TRIENNIAL PLAN
FOR FISCAL YEARS 2014-2016

BY THE
EFFICIENCY MAINE TRUST

OCTOBER 2012

Efficiency Maine Trust
151 Capitol Street, Suite 1
Augusta, ME 04333
www.efficiencymaine.com

efficiency MAINE

March 19, 2013

Dear Senators and Representatives:

Enclosed please find a copy of Efficiency Maine Trust's Triennial Plan for Fiscal Years 2014-2016 and 2012 Annual Report highlighting our residential and business program successes for Fiscal Year 2012.

The Triennial Plan, the second since the Trust has assumed responsibility for administering Efficiency Maine programs, is the culmination of numerous stakeholder meetings and two public hearings held in 2012 and a thorough review and analysis by the Public Utilities Commission. A draft of the Plan was presented to the Energy, Utilities and Technology Committee on September 7, 2012. On October 24, 2012, the Plan received a unanimous vote of the Efficiency Maine Board of Trustees, which represents industrial, commercial, small business, residential, and low income customers. It was subsequently approved by a unanimous vote of the Commission on March 7, 2013. The Plan describes the Trust's objectives, strategies and budget allocations for implementing business and residential programs and related initiatives for the next three fiscal years.

In 2012, we delivered programs that reduced present and future energy costs by an estimated $128 million by helping customers avoid 1.8 billion kWh of electric consumption. Efficiency Maine delivered these energy savings at an average cost of 1.27 cents per kilowatt hour (kWh). This compares favorably to the average standard offer price of electricity of 6-7 cents/kWh. We encourage you to read the Annual Report to learn how we achieved these results by:

- Completing more than 2,500 efficiency upgrades at small, medium and large businesses, municipalities and institutions in Maine;
- Using competitive bidding to leverage the maximum private investment and energy savings from every program dollar through the large Customer Program;
- Moving 2.1 million high-efficiency compact fluorescent lights into Maine homes to generate the highest benefit-to-cost ratio (9.88) of any program in our portfolio and moving toward LED lights;
- Making a bold shift for low-income programs that simultaneously saves electricity, lowers heating bills, and introduces ductless heat pumps;
- Completing 236 loans for home weatherization and new heating systems that lowered homeowners' energy use by an average of 40%.

If you would like to learn more about our programs in your district or have suggestions about ways we can improve, please get in touch, or visit our web site at www.efficiencymaine.com.

Sincerely,

Michael D. Stoddard
Executive Director

151 Capitol Street, Suite 1, Augusta, ME 04330-6262
efficiencymaine.com – Tel - 207-213-4150 Toll free - 866-376-2463 Fax - 207-213-4153

Table of Contents

1. Regulatory Framework

1.1 Purpose of Trust

As enumerated in the Efficiency Maine Trust Act (or "the statute"), the purposes of the Trust are 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;
- 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 § 10103(1)
[2] 35-A MRSA § 10103(1)(B)

1.2 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 use of customer-sited alternative energy systems.

While some of the Trust's funding streams are automatically recurring, the statute also contemplates that the Trust may access other funds. It 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 (RGGI), are required to be held in trust for the benefit of the energy consumers who 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 supported by 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), established in statute at a fixed 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 (DSM) 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 Base Assessment, in 2007 policymakers adopted a provision to periodically adjust the total revenue stream for the Electric Efficiency and Conservation Fund.[6] 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

[3] 35-A MRSA §10103(4).
[4] 35-A MRSA §10110(2)(A).
[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 thus not eligible for funding from the Base Assessment revenues.
[6] Public Law, Chapter 317, 123rd Maine State Legislature (LD 1851).

grants or settlement payments), and then establishing an assessment for whatever 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…."[7]

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 the 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.[8]

The Trust runs multiple programs funded in whole or in part with this fund, including the Residential Retail Products Program (for lights and appliances), the Business Incentive Program (providing incentives for lights, refrigeration, HVAC, air compressors, drives, etc.), the Small Business Direct Install Program, and the Low Income Program.

(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.[9]

Revenues to the Natural Gas Conservation Fund derive principally from an assessment of not less than three percent (3%) of a 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, "[i]n accordance with the Triennial Plan, the Commission may assess a higher amount." [10] 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.

[7] 35-A MRSA §10110(5).
[8] 35-A MRSA §10110(2)(B).
[9] 35-A MRSA § 10111(1).
[10] 35-A MRSA Sec. 10111(2).

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.

The Natural Gas Conservation funds are presently used to promote home weatherization among Unitil's residential customers and to rebate a portion of the cost of new, high efficiency gas equipment installed by Unitil's business customers.

(c) Heating Fuels Efficiency and Weatherization Fund

In 2009, the legislation creating the Trust included establishment of 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, and
- by 2030, to provide cost-effective energy efficiency measures to substantially all homes and businesses whose owners wish to participate.[11]

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.[12]

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. However, there is no policy in place that is predicted to generate a sustained revenue stream for this fund during the period of this Triennial Plan. This leaves only the existing revolving loan fund, capitalized with ARRA funds, available to help achieve the goals of this fund in the period of the Second Triennial Plan.

(d) Renewable Resource and Energy Efficiency Fund

The Renewable Resource Fund was originally established to support research and development (R&D) and demonstration projects for renewable energy.[13] In 2011, the law was modified to allow rebates for customer-sited, commercialized renewable energy equipment, meeting a cost-effectiveness test, as an eligible use of this fund. In 2012, a bill from the Governor modified the law again, allowing voluntary contributions made to the fund to be used for energy efficiency projects (in addition to renewable

[11] 35-A MRSA § 10119.
[12] 35-A MRSA § 10119(1).
[13] *See, e.g.*, 35-A MRSA § 10121 and 35-A MRSA § 3210(9)(B).

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, from alternative compliance payments from electricity suppliers (as a means to complying with their requirements to supply renewable energy), and from a dedicated system benefit charge in the amount of 0.005 cents/kWh for every unit of electricity consumed in Maine. In 2010, statutory authorization for this dedicated system benefit charge "sunset" and was not reauthorized by the Legislature, ending this source of funds. Also, in 2011, electricity suppliers made little or no alternative compliance payments, providing little revenue to the fund. For the period covered by this Second Triennial Plan, funding for this fund will be limited to revenues from voluntary contributions. The Trust estimates that the annual revenues deposited to the fund will be approximately $100,000, consistent with contributions made during the First Triennial Plan period.

(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.[14] 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 allowance, and the total number of tons of carbon allowances 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 generators from oil to natural gas have led to a drop in carbon emissions and a glut of carbon allowances. In the period governed by this Triennial Plan, the Trust is projecting revenues to the RGGI Fund 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:

[14] 35-A MRSA Sec. 10109.

A. The US DOE State Energy Program
B. Other federally funded programs and projects related to Trust programs.[15]

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 of 2009 (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, which in recent years has only provided enough funds for approximately $20,000 per year for the Trust to invest in energy programs.

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

1.3 Long-Term Targets

As described above, each individual funding stream established by statute has its own goals, objectives, and targets. Each also has 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...[16]

[15] 35-A MRSA § 10115(1).
[16] 35-A MRSA § 10104(4)(F).

1.4 Principles of Administration

Leading up to the legislative decision to shift responsibility for administering programs to the new, independent Trust, there was robust policy 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 customers' 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, promote efficient administration, transparency, and accountability.[17]

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:

- **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;

- **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;

- **Efficient.** The efficiency with which programs are planned, designed, overseen and delivered is maximized; and

- **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.[18]

1.5 Other Statutory Directives

(a) The PACE Act

The Property Assessed Clean Energy (PACE) Act was enacted in Maine in 2010 to facilitate financing of energy saving improvements in Maine homes.[19] 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.

[17] Energy Conservation Board, "Principles for Consolidating Energy Efficiency Administration," March 30, 2009.
[18] *See,* 35-A MRSA §10104(2).
[19] 35-A MRSA § 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.[20] 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.[21]

Among other things, the Commission may contract with the Trust to deliver energy efficiency capacity resources and the available energy that is associated with such resources.[22]

1.6 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) has adopted. The Trust's rules, as listed in Table 1, are codified at Section 95-648 of the Code of Maine Rules and copies are available on the Secretary of State's and Efficiency Maine websites.[23]

Table 1 – Efficiency Maine Trust Rules

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

[20] 35-A MRSA § 3210-C.
[21] 35-A MRSA § 3210-C(2)(B) and (2)(C).
[22] 35-A MRSA § 3210-C(6)(A).
[23] *See*, http://www.maine.gov/sos/cec/rules/90/chaps90-.htm

2. Results and Targets

2.1 Recent History for Energy Efficiency Programs

While this document constitutes only the second Triennial Plan put forward by the Trust, energy efficiency programs are not a recent or untested concept in Maine.

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

Starting in 2002, the Commission assumed responsibility for administering statewide energy efficiency programs funded with the system benefit charge Base Assessment. 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 Commission 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 helped transform 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, as the pre-existing Power Partners programs reached their end and made more funds available for Efficiency Maine, grew to between $14 million - $15 million by 2009.

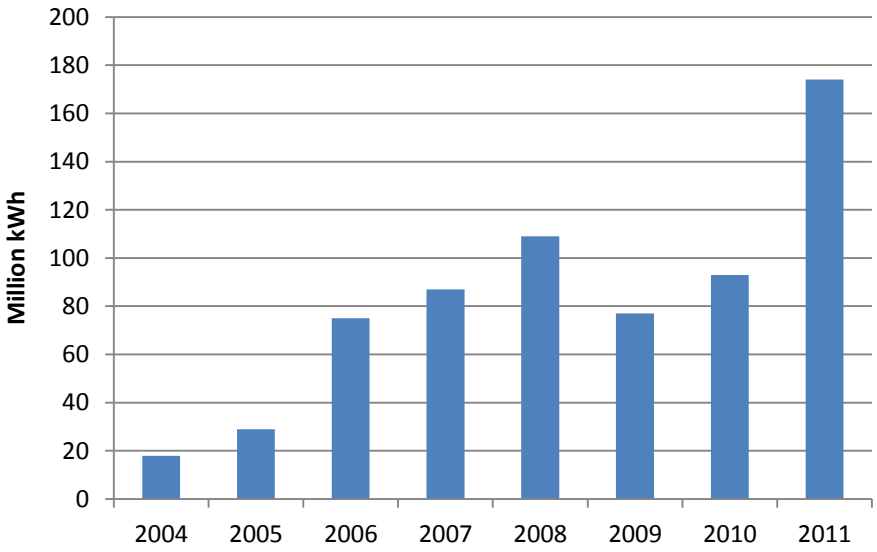
In 2009, state legislation shifted responsibility for administering Efficiency Maine programs to a newly established, independent trust – the Efficiency Maine Trust. The Trust consolidated responsibility for administering multiple revenue streams, including the Electric Conservation Fund, the Natural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

The First Triennial Plan of the new Trust covered fiscal years (FY) 2011, 2012 and 2013, which began on July 1, 2010. The Trust's results for FY 2011 set 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.

2.2 Energy Savings

Looking at the results of the electric savings programs, the following figures show that Efficiency Maine has been steadily delivering energy savings and lowering energy costs to Maine's electric utility customers. Figure 1 shows the individual, annual electrical savings from Efficiency Maine 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 the measures installed in any given year would be multiplied across many years.

Figure 1 – Efficiency Maine Programs Annual kWh Savings (2004-2011)



2.3 Financial Savings (Benefits)

Energy savings from efficiency projects are the chief contributor to financial savings, which are referred to in the Trust's calculus of cost-effectiveness as "benefits." The financial savings represents the net cost that is avoided, or not paid, by the customer and other ratepayers as a result of the efficiency

upgrade. During the past six years in particular, Efficiency Maine programs have been delivering significant benefits that dramatically outweigh the total costs.[24]

Figure 2 and Figure 3 below highlight the financial savings, over the full lifetime that efficiency upgrades remain operational, for Efficiency Maine's two largest and most popular programs – the Business Incentive Program and the Residential Lighting Program. Because the financial benefits are a function of the price of the energy that is being avoided, they may decrease (as in 2009 and 2010) even as budgets or energy savings are increasing.

Figure 2 – Business Incentive Program benefits (lifetime) vs Costs

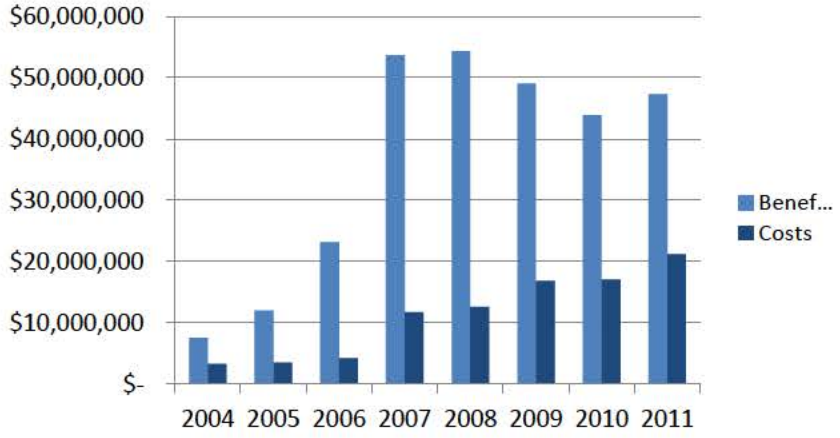
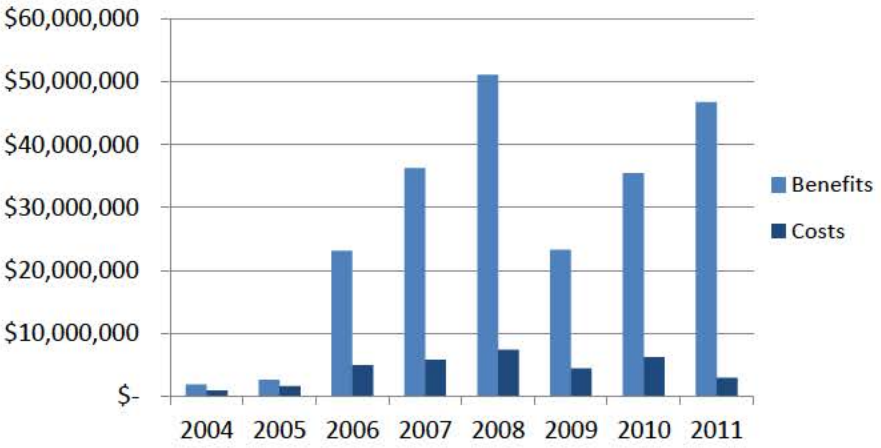


Figure 3 – Residential Lighting Benefits (lifetime) vs Costs

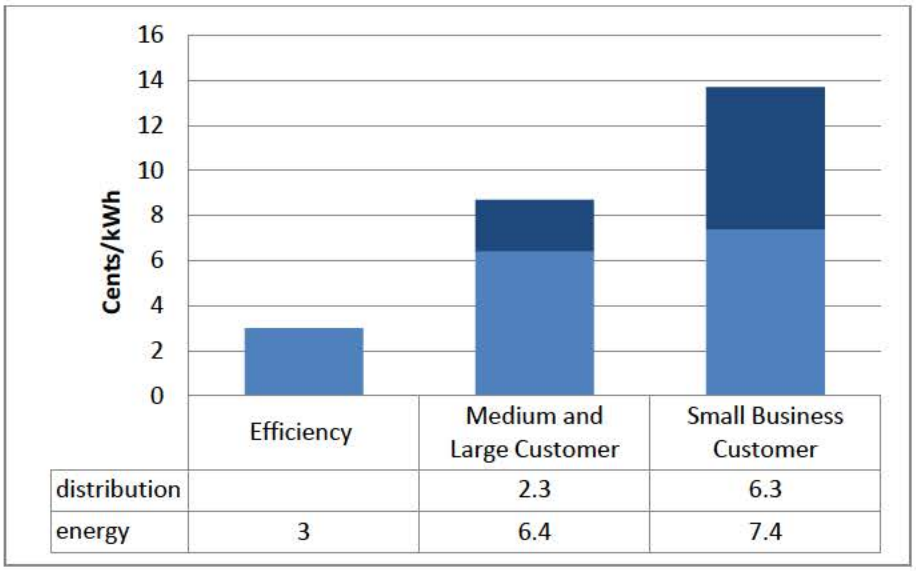


[24] "Total Costs" reflect the sum of Efficiency Maine's costs for administration and financial incentives plus the capital and operating costs paid by the customer.

2.4 The Low Price of Efficiency

A different way to look at the value of energy efficiency programs is to translate the cost savings into a price per unit of supply. When the lifetime energy savings (e.g., kWh) of each year's projects is spread across the total costs of Efficiency Maine and the participating customer, the result is a price to deliver a unit of energy savings that we can usefully compare to the price of a unit of energy supply. Figure 4 shows the effective price of delivering a kWh of electricity savings ("Efficiency") from Efficiency Maine programs in FY 2011, and compares that to the price of electricity supply paid by the medium and large customer class, and the small business customer class. The price shown here for supply assumes that the customer is on the default service (called "Standard Offer"), which is common for small business customers but not common for medium and large customers. The figure also represents the avoided price of supply from two perspectives. One perspective is that of the participating customers, who will avoid the price of both the energy component and the distribution component of each kWh displaced by energy savings; the other perspective is that of ratepayers who, collectively, will still have to pay the price of the distribution. From either perspective, the effective price of energy efficiency is considerably lower than the price of supply.

Figure 4 – Price of Efficiency vs. Standard Offer and Delivery Charges in 2012



	Efficiency	Medium and Large Customer	Small Business Customer
distribution		2.3	6.3
energy	3	6.4	7.4

Similarly, the Trust's programs to help homeowners save heating fuel through weatherization and upgrading their heating systems has demonstrated that heating oil can be saved at a cost of $1.16 per gallon, or less than a third of the price ($3.65 per gallon) to purchase a gallon of heating oil.

2.5 Targets

As noted above, Section 10104(4)(F) of the statute provides that an objective of the Triennial Plan is to design, coordinate and integrate programs that advance eight long-term targets related to: weatherizing residences and businesses; reducing peak-load electricity demand; achieving savings of electricity, natural gas, heating fuels and liquid fossil fuels; capturing all cost-effective electric and natural gas efficiency resources; producing cost-effective savings for heating customers; reducing greenhouse gas emissions; and building private sector jobs. These targets and the Trust's progress in advancing them are presented below.

Considering historic performance data, technology developments, and program funding levels that have been authorized or are reasonably foreseeable, the Trust projects that several of the Targets in Paragraph F will be met, while others cannot and will not be met by the target dates. Considering the size of the gap between certain targets in Paragraph F and what is reasonably achievable, and without prejudice to other targets or metrics in the Efficiency Maine Trust Act, the Trust interprets the targets in Paragraph F to be desired levels of performance, but not to be minimum requirements of performance.

***Residential Weatherization*: Weatherizing 100% of Homes by 2030 – Target F(1)**

The first long-term target, found in sub-section F(1) of the Act's directives for the Triennial Plan, is to weatherize 100% of homes in Maine by 2030.

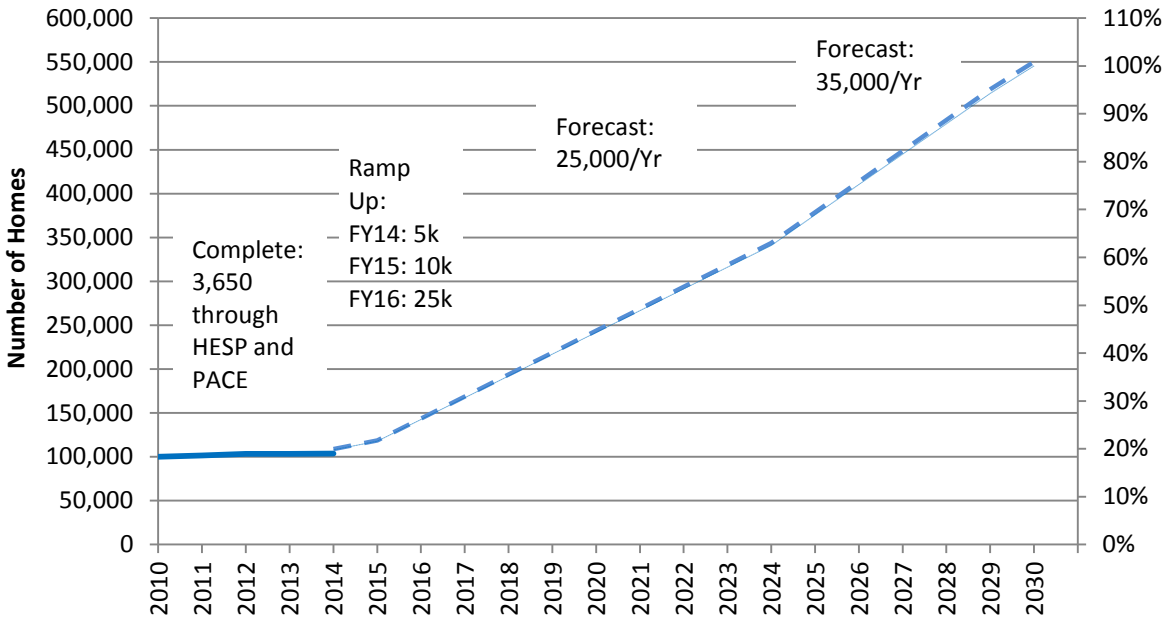
From 2010 to 2012, Efficiency Maine managed the Home Energy Savings Program which offered rebates to customers who had an energy audit and performed energy upgrades that were calculated to meet a minimum 25% heating savings. More than 3,200 homes received such rebates. In 2012 and 2013, the Trust offered low-interest loans to continue home energy upgrades. Because the program is new and the loans are less popular than the rebates, the rate of completed projects has slowed. The Trust estimates that an additional 450 projects will be completed before the Second Triennial Plan period.

As outlined in the Home Energy Saving Program description, below, this Plan has put forward a straw proposal for how to reach 100% weatherization of homes by 2030. It must be noted that the Plan does not propose or identify a source of funding that could support this straw proposal. The straw proposal would establish a fairly low bar for what constitutes a "basic weatherization" (it should be noted that there is no established definition for "weatherization" in the Trust's law or rules), and, assuming significant additional funding were established, maps out a schedule for ramping up to weatherize 40,000 units by the end of the Second Triennial Plan period.

Figure 5 assumes that approximately 20% (100,000 units) of the state's homes have been weatherized in prior years or were recently built and therefore do not require additional weatherizing. This is only an educated guess and would need to be confirmed with additional research. The figure reflects a ramp up

of basic weatherization of 5,000 in fiscal year 2014, 10,000 in 2015, and 25,000 in 2016. It reflects a continuation of this rate from 2016 through 2024, and then accellerates again up to 35,000 units per year until 2030.

Figure 5 – Weatherizing 100% of Homes by 2030



<u>Commercial Weatherization</u>: Weatherizing 50% of Businesses by 2030 – Target F(1)

During the past Triennial Plan period, the Trust received federal funds from the Recovery Act for which oil-saving measures were eligible. The Trust allocated more than $9 million from the Energy Efficiency Community Block Grant (EECBG) Program to all-fuels projects hosted by Maine's municipalities. A significant number of the more than 130 EECBG projects funded by the Trust provided efficiency upgrades in the form of insulating roofs and basements of municipal buildings and upgrading windows and doors. The Trust also allocated $2 million of the ARRA funds to all-fuels projects hosted by commercial property owners. Again, a signficant number of the 60 or more commercial projects included measures that could be considered "weatherizing." Of the entire universe of commercial buildings where treatment of the building envolope through weatherization would be cost-effective, the several dozen buildings addressed during the first Triennial Plan period presents negligible progress toward the statutory target of weatherizing 50% of businesses. With the Recovery Act funds exhausted, and no additional revenue stream available to help fund savings of oil-heated buildings, the prospects for making significant progress toward this target in the Second Triennial Plan are not good. Some progress could potentially be made for businesses that heat with natural gas in utility territories that pay

into the Natural Gas Conservation Fund, but presently that fund is so small the Trust's preference is to direct the funds to lower cost measures such as equipment upgrades.

<u>Electricity Energy Targets:</u> Achieve 30% electricity savings by 2020 and capture all cost-effective energy efficiency resources for electric ratepayers – Targets F(4) and F(5)

In developing the First Triennial Plan, the Trust elected to set 2007 as the baseline from which the target of achieving 30% electricity savings.[25] 2007 was selected as the baseline at the time because: it was the most recent year for which there was complete consumption data; it would have been fresh in legislators' minds when they were debating the bill that set the targets in the fall of 2008 and winter of 2009; and, it pre-dated the recession and was thus viewed as being more representative of typical consumption levels.

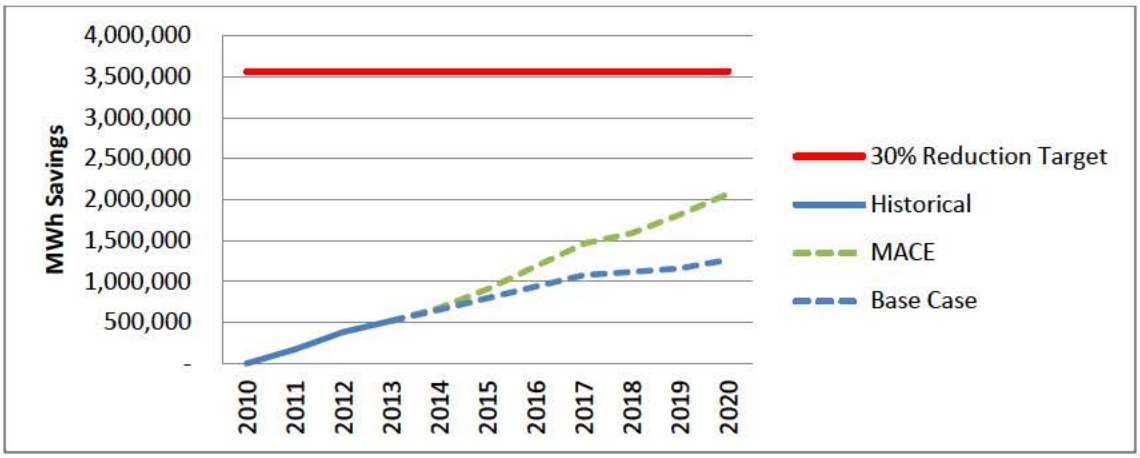
The electricity savings target was arrived at by multiplying the 2007 consumption (or "load") by 30%. The resulting target is slightly more than 3.5 million megawatt-hours (MWh) of savings, as represented by the horizontal red line in Figure 6. This target was included in the First Triennial Plan[26] and was reiterated by the Trust in its 2011 Annual Update filing.[27] It does not shift according to changes in load forecasts into the future. When applied in this way, the target assures that economic growth in Maine is not inhibited. To be clear, this Triennial Plan understands that "savings" means that a quantifiable amount of energy has been saved as the result of an energy efficiency project or program, and that less electricity will be consumed relative to what would have happened without the project or program. It does not, however, necessarily mean that net electricity consumption will go down compared to the baseline. For example, if a factory installs high efficiency drives and controls that save energy compared to the old equipment, and at the same time decides to add a third shift of operations, the Trust still counts the savings even though net electricity consumption at the plant will increase due to the third shift. Furthermore, given the prospect of mini-split heat pumps and electric vehicles entering the marketplace, the Trust's Plan aims not to not discourage new consumption, but to promote higher-efficiency purchases. The Plan views energy savings as a way to help Maine's economy grow by enabling businesses and families to stretch their energy dollars further. It does not view these savings as a requirement that, by 2020, Maine's electricity consumers should be using 30% less electricity than they did in 2007.

Figure 6 shows that through the First Triennial Plan period, the Trust programs "historical" savings will exceed 500,000 MWh in savings. If no additional funding is authorized for the Trust's electricity programs during the Second Triennial Plan period or beyond, the savings are projected to follow the lower Base Case curve, whereas funding sufficient to capture maximum achievable cost-effective (MACE) savings potential is illustrated by the higher "MACE" curve. As discussed further in the Opportunity section of this Plan, the MACE savings levels estimated by the Cadmus study are projected to reach approximately 2.1 million MWh by 2021, or 16% of load. While this would fall short of one of

[25] Optimal Energy Inc., *"Strawman" Stakeholder Input Facilitation Tool*, January 2010, p.7.

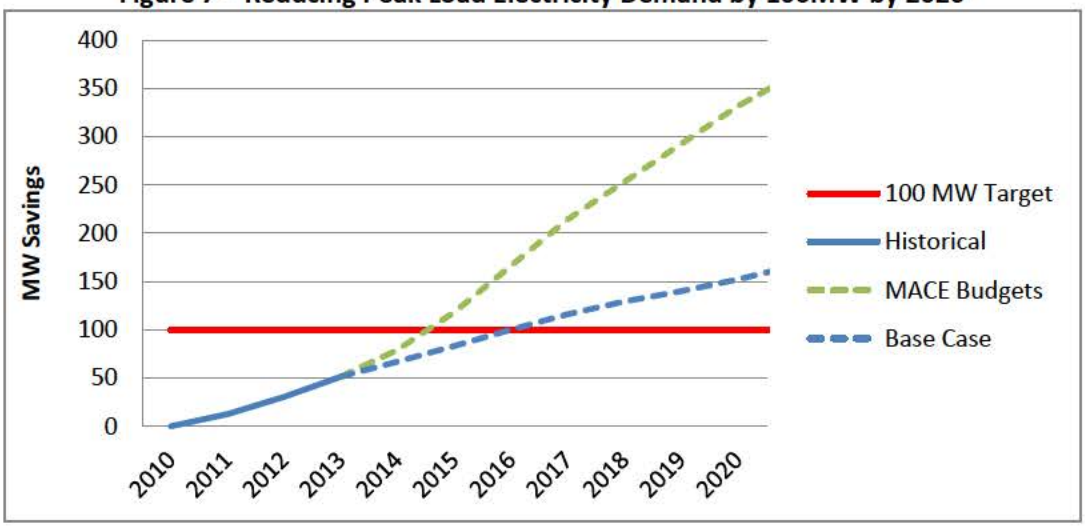
the target to achieve 30% savings, it would fully achieve the target of "capturing all cost-effective resources" for electricity ratepayers.

Figure 6 – Achieve 30% Electricity Savings by 2020 and Capture All Cost-effective Energy Efficiency Resources for Electric Ratepayers



***Electricity Demand Target:* Reducing Peak Load Electricity Demand by 100MW by 2020 – Target F(2)**

Figure 7 – Reducing Peak Load Electricity Demand by 100MW by 2020



[26] Efficiency Maine Trust, *Triennial Plan of the Efficiency Maine Trust 2011-2013*, April 2010, Figure 14 at p. 19; *see also* Table B-90 at p. 90.

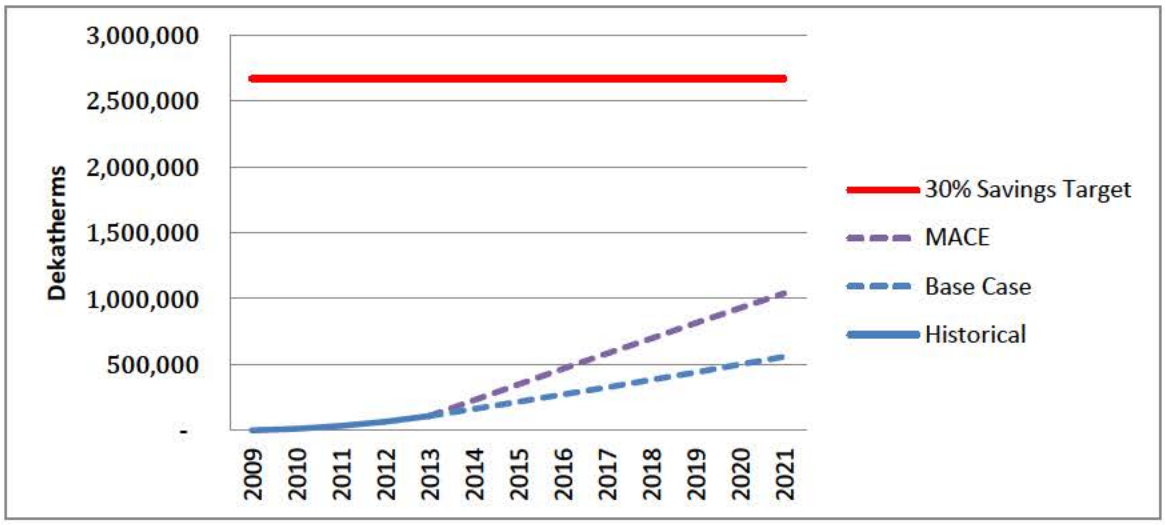
[27] Efficiency Maine Trust, Maine Public Utilities Commission, Order Approving Second Update to Triennial Plan, Docket 2010-00116, September 11, 2012; *see also*, Efficiency Maine Trust Data Responses, Docket 2010-00116, March 22, 2012, Response #2, at p. 2.

The statute also calls for the Trust's Plan to advance the target of reducing peak load by 100 MW by 2020. As Figure 7 illustrates, the Historical peak load reduction from the Trust's programs in the First Triennial Plan period will exceed 50 MW and will continue on a trajectory to surpass the 100 MW target by 2016 under a Base Case funding scenario and by 2015 if the Trust's programs are funded at a level sufficient to capture all cost-effective electric efficiency resources.

Natural Gas Target: ***Savings of 30% by 2020 and capturing all cost-effective energy efficiency resources for natural gas ratepayers – Targets F(4) and F(5)***

The Trust's targets to achieve 30% savings of natural gas and to capture all cost-effective natural gas are illustrated in Figure 8. Using the 2007 Baseline, the target for 2020 is to save 2.67 million dekatherms (Dth). As the figure shows, the Trust's programs through the First Triennial Plan period will have reached 320,000 Dth of savings and from there are projected to reach between 880,000 and 1.15 million Dth of savings by 2020, depending on funding levels. The 1.15 million Dth savings of 2020 would fall short of the 30% target, but would fully satisfy the "all cost-effective" savings potential identified in the 2009 study prepared by Summit Blue for the Maine Public Utilities Commission.

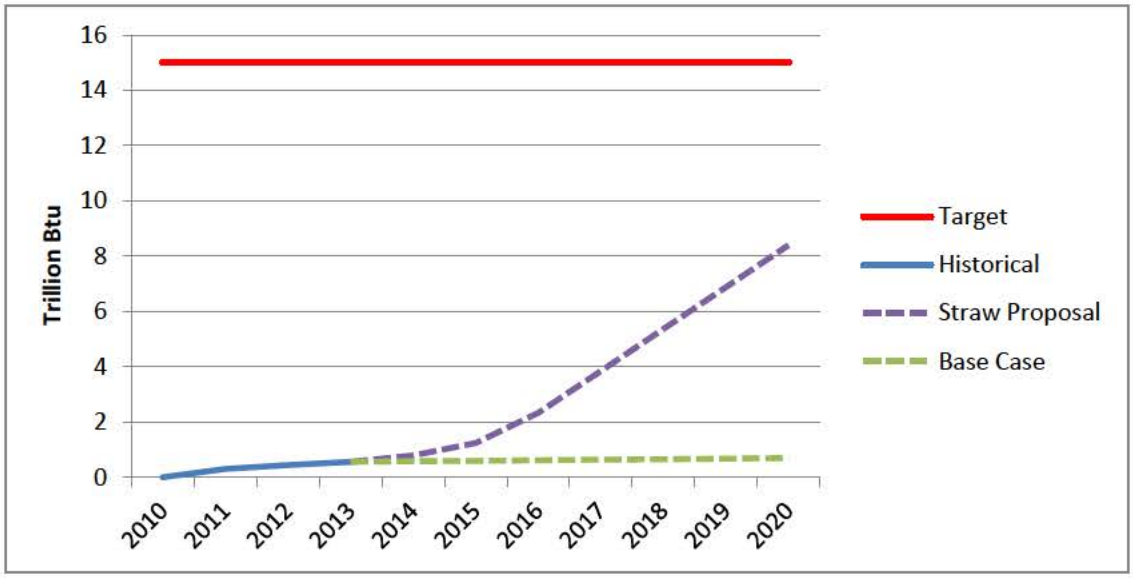
Figure 8 – Savings of 30% by 2020 and Capturing All Cost-effective Energy Efficiency Resources for Natural Gas Ratepayers



***Heating Fuels Target*: Savings of 20% by 2020 [F(4)]**

In the baseline year of 2007, the statewide consumption in the residential and commercial sectors of #2 distillate fuel, kerosene and propane, was 75 trillion Btu.[28] A 20% savings from the baseline is 15 trillion Btu, which is reflected in Figure 9. In the period of the First Triennial Plan, the Trust programs helped save 0.55 trillion Btu, which is projected to increase very gradually as a result of the continuation of the PACE loan program for home energy upgrades. In the event that the Straw Proposal (appearing in the Home Energy Savings Program description in Section 6 of this Plan) is implemented, the projected savings would rise to more than 8 trillion Btu by 2020. The Second Triennial Plan makes no assumption about achieving heating fuel savings from commercial buildings.

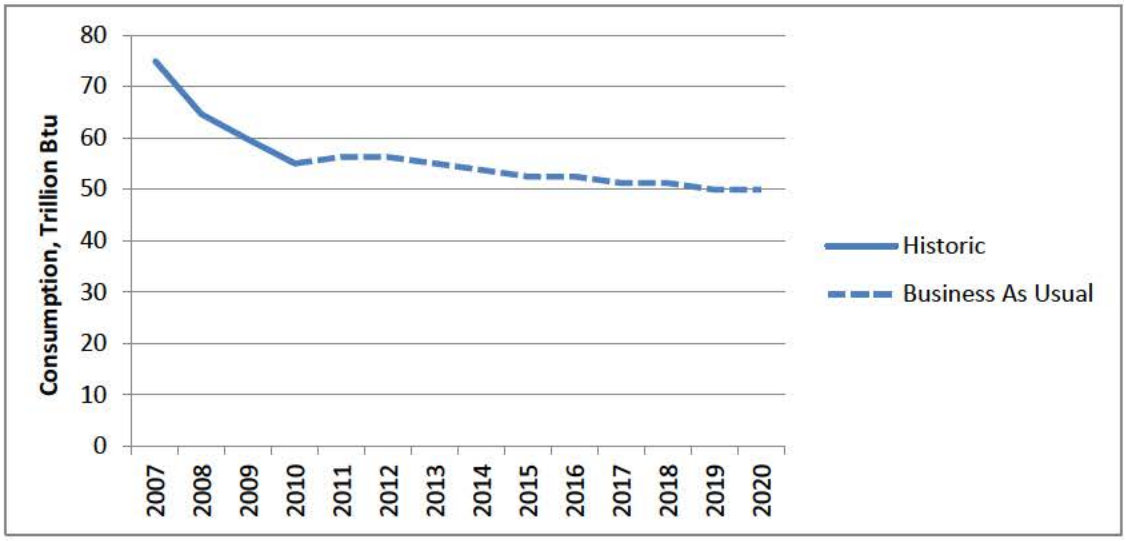
Figure 9 – Heating Fuels Target and Saving Scenarios



As a point of reference, Figure 10 presents the most recent available data (from 2007 to 2010) showing that consumption of heating fuels in Maine has declined by 20 trillion Btu, or 26.7%.

[28] This baseline differs from the baseline identified in prior years' analysis of the Trust's targets in which industrial consumption of heating fuels was included. The statute expressly states that "heating fuel" includes propane, kerosene or #2 heating oil but not when used for industrial or manufacturing processes. 35-A MRSA 10104(4). To facilitate tracking this, and in recognition of the fact that there is no clear way to differentiate between which industrial consumption of heating fuels is for industrial processes versus space or water heating, the Second Triennial Plan relies on EIA reports and limits what is included in the heating fuels to: (a) consumption from the residential and commercial sectors, (b) for propane, kerosene and #2 heating oil only.

Figure 10 – Heating Fuel Use in Maine



<u>Liquid Fossil Fuels Target</u>: Reducing consumption by 30% by 2030 [F(3)]

The legislature defined liquid fossil fuel as "any liquid fossil fuel or heating fuel used for a purpose other than transportation."[29] The Trust interprets this to mean that the legislature intended to factor into the definition those fuels "used for industrial or manufacturing processes" such as #2 distillate and #6 residual fuel, that are petroleum-based but are excluded from the "heating fuels" defintion.

In the baseline year of 2007, Maine's total use of liquid fossil fuels was 23.9 Trillion Btu. To be consistent with the approach the Trust used for the electric, natural gas and heating fuel savings targets, and to limit the Plan's performance metrics to results that the Trust can measure, verify, and take some credit for having occurred, the Second Triennial Plan interprets this target as seeking measures that will achieve 7.17 Trillion Btu of savings by 2030.

As described elsewhere in this section, Maine broke new ground during the First Triennial Plan period on achieving savings of #2 distillate fuel (heating oil) through its HESP rebate program and the PACE loan program to weatherize homes and upgrade heating systems, the Heating System Replacement program, Commercial Grant Program and the municipal grant program. The total lifetime reduction of heating oil use from just one year of these programs was estimated in the Trust's Annual Report for FY2011 at approximately 5,259,000 MMBtu.

During this period, significant federal funds from the Recovery Act were also invested in energy projects that facilitated efficiency improvements or fuel switches at large energy consumers, such as paper mills, and in some cases these projects reduced the consumption of #6 residual fuel or other liquid fossil fuels

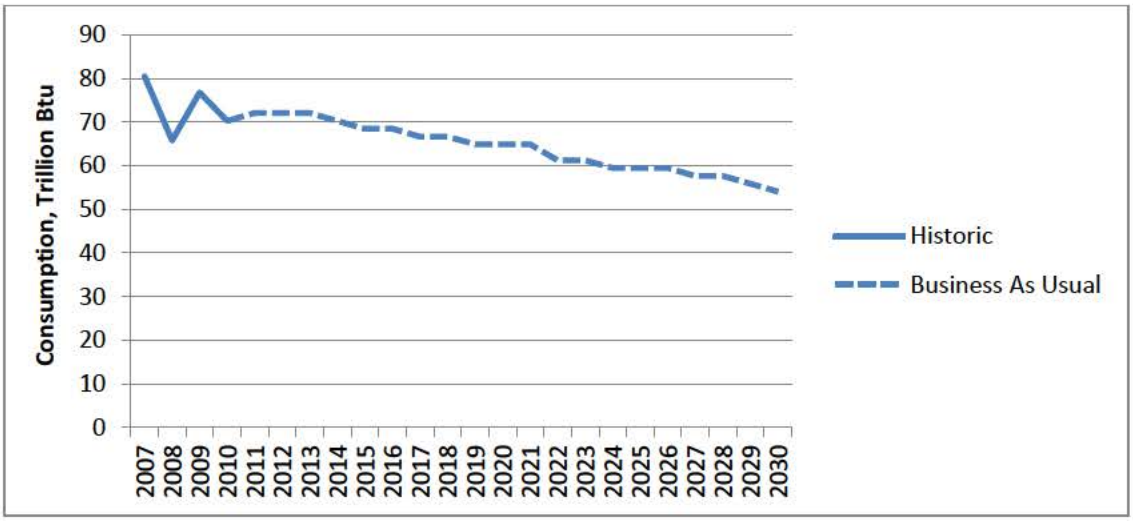
[29] *Id.* The Second Triennial Plan includes all residential and commercial sector use of kerosene, propane and #2 distillate, plus all industrial sector use of propane and #2 distillate (industrial sector use of kerosene is not reported separately in EIA data), and all industrial sector use of residual fuel.

used in industrial or manufacturing processes. While the combination of these programs was significant, it pales in comparison to the shift away from liquid fossil fuels that is occurring due to economic forces (e.g., high oil prices and low natural gas prices).

Because the federal Recovery Act funds are almost entirely exhausted and no there are no known prospects for other revenue streams other than for electric and natural gas,[30] the Trust is not forecasting any significant reductions in liquid fossil fuels during the Second Triennial Plan period as a result of Trust programs and does not speculate on what will happen in future Triennial Plan periods.

Using the most recent available data available, (2007 to 2010), Figure 11 shows that consumption of liquid fossil fuels in Maine has declined by 10.2 trillion Btu, or 12.7%.

Figure 11 – Liquid Fossil Fuel Use in Maine



<u>Cost-effective Heating Savings Target</u>: 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 [F(6)]

This target reflects what is often called the Utility Cost Test or, in the case of third party administrators such as the Trust, the Program Administrator Cost Test. The main area of expenditure for helping heating consumers during the First Triennial Plan period was in the Home Energy Savings Program and the PACE loan program, both of which supported residential weatherization and heating system upgrades.

[30] As discussed in the Budget section, the Trust takes the view that unless and until alternative revenue streams are secured to promote electricity savings programs, RGGI revenues should be dedicated to that purpose. If this view were changed or if alternative revenues for electric savings are authorized, RGGI funds could be freed up to invest in measures to save or shift away from the consumption of heating fuels and oil used by manufacturing and industry.

For the HESP program, the Trust's FY2011 Annual Report showed that Efficiency Maine spent nearly $8.6 million on home upgrades projected to deliver a lifetime energy benefit of more than $101 million. This program will achieve a savings of approximately $11.75 for every $1 of program funds invested. On the PACE side, no rebate incentives are offered so the cost to the program are lower than for HESP. While the sample size of PACE loans is too small to make a meaningful estimate of the savings per $1 of program investment, it is expected to be the same or better than that experienced by HESP. Another program administered by the Trust to help heating customers was the Replacement Heating Equipment Program. This program provided rebates to residential customers purchasing new, EnergyStar rated heating systems. The results of that program from FY 2011 show total program cost of $1.2 million and a lifetime energy benefit valued at $2.2 million, generating a savings of 1.83, which is below the target of 3 to 1. A partial explanation for this is that the price of natural gas has dropped so dramatically that the payback on efficient gas appliances is much reduced. In any case, the program was of limited duration and is not planned to be continued in the Second Triennial Plan.

On the commercial heating customer side, the results of the Commercial Grants funded by ARRA funds were reported in the Trust's Annual Report for FY2011 as costing the program $1.46 million and delivering a lifetime savings valued at $9.36 million.[31] The savings comes to $6.4 for every $1 of program cost.

On the commercial cooling customer side, the Second Triennial Plan anticipates investing $612,000 of incentives for high-efficiency cooling system upgrades that will deliver a lifetime benefit exceeding $3,063,000. This will achieve a ratio of 5:1 in benefits for each incentive dollar invested.

<u>Jobs Target:</u> Building stable private sector jobs providing clean energy and energy efficiency products and services in the State by 2020 [F(7)]

In the 2009 "Summary Report" to the Public Utilities Commission, energy experts at Summit Blue and ACEEE indicated that for every $1 million invested through energy efficiency programs and customer-sited renewable energy programs, an average of 22 jobs are projected to be created. This projection is the average finding of three studies or tools reviewed by the experts: the US Department of Energy's Rapid Deployment Energy Efficiency (RDEE) Toolkit; the Political Economy Research Institute at UMass Amherst's "Green Recovery" report of 2008; and, the "Avoided Energy Supply Cost" (AESC) study for New England, conducted by Synapse Economics.[32]

During the First Triennial Plan period, the Trust will have expended approximately $65 million in federal Recovery Act funded programs plus another $68 million from other revenues which, using the average

[31] Efficiency Maine Trust, "2011 Annual Report," December, 2011, p. 16. Some of the projects funded through this program were exclusively electricity saving measures, and other projects integrated both electric and heating fuel saving measures, which means that the savings here are not all from heating fuels.

[32] Summit Blue and ACEEE, "Summary Report," December, 2009, Slide 35.

factor identified in the Commission's report from Summit Blue, would be projected to have created 2,926 jobs.

A more involved study was also conducted in 2009, which used macro-economic modeling to estimate not only the direct jobs related to the sale and installation of efficiency measures, but also the effect felt in the local economy from the reinvestment of moneys that would otherwise have been spent buying energy. According to this study, 51.5 job-years (one full time equivalent job for a period of one year) are created for every $1 million of program funds invested in electric efficiency programs, and 74.7 job-years are created for every $1 million invested in oil efficiency programs.[33] Assuming that half of the Trust's budget during the First Triennial Plan period was expended on electric saving programs and the other half was expended to save unregulated fuels, then the job-years generated by the Trust's programs during the First Triennial Plan will be approximately 8,391.

Greenhouse Gas Target: Reducing greenhouse gas emissions by 10% below 1990 levels by 2020

Approximately 0.01 metric tons of CO2 is emitted from every gallon of #2 distillate or kerosene used in a furnace or boiler, and about half as much is emitted from each gallon of propane. Assuming that PACE loans continue at their current rate of at least 225 deep weatherization and heating upgrades per year, and further that each such project continues to save 40% from their pre-weatherized consumption levels of heating fuels, we project that by the third year of the Plan impacted homes will be saving 216,000 gallons of heating fuel per year. If all of those gallons were from #2 distillate or kerosene, we project CO2 savings of 2,160 metric tons annually. Add to this the potential savings from continuation of the Residential Direct Install initiative and any Base Weatherization projects completed under the Straw Proposal (to weatherize 40,000 homes by the end of the Plan), and the CO2 savings will be more still.

The Plan also projects three-year savings of between 162,172 and 354,048 dekatherms (Dth) from natural gas programs, depending on the level of funding. Applying the conversion for natural gas combustion to CO2, this suggests the Plan would achieve an additional 8,919 to 19,473 metric tons of CO2 savings from natural gas programs.

Finally, because the electricity sector is operating under the carbon cap established by RGGI, a savings of electricity from an Efficiency Maine-funded project will not create a net reduction in greenhouse gases. It will, however, advance the target of reducing greenhouse gases by making it more affordable for Maine's electricity consumers to operate within the RGGI system.

[33] ENE, "Energy Efficiency: Engine of Economic Growth – A Macroeconomic Modeling Assessment," October, 2009, p.30.

3. The Efficiency Maine Trust

3.1 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 information sharing tasks. 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 and evaluating energy savings. Where appropriate, the Trust staff may fulfill elements of program delivery.

3.2 Stakeholder Board of Trustees

The Trust is governed by a nine-member Board of Trustees, 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.

3.3 Oversight from the Public Utilities Commission

The Commission has oversight of the Trust's program planning and administration. As mentioned above, the Triennial Plan must ultimately be approved by the Commission. The Commission will approve the Plan if it reasonably explains how the programs will achieve the requirements of the statute and the performance metrics contained in the Plan.

The Commission's oversight includes evaluating performance of the programs and ratifying the performance metrics if the metrics conform with the statute's principles of program administration and are in the public interest.[34] The Commission may open an investigation and issue appropriate orders to address concerns of non-compliance. The Commission is empowered to establish a fund to cover the costs of its oversight and evaluation responsibilities.

3.4 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 ordered, require approval from the legislature before it could take effect.

4. The Triennial Plan

4.1 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 Trustees in 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,

[34] 35-A MRSA 10120(1).

- 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.

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.[35]

4.2 Process and Timeline

The process for 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,

- Measures of performance (or "metrics) for each program funded by those Funds.[36]

Before the plan gets to the Commission, however, it undergoes several steps. In the development of the Second Triennial Plan, the Staff and Trustees started in January, 2012 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 cost less than supply.

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

Next, the Staff prepared draft components of the plan and held a dozen public workshops over a period of six weeks, 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 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 satisfied that the document comports with the objectives, targets, and requirements 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 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. Assuming that the PUC uses two to three months to review and approve the Plan, the Trust uses a month to prepare and issue competitive solicitations (RFPs) for program delivery services and then allows two months for contractors to respond and another month to select winning bidders and arrange new contracts, this timeline will leave just a month or two for Staff and new contractors to prepare for the transition.

4.3 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."[37]

4.4 Program Implementation Priorities

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, market transformation, fairness, and comprehensiveness.

(a) Resource Acquisition

The strongest selling point for the Trust's programs is the fact that they deliver energy resources that cost less than conventional supply, and therefore are lowering energy costs. In the case of electricity, the low-cost energy resource acquisition also suppresses the rise of energy and capacity charges and

[37] 35-A MRSA §10104(6).

also improves 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 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.

(b) 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 people 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 past years, Trust programs paid for and organized training for: home energy auditors to learn sales skills when pitching their services to homeowners; contractors to learn about new

mini-split heat pump space heaters; sales staff at big box stores responsible for promoting EnergyStar appliances; large commercial contractors to learn about advances in variable frequency drives; and for facility managers to become certified in best practices of operation and maintenance for the energy systems in their buildings. In the Second Triennial Plan, the Trust continues that trend with an expectation of offerings to help architects and engineers learn about best practices when planning new commercial construction projects, and to make 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 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.

(c) 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 requirements 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.

(d) 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.

5. Opportunity for Energy Efficiency to Lower Energy Costs

5.1 Electric – Maximum Achievable Cost-Effective (MACE) Opportunity

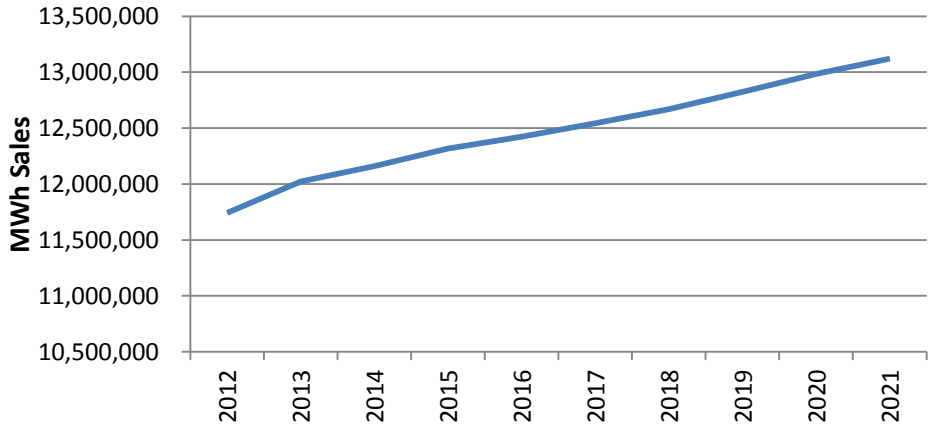
In the spring and summer of 2012, the Trust contracted for a study of the 10-year opportunity to cost-effectively save electricity in Maine. The 2012 Baseline and Opportunities Study[38] (the Opportunity Study) developed a baseline estimate of the efficiency of products currently installed in homes and businesses across Maine. The Opportunity 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. The Opportunity Study included conducting 103 site visits to a sampling of commercial buildings and 30 site visits to a sampling of industrial facilities, analyzing market penetration studies recently conducted by the electric utilities, and reviewing relevant literature and models regarding the residential sector baseline. Data from this research provided the basis for developing up-to-date assessments of current market conditions such as saturation levels of electric end uses, energy efficient equipment, and combined heat and power (CHP) applications. Key data points and findings of the Opportunity Study are highlighted below.

5.1.1 Statewide Electricity Sales Growth

The Opportunity Study projected the growth rate and total annual electricity usage ("sales") over the next decade, assuming there were no energy efficiency programs.

Figure 12 shows the results as a trend line of forecasted sales from 2012 through 2021.

Figure 12 – Maine Electricity Sales Forecast



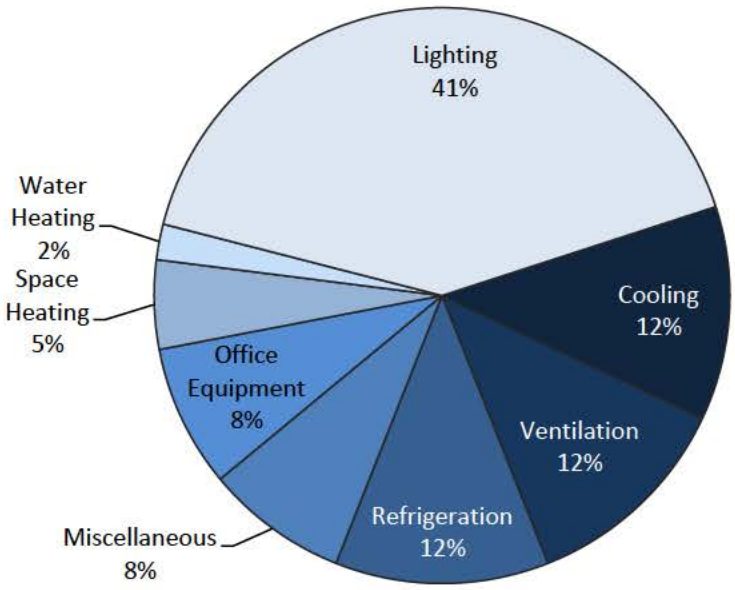
[38] The Cadmus Group, Inc., "Assessment of Energy-Efficiency and Distributed Generation Baseline and Opportunities – Final Report", September 10, 2012.

5.1.2 Baseline Electricity Consumption by End Use and Customer Class

The study's findings regarding the baseline electric consumption, by end use, are presented for the commercial and industrial customer classes, respectively in Figure 13 and

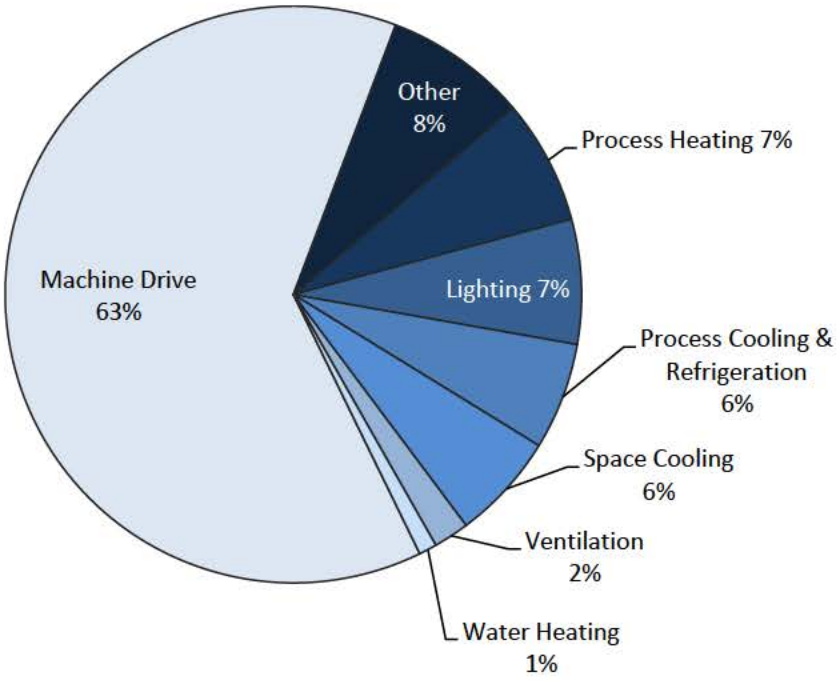
Figure 14. It is notable that for commercial buildings, lighting constitutes more than 40% of consumption, while refrigeration, cooling, and ventilation combine to comprise another 36% of consumption. In the industrial sector, machine drives constitute 64% of consumption.

Figure 13 – Baseline Consumption of Commercial Customer Class, by End Use[39]



[39] Cadmus & GDS Associates, "Assessment of Energy Efficiency and Distributed Generation Baseline and Opportunities," September 11, 2012, Slide 7.

Figure 14 – Baseline Consumption of Industrial Customer Class, by End Use[40]



One illustration of how the Opportunity Study's baseline findings impact program strategy is found in the existing inventory of lights at industrial facilities. As Figure 15 shows, the study found that nearly half (46%) of all lights currently installed at industrial facilities are characterized as interior, non-fluorescent tube lighting. It further found that Maine's industrial facilities currently use a very large number of metal halide (30%) and incandescent (25%) lights to supply this type of lighting (

Figure 16). Knowing, as it does, that alternative types of lighting are more efficient than metal halide and incandescent lights, the Trust will look at designing its programs to harvest this promising efficiency opportunity.

[40] *Id.*, Slide 8.

Figure 15 – Industrial Lighting Breakdown[41]

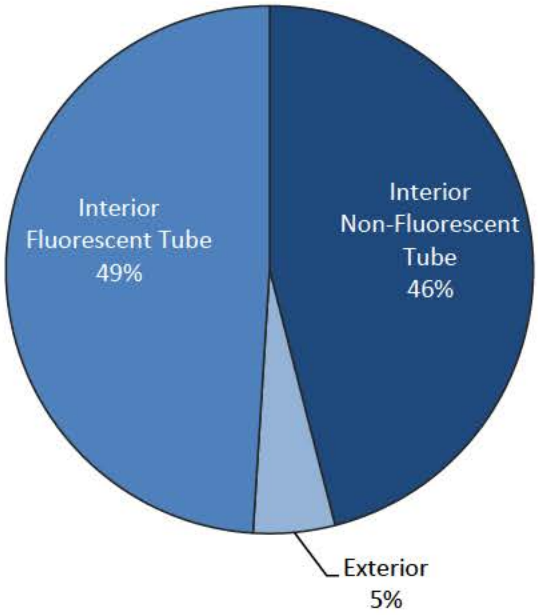
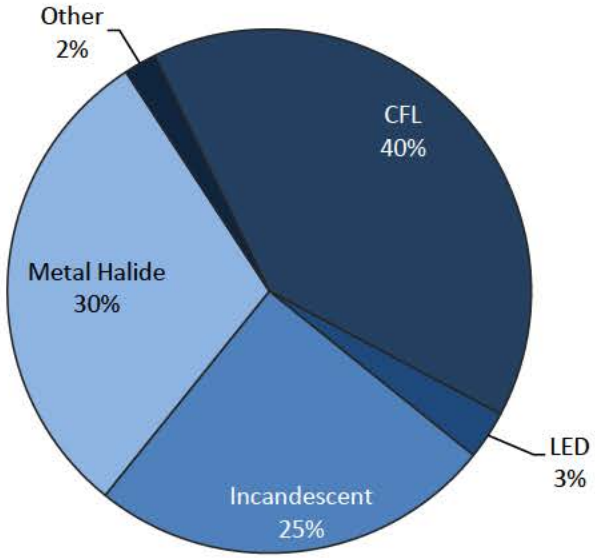


Figure 16 – Current Inventory of Interior, Non-Fluorescent Tube Lighting[42]



Percent of Fixtures

[41] Cadmus (2012), p. 17.
[42] Cadmus (2012), p. 19.

5.1.3 Efficiency Opportunities

The study also assessed the opportunity to upgrade from the baseline to higher-efficiency alternatives, using only 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.

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.

The analysis across all three customer classes (residential, commercial, and industrial) covered 245 unique "measures" (such as installing a 13 watt CFL to replace an old 60 watt incandescent bulb). After adjusting for different housing/building types, building characteristics, and efficiency tiers, thousands of measure permutations were considered.[43]

For the residential sector, the study looked at the following list of potential measures.

Table 2 – Residential Sector Electric Energy-Efficiency Measures Considered[44]

End-Use Type	End-Use Description	Measures/Programs Included
Appliances	ENERGY STAR Appliances	• ENERGY STAR Clothes Washers & Dishwashers • ENERGY STAR Dehumidifiers • ENERGY STAR Refrigerators & Freezers • Refrigerator/Freezer Pick-Up/Recycling
Consumer Electronics	Home Electronics	• Controlled Power Strips • Internal Power Supplies, Laptops, Computer Monitors • Efficient Televisions
Lighting	Interior/Exterior Lighting	• Specialty and Standard CFL Bulbs • LED Screw-In Lighting • Efficient Indoor/Exterior Fixtures
Water Heating	Domestic Hot Water	• Efficient Storage Tank WH • Heat Pump WH • Solar WH w/ Electric Back-Up • Tank & Pipe Wrap • Low Flow Showerheads & Faucet Aerators
HVAC Envelope	Building Envelope Upgrades	• Improved Attic, Wall, & Floor Insulation Levels • ENERGY STAR Windows • Improved Air Sealing & Duct Sealing

[43] Cadmus (2012), p.7.
[44] Cadmus (2012), Table 6, p. 25.

HVAC Equipment	Heating/Cooling/Ventilation Equipment	• Existing Central AC Tune-Up • Efficient Central AC Systems • Efficient Room Air Conditioners • Ductless Mini-Split Heat Pumps • Efficient Furnace Fans • Whole House Ventilation Fans
Other	Miscellaneous Efficiency Upgrades	• Two-speed or Variable Speed Pool Pump Motor

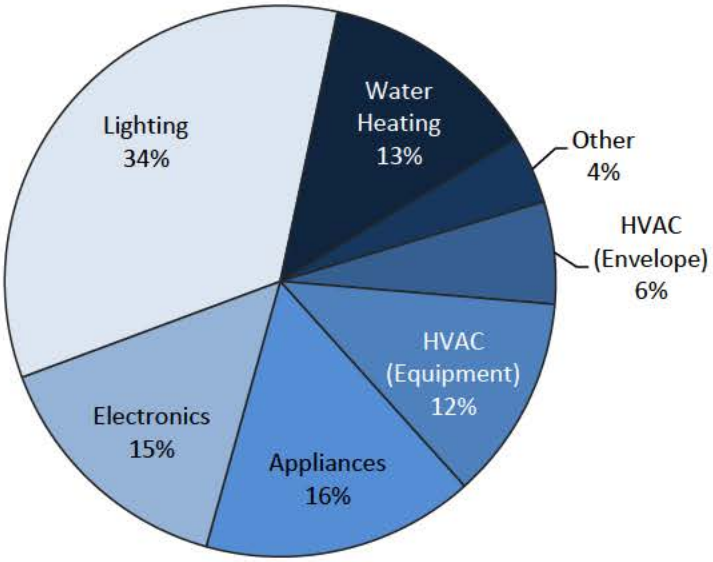
The study found the following opportunities to realize cost-effective, achievable savings in the year 2021 (accounting for the ongoing annual savings carried forward from projects implemented in the prior nine years).

Table 3 – Maximum Achievable Savings for Residential Sector, by End Use[45]

End Use	2021 Energy (MWh)
Lighting	328,406
Appliances	154,185
Electronics	141,156
Water Heating	123,694
HVAC (Equipment)	114,997
HVAC (Envelope)	59,857
Other	42,094
Total	964,389
% of Annual Sales Forecast	18%

[45] Cadmus, 2012, Table 9 and Figure 8, page 28.

Figure 17 – Maximum Achievable Savings for Residential Sector, by End Use[46]



For the commercial sector, the study considered the following list of potential measures.

Table 4 – Commercial Sector Electric Energy-Efficiency Measures Considered[47]

End-Use Type	End-Use Description	Measures Included
Space Heating & Space Cooling	Heating/Cooling/Ventilation Equipment, HVAC Controls	• Heat Pumps (High-Efficiency, Water Source) • Insulation (Wall, Ceiling, etc.) • EMS / Controls • Economizers • High-Efficiency AC and Chillers
Ventilation	HVAC, Air Quality	• Ventilation Motors and VFD's • Demand Controlled Ventilation
Water Heating	Domestic Hot Water	• High-Efficiency Tank and Booster Water Heaters • Heat Pump Water Heater • Low Flow Showerhead/Faucet Aerator • High-Efficiency Clothes Washers
Lighting	Interior/Exterior Lighting	• High-Efficiency T8 and T5 Systems • LED Lighting Systems (Indoor and Outdoor) • Lighting Controls • Refrigerated Case Lighting
Cooking	Energy Star Appliances	• High-Efficiency Cooking Equipment
Refrigeration	High-Efficiency Equipment	• Vending Machines/Vending Misers • Reach-In Freezers

[46] Cadmus, 2012, Table 9 and Figure 8, page 28.
[47] Cadmus (2012), Table 10, p. 32.

End-Use Type	End-Use Description	Measures Included
	Refrigeration Controls	• Covers for Display Cases • Evaporator Fan Controls
Office Equipment/ Computers	Energy Star Office Equipment	• Energy Star Office Equipment • Smart Power Strips / Power Supplies
Other	Industrial Processes High-Efficiency Electricity Distribution	• Machine / Industrial Processes • Air Compressors • High-Efficiency Transformers

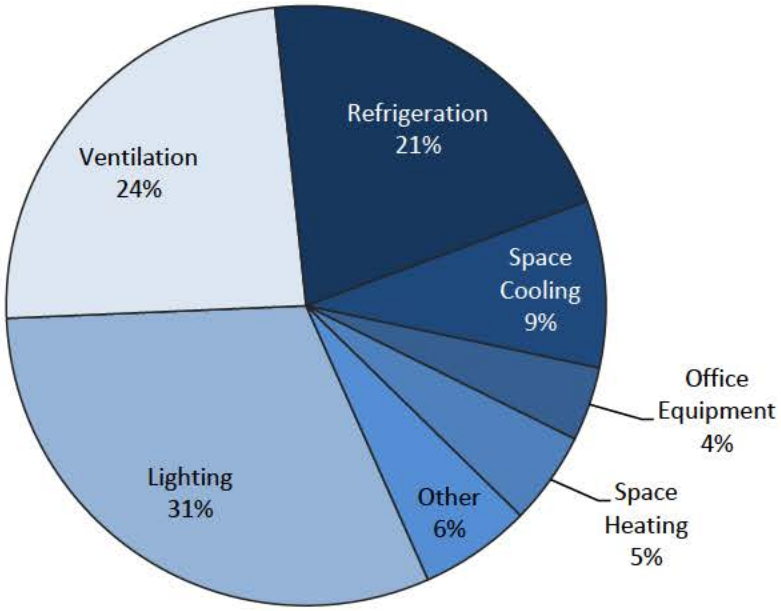
The Opportunity Study found the following potential to realize cost-effective, achievable savings in the commercial sector in the year 2021 (accounting for the ongoing annual savings carried forward from projects implemented in the prior nine years).

Table 5 – Maximum Achievable Savings for Commercial Sector, by End Use[48]

End Use	2021 Energy (MWh)
Lighting	253,055
Ventilation	198,948
Refrigeration	168,161
Space Cooling	72,139
Office Equipment	32,007
Space Heating	42,551
Water Heating	29,869
Process	12,395
Other	5,080
Cooking	2,153
Total	816,357
% of Annual Sales Forecast	18%

[48] Cadmus (2012), Table 13 and Figure 12, p. 35.

Figure 18 – Maximum Achievable Savings for Commercial Sector, by End Use[49]



For the industrial sector, the study considered the following list of potential measures.

Table 6 – Industrial Sector Efficiency Measures Considered[50]

End-Use Type	End-Use Description	Measures/Programs Included
Space Heating & Space Cooling	Heating/Cooling/Ventilation Equipment, HVAC Controls	• Insulation (Wall, Ceiling, etc.) • EMS / Controls • Economizers • High-Efficiency AC and Chillers
Ventilation	HVAC, Air Quality	• Ventilation Motors and VFD's • Demand Controlled Ventilation
Water Heating	Domestic Hot Water	• High-Efficiency Tank and Booster Water Heaters • Heat Pump Water Heater
Lighting	Interior/Exterior Lighting	• High-Efficiency T8 and T5 Systems • LED Lighting Systems (Indoor and Outdoor) • Lighting Controls
Cooking	Energy Star Appliances	• High-Efficiency Cooking Equipment
Process Cooling, Process Heating & Refrigeration	High-Efficiency Equipment Refrigeration Controls	• Improved Refrigeration (Various Measures) • Electric Supply System Improvements • Sensors & Controls • Energy Information System
Office Equipment/ Computers	Energy Star Office Equipment	• Energy Star Office Equipment • Smart Power Strips / Power Supplies

[49] Cadmus (2012), Table 13 and Figure 12, p. 35.
[50] Cadmus (2012), Table 15, p. 38.

End-Use Type	End-Use Description	Measures/Programs Included
Machine Drive	Industrial Processes	• Pump System Efficiency Improvements • Motor System Optimization (Including ASD) • Electric Supply System Improvements • Sensors & Controls • Industrial Motor Management • Fan System Improvements • Advanced Efficient Motors • Energy Information System • Advanced Lubricants

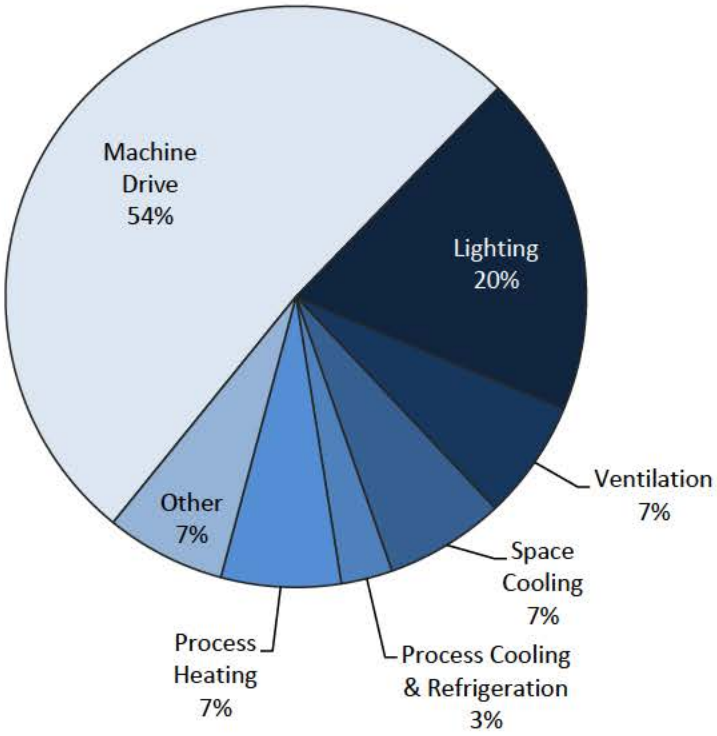
The study found the following opportunities to realize cost-effective, achievable savings from the industrial sector in the year 2021 (accounting for the ongoing annual savings carried forward from projects implemented in the prior nine years).

Table 7 – Maximum Achievable Electrical Savings from the Industrial Sector, by End Use[51]

End Use	2021 Energy (MWh)
Machine Drive	171,307
Lighting	62,776
Ventilation	23,909
Space Cooling	22,518
Process Cooling & Refrig	9,988
HVAC Controls	9,074
Office Equipment	5,867
Process Heating	5,297
Water Heating	2,908
Envelope	2,245
Other	2,117
Total	318,007
% of Annual Sales Forecast	10%

[51] Cadmus (2012), Table 18 and Figure 15, p. 41.

Figure 19 – Maximum Achievable Electrical Savings from the Industrial Sector, by End Use[52]



The summary results for all three sectors, shown in Table 8, 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 16%, or nearly 2.1 million megawatt-hours, of the forecasted sales in that year. [53]

Table 8 – Maximum Achievable Cost-Effective (MACE) Potential for Electricity Savings, by Sector

Sector	Maximum Achievable Potential 2021 (MWh)	Maximum Achievable Potential as a Percent of 2021 Sales
Residential	964,389	18%
Commercial	816,357	18%
Industrial	318,007	10%
Total	2,098,753	16%

Assuming these 10 years of savings were achieved in equal increments each year, the average savings would be 1.6% per year.

[52] Cadmus (2012), Table 18 and Figure 15, p. 41.
[53] Cadmus, Baseline and Opportunity Study, 2012, Table ES-1, p. 1.

According to Staff's analysis, funding Efficiency Maine 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 kWh from the first year of programs in the new Triennial Plan, 198,082,360 kWh from the second year of programs, and 226,172,732 kWh from the third year of programs, having a cumulative effect of saving 574,299,852 kWh in the third year of the Triennial Plan. Over the full lifetime of the efficiency measures installed during these three years, Mainers would need to purchase 7.13 billion fewer kWh of electricity, which would save more than $937 million.

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 Case" MACE budget scenario assumes that Efficiency Maine continues to experience the same program costs to save electricity as it has in recent years, and that participants can be counted on to make the same level of financial contribution to the completion of projects as they have in the past. The "High Case" MACE budget scenario assumes that during the Triennial Plan period, Efficiency Maine's share of the total cost to save a kWh increases as participants ability or willingness to contribute financially decreases compared to prior years. The results, by year, are shown for each scenario in Table 9 below.

Table 9 – Range of Potential Efficiency Maine Budgets Necessary to Realize Maximum Achievable Cost-Effective (MACE) Electricity Savings

Fiscal Year	Low Case MACE Budget Scenario	High Case MACE Budget Scenario
2014	$ 45,926,123	$ 54,954,894
2015	$ 60,022,196	$ 68,789,820
2016	$ 68,171,965	$ 77,352,059

5.2 Natural Gas - All Cost-Effective Potential for Savings

In 2009, the Maine Public Utilities Commission secured the services of contractors Summit Blue and the American Council for an Energy Efficient Economy (ACEEE) to estimate the cost-effective potential to save natural gas in Maine over the period of a decade. Comparing the analysis of surrounding states from recent years, the study extrapolated the potential for cost-effective natural gas savings, and the costs to capture those savings, to Maine's forecasted sales and revenue. It should be noted that the analysis reviewed by this study was generally performed before the significant regional shift away from oil to natural gas, which would suggest that the potential to save natural gas in Maine could be growing.

After considering results based on a number of factors, such as geography, retail price, saturation of space and water heating equipment, role of fuel switching, and sales by sector, the contractors applied what they termed a "best fit" for applying out-of-state results to the markets in Maine, and "best fit-high" to indicate the more aggressive assumptions associated with capturing all of the cost-effective resource. The contractor also calculated the median savings levels and costs from among the surrounding states.

Applying the best fit to Maine, the study found that the best fit-high could achieve up to 2.5% savings as a percent of sales at a first year cost of $30.1/MMBtu.[54] As shown in Table 10, the study also found that in 2008 Maine's actual savings was only a half-percent of sales and was a third more costly to harvest, per-unit of energy saved, than the best-fit high jurisdiction (albeit slightly less costly than the average in the Northeast states).

Table 10 – Potential versus Actual Cost-Effective Natural Gas Savings in Maine[55]

Result	Annual Savings as % of Sales	First Year Cost/MMBtu
Median	1.2%	$30.1
Best Fit-High	2.5%	$30.1
Maine 2008 Actual	0.5%	$40.0

The Summit Blue/ACEEE study concluded that over a 10-year period, from 2010 to 2019, the potential for cost-effective natural gas savings reached 1,090,000 dekatherms at a budget of $33 million, as shown in Table 11.[56]

Table 11 – Potential Amount of Cost-Effective Savings and Budget Needed to Achieve that Potential

Time Period	Savings (Dth)	Required Budget to Achieve Potential (Millions)
10 Year Total	1,090,000	$33
Average Annual	109,000	$3.3

The study also estimated that the actual funding level for Maine's Natural Gas Conservation Fund over the 10-year period would be $8.3 million and judged that to constitute approximately 25% of the budget needed to achieve all cost-effective savings for natural gas in the participating utility territory.[57] It is important to note that these savings and budget estimates do not factor in what would happen if all natural gas utilities in Maine were contributing to the Trust's Natural Gas Conservation Fund, nor does it reflect changes in natural gas prices since the study was conducted.

[54] Summit Blue Consulting and ACEEE, "Summary Report of Recently Completed Potential Studies and Extrapolation of Achievable Potential for Maine (2010-2019)", December, 2009, slide 15.
[55] *Id.*
[56] Summit Blue, Slide 21. Note that the Summit Blue study accidentally reported energy savings in the Summary Report of 1,090 MCf 10-year savings, and 109 MCf annual savings, both of which were off by a multiple of 1,000. We then converted the MCF to Dth to be consistent throughout the document.
[57] *Id.*, Slide 21.

6. 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 2016. The program descriptions are divided into four categories:

- Business
- Residential
- Alternative Energy, and
- Cross-Cutting[58]

The complete list of programs within these four categories is shown in Table 12.

Table 12 – Efficiency Maine Trust Programs

Business	Residential	Alternative Energy	Cross-Cutting
Business Incentive Program – Electric	Residential Retail Products – Electric	Renewable Rebate Program	Energy Education and Information
Business Incentive Program – Natural Gas	Residential Low Income - Electric	Renewable Research, Development and Demonstration Grants	Innovation Program
Small Business Direct Install	Residential Low Income – Natural Gas		Research and Evaluation
Large Customer	Home Energy Savings Program		Database

The program descriptions include the following types of information in this order:

- Program Name
- Overview
- Objectives
- Opportunity
- Program Design
  - Measures Promoted
  - Implementation Strategy
- Program Evolution

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

The 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 in which 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 funding 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 key performance metrics: projected savings (of energy and dollars) and the resulting benefit-to-cost ratio calculated using the Trust's cost-effectiveness test.

Business	BUSINESS INCENTIVE PROGRAM – ELECTRIC
Overview	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. There are two paths available for customers: prescriptive incentives and custom incentives. 1. 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. 2. Custom incentives are available for electricity-saving equipment that is not on the list of prescriptive incentives. Custom incentives are offered to encourage creative solutions by supporting the installation of energy-efficient equipment for which costs and savings vary by application. Calculations are supplied by the customer and reviewed by contracted engineering staff. Projects that result in a yearly energy savings of 70,000 kWh or more are eligible to participate.
Objectives	Create more favorable market conditions for the increased use of energy-efficient products and services; Promote sustainable economic development and reduce environmental damage; Reduce total energy costs for electricity consumers in the State by increasing the efficiency with which electricity is consumed.
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: • 77,000 small C&I (less than 20 KW) • 13,000 medium C&I (20 to 400 KW) • 500 large C&I (over 400 KW) The opportunity avails itself in the form of inefficient electrical equipment such as lighting, HVAC, refrigeration, and process equipment.
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 2003.

<table>
<tr><th>Business</th><th>BUSINESS INCENTIVE PROGRAM – ELECTRIC</th></tr>
<tr><td></td><td>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 Incentive Program for natural gas efficiency measures. This ensures integrated program delivery for the business participant.</td></tr>
<tr><td colspan="2">Program Design</td></tr>
<tr><td>Measures Promoted</td><td>Eligible measures include efficient lighting equipment and controls, efficient motor drive systems, efficient HVAC systems, compressed air systems, industrial process systems and controls, building controls, and demand controlled ventilation.

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:

<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.

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>Measures outside the scope of the Prescriptive Incentive track</td></tr>
</table>
Eligible custom measures are often participant specific or process specific. Eligibility for custom incentives is contingent on establishing demonstrable electricity savings. Measures on the prescriptive measure list are not eligible for custom incentives.</td></tr>
</table>

Business	BUSINESS INCENTIVE PROGRAM – ELECTRIC
Implementation Strategy	**Marketing** 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. Attendance and participation at targeted trade shows will also be included as part of the marketing outreach strategy. In addition to program specific information, the Business Program webpage also provides actual customer case studies in order to share project information.
	Education and Training / Workforce Development Targeted technical training for Qualified Partners will be held throughout the year 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 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 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 as described in the Measures Promoted section above, will be periodically reviewed by program staff to ensure the cost share is balanced.
	Quality Assurance/Quality Control The program has an established quality assurance and quality control process. All incentive applications are screened for completeness. Prescriptive applications larger than $5000 and all custom applications require a technical review before project preapproval is granted. At project completion, all custom projects and large prescriptive projects are inspected for compliance with the incentive

Business	BUSINESS INCENTIVE PROGRAM – ELECTRIC
	application before the incentive payment is issued. In addition, throughout the year a random sample of smaller projects are inspected. All participants are surveyed to determine the level of satisfaction with the Qualified Partner (if applicable) and the program and any issues are promptly addressed.
Program Evolution	
Base Funding	During FY14-FY16 additional program elements to be explored include: • Pay for Performance – an initiative that takes a comprehensive approach to project design, implementation, and verification of energy savings. • 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 are the Healthcare and Retail sectors. • Upstream Incentives – explore incorporating targeted upstream incentives for specific measures. • Retro-commissioning – assess incorporating additional prescriptive measures commonly found in retro-commissioning projects. • Street Lighting – continue to promote efficient street lighting technologies applicable to customer-owned municipal street lights. • 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.

<table>
<tr><th>Business</th><th>BUSINESS INCENTIVE PROGRAM – NATURAL GAS</th></tr>
<tr><td>Overview</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>Objectives</td><td>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.</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 located 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>Premium efficiency boilers, furnaces and heaters, and their associated controls, as well as efficient gas-fired commercial kitchen equipment are efficient alternatives promoted by the program.</td></tr>
<tr><td>Market Barriers</td><td>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.</td></tr>
<tr><td>Program History</td><td>The Business Natural Gas Incentive Program is a mature program well established in Maine since 2006 and was originally offered and delivered by Unitil. In 2012 the Trust integrated the delivery of the program with the delivery of the Business Incentive program for electrical efficiency measures. 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.</td></tr>
<tr><td colspan="2">Program Design</td></tr>
<tr><td>Measures Promoted</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="2">Incremental incentive to customers that upgrade from code compliant standard</td></tr>
<tr><td>Natural gas-fired non-condensing hot water</td><td>AFUE ≥ 85%</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Business</th><th colspan="3">BUSINESS INCENTIVE PROGRAM – NATURAL GAS</th></tr>
<tr><td></td><td colspan="3"><table>
<tr><td>boiler ≤ 300 MBtu/h</td><td></td><td rowspan="10">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 and ≤500 MBtu/h</td><td>Thermal Efficiency ≥ 85%</td></tr>
<tr><td>Natural gas-fired non-condensing hot water boiler

>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

>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>
<tr><td>Commercial Kitchen Combination Oven</td><td>Cooking Efficiency ≥ 40%</td></tr>
<tr><td>Commercial Kitchen Steamer</td><td>ENERGYSTAR-qualified</td></tr>
<tr><td>Commercial Kitchen Griddle</td><td>ENERGYSTAR-qualified</td></tr>
</table></td></tr>
<tr><td>Implementation Strategy</td><td colspan="3">Marketing

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</td></tr>
</table>

Business	BUSINESS INCENTIVE PROGRAM – NATURAL GAS
	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, which promotes integrated program delivery for the business participant. In addition to program specific information, the Natural Gas Program webpage also provides actual customer case studies in order to share project information. Attendance and participation at targeted trade shows will also be included as part of the marketing outreach strategy.
	Education and Training/Workforce Development Targeted technical training for Qualified Partners will be held throughout the year. Training areas may include technical areas and sales training to enable the Qualified Partners to provide better information regarding the potential of the projects.
	Financial Incentives 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 incremental costs and respective incentive amounts will be reviewed periodically by program staff to ensure the cost share is balanced.
	Quality Assurance/Quality Control The program has an established quality assurance and quality control process. All incentive applications are screened for completeness. At project completion, all projects are inspected for compliance with the incentive application before the incentive payment is issued. All participants are surveyed to determine the level of satisfaction with the Qualified Partner (if applicable) and the program and any issues are promptly addressed.
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 incentive option.
Additional Funding Scenario	With additional funding, the program will expand the list of eligible measures and will add a custom measure option. The deployment of account managers to engage customers and explore more comprehensive energy efficiency opportunities will enable an enhanced integrated program delivery approach.

Business	SMALL BUSINESS DIRECT INSTALL PROGRAM – ELECTRIC
Overview	The majority of businesses across Maine are small businesses. Many business owners who want to save energy and money lack the time and the know-how to analyze options. The Direct Install Program will provide the business with a walk-through assessment and determine energy efficiency opportunities. A proposal will be developed providing project cost estimates, associated energy savings and financial incentives. Contractors and Suppliers are available for rapid deployment to install the equipment. The business will pay the balance of the project costs upon project completion or may elect to pay incrementally through On-bill Financing through their electric utility, if available.
Objectives	Increase consumer awareness of cost-effective options; Create favorable market conditions for increased use of energy efficiency; Reduce total energy costs for electricity consumers in the State by increasing the efficiency with which electricity is consumed; and Create a solution to energy project implementation for Maine's small businesses.
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. While the initial focus will be on energy efficient lighting measures, as budgets allow, over time other measures will be accessed and added to the program. For example, in other jurisdictions, similar programs started with lighting measures and then gradually added measures such as HVAC and efficient refrigeration.
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 was conducted as a pilot program during the First Triennnial Plan period (FY12-FY13) 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

Business	SMALL BUSINESS DIRECT INSTALL PROGRAM – ELECTRIC
	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 regarding refrigeration, compressed air, and HVAC equipment, 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: 1. Marketing and project identification, complete with projected energy savings 2. Financing options including utility on-bill financing 3. Installation of the recommended measures 4. Quality assurance and quality control through on-site project verification
	Marketing 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.
	Financial Incentives The cost of the project is partially covered by Efficiency Maine. The customer is offered the option of either financing the balance of the project cost through the customer's electric utility bill or paying it at the time of installation.
	Quality Assurance/Quality Control The program has an established QA/QC process which includes random pre-installation assessments and all post project completion inspections. This includes verifying the installation of pre-selected measures, contractor installation verification, and survey of participant to assess satisfaction with the program. Any issues will be promptly addressed.
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.

Business	SMALL BUSINESS DIRECT INSTALL PROGRAM – ELECTRIC
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.

Business	COMMERCIAL NEW CONSTRUCTION PROGRAM
Overview	The Commercial New Construction Program is designed to provide support and incentives to participants for new construction and major renovation of commercial facilities.
Objectives	Increase consumer awareness of cost-effective options; Create favorable market conditions for increased use of energy efficiency; and Support the industry to encourage incorporation of energy efficiency into the design and construction of new commercial construction projects.
Opportunity	
Market	The target market for this program is 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 climate 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

Business	COMMERCIAL NEW CONSTRUCTION PROGRAM
	advice to the target community through the Maine Advanced Buildings program.
	Technical Assistance 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.
	Financial Incentives The Trust will continue to offer incentives for eligible energy efficient equipment through the Business Incentive Program.
	Quality Assurance/Quality Control Projects requesting incentives through the Business Incentive program will be monitored according to the Incentive Program QA/QC procedures. When budgets allow for a full scale Maine Advanced Building program, an established QA/QC process will be deployed. This will include monitoring of the new construction project throughout the design, construction, and completion phases.
Program Evolution	
Base Funding	During the period of FY2014-FY2016, 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 will ramp up the technical assistance offerings to assist with the new construction projects. The program will also reinstitute incentives for full participation in the Maine Advanced Buildings program and will target new networks, including developers, architects and engineers, mortgage brokers and banks.

Business	LARGE CUSTOMER PROGRAM
Overview	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.
Objectives	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 in the State by increasing the efficiency with which electricity is consumed.
Opportunity	
Market	The 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 816,347 MWh over ten years in the commercial sector and 318,007 MWh in the industrial sector. The study also looked at distributed generation across both sectors and found there to be at least 12 MW of capacity as cost-effectively achievable in the next ten years. 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 that 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 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,

Business	LARGE CUSTOMER PROGRAM
	thereby creating a challenging environment to purchase 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 diverse measures. Many of the projects involved variable frequency drive installations installed on motors and pumps and a number of projects featured large lighting retrofits. In 2010, the Trust contracted with Navigant to conduct an evaluation of the Large Customer program. The impact evaluation found net total resource cost ratio of 7.8 and issued the following recommendations: • Continue funding for this program, incorporating both electricity and Greenhouse Gas (GHG) focused projects. 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. • 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. • 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. 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 initially harvesting the most cost effective projects, making less cost effective projects at the same facilities 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 that have been 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 the

Business	LARGE CUSTOMER PROGRAM
	Second 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 succeeds in securing a long-term contract in FY13, it may then approach the MPUC to seek a multi-year contract for use during the Second Triennial Plan period. By securing a multi-year contract, the Trust could send a consistent message to the large customers in the state that it would be worthwhile to 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** 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 these large facilities and with their vendors to identify and develop projects for the program. In the Second Triennial Plan period, the Trust will deepen its contact with these same individuals. The Trust will continue to offer customers guidance on eligible projects, expected incentive levels, and planning a multi-year investment strategy based on program offerings.
	Technical Assistance The program offers 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 the Trust's program.
	Financial Incentives The program will continue to offer competitive incentives of up to 50% of the project cost and financing for projects that meet the program's established underwriting standards.
	Quality Assurance/Quality Control Projects are monitored throughout construction. This includes invoice review, conducting site visits and reviewing 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, a site visit is conducted to verify project installation details.
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 decline

Business	LARGE CUSTOMER PROGRAM
	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 budget levels and savings projections are projected 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, account management will increase accordingly. 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.

Residential	RESIDENTIAL RETAIL PRODUCTS PROGRAM- ELECTRIC
Overview	This program offers incentives in retail stores including: mark downs, in-store coupons, mail-in coupons and discounted product "bundles". Incented measures include: CFLs, LED lights, appliances, electronics, and supplemental heating systems.
Objectives	Increase consumer awareness of cost-effective options; Create favorable market conditions for increased use of energy efficiency; and Reduce total energy costs for electricity consumers.
Opportunity	
Market	The target market for these programs is all Maine residential consumers. 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 equates to approximately 33 million residential light bulb sockets in Maine. The same study found that 76% of the sockets (25 million) are standard screw-base sockets (as opposed to pin-based, or small screw based). Efficiency Maine's program has incented the sale of 8.5 million bulbs. Thus, it is estimated there are 16.5 million target standard-base sockets that still have incandescent lamps in Maine homes. Appliances that are replaced every ten years have a market potential of approximately 55,000 per year assuming 551,125 occupied residential homes (or apartment units) in Maine. Most lighting, appliances, and electronics products tend to be purchased as replacements. Supplemental heating systems and advanced power strips tend to be new purchases and can be purchased at any time.
Efficient Alternatives	• CFLs present a viable value proposition for indoor, non-dimming, standard socket bulbs. They offer a cheaper lifetime cost, fit well, and work well. • LEDs 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. • ENERGY STAR-certified appliances, electronics and heating systems offer increased energy efficiency compared with products meeting minimum federal standards. • Supplemental heating systems such as ductless heat pumps also offer significant energy savings over traditional units. • Advanced power strips, though not eligible for ENERGY STAR certification, reduce phantom load of TV and PC peripherals by automatically shutting

Residential	RESIDENTIAL RETAIL PRODUCTS PROGRAM- ELECTRIC
	off power to them when the strip senses that the TV or PC has been powered off. These can be highly cost effective.
Market Barriers	• For CFLs, first cost is the primary barrier, but concerns about mercury, delayed start, flickering, light color and fixture fit also have been concerns. The program has demonstrated that first cost is the primary barrier. • 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. • For appliances, first cost is the primary barrier. • 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. • 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 CFLs in the country. This program largely follows the national model with these additional best practices: • Move from coupons to mark downs wherever possible to eliminate hassle • Redirect mass media advertising funds to price reduction • Partner with food pantries to distribute CFLs (similar costs as retail mark down) • Co-merchandise with other Efficiency Maine programs (e.g. Appliance Rebate Program participants were offered free CFL 6-packs) Efficiency Maine also follows the common retailer rebate coupon approach for appliances. This has proven highly effective for appliances. The Trust has implemented a Replacement Heating Equipment Program under DOE guidance in 2010 following national best practices.
Program Design	
Measures Promoted	ENERGY STAR lighting, appliances, heating systems and electronics.
Implementation Strategy	**Marketing** Most marketing will be in-store, "point of purchase" (POP), but additional channels including PR, advertising, direct mail, and cooperative marketing will be considered. The program will be delivered through a program delivery contractor selected through a competitive bidding process. The program delivery team field representatives will install and maintain all POP.

Residential	RESIDENTIAL RETAIL PRODUCTS PROGRAM- ELECTRIC
	Education and Training/Workforce Development Program field representatives will conduct in-store trainings either via 1-on-1 conversations or by staffing demonstration tables to train consumers and store personnel.
	Technical Assistance In addition to in-store education and training, Efficiency Maine will maintain technical information on its website to help consumers select the right product and store for their needs. The website will also contain information about where CFLs can be properly recycled once they have burned out.
	Financial Incentives Mark Down - Efficiency Maine will enter into memorandums of understanding (MOUs) 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. In-Store Coupons - Smaller retailers who do not have the point-of-purchase systems to track and report marked down sales will be reimbursed for submitting in-store coupons. The purchase will be discounted at the time of purchase. Mail-In Coupons – for larger items, such as appliances, consumers will make the purchase, pay full price, and then mail a rebate claim form to Efficiency Maine. The Trust will then mail a rebate check to the participant.
	Quality Assurance/Quality Control Program field representatives will visit stores to ensure markdown prices match MOU's and that POP materials are being used properly. All rebate claims are reviewed to ensure that the product and participant are eligible.
Program Evolution	
Base Funding	The program will continue to add products which prove cost effective and to evaluate incentive amounts. 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 ENERGY STAR standard.
Additional Funding Scenario	With increased funding, the program will expand the appliance program to encompass a more complete appliance, heating system and electronics program, and will explore the use of upstream discounting for these measures. Additional CFL distribution channels (fuel dealers, grass roots organizations, faith groups, non-profits, senior centers, etc.) will also be explored.

Residential	RESIDENTIAL LOW INCOME PROGRAM – ELECTRIC
Overview	This program will target electrical savings in homes occupied by low income residents. The initial focus will be direct install of envelope improvements, and efficient lighting, appliances, and heating systems, in electrically heated homes.
Objectives	Increase consumer awareness of cost-effective options; Reduce total energy costs for electricity consumers; and Deploy the designated electric System Benefit Charge to this market sector through a cost effective program.
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 as many as 120,000 eligible households (60,000 participating in LIHEAP, plus 60,000 in utility-paid subsidized housing or are otherwise eligible, but not participating). 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 electrically heated 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 use of energy efficient lights, 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: • First cost • Lack of information • Lack of access to capital
Program History	From 2004 to 2011, Efficiency Maine ran an Appliance Replacement Program through MaineHousing. In this program, Community Action Agency (or "CAP") employees metered eligible residents' refrigerators to determine their efficiency. If the refrigerators were found to be inefficient, they were replaced at no cost to the resident. The Trust has also been running a highly successful retail markdown residential lighting program since 2004 and the 2012 Residential Lighting Program Evaluation determined that 19% of participants were LIHEAP eligible. In FY2012 Efficiency Maine began a partnership with the Good Shepherd Food Bank to

Residential	RESIDENTIAL RETAIL PRODUCTS PROGRAM- ELECTRIC
	distribute CFLs at food pantries. The Trust started a low-income, electric heat, multi-family weatherization program in January 2012 that considers all relevant efficiency measures. This multi-family program is the basis for the Second Triennial Plan period.
Program Design	
Measures Promoted	The Residential 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** This program will target USDA-RD, HUD, MaineHousing, and other housing authority building owners and managers. The program will be delivered through a program delivery contractor selected through a competitive bidding process.
	Education and Training/Workforce Development The building energy audit, project bid and award, and project oversight will be performed by the program's delivery team. All installation work will be bid out to Participating Energy Advisors and PACE Registered Vendors.
	Technical Assistance All technical assistance will be provided by the program delivery team.
	Financial Incentives The program will cover 100% of all costs of the efficiency project including the audit, project management, project materials, and installation costs.
	Quality Assurance/Quality Control The delivery team will inspect all jobs on-site before and after the upgrade.
Program Evolution	
Base Funding	The Trust will continue to deliver the program and begin planning for a follow-on program once all electrically heated LIHEAP-eligible homes have been upgraded. In addition, 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 used by the Residential Retail Program.

<table>
<tr><th>Residential</th><th>RESIDENTIAL LOW INCOME PROGRAM – NATURAL GAS</th></tr>
<tr><td>Overview</td><td>The Low Income Gas Program provides funding for the installation of high efficiency natural gas space and water heaters in low income homes where participating utility gas lines are plumbed into the residential building.</td></tr>
<tr><td>Objectives</td><td>Increase consumer awareness of cost-effective options for conserving natural gas; and,

Deploy the designated Low Income Natural Gas budget allocation to this market sector through a cost-effective program.</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 the participating utility natural gas service territory (e.g., Unitil) with a particular focus on multi-family 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.

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 continue to evaluate energy efficiency opportunities and methods of delivery.</td></tr>
<tr><td>Efficient Alternative</td><td>Eligible measures include efficient space heaters, instantaneous water heaters, upgraded ENERGY STAR boilers and furnaces.</td></tr>
<tr><td>Market Potential</td><td>The upgrade of heating systems in all low-income properties in the participating utility’s service territory is currently estimated to be 1,000 units.</td></tr>
<tr><td>Market Barriers</td><td>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.</td></tr>
<tr><td>Program History</td><td>Low Income Program funding was formerly used for weatherization of multi-family residential properties in Unitil’s service territory and administered directly by Unitil.</td></tr>
<tr><td colspan="2">Program Design</td></tr>
<tr><td>Measures Promoted</td><td>The following list represents typical high efficiency natural gas space and water heating equipment:

<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 Btuh direct vent space heater with AFUE efficiency exceeding 84%.</td><td>Low Income participants will be eligible to receive upgrades to their</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Residential</th><th colspan="3">RESIDENTIAL LOW INCOME PROGRAM – NATURAL GAS</th></tr>
<tr><td></td><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><td rowspan="2">natural gas heating systems.

Participants will also be eligible for Residential Direct Install Incentives for completing air sealing in conjunction with a BPI energy audit.</td></tr>
<tr><td></td><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>
<tr><td>Implementation Strategy</td><td colspan="3">The program will be delivered through a program delivery contractor selected through a competitive bidding process.

Marketing

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’s service territory.</td></tr>
<tr><td></td><td colspan="3">Education and Training/Workforce Development

Information about the availability of funds for low income natural gas heated residential properties will be conveyed during periodic webinars and technical training for participating contractors held throughout the year. This will includes opportunities for feedback on program design and opportunities for improvements to program delivery. Training on technical topics and sales training will be encouraged with the contractor community to enable them to provide better information about weatherization and efficient heating to low income residents.</td></tr>
<tr><td></td><td colspan="3">Technical Assistance

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.</td></tr>
<tr><td></td><td colspan="3">Financial Incentives</td></tr>
</table>

Residential	RESIDENTIAL LOW INCOME PROGRAM – NATURAL GAS
	In addition to heating system upgrades, eligible participants may receive measures including programmable thermostats and weatherization measures.
	Quality Assurance/Quality Control Program delivery personnel will inspect projects to ensure compliance with established program guidelines. Any issues identified will be promptly addressed.
Program Evolution	
Base Funding	With base funding, the Trust will continue to offer low income participants access to efficiency measures such as heating system upgrades, weatherization measures, and programmable thermostats.
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. The Trust may investigate offering financing options for low income participants to increase availability of funding for projects with a larger scope.

Residential	HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)
Overview	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.
Objectives	Reduce heating fuel consumption consistent with the purpose and targets of the Trust; Promote weatherization of homes and upgrades to higher efficiency heating systems; Increase consumer awareness of cost-effective options for conserving natural gas; and, Promote sustainable economic development and reduce environmental damage through the more efficient use of natural gas.
Opportunity	
Market	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 occupied residential properties in the state. 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.
Efficient Alternatives	Typical measures may include efficient lighting, ENERGY STAR boilers and furnaces, efficient space heating, insulation and air-sealing of building envelopes. Cost-effective renewable energy measures may include solar hot water, solar electric PV, solar hot air panels are eligible to be included in projects.
Market Barriers	Market barriers for the residential weatherization sector include the upfront cost of the efficiency improvement, lack of access to financing and capacity to meet underwriting standards, lack of information, and lack of technical expertise in broader trades.
Program History	The Home Energy Savings Program was initiated in 2010 with a $10 million ARRA-SEP grant providing rebates toward the completion of 3,200 home upgrades. From the time incentive budgets for HESP 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 with spray foam as a tool for marketing more loans for weatherization, has

<table>
<tr><th>Residential</th><th>HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)</th></tr>
<tr><td></td><td>been funded using ARRA funds in FY2013.</td></tr>
<tr><td colspan="2">Program Design</td></tr>
<tr><td>Measures Promoted</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>Air Sealing</td><td>Spray foam and caulk to seal basement sill joints, plumbing and chimney penetrations, air distribution ducts, attic hatches and wall junctions, shim spaces around door and window frames.</td><td rowspan="5">While eligible funding is available, the program may provide for a Residential Direct Install (RDI) incentive toward initial costs of air sealing and insulation as recommended by a home energy assessment. Unitil participants may receive an additional incentive for an RDI project.

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.

PowerSaver loans may provide up to $25,000 for eligible energy measures for terms of up to 25 years on single-family owner occupied dwellings.

Participants of RDI may be eligible for unsecured PowerSaver loans up to $7,500 for any eligible energy upgrade.</td></tr>
<tr><td>Insulation</td><td>Loose- and dense-pack cellulose. Spray and rigid foam insulation.</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 pumps.</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 appropriate. Installation of pipe insulation and tank wrap.</td></tr>
<tr><td>Renewable Energy</td><td>Solar electric PV and solar hot water and air systems installations, where cost-effective.</td></tr>
</table></td></tr>
</table>

Residential	HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)
Implementation Strategy	The program will be delivered through a program delivery contractor selected through a competitive bidding process. **Marketing** Marketing efforts may 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. In addition to media outreach initiatives, the program will engage the network of Participating Energy Advisors and Registered Vendors. This vendor community 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 want to include and can afford to include in projects. Efficiency Maine established online zip code-driven locator tools to enable homeowners to easily locate these weatherization professionals.
	Education and Training/Workforce Development Monthly webinars and technical training for participating contractors may be held throughout the year. Training on building science, sales training, and use of software to model energy savings may be offered to enable the contractor community to provide better information about weatherization to homeowners. For consumers, the Trust's website will continue to offer information and tools (such as the energy cost calculator tool and the screening tool to determine which homes are good candidates for weatherization) to help them choose among energy saving options.
	Technical Assistance Efficiency Maine will offer technical assistance to weatherization contractors and homeowners as needed. Each project that is financed through Efficiency Maine programs will be reviewed for feasibility as it relates to best practices and projected savings.
	Financial Incentives 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 air sealing, the Trust has not identified any dedicated revenue that will be available to continue providing financial incentives for weatherization during the Second Triennial Plan period.

Residential	HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)
	Quality Assurance/Quality Control The program will use an established QA/QC process. The program delivery contractor verifies the validity of the proposed energy efficiency project. In addition, projects are randomly selected for site inspections to ensure the projects have been completed as reported.
Program Evolution	
	The program will continue to seek means of expanding the weatherization workforce statewide, increasing opportunities for underserved segments of the population, and avenues to weatherize residential properties in the state. During the Second Triennial Plan period, the program will begin offering incentives for energy efficient heat and water heating equipment for Unitil's natural gas customers. Efficiency Maine will expand the offerings on its website to provide more comprehensive consumer information about options of products and services to help save energy in the home. Attention will be paid to information about insulation high-efficiency heating and cooling systems, and new construction design. The program will also seek to engage networks – such as mortgage lenders, insurers, or realtors -- that can influence homeowner decisions to make energy upgrades.
Additional Funding Scenario	The Energy Efficiency Revolving Loan Fund, initially capitalized in 2010 with ARRA funds, will continue to be managed with the intent to maintain sustainability to meet all program objectives. At a stakeholder workshop on the subject of this program's future, the following straw proposal was discussed as a potential implementation plan, consistent with statutory targets, in the event funding could be secured: <u>Target Market:</u> Of a universe of 550,000 homes (2010 census), assume 450,000 homes still need weatherization starting in FY2014. ▪ assume 100,000 (+/- 20%) are already sufficiently weatherized (from recent new construction or recent retrofit) ▪ serve all, regardless of condition; assume 0% are considered "walkaway" or "tear down" ▪ assume 20% (90,000) are low income <u>Objective:</u> Weatherize 40,000 homes during the period of the Triennial Plan by ramping up

Residential	HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)

	to the levelized annual rate of 25,000 homes per year. Assume:
	
	▪ Assume ramp up to 25,000/yr level by Year 3 of Triennial Plan 2
	  ○ Yr 1 – 5,000/yr
	  ○ Yr 2 – 10,000/yr
	  ○ Yr 3 – 25,000/yr
	  ○ Triennial Plan 2 Total – 40,000 homes Wx
	
	▪ 450,000 homes needing weatherization
	▪ 17 years to target date (2030)
	  ○ 40,000 homes in the Second Triennial Plan period
	  ○ 25,000 homes/year 2017-2024
	  ○ 35,000 homes/year 2025-2030
	
	<u>Program Design</u>
	
	Establish a new definition of "weatherized" or "basic weatherization":
	
	▪ full air sealing (10 hours)
	▪ insulation in attic (R-49 is code)
	▪ insulation of basement sills
	
	Estimated energy savings from air sealing and insulation of attic and sill in average Maine home is greater than 20%.
	
	Workforce Development
	
	▪ More contractors needed by Year 3 (assuming 5-7 times increase in contractor capacity needed)
	▪ Rely on existing training capacity at Community Colleges
	
	Collect data and customer contact information before and after project
	
	<u>Costs during Period of Triennial Plan 2</u>
	
	Total 3-Year Cost = $64 million
	
	▪ $32 million
	  ○ $1000 incentive/unit for non-low-income units x 32,000 units
	  ○ 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
	▪ $24 million
	  ○ $3,000 total cost/unit to weatherize low-income units, as described above, x 8,000 units (20% of total 40,000 objective)
	▪ $8 million for program delivery, marketing and administration

Residential	HOME ENERGY SAVINGS PROGRAM (INCLUDES NATURAL GAS)
	○ Assumes $200 delivery and administration costs/unit

Alternative Energy	RENEWABLE REBATE PROGRAM
Overview	This program will provide rebates for residential and commercial participants for qualified renewable energy projects. Qualified projects must provide a simple payback to the end user based on the amount of energy projected to be produced from the installation when compared to the installation cost. Rebate amounts will be based on the annual system energy production. Only grid-tied installations that are expected to provide a simple payback over a 20- year expected life will be eligible for rebates.
Objectives	Offer rebates for the promotion and implementation of cost-effective renewable energy technologies.
Opportunity	
Market	Homes and businesses with rooflines or other areas that have an unobstructed, good orientation to the sun and the opportunity to displace expensive heating fuels for water or space heating are good candidates for solar hot water or hot air, and also for PV.
Efficient Alternatives	This program will focus on cost-effective, customer-sited, renewable energy measures such as solar hot water, solar electric PV, solar hot air panels, and micro wind projects.
Market Potential	More than half of the residential and commercial buildings in the state may benefit from the installation of renewable energy technologies. 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 for renewable energy technologies, homeowners and businesses can hedge their energy costs over the long term and reduce carbon emissions at the same time.
Market Barriers	Market barriers for renewable energy technologies include the upfront cost of the improvement, access to financing, 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. The statutory authority to use funds previously collected through an electric assessment for the Solar/Wind Rebate program expired in December 2010. At that time, the program was funded using federal ARRA funds. In December 2011, Efficiency Maine undertook a rulemaking process to develop a new approach to incentivizing cost-effective alternative energy installations in future years. The current program design incorporates those changes.
Program Design	
Measures Promoted	Eligible projects will include cost-effective installations of renewable energy equipment where the project demonstrates a simple payback determined by

<table>
<tr><th>Alternative Energy</th><th>RENEWABLE REBATE PROGRAM</th></tr>
<tr><td></td><td>comparing the net installation costs with the value of energy generated over the life of the equipment. The following is a list of the end use, typical measures, and incentives offered:
<table>
<tr><th>End Use</th><th>Typical measure</th><th>Incentives and Financing</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="4">Rebate amounts will be 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 annual heating needs by approximately 1 gallon per square foot of installed panel.</td></tr>
<tr><td>Solar Electric PV</td><td>Solar electric PV panels generate approximately 1,400 kWh annually in Maine per kW installed.</td></tr>
<tr><td>Micro-Wind Turbine</td><td>For select locations with access to reliable wind.</td></tr>
</table></td></tr>
<tr><td>Implementation Strategy</td><td>The program is delivered through a contractor selected through a competitive bidding process.

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 in the project including renewable energy measures. Efficiency Maine established online zip code-driven advisor and contract finder tools to enable homeowners to easily locate local weatherization professionals.

Marketing

In addition to program specific information, the Efficiency Maine Renewable Energy webpage will provide relevant information and links pertaining to</td></tr>
</table>

Alternative Energy	RENEWABLE REBATE PROGRAM
	renewable energy. Program information may also be distributed through the HESP program marketing initiatives (see prior program description) which may 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 Installers of each technology must demonstrate appropriate levels of insurance and NABCEP recognized training. Monthly webinars and technical training for participating contractors may be held throughout the year. Training on technical topics and sales training may be offered to the contractor community to enable them to provide better information to homeowners about renewable energy .
	Technical Assistance 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 Financial incentives will continue to be offered contingent on available funding to stimulate best practices and program activity. Current funding will allow rebates to be offered through mid-FY2014. The Energy Efficiency Revolving Loan fund will continue to be available to loan funds for customer-sited renewable projects in conjunction with the objectives and procedures of the Home Energy Savings Program.
	Quality Assurance/Quality Control The program will continue to apply its established QA/QC process. All documentation related to projects will be reviewed prior to application acceptance. In addition, site visits will be conducted on at least 15% of all projects to verify that best practices for installation are being followed.
Program Evolution	
Base Funding	The Program will continue to seek means of sustaining the residential and small commercial renewable energy technology installation industry in Maine. However, absent any new revenue, the rebate program will be suspended.
Additional Funding Scenario	Grant funding will continue to be sought for the continuation of activities over time. With additional funding, the Trust would reinstitute rebates, and offer enhanced educational information for consumers and contractors. Opportunities for advanced educational opportunities through renewable energy symposiums would also be investigated.

Alternative Energy	RENEWABLE RESEARCH AND DEVELOPMENT AND DEMONSTRATION PROJECTS
Overview	This program provides grants through competitive solicitations for demonstration projects to Maine-based non-profit organizations, consumer-owned transmission and distribution utilities, community action agencies, municipalities, and school administrative units. In addition, the program provides grants for R&D projects at institutions including the University of Maine System, the Maine Maritime Academy and the Maine Community College System.
Objectives	Promote and demonstrate cost-effective renewable energy technologies to increase public awareness of these technologies and their benefits.
Opportunity	
Market	More than half of the residential and commercial buildings in the state may benefit from the installation of renewable energy technologies. Homeowners and businesses can hedge their energy costs over the long term and reduce carbon emissions at the same time. Through the deployment of renewable resource research and development grants and through demonstration grants, Efficiency Maine is able to provide Maine consumers access to information regarding actual projects.
Efficient Alternatives	Systems using solar hot water, solar hot air panels, solar electric PV, micro-wind, and other customer-sited renewable energy technologies.
Market Potential	The market for the grants are focused on Maine based projects submitted by eligible applicants. The projects must produce energy or heat from renewable sources, including, but not limited to, photovoltaic systems, solar thermal systems, biomass systems, landfill gas to energy systems, geothermal systems, wind systems, and wood pellet systems.
Market Barriers	Market barriers for renewable energy technologies include the upfront cost of the improvement, access to financing, lack of information, and lack of technical expertise in broader trades.
Program History	Efficiency Maine has provided grants for 24 installations of renewable energy technologies over the past 3 years.
Program Design	
Measures Promoted	Measures such as solar hot water, solar electric PV, solar hot air panels, and small non-commercial wind projects. For demonstration projects, measures must satisfy a cost-effectiveness test established by Efficiency Maine rule.
Implementation Strategy	**Marketing** The program is delivered through a competitive bidding process. Each RFP is issued as funding allows.

Alternative Energy	RENEWABLE RESEARCH AND DEVELOPMENT AND DEMONSTRATION PROJECTS
	Education and Training/Workforce Development Projects are selected, in part, on the basis of each applicant's ability to demonstrate the results of the selected technology and results, which may include offering education, training or other workforce development as a deliverable of the project.
	Technical Assistance N/A
	Financial Incentives Grants are offered on a competitive basis contingent on funding.
	Quality Assurance/Quality Control The program will continue to employ the established QA/QC process. Projects will be monitored throughout construction. This includes invoice review, conducting site visits, and reviewing documentation to ensure that each project is completed according to initial design specifications. Upon project completion, a site visit will be conducted to verify project installation details.
Program Evolution	
Base Funding	The Program relies on voluntary contributions from Maine's electric ratepayers which, in past years, have generated approximately $100,000 per year. 35% of the revenues are directed by statute to the Maine Technology Institute. If these minimal funding levels persist into the Second Triennial Plan, the focus will be on demonstration projects and will be narrowly tailored to technologies that present a highly valued opportunity.
Additional Funding Scenario	An increase in funding will allow the Trust to offer more frequent rounds of competitive solicitations and to include demonstration of a broader array of technologies or applications. A significant increase in funding would enable the Trust to promote R&D of technologies or processes shown to fill a particular need or opportunity in the Maine economy and having good potential to be incorporated into Efficiency Maine's regular incentive programs.

Cross-Cutting	ENERGY EDUCATION AND INFORMATION PROGRAM
Overview	Efficiency Maine provides general energy information and education to help consumers who are considering the purchase of new lighting, appliances, electronics, equipment or systems that consume energy. The main target audience is customers who may be considering retrofitting older equipment that still works but could be cost-effectively retired before the end of its useful life as well as those starting from scratch with a new home, a new commercial space, or adding new equipment. Through the Energy Education and Information program, Efficiency Maine provides information that targets specific sub-sectors to help boost energy savings through increased awareness of the benefits of energy efficiency generally, and efficient energy options specifically, as well as basic guidance in how to access Efficiency Maine programs.
Objectives	Increase consumer awareness of cost-effective options for conserving energy, for using energy more efficiently, or for using more alternative or renewable energy, and financing these measures; Create more favorable market conditions for the increased use of energy-efficient products and services; Provide general information about the benefits of energy efficiency and distributed renewable or alternative energy.
Opportunity	
Market	This program is aimed generally at consumers and contractors or suppliers serving both the residential and business sectors.
Efficient Alternatives	N/A
Market Barriers	Among the major barriers to energy efficiency is a lack of information about energy-saving options, 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. Relatively technical energy issues and solutions can prove challenging for customers to sort out, as can competing claims by suppliers and vendors, creating additional barriers to customer action.
Program History	Since the inception of demand side management (DSM) programs and the establishment of Efficiency Maine, raising awareness about the benefits of efficiency and the options for taking advantage of efficiency has been a core activity. In prior years, broadcast media and printed materials were deployed to advance program objectives. In the First Triennial Plan period the program shifted to more economic use of the website and online banner ads, as well as

Cross-Cutting	ENERGY EDUCATION AND INFORMATION PROGRAM
	workshops or conferences to address specific, targeted needs. Also in prior years considerable emphasis was placed on informing students in K-12 classrooms about where electricity comes from, how it is made, and promoting the concept of conservation. In the First Triennial Plan period, the Trust funded less of the K-12 activity, and shifted the focus to activities that would actually save energy. A pilot project was funded to teach students, teachers and facility managers about ways to save energy at their own schools. The "Save Like a Mainer" campaign strategy launched in 2011 uses case studies and testimonials to highlight Maine homeowners, communities, and businesses that have undertaken successful energy efficiency initiatives to show that efficiency is achievable, beneficial, and attractive, saving participants energy and money.
Program Design	
Measures Promoted	This program does not pay incentives for the installation of energy efficient devices. Rather, it funds various communications or events where the benefits of energy efficiency and the options for pursuing energy efficiency, or distributed renewable and alternative energy systems, are presented and discussed. The activities funded range from organizing or participating in workshops and conferences, to creation and delivery of written materials, to recording and disseminating audio or video public service announcements.
Implementation Strategy	**Marketing** Marketing associated with the program consists of notices, paid ads, and earned media alerting Mainers to the availability of information, the scheduling of events, or the existence of competitive solicitations that Efficiency Maine will use to select services to execute elements of the program.
	Education and Training/Workforce Development N/A
	Technical Assistance Technical assistance is typically discussed in the context of a specific program, such as the Business Incentive Program or the Home Energy Savings Program. However, the Trust will continue to add basic technical assistance tools to its website and printed materials so that customers and vendors can become more informed about energy saving options.
	Financial Incentives Financial incentives are typically not a feature of the Trust's Education and Information Programs.

Cross-Cutting	ENERGY EDUCATION AND INFORMATION PROGRAM
	Quality Assurance/Quality Control 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 placed in the media • Media placement in broad geographic diversity (frequency and reach) • Survey instrument • Program Participation rates
Program Evolution	
Base Funding	Under the Base Funding scenario, the Trust will provide $100,000 per year to the Energy Education and Information Program. This campaign seeks to show through examples how Mainers can save as their friends, families, business associates and neighbors have already done. Save Like a Mainer illustrates 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. It drives customers to the Efficiency Maine website or toll free phone number where the customer can gain additional information about products, costs and cost savings, contractors or vendors, and program incentives. During the period of the Second Triennial Plan, 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. Efficiency Maine will continue to track the emergence of new technology for electric meters and the opportunity to control equipment (such as lighting or thermostats) more effectively, and remotely. Where appropriate, the program may work to complement information about these opportunities by collaborating with utilities or other vendors. Efficiency Maine will also take advantage of access to utility data about customer usage, geographic location, etc. and to explore ways to use this information to create and sustain programs tailored to better serve customers to help them save energy. Efficiency Maine will also track and participate in the emergence of building "labels" that provide consumer information and consumer protection when purchasing or renting a home or business facility.

Cross-Cutting	ENERGY EDUCATION AND INFORMATION PROGRAM
	A summary list of expected deliverables is: • Web site redesign • Increase social media presence • Produce promotional materials focusing on awareness of energy efficiency, energy audits, and home weatherization • Produce booklet on energy efficiency in Maine • Offer informational sessions statewide in the form of symposia, seminars, and other forums • Support program marketing (e.g., trade shows, promotional brochures, etc.)
Additional Funding Scenario	Under full funding in an Additional Funding Scenario, the Trust will budget $170,000 per year to this program. A summary list of expected deliverables is: • Produce long-format video on energy efficiency for homeowners • Produce long-format video on energy efficiency for businesses • Enhanced web site offerings, including video • Enhanced You Tube channel offerings • Explore ways to better capitalize upon new customer interface technology with utility data, i.e., smart meters, digital home energy dashboards, etc. • Enhanced development of customized Facebook page, with assigned outsourcing of regular postings, etc. • Develop phone app for energy efficiency

Cross-Cutting	INNOVATION PROGRAM
Overview	This program provides funding for pilot projects. The Trust intends for these projects to demonstrate a new type of energy efficiency or alternative energy measure where such measure shows significant potential to be cost-effective and to provide energy savings but is not yet well understood or established in the marketplace. It is understood that the measure may or may not prove to be cost-effective or popular in the Maine marketplace. Part of the purpose of the Innovation Program is to use smaller pilot projects to make such findings before making larger investments on incentives and program administration.
Objectives	Increase consumer awareness of cost-effective options for conserving energy; Create more favorable market conditions for the increased use of energy-efficient products and services; and, Provide incentives for the development of new, energy-efficient business activity in the state.
Opportunity	
Market	This program is available to serve projects piloting energy efficiency or alternative energy measures in both the Residential and the C/I sector. Generally speaking, newly commercialized technologies tend to try to break in to the C/I sector where they can establish a niche presence before expanding to a mass market. However, in recent years the Trust supported multiple efforts targeting Residential measures. Given the relatively limited size of the Innovation budgets, the Trust will focus on markets and customer sub-sectors where emerging products show significant promise for achieving savings, but show a need for greater demonstration in order to gain acceptance and understanding by customers, vendors and contractors.
Efficient Alternatives	Technological and process improvements are cornerstones of energy efficiency and alternative energy systems. As these improvements become commercially available, it is useful for efficiency programs to make modest investments in demonstration or pilot projects.
Market Barriers	Traditional market barriers facing well-established energy efficiency products or processes are even more pronounced for products or processes that are new to the market. First costs tend to be even higher for newcomers that have not generated any economies of scale. Familiarity and acceptance among vendors and their customers are lower for new technologies. In many cases, a technology or process that is new to a marketplace has difficulty demonstrating that its participation in an energy efficiency program will meet the cost-effectiveness test.
Program History	In the First Triennial Plan period, the Trust issued one or two competitive solicitations each year. Initial solicitations were open to any proposal type, while later solicitations focused on emerging needs and opportunities identified by the Trust. Projects awarded ranged from $50,000 - $150,000 in size. Projects included demonstrations of heat-pumps and varying rebate levels to promote

Cross-Cutting	INNOVATION PROGRAM
	those heat pumps and combined heat and power (CHP) plants sized for apartment buildings.
Program Design	
Measures Promoted	Eligible measures include any commercially available energy efficiency or alternative energy technology that meets the targeted criteria specified in the Trust's request for proposals and is consistent with the any limitations or requirements of the revenue source that funds this program. Eligible measures typically must show that they can meet the Trust's cost-effectiveness test, on paper, and that if the pilot project is successful, that the measure has a strong likelihood of graduating into the Trust's regular program offerings. The program may, on occasion, also promote limited demonstration projects for near-commercial technologies that show substantial energy savings opportunities for the state. The program may also promote demonstration and analysis of varying program designs to help shape the ultimate program design of a full-fledged program in the Trust's portfolio.
Implementation Strategy	**Marketing** Throughout the Triennial Plan period, the Trust will provide outreach and networking efforts with existing public and private organizations. The Innovation Program will use competitive solicitations to screen and select pilot programs for commercialized products or new ways of delivering cost-effective measures. The fund will seek to leverage the efforts of other agencies and organizations.
	Education and Training/Workforce Development Projects bid into the competitive solicitations may include an education and training component. However, the main purpose of the program is primarily to demonstrate a piece of technology or a process or program design. If it is successful, the main opportunity for education and training will follow after the pilot.
	Technical Assistance Technical assistance is typically not a feature of a pilot project.
	Financial Incentives Financial incentives will be determined through the competitive solicitation process. Certain projects may offer financial incentives to customers to promote uptake of a product or process, while other projects may simply seek the Trust's investment of a portion of the costs to install the product or implement the process and then measure and report on the results.

Cross-Cutting	INNOVATION PROGRAM
	Quality Assurance/Quality Control Quality control features will be determined through the competitive solicitation process. If a pilot project is seeking to demonstrate a particular program design for future consideration by the Trust, QA/QC features should generally be used and tested as part of that demonstration. If a pilot is testing a particular product or process, the steps by which the results will be measured, analyzed, verified and shared should be provided in the bidder's proposal and memorialized in the contract deliverables.
Program Evolution	
Base Funding	Under the Base Funding scenario, the Trust will provide $100,000 per year to this program. Generally, the Trust will issue a single competitive solicitation for Innovation proposals. However, the Trust may elect to issue more than one solicitation annually, or may elect to not issue a solicitation in a given year, depending on the nature of the opportunities and the needs for developing new program measures or designs.
Additional Funding Scenario	Under full funding in an Additional Funding Scenario, the Trust will budget $250,000 per year to this program. Given the low overhead to operate this program and the ability to control expenses through the competitive solicitation process, the activity and budgets of this program are highly scalable and can be adjusted, as appropriate. An expansion of the Trust's budgets beyond the Base levels would likely mean the need to add new products and processes to the eligibility of other programs and to consider new program designs. In this event, the Trust would envision an increased budget for this program in the early years of the Plan period.

Cross-Cutting	RESEARCH & EVALUATION
Overview	The Trust's research and evaluation strategy encompasses systematic data collection and analysis activities relating to the Trust's programs and key issues across the energy efficiency and alternative energy spectrum.
Objective	To provide data-driven research and analysis to inform program delivery, verify program results, and ensure ongoing program and organizational improvement.
Opportunity	
Market	The research and evaluation "market" includes all Efficiency Maine Trust programs and initiatives.
Program History	Research and evaluation are ongoing activities of the Trust. Specific independent research projects and associated reports completed during the First Triennial Plan period include: • Home Energy Savings Program Evaluation (2011) • Business Incentive Program Evaluation (2011) • ISO-NE M&V Plan Compliance Review (2011, 2012) • Commercial Project Grants Program Evaluation (2012) • Large Project Grants Program Evaluation (2012) • Residential Lighting Program Evaluation (2012) • Baseline and Opportunities Study (2012) • Retro-commissioning Pilot Program Evaluation (in progress)
Program Design	
Implementation Strategy	Research and evaluation activities are conducted by Trust staff as well as independent third party evaluators. Specific types of activities include: strategic analysis of program design and implementation; independent program evaluations; measurement and verification of energy savings and related program impacts; cost-effectiveness analysis; benchmarking outcomes to goals and targets; and assessment of energy efficiency markets and opportunities. These activities rely heavily on program data maintained by the Trust (see Database description), 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. Key research and evaluation activities include: • *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

Cross-Cutting	RESEARCH & EVALUATION
	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.
Program Evolution	

Base Funding	Under the Base Funding scenario, the Trust will provide $575,000 per year to Research and Evaluation. Under this scenario, activities over the three-year period may include:
	
	• ***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

Cross-Cutting	RESEARCH & EVALUATION
	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.
Additional Funding Scenario	Under the Additional Funding scenario, the Trust will provide $750,000 per year to Research and Evaluation. Under this scenario, the Trust would expand the scope of the program evaluation and market research activities in order to complete additional projects or augment the scope of planned projects.

Cross-Cutting	DATABASE
Overview	The Trust's database system provides a critical foundation for program delivery and reporting program results. The database strategy encompasses all activities to develop and maintain information technology solutions for the entry, storage, analysis and reporting of program data.
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	
Market	N/A
Program History	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. 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 implemented by the Trust, including program design, implementation and delivery, management and oversight, analysis, and reporting and evaluation.
Program Design	
	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 Evolution	
Base Funding	Under the Base Funding scenario, the Trust will provide $75,000 per year to the Database. The Trust will continue to build upon effRT 2.0 to take advantages of cost savings

Cross-Cutting	DATABASE
	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.
Additional Funding Scenario	Under the Additional Funding scenario, the Trust will provide $100,000 per year to the Database. With additional funding and expanded program activity, the Trust will build out additional database functionality which may include GIS data and forecasting capabilities.

7. Discontinued Programs

Looking ahead to the period of the Second Triennial Plan, the Trust has reviewed available funding streams, recent program performance, and other factors to determine if certain programs or program initiatives should be discontinued. The following programs will not be continued in the Second Triennial Plan, except as otherwise noted in the event of changed budgets or other circumstances.

Business Programs

- High Performance Schools

This program has showed low energy savings per dollar invested, and unfavorable cost-effectiveness. The Trust's plan is to continue encouraging schools to take advantage of energy efficiency opportunities and to access those opportunities through the New Construction initiative within the Business Incentive Program.

- Commercial Grant Program

The Commercial Grant Program offered a one-time focus on a wide variety of energy upgrades using ARRA funds which are now exhausted. Most of the projects targeted heating oil savings, which would not be eligible for the electric funding streams that the Trust is forecasting to be available in the Second Triennial Plan period. Commercial facilities seeking to make electricity savings investments can continue to participate in the regular Business Sector programs that the Trust will continue to offer.

- Municipal Grant Program

As with the Commercial Grant Program, this program was funded through a one-time investment of ARRA funds which are now exhausted. No new entries to the program can be accommodated, and instead interested local governments will be directed to the applicable Business Sector programs. Because one of the nearly 130 grants made under the Municipal Grant Program established a Revolving Loan Fund, and because principal repayment and interest will enable that fund to continue on a small scale into the period of the Second Triennial Plan, the Trust may technically leave this program account open in order to continue reporting in compliance with US Department of Energy requirements.

- Maine Advanced Building Incentive

The Trust plans to continue promoting efficiency opportunities during the planning and design stage of new commercial construction projects. It will advance this initiative by offering training and information to architects and engineers and reminding developers of the value in building to higher standards. However, under the Base funding scenario, the Trust will not be able to offer a financial incentive for projects that meet the Maine Advanced Building standards as it has in the past. Should the Trust's overall funding increase significantly, then the incentives will be reintroduced.

- Retro-Commissioning

The Retro-Commissioning Program was funded entirely through ARRA funds which are now exhausted. The program demonstrated reasonably good energy savings and potentially good cost-effectiveness that is currently being evaluated. Many of the measures incented under this program (such as controls) are going to be considered for inclusion in the Business Incentive Program subject to a positive evaluation report.

- Multi-Family Retrofit

This project has been funded principally with a federal ARRA grant. By the start of FY2014, the funds will be exhausted. Because the bulk of savings in this program are associated with heating oil reductions, there is not an obvious revenue stream that can be deployed to continue the program at scale during the Second Triennial Plan.

- Small Business Audits Program

The small business audit program is being discontinued because it was funded principally by ARRA funds that are exhausted. When the audits were free there was reasonable uptake, but once the Trust attempted to require a small customer co-payment demand for the audits disappeared. There was little or no guarantee of follow-though by the customers receiving the audits.

Residential

- Replacement Heating Equipment Rebate (all fuels)

This program was funded by ARRA funds which are completely used up. If a significant all-fuels revenue stream were secured in the future, the rebate program for all heating equipment that saves unregulated fuels such as #2 distillate oil (heating oil), kerosene or propane would be re-started. In the interim, efficient heating system upgrades are currently eligible to be included in PACE or PowerSaver loans where the combined energy savings of the project exceeds a threshold saving level. Where the heating systems result in use of electric systems or natural gas systems, they may also be eligible for programs funded by the Electric Efficiency and Conservation Fund, the RGGI Fund, or the Natural Gas Conservation Fund, as described in the program descriptions.

- Refrigerator Replacement

The Plan does not expect to re-start this program unless an Additional Funding Scenario comes to pass. The program was relatively popular in FY2012, however it did not experience uptake consistent with internal targets and it proved challenging to verify savings to the Staff's satisfaction while other program design options appear to Staff to achieve similar results at lower cost and with greater reliability.

- Low Income Refrigerator Replacement Program

The Plan does not expect to continue replacing refrigerators for Low Income electric customers. This decision would be revisited in an Additional Funding Scenario. During the Plan period, Staff projects that there will be sufficient demand for weatherization of low income units and efficient lights that will meet a wide variety of objectives better than the refrigerator program.

8. Budget Allocations and Performance Metrics

In this section, the Triennial Plan indicates its proposed budget allocations to each program area for electricity and natural gas saving programs and provides measures of performance (or metrics) that can be used to track the Trust's progress during and after the Plan's implementation.

For electricity funding scenarios, the Annual kWh Savings column indicates projected savings from the first year that a program is implemented. The Lifetime Savings column multiplies the first year savings times the full expected life of the types of products or equipment that will be installed through the program. Efficiency Maine's Costs include first and foremost the financial incentives that the Trust expects to invest in projects under the program. It also includes any technical support, training, education, marketing, and quality control that will be needed to effectively deliver the program. The Participant Cost represents the customer's share of investment in the completion and operation of a project. Lifetime Energy Benefit is the sum of the Lifetime Savings times the avoided cost (the value of the avoided purchase of electricity) as determined in the Avoided Energy Supply Cost study conducted for New England utilities and program administrators every two to three years. The Cost/kWh is an expression of what it costs, considering only Efficiency Maine funds, to save one unit of energy. This is useful for comparing to the price that a supplier or a customer would have had to pay to purchase a unit of supply had the energy not been saved. Finally, the Benefit-to-Cost Ratio represents the ratio of total benefits from avoided energy costs to the total costs incurred by Efficiency Maine and the participating customer, using the Trust's Chapter 380 Rule or Chapter 103, to determine the appropriate costs and benefits to be counted.

The Trust has consolidated certain program initiatives into a single program listing for purpose of expressing the budget allocations and the savings metrics. Within Residential Retail Products are the projected costs and savings associated with Residential Lighting, Appliances and Electronics measures. Within the Business Programs row are the projected costs and savings associated with the Incentive Program, the Commercial New Construction initiatives, and the Direct Install program for Small Businesses. The Cross-Cutting programs -- Education and Information, Innovation, and Evaluation – do not indicate any savings not because there will be no savings associated, but because it is generally understood that such savings are difficult or impossible to quantify.

8.1 Electricity Base Funding Scenario

The Base Funding Scenario assumes that, during the Second Triennial Plan period, funding for the Trust's electricity efficiency initiatives remains at levels that were authorized, at the time of the Plan's drafting, from the electric SBC, RGGI, the Forward Capacity Market and the MPRP Settlement. These levels are consistent with the Trust's funding for electricity saving programs in FY 2012 and FY2013. It further assumes an allocation of $5 million per year from the ARRA-funded Revolving Loan Fund (RLF) to be

used in the Large Customer Program and paid back over time to the RLF. In the 3-Year Summary tables, the "third year" savings represents the energy saved in Year 3 accounting for the ongoing savings from projects implemented in Years 1 and 2.

Table 13 – Base Funding Scenario: 3-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	169,085,111	1,526,377,971	19,445,189	660,508	136,770,969	$0.013	6.80
Low Income Weatherization	7,774,272	136,049,758	6,475,969	0	12,101,770	$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	408,084,803	4,592,671,865	80,616,616	48,134,117	416,642,393	$0.018	3.24

Table 14 – Base Funding Scenario: 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	2,561,297	44,822,689	$2,133,560	$0	$3,987,026	$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	132,983,375	1,384,326,814	25,851,205	15,593,130	125,469,442	$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	56,375,006	563,750,056	$6,499,024	$216,936	$50,527,463	$0.012	7.52
Low Income Weatherization	2,592,208	45,363,634	$2,159,309	$0	$4,035,143	$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	136,421,535	1,590,498,574	26,987,223	16,109,688	144,264,365	$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	56,563,051	565,630,514	$6,743,510	$171,229	$50,729,951	$0.012	7.34
Low Income Weatherization	2,620,768	45,863,435	$2,183,100	$0	$4,079,601	$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	138,679,893	1,617,846,477	27,778,188	16,431,298	146,908,587	$0.017	3.32

8.2 MACE Funding Scenario – Assuming Low Costs for the Trust

The MACE, or Maximum Achievable Cost-Effective, scenario reflects the maximum estimated amount of kWh savings from demand-side resources that is both cost-effective and achievable, and costs less than supply. The Low Cost Case shows what it would cost the Trust, over 3 years, to realize this amount of savings assuming that production costs ($/kWh) stay the same as the past three years.

Table 15 – MACE Funding (Low Cost): 3-Year Summary

3-Year Summary -- MACE (Low Case) Budget Allocations and Performance Metrics							
Program	Third Year kWh Savings	Lifetime kWh Savings	Efficiency Maine Costs	Participant Cost	Lifetime Energy Benefit	Cost/kWh (lifetime)	Benefit To Cost Ratio
Residential Retail Products	97,300,754	1,214,190,155	$ 23,422,009	$ 13,742,749	$153,492,921	$ 0.019	4.130
Other Residential	97,043,223	949,559,247	$ 47,567,083	$ 33,976,488	$250,270,556	$ 0.050	3.069
Business Programs	193,777,496	2,533,018,467	$ 45,431,408	$ 32,594,369	$272,208,882	$ 0.018	3.489
Large Customer Program	186,178,379	2,433,684,409	$ 43,649,784	$ 31,316,158	$261,534,023	$ 0.018	3.489
Cross-Cutting			$ 3,650,000				
Administration			$ 10,400,000				
Total	574,299,852	7,130,452,278	$174,120,285	$111,629,763	$937,506,382	$ 0.024	3.281

Table 16 – MACE Funding (Low Cost): Budgets and Results for FY2014, 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 Retail Products	29,363,278	363,493,238	$ 7,063,660	$ 4,064,461	$ 43,421,008	$ 0.019	3.902
Other Residential	27,068,501	261,804,554	$ 13,880,988	$ 9,914,991	$ 72,063,492	$ 0.053	3.028
Business Programs	47,742,620	628,159,328	$ 10,624,053	$ 7,626,989	$ 63,511,732	$ 0.017	3.480
Large Customer Program	45,870,361	603,525,629	$ 10,207,423	$ 7,327,891	$ 61,021,076	$ 0.017	3.480
Cross-Cutting			$ 950,000				
Administration			$ 3,200,000				
Total	150,044,760	1,856,982,749	$ 45,926,123	$ 28,934,333	$240,017,308	$ 0.025	3.206

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 Retail Products	32,531,510	405,475,946	$ 7,814,931	$ 4,576,543	$ 51,220,491	$ 0.019	4.134
Other Residential	32,291,096	315,968,517	$ 15,841,084	$ 11,315,060	$ 83,012,414	$ 0.050	3.057
Business Programs	67,962,474	887,575,521	$ 16,047,753	$ 11,512,350	$ 94,685,386	$ 0.018	3.436
Large Customer Program	65,297,279	852,768,638	$ 15,418,429	$ 11,060,885	$ 90,972,233	$ 0.018	3.436
Cross-Cutting			$ 1,300,000				
Administration			$ 3,600,000				
Total	198,082,360	2,461,788,621	$ 60,022,196	$ 38,464,837	$319,890,525	$ 0.024	3.248

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 Retail Products	35,405,966	445,220,971	$ 8,543,418	$ 5,101,745	$ 58,851,422	$ 0.019	4.313
Other Residential	37,683,626	371,786,176	$ 17,845,011	$ 12,746,437	$ 95,194,650	$ 0.048	3.112
Business Programs	78,072,401	1,017,283,618	$ 18,759,603	$ 13,455,030	$114,011,764	$ 0.018	3.539
Large Customer Program	75,010,739	977,390,142	$ 18,023,932	$ 12,927,382	$109,540,714	$ 0.018	3.539
Cross-Cutting			$ 1,400,000				
Administration			$ 3,600,000				
Total	226,172,732	2,811,680,907	$ 68,171,965	$ 44,230,593	$377,598,549	$ 0.024	3.359

8.3 MACE Funding Scenario -- Assuming High Costs for the Trust

The assumptions for the High Cost Case of the MACE scenario are identical to the Low Cost Case except that Efficiency Maine is assumed to pick up more of the total cost. This assumes that over time, the customers who have the inclination and funds to invest in projects with more of their own money have already done so, and therefore Efficiency Maine will need to increase its share of the cost in order to attract continued customer participation. The total quantity of energy being saved is same under the High Cost and the Low Cost cases.

Table 17 – MACE Funding (High Cost): 3-Year Summary

3-Year Summary - MACE (High Case) Budget Allocations and Performance Metrics							
Program	Third Year kWh Savings	Lifetime kWh Savings	Efficiency Maine Costs	Participant Cost	Lifetime Energy Benefit	Cost/kWh (lifetime)	Benefit To Cost Ratio
Residential Retail Products	97,300,754	1,214,190,155	$ 30,293,383	$ 6,871,374	$153,492,921	$ 0.025	4.130
Other Residential	97,043,223	949,559,247	$ 50,303,643	$31,239,928	$250,270,556	$ 0.053	3.069
Business Programs	193,777,496	2,533,018,467	$ 53,957,871	$24,067,906	$272,208,882	$ 0.021	3.489
Large Customer Program	186,178,379	2,433,684,409	$ 51,841,876	$23,124,067	$261,534,023	$ 0.021	3.489
Cross-Cutting			$ 3,900,000				
Administration			$ 10,800,000				
Total	574,299,852	7,130,452,278	$201,096,773	$85,303,275	$937,506,382	$ 0.028	3.273

Table 18 – MACE Funding (High Cost): Budgets and Results for FY2014, 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 Retail Products	29,363,278	363,493,238	$ 9,095,891	$ 2,032,231	$ 43,421,008	$ 0.025	3.902
Other Residential	27,068,501	261,804,554	$ 14,554,676	$ 9,241,303	$ 72,063,492	$ 0.056	3.028
Business Programs	47,742,620	628,159,328	$ 13,466,207	$ 4,784,835	$ 63,511,732	$ 0.021	3.480
Large Customer Program	45,870,361	603,525,629	$ 12,938,120	$ 4,597,194	$ 61,021,076	$ 0.021	3.480
Cross-Cutting			$ 1,300,000				
Administration			$ 3,600,000				
Total	150,044,760	1,856,982,749	$ 54,954,894	$20,655,562	$240,017,308	$ 0.030	3.174

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 Retail Products	32,531,510	405,475,946	$ 10,103,202	$ 2,288,271	$ 51,220,491	$ 0.025	4.134
Other Residential	32,291,096	315,968,517	$ 16,747,584	$10,408,559	$ 83,012,414	$ 0.053	3.057
Business Programs	67,962,474	887,575,521	$ 18,889,907	$ 8,670,196	$ 94,685,386	$ 0.021	3.436
Large Customer Program	65,297,279	852,768,638	$ 18,149,126	$ 8,330,188	$ 90,972,233	$ 0.021	3.436
Cross-Cutting			$ 1,300,000				
Administration			$ 3,600,000				
Total	198,082,360	2,461,788,621	$ 68,789,820	$29,697,214	$319,890,525	$ 0.028	3.248

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 Retail Products	35,405,966	445,220,971	$ 11,094,291	$ 2,550,872	$ 58,851,422	$ 0.025	4.313
Other Residential	37,683,626	371,786,176	$ 19,001,382	$11,590,066	$ 95,194,650	$ 0.051	3.112
Business Programs	78,072,401	1,017,283,618	$ 21,601,757	$10,612,876	$114,011,764	$ 0.021	3.539
Large Customer Program	75,010,739	977,390,142	$ 20,754,629	$10,196,685	$109,540,714	$ 0.021	3.539
Cross-Cutting			$ 1,300,000				
Administration			$ 3,600,000				
Total	226,172,732	2,811,680,907	$ 77,352,059	$34,950,499	$377,598,549	$ 0.028	3.362

8.4 Natural Gas Base Funding Scenario

The Base Funding Scenario for the Natural Gas Conservation Fund assumes that, during the Second Triennial Plan period, funding for the Trust's natural gas efficiency initiatives remains at the level that was authorized at the time of the Plan's drafting and is derived solely from conservation assessments received from Unitil. This funding level is consistent with the Trust's funding for natural gas savings programs in FY2012 and FY2013. In the 3-Year Summary table, the "third year" savings represents the energy saved in Year 3 accounting for the ongoing savings from projects implemented in Years 1 and 2.

Table 19 – 3-Year Summary –
Base Assessment Budget Allocation and Performance Metrics

Program	Third Year Decatherm (Dth) Savings	Efficiency Maine Costs
Residential	42,570	$519,488
Residential - Low Income	32,434	$317,487
Business Programs	75,004	$631,402
Administration	-	$119,058
Total	162,172	$1,587,434

Table 20 – Base Assessment Budget Allocations and Performance Metrics for FY 2014, 2015, and 2016

FY2014		
Program	Annual Dth Savings	Efficiency Maine Costs
Residential	13,989	$172,300
Residential - Low Income	10,658	$105,302
Business Programs	24,647	$209,419
Administration		$39,488
Total	53,291	$526,508

FY2015		
Program	Annual Dth Savings	Efficiency Maine Costs
Residential	14,178	$173,161
Residential - Low Income	10,803	$105,828
Business Programs	24,981	$210,465
Administration		$39,686
Total	54,013	$529,140

FY2016		
Program	Annual Dth Savings	Efficiency Maine Costs
Residential	14,403	$174,027
Residential - Low Income	10,974	$106,357
Business Programs	25,376	$211,518
Administration		$39,884
Total	54,868	$531,786

8.5 Natural Gas MACE Funding Scenario

THE MACE, or Maximum Achievable Cost-Effective, scenario reflects the maximum estimated amount of natural gas energy savings in Dekatherms (Dth) recommended by Summit Blue Consulting, LLC in a study conducted for the Maine Public Utilities Commission in 2010. In the 3-Year Summary table, the "third year" savings represents the energy saved in Year 3, accounting for the ongoing savings from projects implemented in Years 1 and 2.

Table 21 – 3-Year Summary - MACE Assessment Budget Allocation and Performance Metrics

Program	Third Year Decatherm (Dth) Savings	Efficiency Maine Costs
Residential	92,937	$3,475,861
Residential - Low Income	70,810	$2,124,285
Business Programs	163,747	$4,224,672
Administration	-	$796,607
Total	354,048	$10,621,425

Table 22 – MACE Budget Allocations and Performance Metrics for FY 2014, 2015, and 2016

FY2014		
Program	**Annual Dth Savings**	**Efficiency Maine Costs**
Residential	31,166	$1,165,590
Residential - Low Income	23,745	$712,355
Business Programs	54,911	$1,416,695
Administration		$267,133
Total	118,726	$3,561,774

FY2015		
Program	**Annual Dth Savings**	**Efficiency Maine Costs**
Residential	31,064	$1,161,785
Residential - Low Income	23,668	$710,029
Business Programs	54,731	$1,412,070
Administration		$266,261
Total	118,338	$3,550,144

FY2016		
Program	**Annual Dth Savings**	**Efficiency Maine Costs**
Residential	30,708	$1,148,486
Residential - Low Income	23,397	$701,902
Business Programs	54,105	$1,395,907
Administration		$263,213
Total	116,984	$3,509,508