEP grant providing rebates toward the completion of 3,200 homes. Since the incentive budgets for rebates were fully expended, PACE financing has funded more than 250 weatherization projects with an average cost of $12,800. The Residential Direct Install (RDI) initiative, which provides basic air sealing as a tool for marketing more loans for weatherization, has been funded using ARRA funds in FY2013.</td></tr>
<tr><td colspan="2">Program Design</td></tr>
<tr><td>Measures Promoted</td><td>Eligible measures include efficient lighting, ENERGY STAR boilers and furnaces, efficient space heating, insulation and air-sealing of building envelopes. Cost-effective renewable energy measures including solar hot water, solar electric PV and solar hot air panels are eligible to be included in projects.</td></tr>
<tr><td>Implementation Strategy</td><td>Marketing<br>The Efficiency Maine network of Participating Energy Advisors and Registered Vendors comprises over 350 contractors, vendors, suppliers, and energy professionals who have been trained to provide support to homeowners interested in engaging in weatherization projects to be more comfortable in their homes and save energy. Energy advisors provide recommendations to homeowners allowing them to make informed choices about the measures they</td></tr>
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| | want to include and can afford to include in projects. Efficiency Maine established online zip code-driven advisor and contract finder tools to enable homeowners to easily locate local weatherization professionals.<br><br>In addition to program-specific information, the loan program webpage also provides actual customer case studies in order to share project information, and access to an online loan application.<br><br>Marketing efforts include TV and radio campaigns, print advertising, web ads and search engine optimization, local informational forums, and brochure insertion into property tax bill mailings in participating municipalities. |
| | **Education and Training/Workforce Development**<br>Monthly webinars and technical training for participating contractors are held throughout the year. This includes opportunities for feedback on program design and opportunities for improvements to program delivery. Training on technical topics and sales training are encouraged with the contractor community to enable them to provide better information about weatherization to homeowners. |
| | **Technical Assistance**<br>Efficiency Maine offers technical assistance to weatherization contractors and homeowners as needed. Each project that is financed through Efficiency Maine programs is reviewed for validity as it relates to best practices and projected savings. |
| | **Financial Incentives**<br>The interest rates on PACE and PowerSaver loans are effectively subsidized by the availability of federal funds to help administer and market the loans. Other than the funding for Unitil's natural gas customers and the remaining federal ARRA funds being used to promote RDI, there are no revenues available to continue providing financial incentives for weatherization unless RGGI revenues increase during this Triennial Plan period and funds from that are directed to home weatherization. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of a sampling of projects. |
| **Program Evolution** | |
| | The program continues to seek means of expanding the weatherization workforce statewide, increasing opportunities for underserved segments of the population, and avenues to weatherize all residential properties in the state in coming decades. In FY2014-16, the program will begin to offer incentives for energy efficient heat and water heating equipment for Unitil's natural gas customers. |

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| Additional Funding Scenario | Grant funding will continue to be sought for the continuation of activities over time. The Energy Efficiency Revolving Loan Fund, initially capitalized in 2011 with ARRA funds, will continue to be managed with the intent to maintain sustainability to meet all program objectives.<br><br>At a stakeholder workshop on the subject of this program's future, the following straw proposal was discussed:<br><br><u>Target Market:</u><br>Of a universe of 550,000 homes (2010 census), assume 450,000 homes still need weatherization starting in FY2014.<br>▪ assume 100,000 (+/- 20%) are already sufficiently weatherized (from recent new construction or recent retrofit)<br>▪ serve all, regardless of condition; assume 0% are considered "walkaway" or "tear down"<br>▪ assume 20% (90,000) are low income<br><br><u>Objective:</u><br>Weatherize 40,000 homes during the period of Triennial Plan 2 and ramp up to the levelized annual rate of weatherization (25,000/year) needed to complete 450,000 homes by 2030. Assume:<br>▪ 18 years to target date (2030)<br>▪ 450,000/18 = 25,000 (which is the steady state rate of weatherizations per year in Maine needed to reach 450,000 units by 2030)<br>▪ Assume ramp up to 25,000/yr level by Year 3 of Triennial Plan 2<br>o Yr 1 – 5,000/yr<br>o Yr 2 – 10,000/yr<br>o Yr 3 – 25,000/yr<br>o Triennial Plan 2 Total – 40,000 homes Wx<br><br><u>Program Design</u><br><br>Establish a new definition of "weatherized" or "basic weatherization":<br>▪ full air sealing (10 hours)<br>▪ insulation in attic (R-49 is code)<br>▪ insulation of sills<br><br>Workforce Development<br>▪ Estimated savings from air sealing and insulation of attic and sill in avg. Maine home is > 20%<br>▪ 5,000-7,000 contractors needed by Year 3 (assuming 5-7 times increase in contractor capacity needed)<br>▪ Rely on existing training capacity at Community Colleges<br><br>Collect data and customer contact info on before and after |

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| | <u>Costs during Period of Triennial Plan 2</u><br>Total Cost = $64 million<br>▪ $32 million<br>o $1000 incentive/unit for non-low-income units x 32,000 units<br>o Assumes customer co-payment of a minimum of $2,000 for a full project cost of $3,000 to perform 10 hours of basic air sealing, attic insulation to R-49, and sill insulation, plus data collection and QC<br>▪ $24 million<br>o $3,000 total cost/unit to weatherize low-income units, as described above, x 8,000 units (20% of total 40,000 objective)<br>▪ $8 million for program delivery, marketing and administration<br>o Assumes $200 delivery and administration costs/unit |

**Program Name: RENEWABLE REBATE PROGRAM**

<table>
<tr><td>Objectives</td><td>The Renewable Resource Fund provides rebates and grants for the promotion and development of cost-effective renewable energy technologies. This program provides rebates for residential and commercial properties that provide simple payback to end users for the amount of energy projected to be produced from the installation. Rebate levels are currently structured to purchase solar and wind power at a rate of $0.025 per kWh over the expected life of the equipment. Only grid-tied installations that are expected to provide a simple payback over a 20-year expected life are eligible for rebates. Installers of each technology must demonstrate appropriate levels of insurance and NABCEP recognized training. Quality assurance is conducted on at least 15% of all projects to verify that best practices for installation are being followed. Grants are periodically offered through competitive solicitation to community energy demonstration projects and for R&D projects at institutions in the University of Maine System.</td></tr>
<tr><td colspan="2">Opportunity</td></tr>
<tr><td>Market</td><td>More than half of the residential and commercial buildings in the state may benefit from the installation of solar hot water, solar hot air and solar PV panels. The cost of solar equipment has dropped significantly in the past three years to the point that, when federal and state incentives are included, end users are, on average, seeing return on investment within 8 years on solar hot water systems, and 11 years on solar electric systems. With life expectancy exceeding 20 years, homeowners and businesses can hedge their energy costs over the long term and reduce carbon emissions at the same time.</td></tr>
<tr><td>Efficient Alternatives</td><td>The following is a list of the most commonly installed weatherization measures, recommended technologies, and incentives offered:
<table>
<tr><th>End Use</th><th>Typical measure</th><th>Incentives and Finance</th></tr>
<tr><td>Solar Hot Water</td><td>Average project costs $10K to $12K. Typically designed to provide approximately 70% of the water heating load of a typical home or business with hot water demand.</td><td rowspan="3">For cost-effective installations of renewable energy equipment where the end user is projected to receive a simple payback on net installation costs with energy generated over the life of the equipment, rebates are available. Rebates are based on projected production of kWh equivalent on an annual basis.</td></tr>
<tr><td>Solar Hot Air</td><td>Low technology commercial and residential panels reduce heating needs on every sunny day by approximately 1 gal annually per square foot of installed panel.</td></tr>
<tr><td>Solar Electric PV</td><td>Solar electric PV panels</td></tr>
</table></td></tr>
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| | | generate approximately 1,400 kWh annually in Maine per kW installed. | |
| | Wind Turbine | For select locations with access to reliable wind, micro-turbines can be an effective way to offset electricity costs. The reduced cost of PV panels has impacted the number of installations of small turbines nationally. | |
| | | | |
| Market Potential | Potential for cost-effective renewable energy technologies to be incorporated into most homes and businesses in the state reducing grid demand and fossil fuel dependence | | |
| Market Barriers | Market barriers for renewable energy technologies include the upfront cost of the improvement, access to financing and capacity to meet underwriting standards, lack of information, and lack of technical expertise in broader trades. | | |
| Program History | Efficiency Maine has provided rebates for roughly 400 to 500 installations of renewable energy technologies per year for the past 8 years. | | |
| **Program Design** | | | |
| Measures Promoted | Cost-effective renewable energy measures such as solar hot water, solar electric PV and solar hot air panels. | | |
| Implementation Strategy | **Marketing**<br>The program is delivered through a contractor selected through a competitive bidding process.<br><br>The Efficiency Maine network of Participating Energy Advisors and Registered Vendors is comprised of over 350 contractors, vendors, suppliers, and energy professionals who have been trained to provide support to homeowners interested in engaging in weatherization projects to be more comfortable in their homes and save energy. Energy advisors provide recommendations to homeowners allowing them to make informed choices about the measures they want to include and can afford to include in projects. Efficiency Maine established online zip code-driven advisor and contract finder tools to enable homeowners to easily locate local weatherization professionals.<br><br>In addition to program specific information, the loan program webpage also provides actual customer case studies in order to share project information, and access to an online loan application.<br><br>Marketing efforts include TV and radio campaigns, print advertising, local | | |

| | |
|---|---|
| | informational forums, and brochure insertion into property tax bill mailings in participating municipalities. |
| | **Education and Training/Workforce Development**<br>Monthly webinars and technical training for participating contractors are held throughout the year. This includes opportunities for feedback on program design and opportunities for improvements to program delivery. Training on technical topics and sales training are encouraged with the contractor community to enable them to provide better information about weatherization to homeowners. |
| | **Technical Assistance**<br>Efficiency Maine offers technical assistance to weatherization contractors and homeowners as needed. Each project that is financed through Efficiency Maine programs is reviewed for validity as it relates to best practices and projected savings. |
| | **Financial Incentives**<br>Financial incentives will continue to be offered where needed to stimulate best practices and program activity and as funding is available. |
| | **Quality Assurance/Quality Control**<br>The program has an established QA/QC process. This includes site inspections of projects. |
| **Program Evolution** | |
| Base Funding | The Program continues to seek means of sustaining the residential and small commercial renewable energy technology installation industry in Maine in light of dwindling renewable rebate funding. |
| Additional Funding Scenario | Grant funding will continue to be sought for the continuation of activities over time. The Energy Efficiency Revolving Loan fund will continue to be managed with the intent to maintain sustainability to meet all program objectives. |

# CROSS-CUTTING STRATEGIES

**Program Name: ENERGY EDUCATION AND INFORMATION**

This section describes the Trust's strategy for Energy Education and Information, as well as overall strategy for organization-wide marketing and communications.

**Program Objectives**
In its overall communications initiatives, Efficiency Maine aims to:

- Help achieve and communicate Triennial Plan goals by providing accurate information about energy efficiency
- Help Mainers recognize opportunities to save energy at home and at work
- Mobilize Mainers to make greater efficiency measures at home and work (provide ability to use or act upon information)
- Motivate consumers to take action through Efficiency Maine programs

**Opportunity**
Above all, Efficiency Maine is trying to reach customers who are considering the purchase of new lighting, appliances, electronics, equipment or systems that consume energy. This includes customers who may be considering retrofitting older equipment that still works but could be cost-effectively retired before the end of its useful life. Through the Energy Education and Information program, Efficiency Maine will provide information that targets specific sub-sectors in a way to help boost energy savings through increased participation in Efficiency Maine programs and increased awareness of energy efficiency generally.

One of the major barriers to energy efficiency is a lack of information about energy-saving measures, and misinformation in the minds of homeowners, business owners, and ratepayers that energy efficiency is cost-prohibitive, limited in scope, and generally inconvenient. Furthermore, for Maine homeowners, a common misconception is that energy efficiency is largely intuitive, i.e., do-it-yourselfers can "solve" most problems on their own, using weather-stripping, duct tape, and pipe wrap.

**Program Description**
Through its education, information, and marketing programs, Efficiency Maine seeks to mobilize Maine residents and business owners in a common purpose: To achieve greater energy efficiency at home and at work, demonstrating the real and ongoing savings opportunities that can be realized through a wide array of energy-saving measures. In addition, messaging also promotes the positive impact on home comfort that can be achieved through energy efficiency, and the positive impact on operating budgets and job creation for small businesses and commercial enterprises.

The "Save Like a Mainer" campaign strategy launched in 2011 highlights "real" Maine people, communities, and businesses that have undertaken successful energy efficiency initiatives to show that efficiency is achievable, beneficial, and attractive, saving participants energy and money. The campaign taps into the pioneering spirit that characterizes the state.

Through initiatives such as the *Save Like a Mainer* campaign, energy efficiency is conveyed as a reflection of the state and its people in using energy wisely so that its businesses can remain competitive and homes can be made comfortable and cost less to maintain. The Trust's education and information programs are punctuated by proof points of specific savings due to specific actions that provide the necessary rational motivators to "close the sale." This campaign seeks to resonate as helpful and inspiring because it shows through examples how Mainers can save like their friends, families, business associates and neighbors. *Save Like a Mainer* serves as guide for every customer in Maine, illustrating that there is an opportunity to take control of energy costs by making smart purchasing decisions, and in so doing to lower the costs to operate the grid, to help the environment, and to promote energy independence.

During the period of Triennial Plan 2, Efficiency Maine seeks to build on the continued momentum of this energy awareness campaign, cultivating a culture of conservation, and looking for new opportunities to increase its educational outreach to various audiences via seminars, symposia, and forums, as well as through social media, website and digital technologies, and other vehicles that make our programs and information accessible to Mainers statewide.

The *Save Like a Mainer* platform celebrates the state's diversity and the pride Mainers feel being part of this state, while positioning efficiency as a desirable behavior because it:

- Creates a more comfortable home and a more productive workplace;
    - Enables lower energy bills, which increases discretionary income, consumer savings, business profitability and investment into the Maine economy
    - Lowers the price we all pay for peak power and for transmission and distribution capacity
- Creates jobs, improving the local economy and individual consumer/business financial stability
- Leads Maine toward energy independence through less dependence upon foreign oil
- Improves the quality of life through a more stable economy and improved environment

The Key Messages of Efficiency Maine programs are to:

- Help Maine consumers save money through the increased use of energy efficiency
- Help make Maine businesses stronger/more profitable
- Create/retain Maine jobs
- Promote investment in Maine's business infrastructure
- Fuel the Maine economy by increasing discretionary income
- Decreases Maine's energy demand, which lowers energy rates for all Mainers

Efficiency Maine also will pursue new information and communication channels related to the advent of Smart Meters, at-home energy dashboards, and other consumer energy interface devices for commercial and residential customers

Efficiency Maine will also take advantage of newfound access to utility data about customer usage, geographic location, etc. and seek to collaborate with partners whenever possible to explore ways to use this information to create and sustain programs tailored to customers through more precise knowledge of their energy usage and habits.

**Performance Metrics**

The following measurement tools will be considered when gauging the success of an initiative:

- Web hits: number of unique visitors, time, bounce rate, frequency
- Customer success stories in the media
- Media placement in broad geographic diversity (frequency and reach)
- Survey instrument
- Program Participation rates

**Program Evolution**

<u>Base Funding</u>

A. Web site redesign
B. Increase social media presence
C. Produce promotional materials focusing on awareness of energy efficiency, energy audits, and home weatherization
D. Produce booklet on energy efficiency in Maine
E. Offer informational sessions statewide in the form of symposia, seminars, and other forums
F. Support program marketing (e.g., trade shows, promotional brochures, etc.)

<u>Additional Funding Scenario</u>

A. Produce long-format video on energy efficiency for homeowners
B. Produce long-format video on energy efficiency for businesses
C. Enhanced web site offerings, including video
D. Enhanced You Tube channel offerings
E. Consider production of major statewide energy efficiency awareness event
F. Explore ways to better capitalize upon new customer interface technology with utility data, i.e., smart meters, digital home energy dashboards, etc.

G. Enhanced development of customized Facebook page, with assigned outsourcing of regular postings, etc.
H. Develop phone app for energy efficiency

**Program Name: ANALYSIS AND EVALUATION**

Objectives

The Research Strategy encompasses a variety of activities that involve the systematic collection and analysis of data relating to the Trust's programs and key energy efficiency issues. This strategy supports program delivery, accountability, and ongoing improvement through: strategic analysis of program design and implementation; measurement and verification of energy savings and related impacts; cost-effectiveness analysis; benchmarking outcomes to goals and targets, and assessment of energy efficiency markets and opportunities. Research activities are data driven and rely heavily on program data maintained by the Trust (see Database Strategy), as well as primary and secondary data collected through research efforts. In turn, research activities produce key data to inform the Trust's short- and long-term program planning and delivery decisions and to meet reporting requirements.

Program Design

1. Component Activities

The Research Strategy includes the following key activities:

- *Program Evaluation & Market Research.* In fulfillment of statutory requirements, at least once every 5 years, the Trust conducts an independent evaluation of programs with an annual budget over $500,000. Evaluations typically include process, impact, and cost-effectiveness components. The Trust also conducts market research to assess energy efficiency baselines and opportunities.
- *Forward Capacity Market Analysis and Reporting.* As a participant in the ISO New England (ISO-NE) Forward Capacity Market, the Trust completes specific analyses and reports, including demand resource qualification packages, measurement and verification (M&V) plans, monthly performance reports, and annual certifications of compliance with M&V Plans.
- *Technical Reference Manuals.* The Trust maintains Technical Reference Manuals (TRMs) that document the methods and assumptions used in calculation of energy and demand savings.
- *Research Forums.* The Trust participates in selected regional and national forums, contributing to data collection and participating in joint research studies.
- *Ad-hoc research and analysis.* The Trust performs in-house targeted research and analysis of discrete issues and questions on an as-needed and ongoing basis.

2. Research Agenda

a. Planned Activities FY14-16

- *Program Evaluation and Market Research*

  - *Program Evaluation.* During FY2014-2016, the Trust will conduct independent evaluations of its major programs. The Trust expects to issue RFPs during FY2013 to select evaluators for the residential and business sectors, respectively. Programs most likely to be evaluated during this period include*:*
    - Residential: low-income weatherization, appliances, and lighting.
    - Business: multi-family retrofit, business incentive, and large customer*.*
  - *Market Research.* During FY2016, the Trust expects to conduct a study of energy efficiency market baselines and opportunities in preparation for the third Triennial Plan.
  - *Evaluation Advisors.* The Trust will explore the creation of a small Evaluation Advisory Group to provide input in the review of proposals and generally advise on the conduct of program evaluations.
- *Forward Capacity Market.* Throughout the 3-year period, the Trust will complete the various analyses, documentation and reports required for its demand resources in the FCM. The Trust will contract with an independent third party to complete the required annual verification of compliance with the M&V Plan.
- *Technical Reference Manuals.* The Trust plans to issue updated versions of its TRMs at least once per year. These updates will incorporate new measures as well as new results from program evaluations and other relevant research. The Trust intends to contract for technical support for the review and updating of the TRMs.
- *Research Forums.* The Trust expects to continue its participation in the Northeast Energy Efficiency Partnerships (NEEP) Evaluation, Measurement and Verification Forum (EM&V Forum) and the Consortium on Energy Efficiency's (CEE) Evaluation Committee. Other opportunities will be reviewed on a case-by-case basis.
- *Ad hoc research and analysis.* The Trust will continue its practice of conducting targeted research and analysis to support program design and delivery and to respond to requests for data.

**Program Evolution**

<u>Additional Funding Scenario</u>

If additional funding became available, the Trust would expand the scope of the program evaluation and market research activity in order to complete additional projects or augment the scope of planned projects.

**Program Name: DATABASE**

Objective

To enhance the capacity of the Trust's database so that it can more effectively track all efficiency projects funded by the Trust, accurately measure energy savings, maintain confidential treatment of customer information, easily generate reports, and be maintained and operated by Trust Staff.

Opportunity

The Database Strategy provides a critical foundation for the Trust to deliver its programs and report program results. This strategy encompasses all activities to develop and maintain information technology solutions for the entry, storage, analysis and reporting of program data. The Database Strategy is truly cross-cutting, supporting the diverse array of programs across the Trust's portfolio as well as multiple activities across the lifecycle of each program, including program design, implementation and delivery, management and oversight, analysis, and reporting and evaluation.

Historically, the Trust maintained separate databases for each of its programs. In large part, these databases evolved independently and varied in format and sophistication. During the first Triennial Plan period, the Trust initiated a significant effort to upgrade and transform its databases into a unified system that supports multiple programs with standardized internal processes, features and quality. This initiative builds on the foundation of the successful Efficiency Maine Reporting and Tracking (effRT) database system that historically supported the Business Programs to create a new multi-program database effRT 2.0. For component programs, effRT 2.0 captures data on program participants, workflow processes, efficiency measures installed, and project sites and enables streamlined calculation of energy and demand savings, cost-effectiveness and other metrics.

effRT 2.0 provides enhanced features for program management including a universal dashboard with real-time statistics, a configuration module to capture program incentives, savings calculation rules and other program-specific features, as well as budget management and forecasting. It also provides comprehensive program reporting capabilities, through standardized "one-click" reports, recurring reports for program managers, an ad-hoc reporting module, and an on-line benefit/cost modeling tool.

Program Design

The Trust will continue to build upon effRT 2.0 to take advantages of cost savings from streamlining administrative functions and automating processes. The platform will continue to support the Trust's reporting and project activity tracking. In addition, it will continue to support the Trust's participation in the Forward Capacity Market by accurately reporting incremental capacity savings on a monthly basis. Improvements to effRT 2.0 will also enhance the Trust's forecasting ability.

# 5. Budget Allocations and Performance Metrics

## A. Base Funding Scenario

### i. Three-Year Summary

**Trienial Plan -- Base Assessment Budget Allocation and Performance Metrics -- 3-Yr Summary**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
|---|---|---|---|---|---|---|---|
| Residential Markdown | 169,143,521 | 1,526,962,069 | 19,521,130 | 646,311 | 136,833,865 | $0.013 | 6.78 |
| Low Income Weatherization | 7,688,715 | 134,552,521 | 6,404,700 | 0 | 11,968,589 | $0.048 | 1.87 |
| Business Programs | 98,107,881 | 1,199,716,116 | 25,115,618 | 17,649,879 | 115,191,102 | $0.021 | 2.69 |
| Large Customer Program | 133,117,540 | 1,730,528,020 | 19,967,631 | 29,823,731 | 152,578,553 | $0.012 | 3.06 |
| Cross-Cutting | 0 | 0 | 2,553,639 | 0 | 0 | | - |
| Administration | 0 | 0 | 7,058,571 | 0 | 0 | | - |
| Total | 408,057,657 | 4,591,758,726 | $ 80,621,288 | $ 48,119,920 | $ 416,572,109 | $0.018 | 3.24 |

### ii. Individual Budgets and Results for FY 2014, 2015 and 2016

**FY 2014**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
|---|---|---|---|---|---|---|---|
| Residential Markdown | 56,147,054 | 396,997,400 | $6,202,655 | $272,342 | $35,513,555 | $0.016 | 5.48 |
| Low Income Weatherization | 2,562,905 | 44,850,840 | $2,134,900 | $0 | $3,989,530 | $0.048 | 1.87 |
| Business Programs | 29,902,512 | 365,664,052 | $7,655,043 | $5,379,544 | $35,109,343 | $0.021 | 2.69 |
| Large Customer Program | 44,372,513 | 576,842,673 | $6,655,877 | $9,941,244 | $50,859,518 | $0.012 | 3.06 |
| Cross-Cutting | | | $851,213 | | | | - |
| Administration | | | $2,352,857 | | | | - |
| Total | 132,984,984 | 1,384,354,966 | $ 25,852,545 | $ 15,593,130 | $ 125,471,946 | $0.019 | 3.03 |

**FY 2015**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
|---|---|---|---|---|---|---|---|
| Residential Markdown | 56,394,988 | 563,949,879 | $6,525,004 | $212,079 | $50,548,980 | $0.012 | 7.50 |
| Low Income Weatherization | 2,562,905 | 44,850,840 | $2,134,900 | $0 | $3,989,530 | $0.048 | 1.87 |
| Business Programs | 33,081,809 | 404,542,210 | $8,468,943 | $5,951,509 | $38,842,241 | $0.021 | 2.69 |
| Large Customer Program | 44,372,513 | 576,842,673 | $6,655,877 | $9,941,244 | $50,859,518 | $0.012 | 3.06 |
| Cross-Cutting | | | $851,213 | | | | - |
| Administration | | | $2,352,857 | | | | - |
| Total | 136,412,215 | 1,590,185,603 | $ 26,988,794 | $ 16,104,831 | $ 144,240,268 | $0.017 | 3.35 |

**FY 2016**

| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
|---|---|---|---|---|---|---|---|
| Residential Markdown | 56,601,479 | 566,014,789 | $6,793,471 | $161,889 | $50,771,330 | $0.012 | 7.30 |
| Low Income Weatherization | 2,562,905 | 44,850,840 | $2,134,900 | $0 | $3,989,530 | $0.048 | 1.87 |
| Business Programs | 35,123,561 | 429,509,855 | $8,991,632 | $6,318,825 | $41,239,517 | $0.021 | 2.69 |
| Large Customer Program | 44,372,513 | 576,842,673 | $6,655,877 | $9,941,244 | $50,859,518 | $0.012 | 3.06 |
| Cross-Cutting | | | $851,213 | | | | - |
| Administration | | | $2,352,857 | | | | - |
| Total | 138,660,458 | 1,617,218,158 | $ 27,779,949 | $ 16,421,958 | $ 146,859,895 | $0.017 | 3.32 |

## B. MACE Funding Scenario (Assuming Low Costs for the Trust)

i. Three-Year Summary (*Updated information to be inserted by 9/6/2012)*

| 3-Year Summary -- MACE (Low) Budget Allocations and Performance Metrics | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 97,300,754 | TBD | $ 23,422,009 | TBD | TBD | TBD | TBD |
| Other Residential | 97,043,223 | TBD | $ 47,567,083 | TBD | TBD | TBD | TBD |
| Business Programs | 357,225,212 | TBD | $ 38,988,989 | TBD | TBD | TBD | TBD |
| Large Customer Program | 343,216,380 | TBD | $ 37,460,009 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 3,650,000 | | | | |
| Administration | | | $ 10,400,000 | | | | |
| Total | 894,785,569 | TBD | $ 161,488,089 | TBD | TBD | TBD | TBD |

ii. Individual Budgets and Results for FY2014, 2015 and 2016 (*Updated information to be inserted by 9/6/2012)*

| FY 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 29,363,278 | TBD | $7,063,660 | TBD | TBD | TBD | TBD |
| Other Residential | 27,068,501 | TBD | $13,880,988 | TBD | TBD | TBD | TBD |
| Business Programs | 47,742,620 | TBD | $9,145,218 | TBD | TBD | TBD | TBD |
| Large Customer Program | 45,870,361 | TBD | $8,786,582 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 950,000 | | | | |
| Administration | | | $ 3,200,000 | | | | |
| Total | 150,044,760 | TBD | $ 43,026,448 | TBD | TBD | TBD | TBD |

| FY 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 32,531,510 | TBD | $ 7,814,931 | TBD | TBD | TBD | TBD |
| Other Residential | 32,291,096 | TBD | $ 15,841,084 | TBD | TBD | TBD | TBD |
| Business Programs | 115,705,095 | TBD | $ 13,763,079 | TBD | TBD | TBD | TBD |
| Large Customer Program | 111,167,640 | TBD | $ 13,223,351 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 1,300,000 | | | | |
| Administration | | | $ 3,600,000 | | | | |
| Total | 291,695,341 | TBD | $ 55,542,444 | TBD | TBD | TBD | TBD |

| FY 2016 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 35,405,966 | TBD | $ 8,543,418 | TBD | TBD | TBD | TBD |
| Other Residential | 37,683,626 | TBD | $ 17,845,011 | TBD | TBD | TBD | TBD |
| Business Programs | 193,777,496 | TBD | $ 16,080,691 | TBD | TBD | TBD | TBD |
| Large Customer Program | 186,178,379 | TBD | $ 15,450,076 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 1,400,000 | | | | |
| Administration | | | $ 3,600,000 | | | | |
| Total | 453,045,468 | TBD | $ 62,919,197 | TBD | TBD | TBD | TBD |

## C. MACE Funding Scenario (Assuming High Costs for the Trust)

i. Three-Year Summary (*Updated information to be inserted by 9/6/2012)*

| 3-Year Summary - MACE (High) Budget Allocations and Performance Metrics | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 97,300,754 | TBD | $ 30,293,383 | TBD | TBD | TBD | TBD |
| Other Residential | 97,043,223 | TBD | $ 61,818,767 | TBD | TBD | TBD | TBD |
| Business Programs | 357,225,212 | TBD | $ 49,204,352 | TBD | TBD | TBD | TBD |
| Large Customer Program | 343,216,380 | TBD | $ 47,274,770 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 3,900,000 | | | | |
| Administration | | | $ 10,800,000 | | | | |
| Total | 894,785,569 | TBD | $ 203,291,272 | TBD | TBD | TBD | TBD |

ii. Individual Budgets and Results for FY2014, 2015 and 2016 (*Updated information to be inserted by 9/6/2012)*

| FY 2014 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 29,363,278 | TBD | $9,095,891 | TBD | TBD | TBD | TBD |
| Other Residential | 27,068,501 | TBD | $18,164,795 | TBD | TBD | TBD | TBD |
| Business Programs | 47,742,620 | TBD | $12,550,339 | TBD | TBD | TBD | TBD |
| Large Customer Program | 45,870,361 | TBD | $12,058,169 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 1,300,000 | | | | |
| Administration | | | $ 3,600,000 | | | | |
| Total | 150,044,760 | TBD | $ 56,769,194 | TBD | TBD | TBD | TBD |

| FY 2015 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 32,531,510 | TBD | $10,103,202 | TBD | TBD | TBD | TBD |
| Other Residential | 32,291,096 | TBD | $20,592,113 | TBD | TBD | TBD | TBD |
| Business Programs | 115,705,095 | TBD | $17,168,200 | TBD | TBD | TBD | TBD |
| Large Customer Program | 111,167,640 | TBD | $16,494,938 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 1,300,000 | | | | |
| Administration | | | $ 3,600,000 | | | | |
| Total | 291,695,341 | TBD | $ 69,258,453 | TBD | TBD | TBD | TBD |

| FY 2016 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program | Annual kWh Savings | Lifetime kWh Savings | Efficiency Maine Costs | Participant Cost | Lifetime Energy Benefit | Cost/kWh (lifetime) | Benefit To Cost Ratio |
| Residential Markdown | 35,405,966 | TBD | $11,094,291 | TBD | TBD | TBD | TBD |
| Other Residential | 37,683,626 | TBD | $23,061,859 | TBD | TBD | TBD | TBD |
| Business Programs | 193,777,496 | TBD | $19,485,813 | TBD | TBD | TBD | TBD |
| Large Customer Program | 186,178,379 | TBD | $18,721,663 | TBD | TBD | TBD | TBD |
| Cross-Cutting | | | $ 1,300,000 | | | | |
| Administration | | | $ 3,600,000 | | | | |
| Total | 453,045,468 | TBD | $ 77,263,625 | TBD | TBD | TBD | TBD |