Triennial Plan of the Efficiency Maine Trust 2011 - 2013

A three-year plan designed to help Maine's consumers save energy and money, meet environmental goals, and stimulate the state's economy.

EFFICIENCY MAINE TRUST

Prepared with the assistance of
OPTIMAL ENERGY INC. and **DUNSKY ENERGY CONSULTING**

April 2010

TRIENNIAL PLAN
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EFFICIENCY MAINE TRUST

The Efficiency Maine Trust (Trust) was created in statute to help Maine's consumers save energy, save money, meet environmental goals, and stimulate the state's economy by administering energy efficiency and alternative energy programs in the State of Maine.

The Trust is governed by an independent board of directors comprising nine volunteers who are appointed by the Governor and confirmed by the State Senate:

ADAM LEE, Chair
President, Lee Auto Malls

NAOMI MERMIN, Vice-Chair
President, Naomi Mermin Consulting

MICHELLE ATHERTON, Treasurer
Owner, New Form Building Systems, Inc.

JAMES ATWELL, P.E., Secretary
Senior Project Manager, Sevee and Maher Engineers, Inc.

GLENN S. POOLE
Manufacturing Support Manager - Energy, Verso Paper

JOHN ROHMAN, P.E., CID
Chairman, Board of Directors, WBRC Architects-Engineers

TOM TIETENBERG, Ph.D.
Mitchell Family Professor of Economics, Emeritus, Colby College

JOHN KERRY (member ex-officio)
Director, Governor's Office of Energy Independence and Security

DALE MCCORMICK (member ex-officio)
Director, MaineHousing

Efficiency Maine is the administrator of energy efficiency programs in Maine as part of the Energy Programs Division of the Maine Public Utilities Commission through June 30, 2010. After that date, all programs, regardless of the fuel type, will be grouped together and administered by the Trust, consistent with this Plan as approved by the Commission.

Prepared with the assistance of **Dunsky Energy Consulting** and **Optimal Energy Inc.**

» EXECUTIVE SUMMARY

The Efficiency Maine Trust (hereinafter referred to as the "Trust") is pleased to present its first proposed Triennial Energy Efficiency Plan. This plan was prepared in response to the Trust's enabling legislation, which directs it to:

> *"provide integrated planning, program design and implementation strategies for all energy efficiency, alternative energy resources and conservation programs administered by the trust, including but not limited to the electric efficiency and conservation programs, the natural gas efficiency and conservation programs, the Regional Greenhouse Gas Initiative Trust Fund, the Heating Fuels Efficiency and Weatherization Fund and any state or federal funds or publicly directed funds accepted by or allocated to the trust for the purposes of this chapter." (35-A MRSA Section 10104.4)*

The legislature entrusted the Trust with helping consumers achieve far-reaching, long-term energy savings targets. These will require an unprecedented effort, aimed at securing all cost-effective opportunities. In addition to coordinating programs under a single roof, and integrating delivery of both electric and thermal savings measures, it will involve creating new businesses, filling new jobs, expanding training and education, and other tasks.

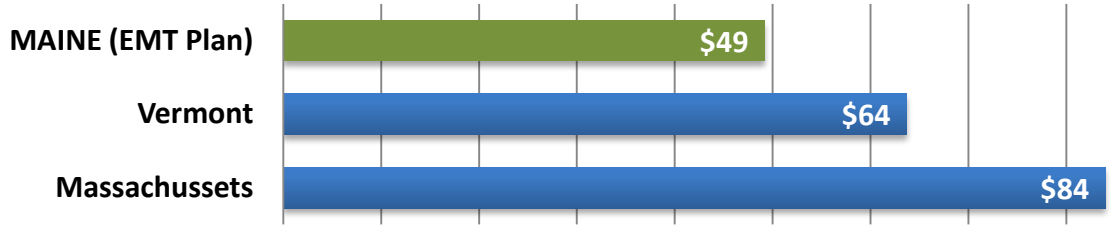
For its first Triennial Plan, the Trust has chosen a cautious approach, with an average annual budget of $63 million, or $48 per capita – far less than some neighboring states (see Figure A). Much of the budget for these first three years is provided by the American Resource Recovery Act. We understand; however, that more effort will be required over time for Maine to secure the full benefits that cost-effective savings have to offer.

Benefits for the State of Maine

This plan is poised to provide the State of Maine with a broad array of economic, social and environmental benefits. Following are a few of the more notable plan benefits:

- Save more than **3.3 trillion Btu** of energy annually by the third year.
- Result in nearly **$840 million in energy savings to consumers and $1 billion increase in Maine's Gross State Product, net present value**.
- Provide better than a **4:1 benefit to cost ratio** for dollars invested by the Trust.
- Provide a **2.3:1 benefit to cost ratio** for all costs invested, including consumer spending (i.e., using the "Total Resource Cost" cost-effectiveness test).
- Create jobs, more than **12,000 net "person-years" of employment** over the life of the energy efficiency measures.
- Reduce nearly **300,000 tons of CO_2** emissions annually by the third year, the equivalent of removing 52,000 cars from circulation**.**
- Leverage as much as **$281 million in private funds** at a three-year **program cost of $192 million**.

Figure A: Relative Energy Efficiency Spending in Three States



Summary of Efficiency Programs

This first Triennial Plan is envisioned to cover the three year period beginning July 1, 2010 and ending June 30, 2013; or the fiscal years (FY) 2011, 2010, and 2013. As per the enabling legislation, the plan will be re-visited and possibly revised annually.

This plan provides detailed information on the context, guiding principles, and strategies proposed by the Trust. The plan is based on a balanced approach to capturing all cost-effective energy efficiency opportunities across all fuels (i.e., electricity, heating oil, and natural gas), involving all customer groups, and addressing new, innovative energy technologies.

The plan is built around the following three strategies:

RESIDENTIAL STRATEGY

Seven residential programs are built primarily around key measure opportunities, with a distinct approach for low-income customers.

- Low-income Programs
- Home Energy Retrofit
- Lighting, Appliances and Electronics
- Efficient Heating Systems
- Refrigerator Recycling
- New Construction
- Wind and Solar Energy

BUSINESS STRATEGY

Three business programs are built around customer size and investment cycles (note that "business" here refers to all non-residential consumers, including institutional customers).

- Medium and Large Business Program
- Small Business Program
- Prescriptive Program

ENABLING STRATEGY

Seven enabling programs are aimed at supporting residential and business programs, and/or helping to secure longer-term savings opportunities.

- Public Awareness Campaign
- Financing Options
- Energy Performance Labeling
- Market Channels Coordination
- Training a Qualified Workforce
- Building Codes and Standards
- Innovation

Although this plan includes detailed proposals for each program, it is deliberately flexible in some areas. This flexibility will allow the Trust to be nimble, and to react to new and innovative technologies, changing markets and/or fuel prices, and the Trust's own organizational development.

At the time of preparing this plan, the Trust was entirely run by a volunteer Board of Directors. The Trust's first Executive Director commenced work in March 2010. As the Trust adds staff and develops in-house expertise, the ability to revise plan details and execute modest mid-course corrections will be important. Being nimble, adjusting to changes in the marketplace, and learning from experience will enable the programs to capture strategic, cost-effective energy saving opportunities available at any given time.

» CONTENTS

TRIENNIAL PLAN OVERVIEW

» INTRODUCTION

Throughout the U.S., and indeed the world, there is growing recognition that the successful economies of tomorrow will need to use energy far more efficiently than they do today.

Maine is no different. With more than 85 percent of its energy coming from imported – and often polluting – fuels, reducing waste and improving our energy efficiency opens the door to tremendous new benefits: reduced capital outflows and increased in-state jobs; improved air quality and reduced CO_2 emissions; and a more competitive, greener economy built to take advantage of new markets and opportunities.

Maine is already working toward a more energy efficient economy. For the past 8 years, Efficiency Maine has been providing incentives to households and businesses alike to adopt more energy-efficient equipment and practices. Together with MaineHousing, it also offers training to Maine's contractors to help them meet the highest quality standards for energy efficiency, and assisted the state in adopting one of the most forward-looking building codes in the nation. Maine can now build on that foundation to accelerate the pace of change, and reap ever greater benefits.

The Efficiency Maine Trust

The Efficiency Maine Trust (the Trust) was created by the Governor and state legislature in 2009. Its board of directors is comprised of individuals representing a variety of backgrounds and perspectives, including those of industry, business, residential consumers and environmental protection. The board is charged with ensuring that the Trust achieves the purposes set out in its enabling legislation (see inset). These include consolidating Maine's consumer efficiency programs and alternative energy programs under one roof; integrating delivery of electric and thermal efficiency measures so the customer can have a one-stop shopping experience; and administering cost-effective energy efficiency programs to help individuals and businesses meet their energy needs at the lowest cost.

THE TRUST'S ENABLING LEGISLATION

The Efficiency Maine Trust was established to develop, plan, coordinate and implement energy efficiency and alternative energy programs in Maine. Its legislative charge is to:

A. Provide uniform, integrated planning, program design and administration of programs pursuant to this chapter and any other provisions of law administered by the trust;

B. Reduce energy costs and improve security of the state and local economies. The trust shall administer cost-effective energy efficiency programs consistent with applicable requirements of this chapter or other law to help individuals and businesses meet their energy needs at the lowest cost and generally to improve the economic security of the State by:

(1) Maximizing the use of cost-effective weatherization and energy efficiency measures, including measures that improve the energy efficiency of energy-using systems, such as heating and cooling systems and system upgrades to energy efficient 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 for those households 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.

C. Ensure that all expenditures of the trust are cost-effective in terms of avoided energy costs; and

D. 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.

(EFFICIENCY MAINE TRUST ACT: 35-A-MRSA Chapter 97, § 10103)

The legislature also charged the Trust with the objective of meeting far-reaching, 10- and 20- year energy savings targets. These targets were developed with the dual aim of not only setting the state on a path to a sustainable energy future, but also improving its economy by keeping more of our money and jobs in-state, by creating new jobs, by making existing business and industry more competitive, and by building the foundations of a green economy that will serve us far into the future.

The Trust will have a significantly increased capacity to help Mainers and the Maine economy save energy – in all spheres of life and work. The Trust is notably charged with the power to address all fuels, including heating oil, electricity and natural gas; to encourage renewable energy sources like biomass, solar and wind; and to use its own funding to leverage other contributions.

Legislative Targets

The 10- and 20-year energy savings targets established by statute are far-reaching and, in many respects, unprecedented. Among others, they include the following goals:

- *Reductions in electricity and natural gas consumption of 30 percent within a decade;*
- *Reductions in oil heating use of 20 percent in the same timeframe; and*
- *Weatherization of 100 percent of homes and 50 percent of businesses by 2030.*

By all accounts, these represent the most ambitious energy savings goals in the nation today.

The Efficiency Maine Trust is proposing an actionable Triennial Plan that starts Maine on the path to achieving these targets. This plan was developed through public consultation, expert analysis of the options, and the combined vision of the volunteer members of the board.

Maine currently has the highest dependence on #2 heating oil of any state in the nation. With annual consumption of half a billion gallons, the state is losing upwards of a billion dollars – and thousands of jobs – every year.

In addition to charting a realistic path forward, the plan seeks to respect five guiding principles:

1. *Affordable*
2. *Comprehensive*
3. *Balanced*
4. *Flexible, and*
5. *Enabling of future efforts*

These principles will help ensure that the plan receives widespread acceptance, allows a new Trust team to build on the strength of existing programs, and paves the way for even greater energy savings in the future.

This plan describes the proposed strategies to meet these objectives. The plan also forecasts energy and carbon dioxide (CO_2) (or equivalent) emissions savings, as well as its associated costs and benefits. The plan includes a breakdown of the budget required to achieve these goals according to their sources, and specifies the funding for which the Trust is requesting approval, including, most notably, an increase in the electric systems benefits charge and a new budget to achieve the statute's target oil savings.

All in all, these charges will generate cost-effective savings for consumers, as well as significant net benefits for the state's economy, business climate, workforce, and environment.

» TRIENNIAL PLAN VISION

This is the Trust's first Triennial Plan. It was prepared with the assistance of the Trust's consultants, Optimal Energy and Dunsky Energy Consulting. The plan follows the direction provided by the Trust's volunteer board of directors and includes information provided through public participation opportunities. The Trust also consulted with energy efficiency experts in Vermont and Oregon, who face similar challenges and have more experience in statewide energy efficiency programs.

This first Triennial Plan focuses on the full breadth of energy savings opportunities, namely:

- **Conservation.** This plan sets significant funds aside to launch a public awareness campaign. This campaign will seek to inform and enable Maine consumers to voluntarily adopt new energy saving habits.
- **Energy Efficiency.** The plan is focused primarily on a series of strategies, including but not limited to consumer incentives, aimed at encouraging and enabling adoption of cost-effective energy efficient products, equipment and services.
- **Renewable Heat.** This plan goes beyond traditional energy efficiency options to promote *renewable energy heating options*, including most notably biomass heating systems, which can reduce our dependence on heating oil.
- **Renewable Electricity.** Finally, this plan continues modest efforts required in statute to make alternative, customer-sited electricity technologies like wind and solar power more affordable to Maine consumers.

Pursuit of these opportunities for saving energy is the cornerstone of this plan.

Guiding Principles

Opportunities for cost-effective energy savings in the State of Maine are abundant and varied, both in terms of the types of opportunities (e.g., lighting, appliances, heating systems) and the consumer segments where they can be found (e.g., renters and homeowners of varying income levels, businesses and industry of varying sizes and structures).

Because of this abundance of opportunities and markets, a responsible plan needs to make choices, beyond the direction already provided by the legislature, about how much money to invest and about where to invest it. To guide these choices, this plan strives to follow five guiding principles: that it be affordable, comprehensive, balanced, flexible, and enabling of future savings.

The meaning of these five principles, and how they have helped to sculpt the Triennial Plan, is discussed below.

#1. An Affordable Plan

The Triennial Plan will help make energy more affordable for Maine's residential and business customers. It will achieve this through a combination of factors, including lowering energy consumption for participants, driving down the unsubsidized cost of energy efficient products through economies of scale and improved training, installation and maintenance, and reducing peak demand which in turn lowers the cost for all consumers on energy, capacity, and transmission and distribution. Energy efficiency is the least-cost energy resource, cheaper than supplies of electricity, natural gas or heating oil, but not easy for an individual customer to purchase. As a result of the programs in this plan, Maine consumers will find that their energy costs are indeed more affordable.

The Maine Energy Futures Act directs the Trust to design and administer programs that advance the objective of aggressive energy savings targets, and that capture all energy savings for consumers that are cost-effective, feasible and reliable. There is no shortage of cost-effective opportunities for energy savings in Maine that can help save consumers money and stimulate the economy.

Successful and sustainable efficiency programs around the world leverage multiple sources of funding including, most significantly, customer contributions toward the cost to purchase and install high-efficiency

products. Without these contributions there would never be sufficient funding to capture significant savings across the economy or to transform the energy products market in a meaningful timeframe. So, while all cost-effective savings opportunities are worth pursuing in Maine over the long run, the current stresses on the economy remind us that this plan must also be affordable in the short run. In light of this, the first Triennial Plan has balanced the legislation's ambitious savings goals and mandates with the board's concern for limiting the financial contributions it will require of Maine's consumers in today's difficult financial times.

As a result, the Trust chose to limit the plan's budget in the first three years, staying nearly level at $60 million each year. While this constitutes only a half to a third of the spending that could be justified to maximize cost-effective savings across all fuels and all market sectors in Maine, it will be more affordable to customers in the short run. (It will also mean that as the economy strengthens, the budget will have to be ramped up more steeply in subsequent triennial plan periods.) The Trust believes this is a prudent, affordable budget, which is justified by the plan's cost-effective savings benefits.

#2. A Comprehensive Plan

To set the stage for an ambitious, long-term effort, this first Triennial Plan seeks to be comprehensive in its approach, making a wide array of savings opportunities available and accessible to the full spectrum of Maine consumers.

To achieve this goal, this plan proposes a complete portfolio of customer-sited energy efficiency and renewable energy strategies, including programs tailored to the specific needs of low-income customers and small businesses. It also ensures that efforts are not limited to a few "low-hanging fruit," paving the way for what are traditionally more difficult savings to achieve, like those from whole-home retrofits and renewable energy heating equipment. Finally, unlike many plans in the country, the Trust's Triennial Plan addresses all major fuels, including electricity, natural gas and heating oil, as well as propane and kerosene.

Ultimately, this plan recognizes that to achieve the legislature's long-term goals, an "all-hands-on-deck" approach is essential.

#3. A Balanced Plan

In line with the state's legislation, this plan seeks a balanced approach to achieving energy savings. This balance plays itself out in two important ways:

First, the plan seeks to ensure that costs are fairly shared between the Trust and those consumers who will benefit most immediately from its efforts. In practice, this means that programs offer a balanced approach to incentives: offering only what the Trust believes is needed to ensure broad participation, while asking program participants to shoulder their fair share of measure costs. Exceptions to this rule include low-income households and small businesses, for which up-front contributions represent a much more important barrier.

Second, the plan seeks to ensure a balance between short-term savings, commonly referred to as "resource acquisition," and longer-term, more sustainable change, sometimes known as "market transformation." Resource acquisition strategies use incentives to *overcome* market barriers to energy savings in the short term, for example by enticing consumers to purchase more efficient products. Market transformation seeks to address the underlying barriers themselves, for example by offering training to ensure a sufficient workforce able to conduct high-quality energy audits; by making it easier for private capital to finance energy savings investments where those investments can generate positive returns; or by using regulation to ensure home buyers are made aware of – and able to judge – the energy performance of houses on the market.

#4. A Flexible Plan

The Efficiency Maine Trust is a new organization. Until March 2010, the volunteer board of directors and a handful of consultants were the only "staff" available to implement development of the plan.

As a result, the Trust is proposing a plan that is less prescriptive than it might otherwise be. While the plan is rooted in a number of assumptions, the Trust believes it is critical to leave a reasonable degree of flexibility for a new team to take ownership of the specific means of implementing the plan's overall strategies, and to build on its own strengths in so doing. This approach recognizes that the Triennial Plan's success will hinge just as much on the expertise and foresight of its designers, as on the skill,

dedication and sense of mission of those who will be called upon to implement it.

#5. An Enabling Plan

The long-term targets set out in the Trust's enabling legislation are far-reaching, and achieving them will require an unprecedented effort.

The Trust recognizes that the first Triennial Plan is just that: the *first* in a series of many. Accordingly, the Trust is proposing to set aside a share of its budget for investments that, while not necessarily expected to produce significant savings in the short-term, will enable deeper savings – and leverage additional contributions – in the long run. This approach is analogous to the way any smart business with a long-term view operates: putting a part of its revenue to research and development efforts that, while not necessarily generating short-term sales, can improve long-term performance.

In practice, this first plan proposes to invest up to 10 percent of its budget on efforts – such as training, financing and awareness – designed to *enable* savings and *leverage* additional contributions well into the future.

This Plan is designed to change. In the long run, reliance on incentives alone will not achieve the legislature's energy savings goals.

The overarching metrics of this plan for the three-year period that it covers, and consistent with the assumptions enumerated in the plan, are:

1. Reduce more than 3 trillion BTUs of electric, natural gas and heating fuel energy consumption by Maine consumers (estimated over the life of the installed measures);
2. Achieve a benefit to cost ratio of not less than 2:1 as measured using the Total Resource Cost test;
3. Avoid of 500,000 tons of CO2 equivalent (lifetime) from three years of investments;
4. From the base electric conservation assessment, expend at least 20% of for the benefit of low income customers and at least 20% for the benefit of small business customers.

The Trust recognizes that a number of factors outside of its control may impact actual performance, including energy prices, federal incentives, codes, standards and other legislative activity. The Trust will commit to report on its performance, and provide full explanations, if needed, for any variances from its stated targets.

Performance Metrics

In addition to these guiding principles, the Trust is bound by statutory requirements (Section 10104(3)) to:

> "*develop quantifiable measures of performance for all programs it administers and to which it will hold accountable all recipients of funding from the trust and recipients of funds used to deliver energy efficiency and weatherization programs administered or funded by the trust*."

To this end, the Trust is committed to developing meaningful performance metrics, focused primarily on key goals such as net energy and carbon savings. Furthermore, the Trust will incorporate performance metrics into subsequent detailed program work plans and suppliers' contracts, such that both the Trust and its contractors are focused on and accountable for delivering results.

Planning for Maine's Future

Over the past decades, much of the savings achieved by energy efficiency programs in the United States has rested on a generous set of consumer incentives such as coupons for purchasing compact fluorescent light bulbs, rebates for high-efficiency appliances, and checks in the mail for achieving significant retrofit savings in homes and businesses.

These incentives can be necessary to overcome barriers in the market, whether they be a lack of information, difficulty finding qualified contractors, lending practices that fail to recognize the inherent value of energy saving investments, or any of a host of other market barriers.

Incentives will no doubt continue to be needed for a number of products and markets for years to come. But in the long run – and to achieve the levels of savings sought by the Maine state legislature – reliance on incentives alone is not sustainable.

Recognizing this, the Trust is proposing the following two-step approach to achieving the long-term goals set out in its enabling legislation:

- ***Short-term*:** In its first Triennial Plan, the Trust will begin building on Efficiency Maine's existing foundation by adjusting some current programs and by broadening the portfolio of programs and strategies thanks to new funding streams. Yet simultaneously, the plan will also intensify efforts aimed at reducing (or even eliminating) market barriers, as well as **leveraging capital and other contributions beyond the Trust's own resources.** This means dedicating efforts – relatively small in budget terms, but with potentially larger payoffs in the future – to what we refer to hereafter as "enabling strategies".
- ***Mid-to-long terms:*** In the mid- to long-terms, the Trust envisions broadening its portfolio of approaches to ensure that consumers see energy efficiency opportunities at every turn. Furthermore, the second phase of this strategy will work to leverage the enabling investments of years' prior, advancing and taking advantage of transformative tools like financing, training and regulation to bring energy efficiency decisions and investments into the mainstream. These lower-cost strategies will complement more traditional financial incentives, and should set the stage to achieving ever-greater savings, at a lower cost than would otherwise be necessary.

This vision – that the current plan is merely a step in a long-term strategy – is essential to understanding the approach the Trust has chosen. Highlights of that approach are presented on the following pages; details can be found in the supporting sections that detail each strategy or program group.

Important Considerations

This plan takes into account the unique circumstances in which it was prepared, including the existence of Efficiency Maine, with previously-approved plans and commitments, as well as uncertainty regarding future federal funding.

Transition from Efficiency Maine: This first Triennial Plan ensures a smooth transition from the current Efficiency Maine to the new Efficiency Maine Trust. As part of that transition, this plan takes Efficiency Maine's existing budgets and plans as its starting point, and builds upon them rather than starting entirely anew. It also includes broad strategies to ensure a smooth transition where programs are expected to change over time.

Federal Funding: The federal government currently provides significant funding for energy efficiency and renewable energy, both to consumers directly and to organizations that, like the Trust, deliver programs. There is also discussion underway regarding potential new federal funding, including grants for home energy retrofits. This plan assumes that existing incentives to consumers – currently in the form of tax credits – will either continue through the full three years, or be replaced by similar incentives (e.g., the "Home Star" program). The plan also assumes that there will *not* be another round of ARRA or similar funding and, as such, that the stimulus-related funds used by Efficiency Maine will not be renewed. The Trust recognizes that changes to these assumptions could impact, positively or negatively, the plan's ability to meet its stated savings objectives within the proposed budget. Given these considerations, and the guiding principles previously outlined, key aspects of the plan are described in the following sections. Further descriptions and analyses for each of the 18 individual strategies for which the Trust is seeking funding approval are provided in the detailed program descriptions.

***Stakeholder Input*:** This plan takes into account the views expressed during a series of public consultations, held at the Board's request, on four separate occasions:

- *Friday, January 15, University of Maine, Orono.*
- *Friday, January 22, Abromson Community Education Center, University of Southern Maine, Portland.*
- *Friday, January 29, PUC Offices, Hallowell.*
- *Tuesday, March 23, Conference Center, Holiday Inn Hotel, Augusta.*

These meetings were facilitated to encourage participation from various stakeholder groups

including representatives of energy providers, small and large businesses, environmental groups and private citizens. Written comments were compiled and written and verbal input was summarized and provided to the full board and reviewed at a subsequent public board meeting.

» STRATEGY HIGHLIGHTS

This plan includes three types of strategies: those aimed primarily at the residential sector, those aimed at the business and government sectors, and those that are cross-cutting and/or designed to enable future savings.

The residential and business programs are aimed at different types of energy efficiency opportunities, within different consumer groups. These include "market-driven" and "discretionary" market opportunities.

- ***Market-driven*** refers to energy efficiency investment opportunities that arise when a consumer is already planning a purchase for other reasons (e.g., a new house, a refrigerator, or a planned facility expansion). If the opportunity to choose an efficient option (e.g., an Energy Star home or appliance) is missed, it is considered by and large "lost" for the life of that equipment.
- ***Discretionary*** refer to energy efficiency investments or decisions that could take place independently of planned investments. For example, a lighting retrofit that reduces electricity consumption by 50 percent may make sense even though the small business did not otherwise need to replace their lighting. These investment opportunities are "discretionary", and can be pursued at any time.

This plan recognizes the fundamentally different timing, needs of, and drivers for securing these two opportunities, and proposes a series of strategies accordingly.

This plan also accounts for the unique circumstances and barriers certain customers face. While size and income alone cannot explain the lack of investment in cost-effective energy efficiency, this plan recognizes that smaller businesses and lower-income consumers face far greater challenges than do their larger and/or wealthier counterparts. In both cases, these customer segments may lack access to capital to undertake the efficiency investments, may not have the resources to properly assess the options and their relative costs and benefits, and may have difficulty finding qualified contractors interested in servicing them.

> ***A focus on comprehensive home retrofits and advanced heating systems represents the most significant change from Efficiency Maine's current slate of residential programs.***

This plan includes programs designed specifically to account for these differences, keeping in mind that the ultimate goal is to ensure that Mainers from all walks of life can take part in, and benefit from, the state's energy efficiency effort. Figure 1 illustrates some of the characteristics of different residential customer groups.

The following sections provide highlights from each of these three sector strategies.

Figure 1: Home Energy Retrofits: households face different barriers

Low Income	• Care a lot about lower bills, comfort • Little if any disposable money to invest • Contractors often uninterested • May lack control (e.g., tenants in multi-family buildings)
Mid/High Income	• Care about lower bill, comfort • Most have limited disposable income, time • Difficult to find qualified contractors • Unsureo f savings or that market will value investment at resale
Innovators	• May care about utility bills, environment, new technology or other drivers • May adopt energy efficiency without significant incentives

Residential Strategy Highlights

All told, this plan includes eight programs designed primarily for the residential sector. The plan recognized that that markets do not fit into neatly-drawn categories and that many small businesses – who often shop at retail stores or otherwise coexist in similar markets – may take advantage of residential sector strategies.

These strategies are designed to address all market opportunities, and to ensure that low-income consumers can participate in, and benefit from, the overall effort. They are rooted in best practices throughout North America, and in the practical realities of Maine's own housing stock, resources and economy. As shown in Figure 2, the programs provide for energy savings in liquid fossil fuel, electricity, and natural gas consumption. Below are highlights of the residential sector strategies. More information is provided in the Residential Strategies section of this plan.

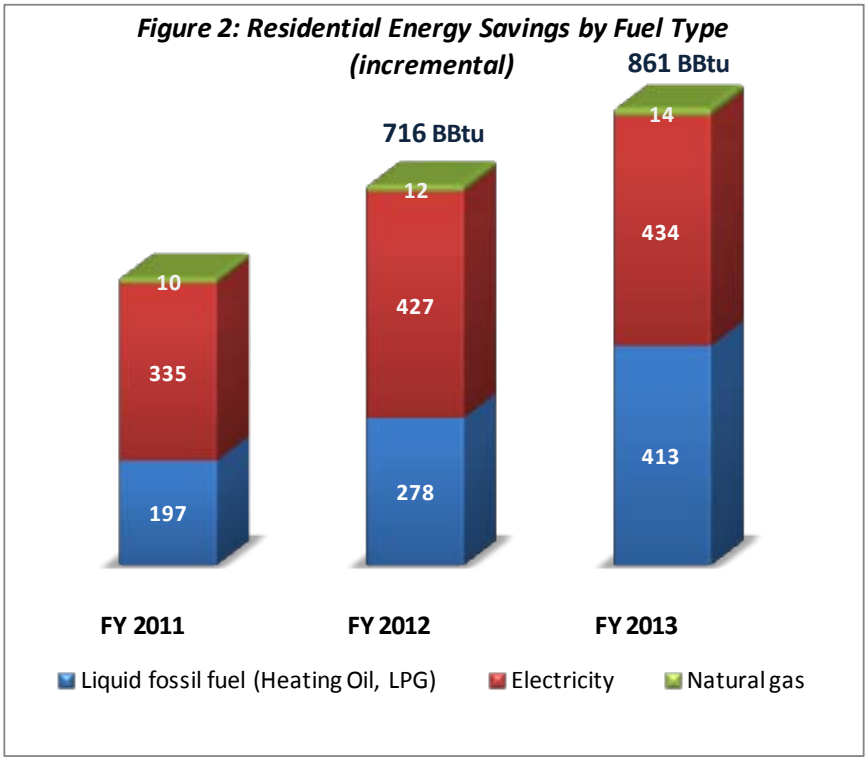
- ***Flagship Home Energy Retrofit Program.*** In keeping with the goal of reducing reliance on fossil fuels, this plan includes a program aimed at securing significant energy savings through whole-home energy audits and retrofits. This program will build on Efficiency Maine's recently launched Home Performance program. Once fully transitioned, this program will use a number of market levers, from contractors to community groups to the Trust itself, to encourage homeowners to receive comprehensive energy audits.

  These audits, in turn, will offer a one-stop-shop opportunity to directly implement low-cost measures, such as air sealing or compact fluorescent bulbs; to encourage and incent deeper savings through insulation or replacement of windows and doors; and to link into other incentive programs, including those aimed at appliances and efficient or renewable heating systems. By the third year of the plan, this program will represent just over 20 percent of residential sector spending.

- ***Continued Low Income Weatherization.*** Thirty-six percent of Maine's population is eligible for the Department of Energy's Weatherization Assistance Program administered by MaineHousing. This successful program will continue in cooperation with the Trust. With increased short-term funding from ARRA, this program will provide more savings to more income-eligible households than ever before. Although this stimulus funding is slated to decrease over the three-year plan period, funding in the final year, with targeted appliance and CFL efforts, will represent under 30 percent of total residential program spending.

- ***Advanced Heating Systems.*** In order to address the legislature's heating oil savings goal, this plan includes an aggressive effort to encourage homeowners to replace old, inefficient heating systems with more efficient options. The program will encourage a wide array of advanced heating systems, and will use varying incentives where relevant, notably to further market penetration of ground source (electric) heat pumps, advanced biomass systems (notably pellet furnaces and boilers) and, through the

Figure 2: Residential Energy Savings by Fuel Type (incremental)



alternative energy fund, solar hot water heating systems. This program will ramp up over time, consuming over 20 percent of residential spending by 2013.

- ***Refrigerator Recycling Program.*** The Residential Program will quickly launch an effort to remove old, inefficient refrigerators from the market. This program is already in place in neighboring states, and is among the surest ways of achieving rapid savings. By 2013, this program will use under 10 percent of the total residential budget.

The plan will also pursue a new initiative focused on new construction, as well as existing programs, including those aimed at renewable energy systems like wind and solar, CFL lighting, and ENERGY STAR™ appliances.

Figure 3 shows that more than 85 percent of initial savings come from three programs. The remaining initiatives, while more costly in the short-term, will produce longer-term savings and/or broader social benefits. **In all, the residential sector would produce direct benefits more than twice as great as total costs (*including* participant costs), as well as societal benefits like job creation, poverty alleviation, and a reduction in carbon emissions.**

Figure 3: Share of Residential Energy Savings by Program

(Cumulative: 2011 - 2013)

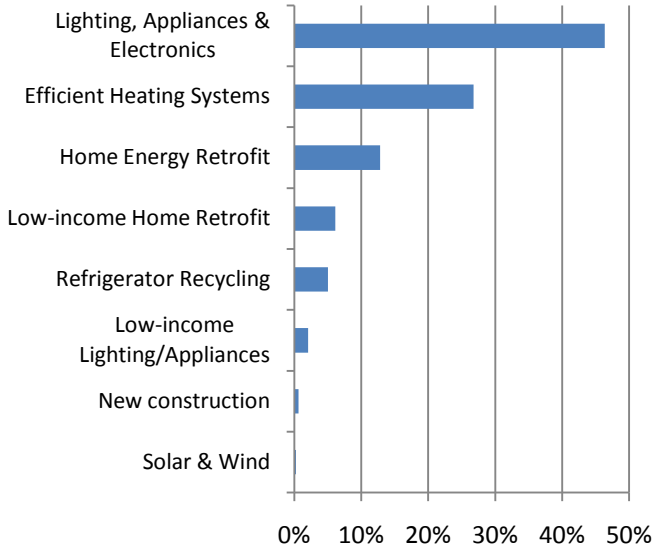


Figure 4: Residential Program Budgets and Total Resource Cost (TRC) Ratios

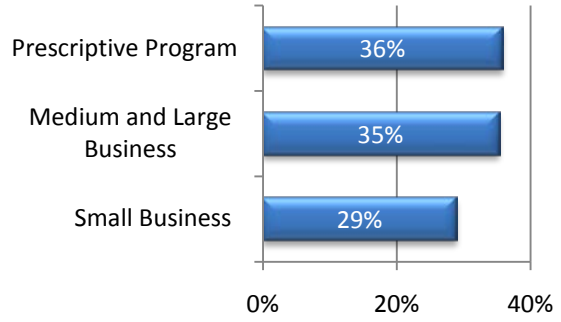
	FY 2011	FY 2012	FY 2013	TOTAL	Lifetime (TRC)* B/C Ratios
Low-income Home Energy Retrofit	$27.3	$6.4	$6.4	**$40.1**	**1.2**
Low-income Lighting & Appliances	$2.6	$2.6	$2.6	**$7.8**	**1.4**
Home Energy Retrofit	$3.9	$5.5	$6.3	**$15.6**	**1.1**
Lighting, Appliances & Electronics	$4.4	$5.7	$5.5	**$15.7**	**6.0**
Efficient Heating Systems	$2.3	$4.2	$6.8	**$13.3**	**2.3**
Old Fridge Recycle	$1.7	$2.4	$2.4	**$6.5**	**3.0**
New construction	$0.2	$0.6	$1.8	**$2.6**	**1.6**
Solar & Wind	$0.4	$0.4	$0.4	**$1.3**	**0.4**
TOTAL RESIDENTIAL	**$42.8**	**$27.8**	**$32.2**	**$102.8**	**2.3**

** Total Resource Cost (TRC) test compares the sum of lifetime benefits (cost savings) against the sum of costs, both program and participant.*

Business Strategy Highlights

This plan includes three broad programs designed for the commercial, institutional and industrial customers (the "Business" sector). While some small commercial customers may take advantage of programs that are primarily aimed at households (particularly in the area of retail products), these three programs are structured for business customers only. Figure 5 shows the relative share of energy savings projected for the Triennial Plan period.

Figure 5: Share of Business Energy Savings by Program
(Cumulative: 2011 - 2013)



These strategies are designed to address a wide range of market opportunities across a diverse customer base by providing simple, customer-centered energy efficiency solutions addressing all fuels (see Figure 6). Below are highlights of these programs. Descriptions of each can be found in the Business Strategies section.

- ***Prescriptive Products Program.*** This program will build on Efficiency Maine's current prescriptive incentive program, aimed at encouraging the purchase of high-efficiency equipment. A "prescriptive program" is one that establishes a pre-defined list of products or procedures that are eligible for support, and prescribed incentive levels, that are available to customers and their contractors. Prescriptive programs complement "custom programs." This program will evolve to address a broader range of major market opportunities, and begin to address fuel-fired equipment such as boilers and hot water heaters. These incentives will be enhanced by extensive efforts to engage the product supply chain in supporting the eventual installation of high-efficiency equipment at customer facilities.

This is not a cookie-cutter plan. Maine's diverse businesses need customized energy efficiency solutions.

Currently representing the majority of business sector spending, this program will represent one-third of the budget by 2013.

- ***Medium and Large Business Custom Program.*** To reach greater numbers of customers and achieve deeper savings, Efficiency Maine's existing custom incentive program will be expanded into a set of enhanced services for medium and large customers. These services will be tailored to the specific needs of each participant, and delivered through a single point-of-contact, providing "one-stop shopping" for all of their energy efficiency needs.

  As part of this program, medium and large business customers will receive assistance with identifying and implementing early retirement of inefficient equipment and investments in higher efficiency equipment during replacement and business expansion cycles. Trained account managers will cultivate long-term relationships with the largest customers in Maine, and expert teams will provide support for cost-effective projects, including conversions to biomass-fired systems and customer-sited renewable energy equipment.

  This program will represent nearly 40 percent of business sector spending by 2013.

- ***Small Commercial Customer Program.*** Initially, small business customers will be encouraged to take advantage of prescriptive incentives when applicable. Beginning in 2012, the program will incorporate a comprehensive strategy to provide small commercial customers with services specifically designed to address their unique needs. The centerpiece of this program is a direct install effort that will address opportunities to reduce both electric and fossil fuel usage across all

major end-uses using a turnkey approach. The program will also eventually include a simplified whole-building approach to new construction.

The direct install component of this program will begin with a facility walk-through, similar to Efficiency Maine's current Small Business Energy Audit program.

After the walk-through, customers will be presented with a suggested set of efficiency measures for implementation, along with the customer financial contribution after Efficiency Maine incentives. If the customer agrees, Efficiency Maine will proceed to ensure the project is implemented, including through material procurement, installation, and quality control.

By 2013, this program will account for nearly 30 percent of the business sector's budget.

In all, the business sector will produce direct benefits two and a half times as great as total costs (*including* participant costs), as well as significant societal benefits like creating jobs, improving business competitiveness, and reducing carbon emissions.

Figure 6: Business Energy Savings by Fuel Type *(incremental)*

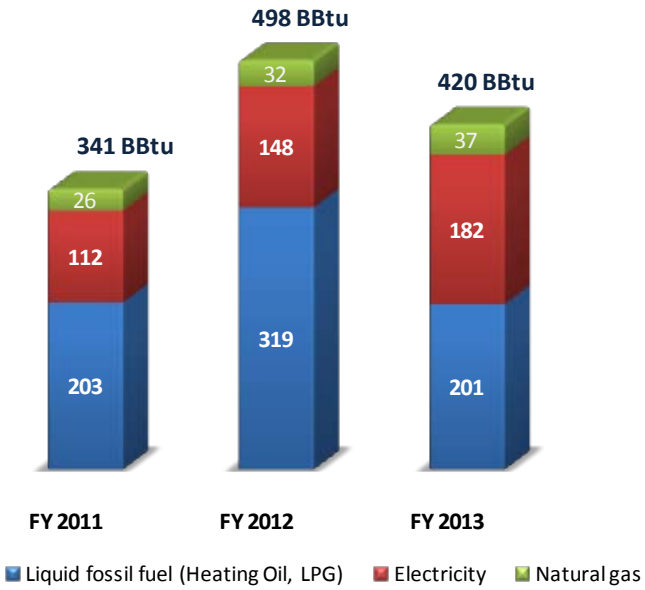


Figure 7: Business Program Budgets ($M) and Total Resource Cost (TRC) Ratios

	FY 2011	FY 2012	FY 2013	TOTAL	Lifetime (TRC)* B/C Ratios
Medium & Large Business	$7.1	$8.9	$9.1	**$25.1**	**2.0**
Small Business	$2.9	$7.7	$7.3	**$17.9**	**3.2**
Prescriptive	$9.1	$11.1	$8.3	**$28.5**	**2.8**
TOTAL BUSINESS	**$19.1**	**$27.7**	**$24.7**	**$71.6**	**2.6**

** The Total Resource Cost (TRC) test compares the sum of lifetime benefits against the sum of lifetime costs, both program and participant.*

Enabling Strategy Highlights

Beyond incentive programs, the first Triennial Plan includes a series of efforts – relatively small in budget terms, but significant for their long-term potential – aimed to enable future savings by addressing underlying market conditions. These strategies are rooted in the very sense of the Trust's enabling law: viewing energy efficiency not just as a short-term resource, but as a long term priority for the state's economy, environment and strategic future. Descriptions of all enabling strategies can be found in the Program Descriptions section.

Enabling strategies will build support, and create and leverage opportunities, for deeper savings down the road.

- ***Public Awareness Campaign.*** Achieving the desired shift in Maine's energy consumption will require more than just adoption of energy saving products and services. To galvanize a change in energy consuming habits, this plan includes a broad public campaign, comprised of awareness, education and some of the latest tools available to empower consumers to better understand and take control of their energy consumption. This campaign will generate some direct savings of its own, will contribute to participation in other programs, and will begin a move toward a "culture of conservation" in the state.

- ***Financing Options.*** One of the challenges facing energy efficiency investments is the lack of appropriate and accessible financing. For example, many financial institutions still treat home energy efficiency investments no different from the purchase of a home or car, neglecting to account for the consumer savings – and resulting ability to repay – they generate. Similarly, because real estate markets do not yet fully reflect the value of energy efficient homes, owners who borrow to weatherize or install an advanced heating system, for example, run the risk of never recovering their investment should they need to sell their homes soon after. This plan dedicates significant resources to advancing the availability of appropriate financing tools, including voluntary municipal financing (commonly known as PACE), among others.

- ***Energy Performance Labeling.*** Real estate markets currently undervalue energy performance, and one reason is the lack of comparable information at the time of real estate transactions. This is a consumer protection issue and an energy saving issue. The Trust will build upon the Commission's report to the Joint Standing Committee on Utilities and Energy (February 2010), as well as recent work conducted for Northeast Energy Efficiency Partnerships (NEEP), examining options to advance energy

Figure 8: Enabling Strategies Budgets ($M) and Total Resource Cost (TRC) Ratios

	FY 2011	FY 2012	FY 2013	TOTAL	Lifetime (TRC) B/C Ratios
Financing, Training, Labeling, Market Channel Coordinator	$2.1	$2.1	$2.1	**$6.3**	**N/A**
Codes & Standards	$0.3	$0.3	$0.2	**$0.8**	**N/A**
Education & awareness	$2.4	$2.4	$2.2	**$7.0**	**N/A**
Innovation	$0.2	$0.3	$0.3	**$0.8**	**N/A**
Evaluation	$0.6	$0.9	$1.1	**$2.6**	**N/A**
TOTAL ENABLING	**$5.6**	**$5.9**	**$5.9**	**$17.4**	**0.7***

** The Trust may implement individual programs not satisfying the Total Resource Cost (TRC) test where benefits are known to exist but cannot be quantified with accuracy, the program satisfies some other statutory goal or objective, and the entire portfolio of program benefits substantially exceeds total portfolio program costs. 65-407 Maine Code of Regulations Chapter 380, Section 4.B. While all of the costs of enabling programs are counted here, only a fraction of their total benefits that are easily quantifiable are reflected here. The remainder is either counted in the Residential and Business programs or occurs in future years (e.g., from compliance with building energy codes) and is not easily quantifiable.*

performance labeling of homes and buildings in the state. The Trust will notably look to support current labeling efforts, including through appropriate links to its program incentives, and to further assist the state in designing a path toward broad market adoption of labeling early in real estate transactions.

- ***Building Codes and Standards.*** Maine recently adopted one of the most stringent building codes in the nation. This Triennial Plan will devote resources to ensure this new code is well understood, that builders are empowered to meet or exceed it, and ultimately to ensure compliance. Similarly, the Trust will examine options for adopting new efficiency product standards, notably through regional initiatives.

- ***Training a Qualified Workforce.*** For Maine to achieve deep savings among a broad spectrum of households and businesses, it will require investing in a qualified, "green" workforce. This plan includes training for high-quality energy audits and weatherization services, among others, to be delivered in part through Community Colleges.

- ***Innovative Technology Support.*** While focused on well-known, proven savings opportunities, this first Triennial Plan will also launch a fund dedicated to assisting new energy saving opportunities to enter the market. Priority will be given to products and services that originate within Maine, or that can generate opportunities for state businesses. In the long run, this fund will serve to continuously replenish the pool of cost-effective energy savings options and to pilot new program initiatives that will transform the market.

- ***Program Evaluation***. Finally, this plan also sets funds aside to ensure rigorous evaluations of the plan's most important programs. These evaluations will be key to ensuring continuous improvements and the long-term effectiveness of energy efficiency funds.

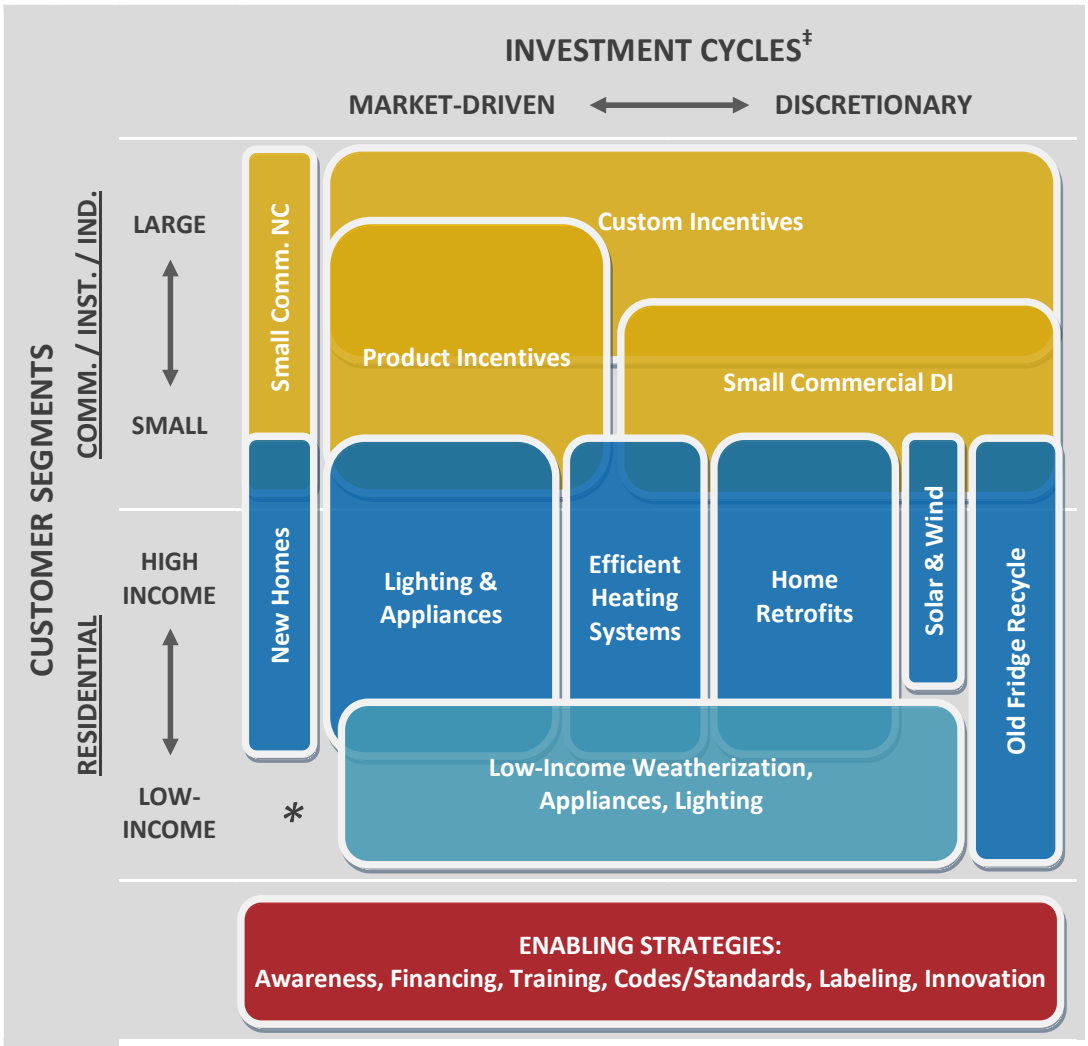
A Comprehensive Portfolio Approach

Ensuring that all Mainers can benefit from this plan requires that the plan be comprehensive, offering energy savings opportunities to all customers at appropriate times in their investment cycles.

As Figure 9 illustrates, this plan provides a portfolio approach to ensuring that, by the plan's third year, all consumer segments *and all market opportunities* will be addressed.

The reader will note that the overlapping of strategies is deliberate, in recognition of the fact that markets do not fit neatly into pre-defined categories. For example, some (though not most) low-income consumers may benefit from appliance incentives aimed at middle-income earners, just as some small businesses may purchase residential-size HVAC systems. This plan welcomes – and indeed plans for – these realities.

Figure 9: A Comprehensive Portfolio of Programs and Strategies



‡ "Market-Driven" refers to energy efficiency investment opportunities that arise when a consumer is already planning a purchase for other reasons (e.g. a new house, a fridge, a planned plant expansion). If the opportunity to purchase a high-efficiency option (e.g. an Energy Star home or appliance) is missed, it is considered by and large "lost" for the life of that equipment.

‡ "Discretionary" refers to energy efficiency investments or decisions that could take place independently of planned purchases. For example, a lighting retrofit that reduces electricity consumption by 50% may make sense even though the small business did not otherwise need to replace their lights. These investment opportunities are "discretionary", and can be pursued at any time.

** New social housing construction already benefits from regulations ensuring built-in energy efficiency standards.*

» PLAN-WIDE BENEFITS AND COSTS

A Cost-Effective Plan

Overall, this plan is cost-effective even under the most conservative assumptions.

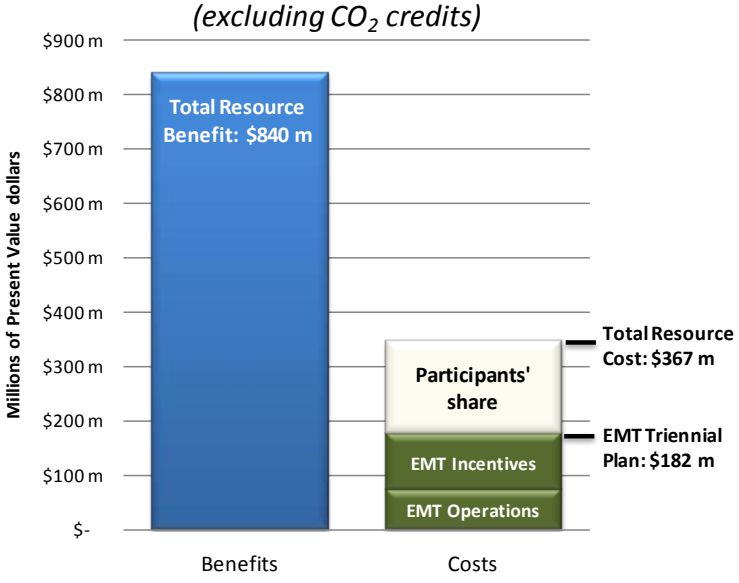
Indeed, as indicated in Figure 10, the plan is expected to generate direct savings of nearly $810 million (present value 2010 dollars), while spending less than a quarter of that amount ($180 million in present value dollars, or $188 million in actual budget dollars). From the program administrator's perspective, this results in a benefit/cost ratio in excess of 4:1.

From a total resource cost (TRC) perspective, which includes participants contributions to efficiency measure costs, the plan offers benefits more than twice as high as associated costs (a resulting benefit/cost ratio of 2.2:1).

It is noteworthy that the benefits indicated above do not include any valuation of the impact of the plan on Maine's overall carbon emissions. Nor do they account for the significant macro-economic ("trickle down") and social benefits the plan is expected to produce. (See the following subsections.) While the benefits to low-income households are not explicitly addressed, it is worth noting that over the three years, nearly

half of the residential budget will be allocated exclusively to those with limited incomes.

Figure 10: Net Present Value (NPV) of Total Resource Costs and Benefits
(excluding CO_2 credits)



Other Benefits: Stimulating the Economy

In addition to direct cost savings, this first Triennial Plan is expected to contribute to broader societal goals. The first of these is its positive impact on Maine's economy, and in particular on job creation (see Figure 10).
Jobs will be created in two ways. First, new jobs will result directly from the program's expenditures. (Jobs created from participant expenditures are not reflected in this initial assessment). Indeed, all studies suggest that spending on energy efficiency creates far more jobs than equivalent spending on increasing energy supply, regardless of the source.

Second, jobs are created from the money consumers save off of their energy bills – much of which would otherwise be shipped out of state. Much of that money is instead redistributed within the economy, either through consumer spending or inter-business trade.

All in all, based on a recent macroeconomic assessment using the regional REMI model, prepared for Environment Northeast and published in October 2009, this plan can be expected to create between 12,000 and 13,000 person-years of employment. While a part of these jobs would be spread over the life of energy savings measures (jobs associated with

energy bill savings), a significant share would occur in the initial three years (those associated with initial bill savings *and* program spending). Figure 11 illustrated the projected range of job creation based on the Triennial Plan budgets for energy efficiency programs by fuel type.

Furthermore, by keeping more dollars within the state, the Triennial Plan is expected to have a positive effect on Maine's economy. Indeed, with a strong multiplying effect, the ENE study suggests this plan will add over $1 billion to the gross state product (GSP) (see Figure 12).

Other Benefits: Reducing Carbon Emissions

Energy efficiency is broadly recognized as the most cost-effective strategy for reducing emissions of carbon dioxide and other greenhouse gases.

Figure 11: Triennial Plan: New Job Creation

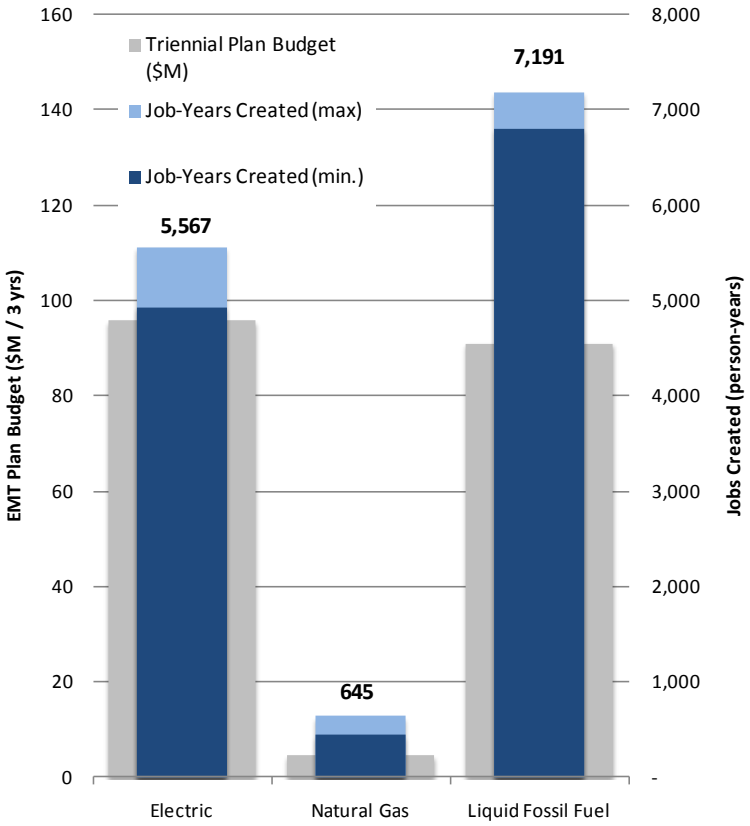
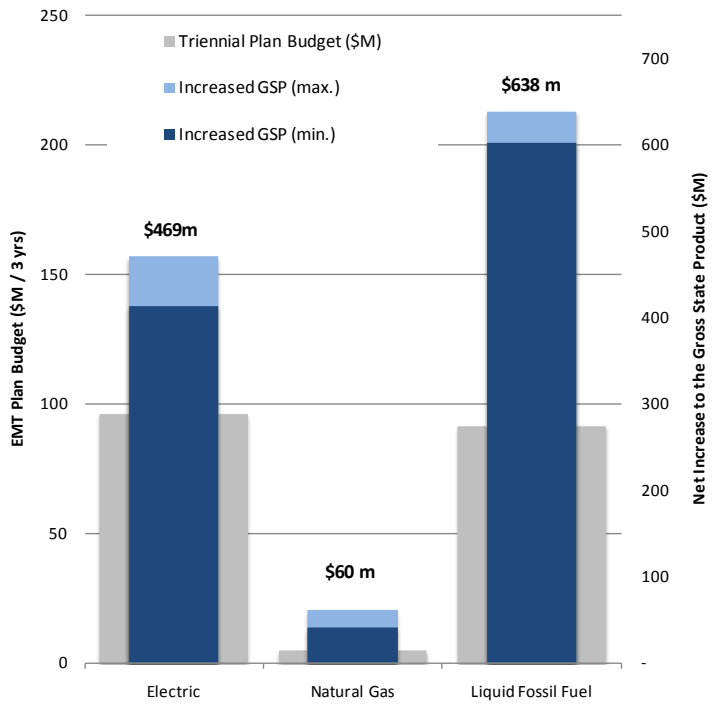


Figure 12: Triennial Plan: Economic Status

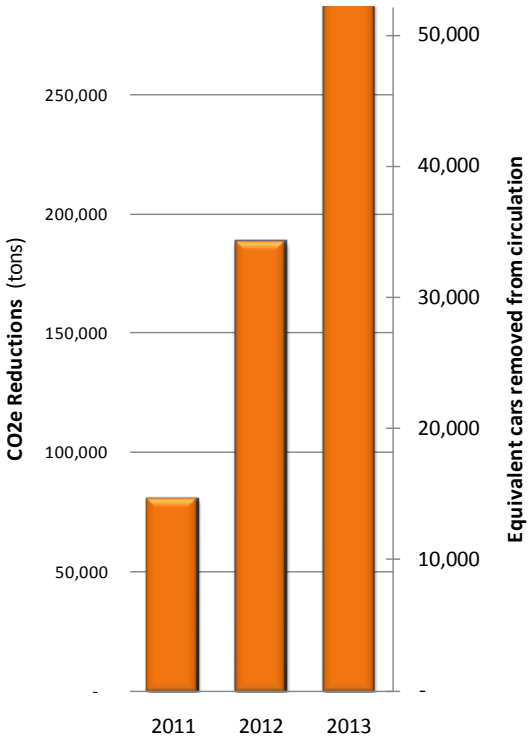


By the end of the third year, the Trust's plan is expected to reduce these emissions by nearly 300,000 tons. To put that in perspective, it is the equivalent of removing 52,000 cars from circulation on Maine's roads and highways (see Figure 13). These emissions reductions will remain in effect for the full life of the energy savings measures.

Other Benefits: Setting the Stage for Maine's Long-Term Energy Independence

This plan is only the first in a long-term effort to reduce Maine's reliance on fossil fuels and harness the economic, environmental and social benefits of a more energy efficient economy.

Figure 13: Carbon Emissions Reduction



Indeed, this first Triennial Plan sets the stage for continued efforts and savings into the future. In particular, this plan's enabling strategies represent a significant early effort to pave the way for subsequent plans to achieve deeper savings, while minimizing the cost of doing so. Still, the Trust recognizes the extent of the challenge ahead. As illustrated in Figure 14, the current strategies, and their significant reliance on incentives, alone may not be "up to the task" of achieving the legislature's goals.

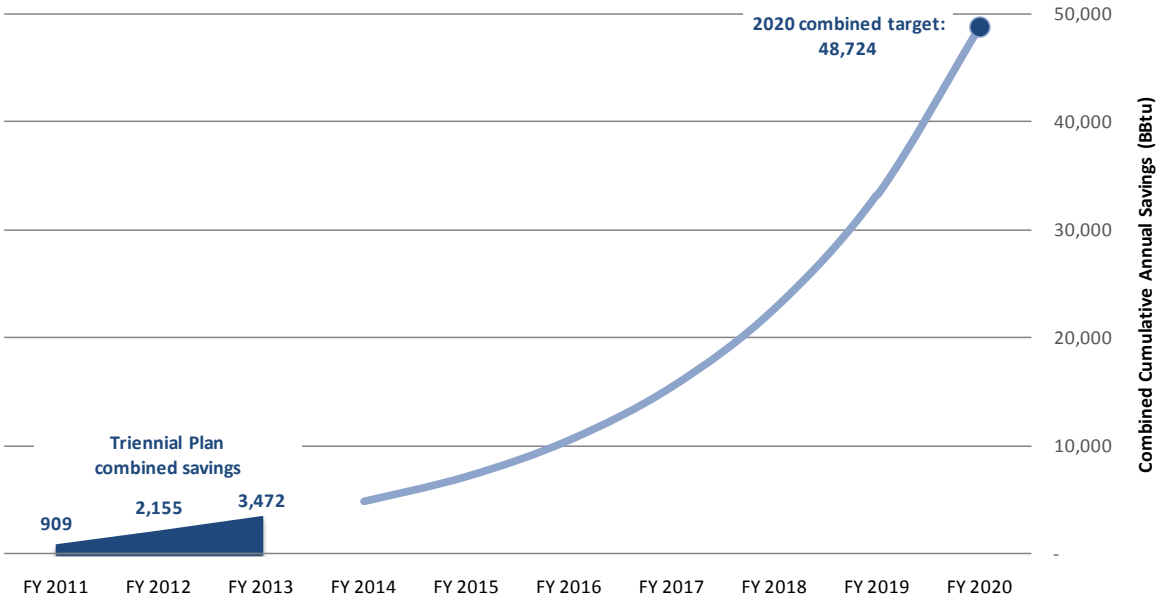
As the Trust moves forward, it must continuously strive to ensure that everyone – including government (through codes, standards and other regulatory powers) and financial institutions, among others – are contributing their full might to the effort. The Trust will work to assist them – and all others who can contribute to the state's goals – toward that end.

Plan Budgets

Funding for the Trust's Triennial Plan will be derived from a variety of sources, each of which will evolve over time.

In particular, it is worth noting the impact of federal stimulus funding. The American Recovery and Reinvestment Act (ARRA) provided considerable, short-term funding to energy efficiency initiatives, including in Maine. In fact, this year alone ARRA is providing some $30 million to the combined efforts of

Figure 14: Achieving the long-term goals required a long-term view... and effort.



Efficiency Maine and Maine State Housing Authority.

As ARRA funding winds down, the triennial plan will require new funding. As shown in Figure 15, the Trust is proposing that new funding sources compensate to a large degree (though not entirely) the lost revenue from federal stimulus funding. Keeping the total budget fairly level over these three years will inject predictability in the market, allowing contractors and vendors can gauge the level of activity and make new hires, purchase inventory, or invest in equipment and marketing. The proposed budget also is in keeping with the enabling legislation, which requires the PUC to establish both electric and natural gas system benefits charges sufficient "to obtain all achievable cost-effective energy efficiencies and alternative energy resources." (35-A MRSA §10110.5). It further directs that:

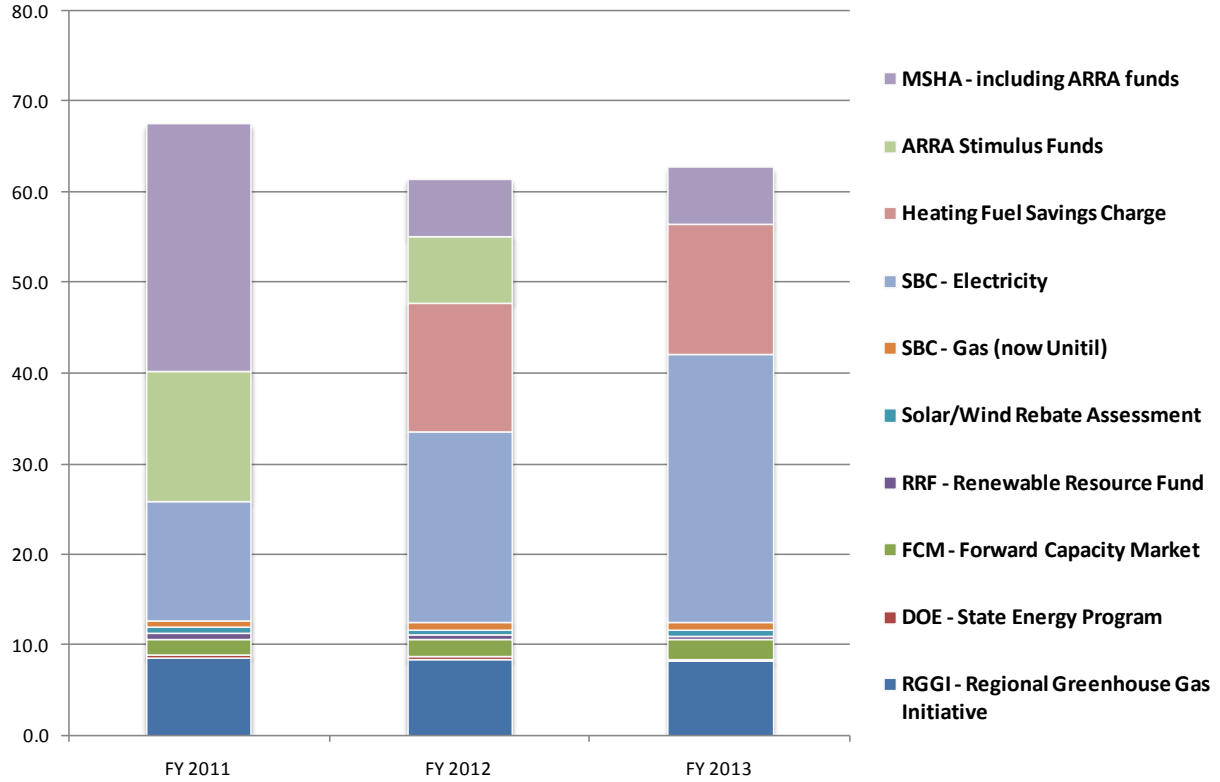
> "*[t]he Efficiency Maine Trust Board, in consultation with stakeholders, shall develop a proposed heating fuel weatherization and efficiency program to implement Title 35-A, section 10119 and appropriate funding mechanisms*".

Specifically, the Trust proposes that an increase to the electric systems benefit charge (SBC), coupled with a new budget to achieve fuel oil savings, ensure this funding stability in nearly equal measure over the second and third years of the Triennial Period.

The cost of these programs is moderate. Together, we estimate that at their peak in FY 2013, they will add about 8 cents a day to the average household energy bill. In return, they will open the way to far more important energy bill savings, as well as the job creation, carbon reduction and economic stimulus benefits we previously described. **Over the period contemplated in the statutory targets, all Maine customers will have the opportunity to reap the benefits of these programs through: direct energy reductions; lower prices for energy supply, capacity, transmission and distribution, and; through market transformation that lowers prices of efficient products and practices provided by the energy services sector in Maine.**

Budget details – including both funding sources and allocation of expenditures – are presented in Appendix A.

Figure 15 – Revenue Sources Needed to Satisfy Statute and Keep Steady Funding



RESIDENTIAL STRATEGY

Overview

To achieve its ambitious, long-term energy efficiency goals, the Trust will implement a portfolio of comprehensive programs that will capture most, if not all, cost-effective energy savings opportunities in the residential market. These opportunities fall into the following six categories:

- weatherization of existing homes;
- adoption of energy efficient appliances, lighting and consumer electronics;
- installation of advanced heating systems, including renewable energy systems;
- removal of old, inefficient refrigerators;
- construction of high-performance homes and residential buildings; and
- use of on-site wind and solar energy.

Compared to the business sector, the residential market has a relatively large number of energy users and the customer base is more homogeneous. Given these market characteristics, effective strategies to capture energy savings opportunities, with the exception of low income households, are mostly based on mass-market approaches. Low-income consumers require a more tailored approach to address the unique financial barriers they face.

Decades of experience with energy efficiency programs suggests that successful strategies must not only target end-users, but also all market actors involved in bringing equipment and services to end-users, including manufacturers, distributors, retailers, trade allies and contractors.

The Trust's first Triennial Plan will build on Efficiency Maine's existing programs, while moving to expand their scope and, in some cases, develop new programs. These programs, taken individually, are presented in the following sections.

Beyond individual program areas, the Trust believes that an effective plan must be designed to be greater than the mere sum of its parts. This means taking a holistic approach to the markets and customers it is addressing, by incorporating the following strategies:

- **Joint promotion to consumers:** The Trust recognizes that consumers are not best served when programs are completely independent of each other. As a result, this plan seeks to ensure that, where appropriate, programs are designed to "cross-pollinate." For example, the home retrofit program will serve as a one-stop-shop to actively promote incentives for efficient heating systems and refrigerator recycling, even though these are conceivably distinct "program" areas, and also to assist customers in obtaining other funding (e.g., federal incentives).

- **Coordinate market channel efforts:** The Trust's plan includes a market channel coordination function that will serve to engage, where appropriate, with key channel actors including contractors, retailers, wholesalers and manufacturers. This function is designed to be cross-

cutting, addressing all relevant efforts (weatherization, heating systems, appliances, lighting, consumer electronics, etc.) across all markets (residential and business).[1]

Table 1 presents the program budgets, energy savings and cost-effectiveness results for the Trust's portfolio of comprehensive programs. Tapping the substantial energy savings associated with the Home Energy Retrofit represents the biggest challenge for the residential sector, while Advanced Heating Systems represents a new and exciting energy savings opportunity.

Program-by-program descriptions are presented in the following sections.

Table 1: Residential Program Budgets ($M) and Total Resource Cost (TRC) Ratios

	FY 2011	FY 2012	FY 2013	TOTAL	Lifetime (TRC)* B/C Ratios
Low-income Home Energy Retrofit	$27.3	$6.4	$6.4	**$40.1**	**1.2**
Low-income Lighting & Appliances	$2.6	$2.6	$2.6	**$7.8**	**1.4**
Home Energy Retrofit	$3.9	$5.5	$6.3	**$15.6**	**1.1**
Lighting, Appliances & Electronics	$4.4	$5.7	$5.5	**$15.7**	**6.0**
Efficient Heating Systems	$2.3	$4.2	$6.8	**$13.3**	**2.3**
Old Fridge Recycle	$1.7	$2.4	$2.4	**$6.5**	**3.0**
New construction	$0.2	$0.6	$1.8	**$2.6**	**1.6**
Solar & Wind	$0.4	$0.4	$0.4	**$1.3**	**0.4**
TOTAL RESIDENTIAL	**$42.8**	**$27.8**	**$32.2**	**$102.8**	**2.3**

** Total Resource Cost (TRC) test compares the sum of lifetime benefits (cost savings) against the sum of costs, both program and participant.*

[1] Further information on the Market Channel Coordinator can be found in the Enabling Strategies section.

Low-Income Programs

Market Profile

Approximately 40 percent of Maine households are qualified as low-income based on MaineHousing's criteria. This criterion defines low-income as residences where total household income falls within 200 percent of the federal poverty guidelines or 75 percent of the state area median income, whichever is less. This represents approximately 200,000 households, which are eligible for a tailored approached to meet their specific needs. (Low-income eligible customers are also eligible to participate in other Residential Programs under this plan.)

Current Programs

Since 1975, MaineHousing has run a successful weatherization program for low-income households. MaineHousing offers this program to eligible households at no cost, regardless of their heating fuel, through the Community Action Program (CAP) agencies, who process applications and assist with program implementation and administration.

Through its Low-Income Programs, Efficiency Maine assists qualified households by providing assistance for energy-efficient refrigerators and freezers, and by providing CFLs at no cost to the customer. These programs are implemented through MaineHousing and the CAPs.

Although not included in the investments and energy savings of the Triennial Plan, MaineHousing provides other valuable energy efficiency related services to low-income households. When MaineHousing funds development of new low income rental housing, the new building must be built to its green building standards, which include energy efficiency standards. Furthermore, if a low income homebuyer uses a MaineHousing mortgage to purchase a home and they qualify for Gift of Green, they receive, in addition to help with down payment and closing costs, a coupon worth up to $500 for a home energy audit.

Triennial Plan Priorities

Over the FY 2011-2013 period, the Trust will continue to partner with MaineHousing and the CAP agencies to ensure efficient delivery of the current programs.

Energy Savings

Tables 2 and 3 present the projected energy savings by fuel type for the Trust's and MaineHousing's programs during the Triennial Plan period. Because Maine is highly dependent on fossil fuels for space heating, the bulk of energy savings will come from these fuels.

Table 2: MaineHousing's Weatherization Program – Projected Energy Savings

	FY 2011	FY 2012	FY 2013
Electric (MWh)	1,600	1,970	2,340
Electric (MW)	0.27	0.33	0.40
Natural Gas (MMBtu)	3,293	4,060	4,826
Fossil Fuels (MMBtu)	72,577	89,480	106,383
Total* (MMBtu)	81,322	100,262	119,202

**Throughout the Triennial Plan, Total Projected Energy Savings are represented in MMBtu's. Electric savings are converted to Btu's based on a conversion factor of 3,412,000 Btu/MWh.*

Table 3: Low-income Appliances and Lighting Program – Projected Energy Savings

	FY 2011	FY 2012	FY 2013
Electric (MWh)	4,000	8,000	12,000
Electric (MW)	0.6	1.1	1.7
Natural Gas (MMBtu)	0	0	0
Fossil Fuels (MMBtu)	0	0	0
Total (MMBtu)	13,508	27,015	40,523

Investments

To achieve these savings, the Trust and MaineHousing will invest, respectively, $7.8 million and $40.1 million over the Triennial Plan period. Table 4 provides a breakdown of program investments. Unlike most other programs, low-income households are not required to contribute financially to energy savings measures to participate in these programs.

Table 4: Annual Low-Income Programs and Participants Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Programs Investments				
EMT program	$2.6	$2.6	$2.6	$7.8
MaineHousing program	$27.3	$6.4	$6.4	$40.1
Sub-total	$29.9	$9.0	$9.0	$47.9
Participants Investments				
EMT program	0	0	0	0
MaineHousing program	0	0	0	0
Sub-total	0	0	0	0
Total Investments	$29.9	$9.0	$9.0	$47.9

Home Energy Retrofit

Market Profile

Maine's home energy retrofit or weatherization market includes approximately 500,000 households, primarily single-family homes and a lesser number of small (one- to four-unit) multifamily buildings. Buildings of five units or more, representing about 10 percent of Maine's residential building stock, are also an important part of the opportunity to capture energy savings among Maine residences.

Retrofit opportunities include the built envelope (improving insulation, air sealing, windows and doors), heating and hot water systems (installation of high-efficiency or renewable energy systems, or improving the existing systems), and lighting and appliances (notably installing compact fluorescents and early retirement of old, inefficient refrigerators). In the market, implementation of these measures involves two key actors: contractors and suppliers. Contractors can help to identify the best opportunities and install them, while suppliers can ensure that both contractors and consumers alike have access to energy-efficient options.

Current Programs

MaineHousing offers a retrofit program for low-income households, which is further described in the Low-Income Programs section.

In December 2009, Efficiency Maine significantly expanded its Home Performance Program as a result of the federal stimulus funding. The fuel-blind[2] program provides grants primarily to mid- to high-income households for implementing a comprehensive set of energy conservation measures, including weatherization and renewable energy systems (using solar, geothermal, wind, and wood). To receive a grant of up to 30 percent of total costs with a $1500 ceiling, a project must achieve a minimum 25 percent reduction in combined space and water heating. Efficiency Maine encourages homeowners to implement measures resulting in deeper savings. Projects achieving a minimum 50 percent reduction receive higher incentives: 50 percent of total costs with a $3,000 maximum. Federal tax credits are also available to participating households, including higher incentives for renewable energy systems.

Efficiency Maine now uses a turnkey approach, in which homeowners hire a pre-approved, certified contractor to undertake all of the following tasks: i) identify opportunities (i.e., perform an energy audit); ii) recommend energy efficiency measures and assess their costs and financial benefits; iii) assist customers in filing grant applications; iv) install the measures; and v) conduct a post-installation audit.

It is important to note that Efficiency Maine's program takes a comprehensive, whole-home approach, addressing all opportunities and taking into account any interactive effects between measures.

[2] "Fuel-blind" refers to programs that are applicable to any fuel source (e.g., fuel oil, electricity, natural gas, etc.).

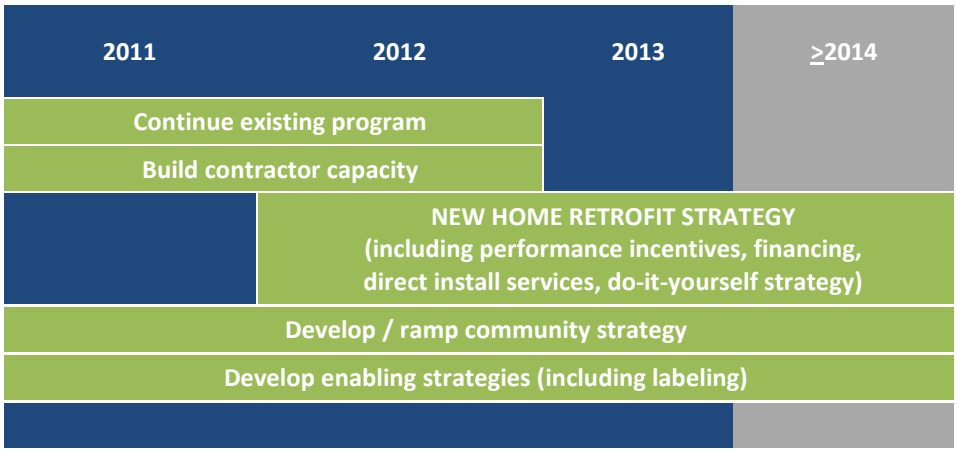
Triennial Plan Priorities

In FY 2011, the Trust's main priority will be to ensure that the revised Home Performance Program (now the "The Efficiency Maine Home Energy Savings Program") achieves increased participation by initiating the following activities:

- Deploy a marketing campaign aimed at raising public awareness about the program, and encouraging homeowners to participate in the program

- Coordinate and co-sponsor training courses for contractors interested in obtaining the program's certification standard. Such certification ensures that homeowners have access to qualified energy auditors and installers.

- Develop a systematic inspection and referral process to provide a one-stop-shop opportunity for other program incentives, including old refrigerator recycling and efficient or renewable energy heating systems.



In 2012-2013, the Trust will begin implementing changes to this program aimed at laying the foundation for meeting aggressive long-term goals. These additional efforts will maintain momentum and ensure that a broad spectrum of the population can participate fully in this comprehensive program. To this end, the Trust will take the following course of action:

- Establish a performance-based incentive mechanism for participating contractors to encourage higher conversion rates and deeper energy savings. Contractors will receive financial incentives based on two factors: the number of weatherized homes and the depth of energy savings (i.e., the percent of energy saved per project).

- Work closely with contractors and equipment suppliers to design and implement effective co-marketing campaigns.

- Provide financial incentives to assist towns in organizing activities that will promote energy conservation in general and, more specifically, the Home Energy Savings Program. Through this strategy, the Trust will provide participating communities an incentive for every audit

completed. Further details on this community-based awareness campaign are provided in the Enabling Strategies section.

- Add a "direct install" component to the initial energy audit, installing at no cost to the customer, while the audit is conducted, simple, highly cost-effective measures (e.g., light air sealing, simple domestic hot water measures, electronic thermostats, and CFLs) to add immediate value to consumers and ensure a minimum amount of energy savings to offset upfront audit costs.

- Develop partnerships with financial institutions and municipalities through which incentives would be complemented by attractive financing (see the Enabling Strategies section for further details on third party financing).

- Consider providing incentives to homeowners for self-installed weatherization measures. The objective of these incentives is to enable participation from "do-it-yourself" customers who would not otherwise hire contractors to retrofit their home, while ensuring project quality.

- Given the size and type of ownership of multi-family buildings housing 5 or more units, collaborate with the Business Programs to find the most effective means of delivering measures.

Over time, the program will be adjusted to reflect the market's ability to independently sustain retrofit efforts. The Trust will also work toward adoption of enabling policies like energy labeling of homes and buildings, in order to remove some market barriers and reduce – though not likely eliminate – the need for incentives (see the Enabling Strategies section for more information).

Energy Savings

Table 5 presents the forecasted energy savings by fuel type for the Trust's Home Energy Savings Retrofit program during the Triennial Plan. Because Maine is highly dependent on fossil fuels, the bulk of these savings will come from these fuels. It is worth noting that these savings assume adoption of the Enabling Strategies discussed further, and also assume that currently applicable federal tax credits either continue through the triennial plan period, or are replaced by similar federal incentives such as the Home Star program currently being debated.

Table 5: Home Energy Retrofit Program – Projected Energy Savings

	FY 2011	FY 2012	FY 2013
Electric (MWh)	1,000	3,500	5,500
Electric (MW)	0.18	0.60	1.10
Natural Gas (MMBtu)	2,155	5,916	10,346
Fossil Fuels (MMBtu)	47,499	125,366	217,086
Total (MMBtu)	53,222	143,391	249,601

Investments

To achieve these savings, the Trust will invest $15.6 million over the Triennial Plan period (see Table 6). It is expected that participants to the Trust's program will invest almost three times as much as the Trust.

Table 6: Annual Home Energy Retrofit Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$3.9	$5.5	$6.3	$15.6
Participant Investments *	$17.1	$20.0	$22.8	$59.9
Total Investments	$21.0	$25.4	$29.1	$75.5

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

Lighting, Appliances, and Electronics

Market Profile

The energy consumption of lighting and appliances, as well as consumer electronics, represents approximately 20 percent of an average Maine household's total energy use. Given strong growth in consumer electronics (e.g., TVs, DVD players, and computers), the associated electricity consumption is forecast to grow over the coming years at a faster rate than for other end-uses.

One of the key characteristics of these mass market products is that the customers buy these products through retailers. Manufacturers, wholesalers, and retailers constitute the key market actors since together they bring the energy-efficient products to the market.

Current Programs

Since 2002, Efficiency Maine has encouraged consumers to buy efficient lighting products through its Residential Energy Star Lighting Program. The number of products supported by the program has evolved over time and households now have access to incentives for a variety of product categories: CFLs, ceiling fans, external and internal fixtures, table and floor lamps. CFLs constitute the most important category in terms of energy savings. In order to address the first-cost barrier[3] for consumers, Efficiency Maine offers a retailer mark-down for these Energy Star equipment. Since the program's inception, a close partnership has been established with retailers to encourage them to stock and sell efficient lighting products.

In October 2009, Efficiency Maine launched the Appliance Rebate Program which offers mail-in rebates ranging from $25 to $75 for the following Energy Star products: refrigerators, freezers, washing machines, room air conditioners, and dehumidifiers.

Triennial Plan Priorities

To date, the bulk of financial resources for these two programs have been allocated towards addressing the first-cost barrier by providing financial incentives to customers. To tap the large energy savings potential associated with efficient lighting and appliances more rapidly, the Trust will significantly increase its marketing activities and its partnership with retailers.

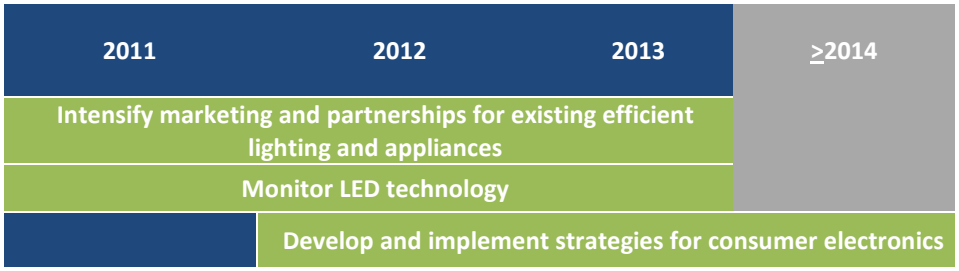
When aided, approximately 46 percent of Maine residents say they are aware of the Energy Star label and 40 percent say they are aware of Efficiency Maine.[4] The Trust will strive to raise consumer

[3] The first cost barrier represents the additional cost of an energy savings measure compared to an equivalent conventional product.

[4] See also, *Efficiency Maine Advertising Message Testing: Final Report*, Digital Research Inc., December 2008.

awareness of both the current financial incentives and Energy Star products by providing the following support to retailers:

- consumer education on energy-efficient products;
- high-visibility point of purchase advertising and displays of energy-efficient products;
- cooperative advertising with retail partners; and
- periodic, short-term promotions.



As there is currently no program for consumer electronics, in **FY 2012** the Trust will develop and launch the following strategies aimed at promoting energy-efficient products in this category:

- Joining in regional collaborative efforts to encourage manufacturers to improve product efficiency.

- Raising awareness among end-users about the benefits and availability of energy-efficient products, such as efficient power strips (power outlets that reduce the amount of electricity use when electronics are in the *off* mode).

- Providing financial incentives, likely aimed at upstream market actors, to encourage a market 'push' of energy-efficient devices.

The Trust will also examine opportunities for adoption of new energy efficiency standards, including those for television sets (see Enabling Strategies).

It is important to note that electronic products are different from other products with which the energy efficiency industry is familiar. Their great variety and rapid pace of change – in technologies, manufacturers, and distribution channels– should not be underestimated. Successful strategies will require careful consideration of the unique elements of each product's supply chain. As a result, we do not expect significant savings from electronic products to be realized within this first triennial period.

In the future, LED lighting technology has the potential to provide significant energy savings compared to current residential lighting technologies. The rapid development of LED technology will be monitored and promotional activities will be developed as the technology becomes cost-effective.

Energy Savings

Table 7 shows the electricity savings goals for the two primary components of the residential lighting program area, of which Residential Energy Star Lighting accounts for 97 percent.

Table 7: Lighting, Appliances, and Electronics Program - Projected Energy Savings

	FY 2011	FY 2012	FY 2013
Electric (MWh)	84,000	189,000	294,000
Electric (MW)	12	27	41
Natural Gas (MMBtu)	0	0	0
Fossil Fuels (MMBtu)	0	0	0
Total (MMBtu)	285,032	644,331	1,003,331

Investments

While the Trust will invest $15.7 million over the FY 2011-2013 period, which will leverage almost twice this amount from participants and other funding sources (e.g., federal tax credits) (see Table 8).

Table 8: Annual Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Programs Investments				
Appliances/Electronics	$1.3	$1.8	$1.6	$4.8
Lighting	$3.1	$3.9	$3.9	$10.9
Sub-total	$4.4	$5.7	$5.5	$15.7
Participant Investments *				
Appliances/Electronics	$0.3	$0.4	$0.3	$1.0
Lighting	$8.2	$10.3	$11.1	$29.5
Sub-total	$8.4	$10.6	$11.4	$30.5
Total Investments	$12.9	$16.4	$16.9	$46.2

** Participant investment amounts are net of programs incentives, but may include federal tax credits or other financial support.*

Efficient Heating Systems

Market Profile

Space and water heating account for roughly two-thirds of total household energy use in Maine. Fuel oil is used to heat 80 percent of Maine homes, and provides hot water in 45 percent of Maine homes. It is important to note that 40 percent of Mainers use a wood stove, primarily as an auxiliary space heating system.

Other than building envelope improvements such as insulation and draft sealing, Maine residents can reduce the net energy consumption associated with their heating loads through three means:

- use of high-efficiency conventional furnaces and boilers,
- use of systems based on renewable energy sources, and/or
- adoption of "ancillary" measures such as programmable thermostats, low-flow showerheads and system tune-ups.

Replacement of heating systems occurs through trade allies, contractors and other channels which are very different from the retail channels for other appliances. These market actors, along with manufacturers and distributors, represent key players for the Trust to encourage the implementation of energy saving technologies.

Current Programs

While Efficiency Maine currently has no program in place aimed at replacing inefficient space and water heating systems for non low-income households, Unitil, Maine's largest natural gas utility, offers customers rebates ranging from $100 to $1,350 for installation of qualified high-efficiency equipment, some of which have the Energy Star label. A grant of $25 is also offered for the purchase of Energy Star programmable thermostats.

Triennial Plan Priorities

Alternative/Renewable Energy Systems

Through this program, the Trust seeks to encourage adoption of alternative/renewable energy systems that: (a) generate net energy savings, taking into account significant upstream energy uses; (b) are environmentally sustainable on the whole; (c) that offer real, long-term energy savings beyond current standard practices, and (d) can be funded at scale by the Trust, within its resource limitations, to help spur market transformation. The Trust initially intends to focus on wood pellet heating systems, ground-source heat pumps, and solar thermal heating options consistent with these criteria.[5,6]

[5] Solar thermal systems will be funded through the "Solar/Wind" program funds described separately.

The Trust will also continue to encourage alternative/renewable electricity generation systems through its existing Solar and Wind program. The Trust will further encourage new technologies through its proposed Innovation Fund (described in the Enabling Strategies section), aimed at demonstrating the viability of new program designs for technologies or emerging processes to help penetrate the market.

With respect to biomass, the Trust will be promoting this renewable fuel to the extent that harvest rates do not violate the rules of sustainable forestry.[7] This first Triennial Plan forecasts increased biomass fuel use well below this limit, with less than one percent of households expected to switch to biomass during the period. The Trust will continue to investigate the question of forest sustainability in collaboration with stakeholders.

Effective Energy Savings Strategies

To ensure success, the Trust will design and implement strategies targeting both consumers and upstream market actors, including trade allies, contractors, manufacturers and vendors. These players are key to bringing both energy-efficient and renewable energy systems and services to consumers. The Trust does not want to promote high-cost heating system measures in homes that are poorly sealed and insulated. Placing a strong priority on first meeting the lowest hanging fruit of energy saving measures, such as addressing the building envelope and electric loads, the Trust will encourage households to adopt space and water heating improvements according to the following order of priorities:

1. Install low cost measures such as programmable thermostats, proper tune-up of space heating systems, and low-flow shower heads.

2. Acquire a renewable resource-based system that can meet heating loads partially (e.g., a wood stove) or entirely (e.g., ground-source heat pumps or wood pellet furnaces).

3. Replace their old heating equipment with more energy efficient equipment using conventional fuels (oil, gas, propane, electricity).

[6] At the time of writing, air-source heat pumps were not included in this list. However, the Trust is interested in testing advanced and/or cold-climate systems through its Innovation fund (see Enabling Strategies), and would consider their addition to this list if results proved positive on a net-energy basis.

[7] Current estimates suggest the existence of a ceiling – equivalent to 10 percent of Maine residences converting exclusively to wood pellets for their heating needs – before harvest would exceed biomass growth, based on the *Governor's Wood to Energy Task Force Report* (September 2008, p.13).

Starting in **FY 2011**, the Trust will engage the business marketplace as allies to promote the benefits of energy efficiency improvements and to make these products and services accessible to consumers. The Trust's Market Channel Coordinator will play an important role in maintaining and deepening relationships with these actors, as well as in assisting the renewable energy industry to strengthen its infrastructure. A description of the Coordinator's various roles can be found in the Enabling Strategies section.

On the consumer side, in **FY 2011** the Trust will implement actions aimed at significantly increasing public awareness of various efficient heating system options, including alternative and renewable energy technologies, and at providing financial support for targeted measures. Table 9 highlights these key actions.

Table 9 – Efficient Heating System Options

	AWARENESS	FINANCIAL INCENTIVES
Low cost measures *(e.g., programmable thermostats, low-flow showerheads, pipe wraps, tune-ups)*	• Provide information to consumers on measures (e.g., costs and potential savings, efficient product specifications) through various communication channels, notably via retailers and trade allies.	Extend the current $25 rebate for gas users on Energy Star programmable thermostats to oil, electric and propane consumers, which could save approximately 5 percent of space heating energy consumption.
Alternative/ renewable energy systems *(e.g., wood pellet furnaces and boilers, ground source heat pumps)*	Initiate co-marketing activities with industry actors with the following goals: • Demystify wood pellet and geothermal technologies by, among other actions, showing their real benefits and costs and their installation requirements. • Promote existing federal incentives, which cover up to 30 percent of the installed cost of qualified equipment.	Complement federal incentives by introducing grants for the installation of efficient wood pellet furnaces and boilers and Energy Star geothermal systems. These heating systems have the capability to meet homeowners' total heating loads.
Advanced conventional systems *(e.g., Energy Star furnaces and boilers)*	Build upon DOE/EPA's public outreach strategies which, among other contributions: • Provide energy savings calculators, buying guidance, and lists of qualified equipment for Energy Star products. • Promote federal incentives, covering up to 30 percent of the installed cost of qualified equipment.	Assess whether current gas incentives are still warranted given federal incentives and successful results to date.

After having launched these new initiatives in the first year of the Triennial Plan, the Trust will closely monitor results and adapt its strategies over **the FY 2012-2013 period** to ensure that consumers and market actors participate actively in the program.

In the long run, the Trust expects to increasingly focus its efforts on renewable energy systems, and to adjust its strategies accordingly.

Energy Savings

Table 10 presents the forecasted energy savings by fuel type for the Efficient Heating System Program during the Triennial Plan period.

Table 10: Projected Energy Savings – Efficient Heating Systems

	FY 2011	FY 2012	FY 2013
Electric (MWh)	90	570	970
Electric (MW)			
Natural Gas (MMBtu)	4,213	10,338	17,080
Fossil Fuels (MMBtu)	70,067	232,875	499,630
Total (MMBtu)	74,590	245,164	520,005

Investments

To achieve these energy savings, the Trust will invest $13.3 million over the Triennial Plan period (see Table 11). It is expected that participants in the Trust's program will invest almost three times that amount.

Table 11: Annual Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$2.3	$4.2	$6.8	$13.3
Participant Investments *	$5.8	$10.9	$19.1	$35.8
Total Investments	$8.0	$15.1	$25.9	$49.0

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

Refrigerator Recycling

Market Profile

Refrigerators manufactured before 1993 are major electricity consumers. A typical retired unit will consume some 1500 to 2000 kWh annually, while the average new refrigerator consumes barely 500 kWh/year. These differences in energy consumption offer an excellent opportunity for energy savings by encouraging early retirement and recycling of old, inefficient units.

Firms specialized in turnkey, refrigerator retire/recycling programs are the key market actor, notably because they have the expertise to properly recover and/or destroy harmful refrigerator components such as ozone-depleting and greenhouse gas emitting refrigerants, PCBs, mercury, and oil. Many firms also recycle metal, plastic, and glass parts.

Current Program

Aside from existing low-income programs, there is currently no refrigerator recycling program in place in Maine. However, Efficiency Maine has begun to explore options and may be able to launch a program prior to the initiation of the Triennial Plan in July 2010. If such a program begins, the Trust will assume its administration, monitor results, and adjust specifics as needed to assure cost-effectiveness and high participation rates. If a program is not launches, the Trust will initiate a program as described herein.

Triennial Plan Priorities

Programs aimed at removing – and properly recycling – old, inefficient refrigerators from the market can be found in many regions in North America, and have a strong track record. The Trust will move expeditiously to launch this program by the fall of 2010. Key actions during **FY 2011** will include:

- Selecting a contractor to provide turnkey program delivery, including co-marketing strategies and a comprehensive tracking database, establishment of a call center, and collection and recycling of eligible units.
- Determine the level of incentive – in the range of $25 to $50 – necessary to encourage households to participate in the program.
- Develop coordinated marketing strategies for promoting refrigerator recycling and the Energy Star appliances programs, to ensure that consumers who replace their old refrigerators through this program upgrade with the most energy-efficient models.
- Work in partnership with MaineHousing and the State's Community Action Programs (CAPs) to establish a process enabling the program's selected contractor to recycle the old, operating refrigerators that are replaced with Energy Star equipment under the existing Low-Income Programs.

During **FY 2012 and 2013**, the Trust will assess whether other high-energy-consuming products, such as room air conditioners, should be integrated into the program. As greenhouse gas emission credit markets are developed, they could create new opportunities for enhanced replacement and recycling of these products.

In the mid-term, the Trust will likely continue to recycle refrigerators even though new appliances are more energy efficient.

Energy Savings

Table 12 shows the forecasted electricity savings for the Refrigerator Recycling program.

Table 12: Projected Energy Savings – Refrigerator Recycling Program

	FY 2011	FY 2012	FY 2013
Electric (MWh)	7,550	18,020	28,550
Electric (MW)	1.27	3.04	4.81
Natural Gas (MMBtu)	0	0	0
Fossil Fuels (MMBtu)	0	0	0
Other (MMBtu)	0	0	0
Total (MMBtu)	25,773	61,500	97,405

Investments

Over the first Triennial Plan, the Trust will invest $6.5 M in this program (see Table 13). Participants are not required to make any investments since the level of incentives will offset the incurred costs.

Table 13: Annual Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$1.7	$2.4	$2.4	$6.5
Participant Investment	$0.0	$0.0	$0.0	$0.0
Total	$1.7	$2.4	$2.4	$6.5

New Construction

Market Profile

Historically, 6,000 to 8,000 new homes and units in small multifamily buildings are built in Maine each year. However, this number is currently less than half that level due to economic conditions. The Trust assumes that approximately 3,000 homes will be built annually during the Triennial Plan period[8]. If the opportunity to build a more energy-efficient home is missed, it is considered by and large "lost" for the next 20 years.

The fundamental goal of implementing an energy-efficient new homes program is that the buildings surpass minimum energy code standards. Currently, these codes vary by municipality, but as of June 2010 Maine will implement a state-wide code with energy provisions based largely on the 2009 International Energy Conservation Code (IECC). Achieving compliance with this new code will likely require substantial effort on the part of builders and code officials, and the Trust will play a role in aiding this process – see Enabling Strategies: Codes and Standards for more information.[9]

Beyond the new code requirements, additional opportunities exist in higher insulation levels and installation quality, air sealing and duct sealing, HVAC system sizing and efficiency, hot water delivery systems, lighting and appliances, and renewable energy options for heat, hot water and, ultimately, electricity loads.

The state has relatively few large developers and a significant number of custom builders, which requires a greater effort to reach builders and enroll them into an energy efficient new construction program.

Existing Programs

There are currently no residential new construction programs in place in Maine.

Program Design

The New Construction program will aim to encourage builders to go beyond the 2009 IECC using a combination of subsidized builder training and support, builder incentives, home certification and branding, and a marketing campaign targeting home buyers. It will be built around three tiers of home certification:

1. EPA's successful national Energy Star New Homes brand (approximately 15 percent savings above code).

[8] The Congressional Budget Office's 2009-2012 Outlook for Housing Starts predicts a return to typical historical levels by 2012 at the national level, although the exact timing will depend on economic recovery.

[9] A 2008 new construction baseline study, conducted by Vermont Energy Investment Corporation and GDS Associates, found that less than 20 percent of new homes could have passed the (less stringent) state model energy code in place at that time, principally due to insulation installation issues and practices.

2. A "High Performance" tier requiring significant additional savings (approximately 25 percent above code).

3. A "Micro Load" tier aimed at generating at least 40 percent savings beyond the new code requirements.

The Trust expects that most participating builders will opt for the basic Energy Star tier, which already represents a considerable improvement in efficiency beyond current practice. The Energy Star 2011 standard will focus on improving insulation and HVAC system installation quality, among other measures. The High Performance and Micro Load tiers will reflect long-term goals of moving towards super efficient housing. These two tiers will be designed in FY 2011 and may be aligned with existing regional or national "beyond Energy Star" standards such as Passive House[10], Climate Choice[11] or others. They will likely be performance standards that can be met by a combination of high insulation levels, high efficiency equipment, and onsite renewables.

The program will notably integrate previously-discussed incentives for heating systems, appliances, lighting and renewable power generation into a seamless, one-stop-shop approach. It will also be supported by enabling strategies including training, financing, building energy labeling and building code enforcement. Specific strategies will be developed for the manufactured housing industry which represents approximately 25 percent of new homes, and small multifamily building segments.

Triennial Plan Priorities

The Trust expects to put much of its new construction efforts in FY 2011 to promote compliance with the new 2010 building energy code (see the Enabling Strategies section). To move the market beyond the new code, the Trust's main priority will be to lay the groundwork for pilot programs in FY 2012 and 2013, and partial program roll-out in FY 2013. In FY 2011 the Trust will initiate the following activities:

- Work with the national level Energy Star program to prepare a pilot for FY 2012.
- Finalize specifications for the "High Performance" and "Micro-Load" tiers.
- Work with builders to prepare a pilot program for FY 2012.
- Increase partnerships and coordination with industry trade associations.

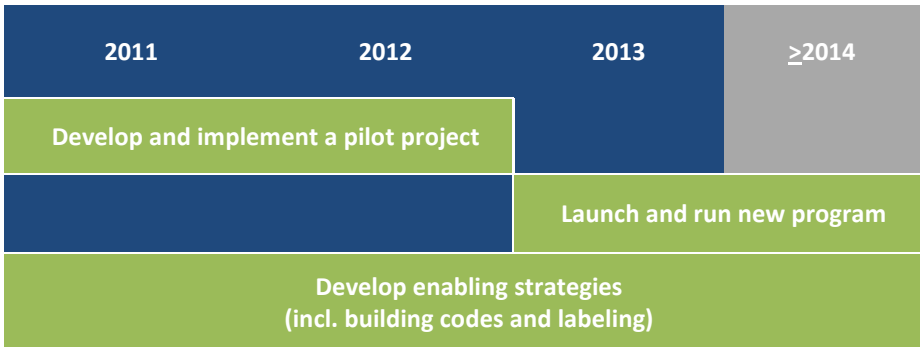
In FY 2012, the focus will be to launch a small pilot Energy Star tier program. The Trust will also initiate the following activities:

- Work with builders to prepare a pilot for higher tiers during FY 2013.
- Prepare for full roll-out of the Energy Star tier in FY 2013.

[10] Passive House standard is managed by the Passive House Institute US, based in Illinois.

[11] Climate Choice standard was developed by U.S. EPA.

- Work with builders to ensure that first-year market participation targets are met.



In FY 2013, the Trust will continue the New Construction program with the following activities:

- Operate a full program for the Energy Star tier (single family homes only).
- Run a small pilot of the "High Performance" and "Micro-Load" tiers.
- Run a small pilot for small multi-unit buildings.
- Prepare for full roll-out of all tiers as of FY 2014.

In the mid- to long-term (FY 2014-2020), the program will aim to achieve market share levels in excess of 50 percent for the Energy Star tier, with an assumption that both the Energy Star standard and state building codes will be updated at least once by 2020. The Trust will also work toward building energy labeling to support increased market demand for high performance homes, reducing the need for incentives (see Enabling Strategies).

Energy Savings

Table 14 presents forecasted energy savings for the New Construction Program during the Triennial Plan's horizon.

Table 14: Projected Energy Savings – New Construction Program

	FY 2011	FY 2012	FY 2013
Electric (MWh)	-	30	340
Electric (MW)	-	0.01	0.15
Natural Gas (MMBtu)	-	44	511
Fossil Fuels (MMBtu)	-	910	10,579
Other (MMBtu)	-	-	-
Total (MMBtu)	-	1,053	12,251

Investments

To achieve these goals, an estimated budget totaling $2.6 million will be required for the Residential New Construction program (see Table 15). It is expected that participants in the program will invest $1.5 million.

Table 15: Annual Program and Participants Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$0.2	$0.6	$1.8	$2.6
Participant Investments	$0.0	$0.1	$1.4	$1.5
Total	$0.2	$0.7	$3.2	$4.1

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

Solar and Wind

Market Profile

Maine has significant wind and solar resources that can be tapped to provide clean, in-state, renewable power generation. The development of these resources on residential and business sites is supported by a host of committed, forward-thinking market actors, including the supply chain (manufacturers, distributors and contractors), environmental groups, academics, governmental agencies at the federal, state and municipal level, and private and non-profit organizations.

Existing Programs

Since 2005, Efficiency Maine has offered grants to homeowners and businesses for installation of solar electric and thermal energy systems. Incentives offered for thermal energy systems are 25 percent of the installed costs, up to $1,000, and grants for electric systems amount to $2.00 per watt for the first 1,000 watts. Efficiency Maine also offers certified solar thermal installer training to contractors.

In the case of electric systems, access to the grant is conditional, among other things, to their connection to the grid. Such a requirement enables the homeowners to have access to the electricity from the grid if their systems cannot produce sufficient electricity.

With oil prices approaching $5 a gallon in 2008, solar hot water systems have begun to attract growing interest from consumers and businesses. In FY 2009, 212 solar hot water systems were installed under the Efficiency Maine program and 358 contractor certifications were awarded.

Beginning in early 2009, Efficiency Maine began offering rebates for small wind energy installations for Maine residents and businesses. Residents can qualify for rebates of up to $2,000 and businesses can qualify for rebates up to $4,000. Similar to solar electric systems, the installations must be connected to the grid. As of June 30, 2009, three wind turbines were installed under this program, of which two were pilot projects.

Triennial Plan Priorities

In FY 2011, the Trust will work closely with stakeholder organizations, such the Maine Small Wind Working Group and the Maine Solar Energy Association, to implement a host of activities aimed at addressing the following key market barriers:

First cost[12]

- Promote the existing program and tax incentives, which, when combined, could cover approximately 40 to 55 percent of the installed costs.

[12] The first cost barrier represents the additional cost of an energy savings measure compared to conventional equipment.

- Develop a partnership with financial institutions and municipalities whereby these organizations would complement these incentives by offering attractive financing (see the Enabling Strategies section for further details on third party financing).

Awareness

- Create a consumer's guide for electric and thermal solar systems aimed at answering the numerous questions that homeowners and might have, for example, on the costs, benefits and reliability of various systems. Such a guide is currently available for small wind power installations.

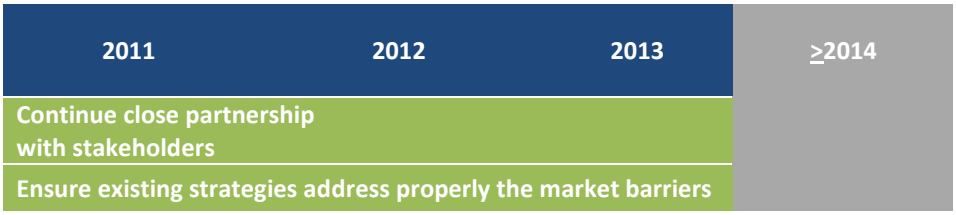
- Support community-based activities (see the Enabling Strategies section for further details on community-based awareness).

Municipal regulations

- Assist cities and towns in establishing streamlined permitting processes and other renewables-friendly regulations.

Installation quality

- In close collaboration with the North American Board of Certified Energy Practitioners and other trade ally organizations, coordinate and offer training to contractors to become certified solar electric and wind system installers.



Energy Savings

The Trust foresees that the success of solar hot water systems will continue over the coming years. Therefore, the bulk of the energy savings from Solar and Wind programs stems from the installation of such systems.

Table 16: Projected Energy Savings - Solar and Wind Program

	FY 2011	FY 2012	FY 2013
Electric (MWh)	240	480	720
Electric (MW)	0.19	0.38	0.57
Natural Gas (MMBtu)	133	267	403
Fossil Fuels (MMBtu)	607	1,220	1,840
Other (MMBtu)	-	-	-
Total (MMBtu)	1,557	3,129	4,716

Investments

While the Trust will invest $1.3 million over the FY 2011-2013 period, participants will invest more than three times this amount (see Table 17).

Table 17: Annual Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$0.4	$0.4	$0.4	$1.3
Participant Investments	$1.6	$1.6	$1.5	$4.6
Total	$2.0	$2.0	$1.9	$5.9

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

BUSINESS STRATEGY

Overview

To assure long-term progress toward the Trust's legislative goals, this first Triennial Plan is designed to engage all sectors of Maine's business community in energy efficiency programs. Non-residential utility customers and fuel-users are more heterogeneous than residential customers, both in their overall energy use and in the patterns of energy consumption (i.e., end-uses, time of day, etc.). Total annual electric use can range from under 50,000 to over 1 million kWh, with fossil fuel usage also varying over a similar range. These entities also vary widely in how they use their facilities and the activities that occur within them.[13]

Overall Business Market Profile

The business customer group is generally divided into the following three segments:

- **Commercial** customers are those engaged in selling a product or service. Their facilities are used by their employees and, potentially, their customers.
- Businesses engaged primarily in manufacturing or materials processing are considered to be **Industrial**.
- **Institutional** customers are categorized as federal, state, and local governments and other private and public organizations serving the public interest, such as educational institutions and large health care facilities.

In discussions regarding efficiency programs, the abbreviation C&I can mean either Commercial & Institutional or Commercial & Industrial. For the purposes of the Trust's Triennial Plan, the term "Business" and the abbreviation C&I both refer to all non-residential customers – commercial, institutional, and industrial. Note that for the purposes of this plan, responsibility for multi-family buildings of greater than four units is included with the business sector. However, this responsibility extends only to building-wide systems and common areas. Individuals living in multi-unit buildings are treated as residential customers for purposes of the products and appliances within their units, unless these are the property of the building owner.

Triennial Plan Strategy

Maine's interest in simultaneously reducing electrical, natural gas, and liquid fossil fuel consumption requires an integrated, comprehensive programmatic approach, rather than segregated programs that focus on individual fuels, end-uses, or customer types. Furthermore, business customers require services tailored to their particular needs and barriers. Typically, smaller customers have different needs and face different barriers than medium-sized and large customers. Therefore, the proposed Efficiency Maine Trust delivery strategy for business customers is divided into two programs: one for

[13] Note that for purposes of efficiency program delivery, the relevant unit for classification is the facility, rather than the business. For example, a building housing the offices of a paper manufacturer or a mining firm is a commercial customer for purposes of this plan.

medium and large customers and one for small customers. These programs are described in subsequent sections under the headings "Medium and Large Business Program" and "Small Business Program." In addition to these two customer-centered programs, a Prescriptive Program will continue to provide opportunities for all business customers to participate in a simple, easily-managed manner for basic efficiency upgrades. As such, the Prescriptive Program, described below, represents a tool that both the Small Business and Medium and Large Business Programs can use when applicable and appropriate for their customers' needs.

The Trust's plan includes component strategies that are delivered or supported by two cross-functional roles or functional groups within Efficiency Maine. The Solution Provider and the Market Channel Coordinator are integral parts of the comprehensive strategy for the business sector. As such, their efforts may cross program boundaries and customer classes.

Solution Provider. Energy efficiency Program Administrators have begun to recognize the need for a fully-developed sales function that mimics those of other leading industries that provide products and services to Maine's businesses. The Solution Provider is a multifunctional role that combines aspects of account management, project initiation, project management, and quality assurance. It handles all aspects of customer interaction for large customers and project-level assistance for medium customers.

Under the Trust's plan, trained *Account Managers* will cultivate long-term relationships with the largest customers in Maine with the objective of supporting cost-effective efficiency or renewable energy projects. Whether they are buying energy efficiency or products and services central to their operations, business customers buy through relationships. Through regular contact[14] and an understanding of each customer's business and energy needs, the Account Manager is able to take advantage of energy efficiency opportunities by identifying, quantifying, and promoting energy and demand savings for new or ongoing projects. These opportunities may be in any energy-related system or process, ranging from basic lighting upgrades to comprehensive process improvements.

The Solution Provider will also act as *project manager* to ensure that incentive offers are designed to best meet the needs of the customer and the project in question. The Trust plans a transition from standard "percent-of-project cost" incentives to packages focused more on cash flow, rates of return or other customer investment criteria.

The Solution Provider will also manage *expert teams* to provide technical assistance for various types of projects, including conversions to biomass-fired systems and customer-sited renewable energy equipment. The teams will cover industry-specific technologies, business types, and building types. Technical assistance can come from the in-house delivery team or other industry experts as needed. This assistance will be available to all business customers, but will be focused on customer in the Medium and Large Business Program.

Market Channel Coordinator. The Market Channel Coordinator interacts with organizations and individuals within the supply chain of goods and services related to energy consumption. These entities include manufacturers, distributors, wholesalers, retailers, installers, and servicers of energy consuming equipment and systems (e.g., HVAC systems, lighting products, or motors); and architects and engineers involved in the design and specification of buildings and building systems. These diverse entities are

[14] A Triennial Plan assumption is that all customer data will be available to the Trust. Confidentiality of the data will be of primary importance.

broadly referred to as "trade allies." Efficiency Maine's current Qualified Partner Program provides the framework to expand its reach to additional sectors of market channels; they are distinguished by having received training in Efficiency Maine programs, allowing them to be included in lists of efficiency service providers. The Market Channel Coordinator's objective is to develop awareness of the benefits of efficiency measures and practices to cultivate a supporting environment for the Trust's business programs. This is particularly important for the Prescriptive Program, where availability and promotion of high-efficiency equipment throughout the product chain is critical for success. The Coordinator will also be active for Residential programs, as described in the Enabling Strategies section.

The Market Channel Coordinator manages interaction with *Qualified Partners*, trade allies that have received training on program guidelines. The current Qualified Partner list includes hundreds of businesses ready and able to help Maine's businesses. As the Trust evolves to become more comprehensive and achieve deeper savings, the Qualified Partners will continue to fulfill an important role in identifying energy efficiency opportunities, particular for the medium and small customer classes.

Table 18 presents the budgets, energy savings and cost-effectiveness results for the Business Programs. Program-by-program descriptions are presented in the following sections.

Table 18: Business Strategy Budgets, Energy Savings, and Total Resource Cost (TRC) Ratios

	FY 2011	FY 2012	FY 2013	TOTAL	FY 2013 Energy Savings (BBtu)	Lifetime (TRC)* B/C Ratios
Medium & Large Business	$7.1	$8.9	$9.1	**$25.1**	**429**	**2.0**
Small Business	$2.9	$7.7	$7.3	**$17.9**	**353**	**3.2**
Prescriptive	$9.1	$11.1	$8.3	**$28.5**	**436**	**2.8**
TOTAL BUSINESS STRATEGY	**$19.1**	**$27.7**	**$24.7**	**$71.6**	**1,217**	**2.6**

** Total Resource Cost (TRC) test compares the sum of lifetime benefits (cost savings) against the sum of costs, both program and participant.*

Medium and Large Business Program

Market Profile

With more than 13,500 customer accounts, the medium and large business sector (users with peak demand greater than 25 kW) represents nearly 50 percent of the state's load but represents just 2 percent of the customer base. This customer group includes commercial enterprises, institutional customers, and industrial facilities. Increasing the rate of participation in this group has proven to be challenging due to limited program funding. To increase enrolment, the Trust proposes to expand Efficiency Maine's existing Business Programs to include a comprehensive suite of enhanced services aimed at the specific needs of medium and large businesses. The Medium and Large Business Program (MLB) will deliver these services through a single point of contact.

Current Programs

Efficiency Maine's current Business Programs provide technical assistance and financial incentives for custom measures equal to approximately 75 percent of the incremental cost of market opportunity projects or 35 percent of full installed costs for early retirement projects. This fixed incentive structure does not take into account the customer's investment criteria or the realized return-on-investment in their application. Although incentives are offered to offset the cost of a wide array of equipment in the new and existing buildings, nearly 70 percent of program savings stem from lighting measures. Efficiency Maine is also in the process of implementing a Maine Advanced Buildings New Construction Program (MAB), based on the Core Performance concept.

Initially developed as an electric-only program, the program was recently expanded to include other fuels. Current Efficiency Maine business programs cannot use systems benefit funds to work with large customers but have been using both ARRA and RGGI funds to provide some program outreach including dedicated resources to new construction projects. The Energy and Carbon Savings Trust grant money is being used to leverage "all fuels" energy efficiency opportunities with Maine's larger businesses. It is the current policy of the Energy and Carbon Savings Trust to provide funding to applicants selected by competitive bid.

Triennial Plan Priorities

The primary focus of the MLB program will be to provide enhanced services that address the full spectrum of each participant's energy needs and goals. These may include both efficiency projects and alternative energy supply applications, across all fuel types, covering discretionary retirement, market opportunity, and new construction opportunities. sThe expanded program will actively seek participation in the program, will provide customer-centric incentives and services, and will offer a single point-of-contact for all customers. The Trust will ensure that program delivery emphasizes high levels of service to the customer.

Successfully addressing the MLB sector requires a strategy to engage customers in long range energy planning and provides the technical expertise needed to demonstrate true value of efficiency to the customer. The Account Management function, implemented by the Solution Provider, is the mechanism

that ensures long term relationships with the largest customers are developed and maintained. The Solution Provider is also the single point of contact for all businesses in this size class, even where they are not proactively engaged with the customer as an Account Manager. Projects from customers not receiving direct Account Management will be initiated through a variety of channels, including efforts supported by the Market Channel Coordinator: upstream market initiatives, trade allies, and certified Qualified Partners. Note that large customers who are exempt from system benefit charges (SBC) may have access to technical services, if RGGI and FCM funding continue.

Regardless of how a potential project is identified, the Solution Provider is responsible for seeing it through to completion. Depending on the project, the customer may be directed to available prescriptive incentives (see subsection below) or be offered an incentive package customized for their needs and the characteristics of the project. When needed, the Solution Provider will arrange project financing through established third party vendors. Incentive offers will be calculated through an incentive calculation tool designed to provide project specific economic data in the customer's preferred decision-making format. This leverages program dollars by not providing more incentive than is necessary to get the project done.

Overall, the Solution Provider coordinates all services offered by the Delivery Team[15] as well as outside services from project inception to completion, allowing the customer to focus on their core business. Expert technical assistance teams play a key role in ensuring that all aspects of the customer's energy needs are addressed thoroughly, including alternative energy supplies such as Combined Heat and Power (CHP) applications, conversion to biomass, and customer-sited solar and wind energy investments. Teams will be selected on the basis of their expertise and experience in Maine's most significant businesses (e.g., food processing, lumber and wood products, ski areas, industrial facilities, and municipal buildings) and important technologies (e.g., lighting, HVAC, refrigeration, biomass conversions, Advanced Buildings new construction standard, etc.).

Building a new delivery infrastructure is an investment that will begin to pay rewards by the third year of the Triennial Plan and hit its stride thereafter. The result of this resource investment will be more comprehensive projects[16] resulting in deeper savings at each site. Deeper savings typically means higher cost per saved unit of energy as customers go beyond inexpensive lighting to more costly heating, ventilating, and air conditioning and refrigeration measures. As government efficiency standards for lighting take effect and verifiable savings become more challenging to acquire, program administrators must look past lighting to other building systems.

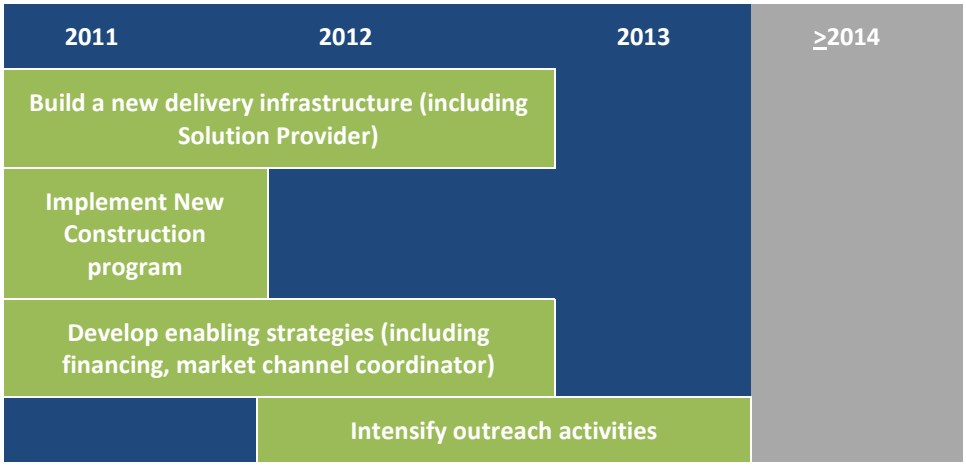
In FY 2011, the Trust's primary activities will be as follows:

- Develop the scope of work for Solution Providers and determine how they will deliver services within Efficiency Maine (either in-house or via a competitively selected contractor).
- Enhance the Account Management framework for the largest C&I customers, to proactively identify efficiency opportunities.
- Develop technical staff organized into industry and technology-specific teams, to assist the Solution Provider with in-depth technical and sales assistance.

[15] 'Delivery Team' refers to the Trust and its implementation contractors.

[16] Comprehensive projects are those involving more than one system.

- Add cash-flow and financing components to the current project analysis tool and enhance presentation to customers.
- Enhance MCC activities to improve project initiation from Qualified Partners resulting in more comprehensive projects.
- Continue the Advanced Buildings Program for new construction using information collected from Maine's experience.



In FY 2012, the Trust will continue to expand the MLB program by initiating the following additional activities:

- Account Managers develop customer-specific energy plans that identify major opportunities, important energy-related aspects of the customer's business, and describe a multi-year approach to deep savings penetration at the customer facility.
- Market Channel Coordinators begin efforts to move incentives "upstream" to capture more cost-effective savings in the lost opportunity market.
- Refine the mechanism for communication and feedback between the Solution Provider and the Market Channel Coordinators, to facilitate sharing of information on market conditions, customer preferences, and potential target areas for outreach efforts.
- Develop financing options in conjunction with other state and private entities.
- Begin aggressively pursuing biomass projects.
- Perform impact evaluation to make sure savings algorithms are tracking changes in the market.

In FY 2013, the Trust will begin the following aggressive outreach and program activities:

- Perform evaluation of program processes to confirm customer interactions and program flows are meeting design criteria.

- Review definitions of large and small customers to make sure fossil fuel program elements are parallel to electric.

- Continue to refine outreach strategies for both the Solution Provider and the Market Channel Coordinator, to define new markets and emerging technologies for promotion within the program.

- Define funding sources, budgets and program changes for second Triennial Plan.

Energy Savings

Total energy savings for the MLB programs are expected to be 359 billion Btu in FY 2013. Table 19 provides a more detailed breakdown of energy savings by year and by fuel type.

Table 19: Projected Energy Savings - MLB Program

	FY 2011	FY 2012	FY 2012
Electric (MWh)	10,000	2,100	33
Electric (MW)	2	3	5
Natural Gas (MMBtu)	16,000	32,000	54,000
Fossil Fuels (MMBtu)	81,000	162,000	305,000
Total (MMBtu)	131,120	201,165	359,112

Investments

To achieve these goals, an estimated budget totaling $25 million will be required for the Trust (see Table 20). It is expected that participants in the Trust's program will invest more than twice this amount.

Table 20: Annual MLB Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$7.1	$8.9	$9.1	$25.1
Participant Investments*	$14.4	$16.1	$24.5	$54.9
Total Investments	$21.5	$25.0	$33.5	$80.0

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

Small Business Program

Market Profile

Maine's small business sector represents a significant market opportunity for energy efficiency. Over 50,000 small businesses operate throughout the state in a wide variety of industries. The average small business, with peak demand less than 25 kW, consumes approximately 1,000 kWh of electricity per month. For many of these customers, energy costs other than electricity represent the majority of total energy spending. These businesses operate across nearly the entire range of commercial enterprise, including retail establishments, restaurants, offices, service establishments, wholesalers and distributors, and small lodging facilities.

Small businesses face different barriers to energy efficiency investment than do medium and large businesses. High up-front costs, limitations on time and knowledge, and limited access to capital are particularly difficult barriers for these customers. Therefore, the Trust's plan proposes to expand Efficiency Maine's offerings for small businesses to address these barriers and to cover non-electric energy use.

Current Programs

Efficiency Maine's Small Business Audit and the Low Interest Loan programs are primarily responsible for delivering efficiency services to Maine's small businesses. The program typically involves a "walk through audit" to identify potential energy efficiency opportunities, but does not provide engineering analysis or estimates of project cost-effectiveness. Customers may then choose to pursue energy efficiency upgrades through participation in either prescriptive incentives or the custom project process. Project implementation is the responsibility of the customer. Efficiency Maine is also in the process of implementing a Maine Advanced Buildings New Construction Program (MAB), based on the Core Performance concept. Statutory requirements result in no less than 20% of electric funds collected under the base system benefit charge (SBC) assessment being dedicated to customers defined as "small business."

Triennial Plan Priorities

The primary focus of the Small Business Program is to reduce the complexity and cost of participation for customers with total electric demand less than 25 kW. The following four elements will eventually compose the delivery strategy:

- Prescriptive incentives for equipment replacement supported by extensive market channel coordination.
- A Direct Install initiative for early retirement opportunities.
- A simplified whole-building approach to new construction.
- Financing resources tuned to the needs of small businesses.

Prescriptive Incentives. Small Business participation in the expanded business Prescriptive Incentive program (described in section below) will be enhanced in two ways. First, Market Channel Coordination efforts will improve the ability of trade allies and Program Partners (including trade associations) to support applications from smaller businesses. These groups will help the applicant with the details of the application, reducing the knowledge and time requirements for successful participation. Most importantly, rather than trying to reach these customers directly during the very short window of influence over a new or replacement equipment purchase, the vendor and contractors with whom the customer already has a relationship act to "sell" the program. Second, the Direct Install provider (described below) will identify potential opportunities for future prescriptive opportunities and provide the customer with relevant program information. As in all of the business programs, a call to a central phone number will direct the customer to a person who can help them through the process regardless of the nature of the efficiency opportunity they wish to pursue.

Direct Install Initiative for Early Retirement Opportunities. As with other sectors and customer classes in Maine, most energy efficiency opportunities are found in existing buildings and systems. To achieve its energy reduction goals, Maine requires an aggressive campaign to encourage small businesses to retire inefficient equipment and upgrade building envelopes. These opportunities are available to reduce both electric and fossil-fuel usage in all building systems, including lighting, refrigeration, HVAC and the building shell itself. The most cost-effective approach to wide participation by small businesses in an early retirement program is to provide "direct install" services. This strategy relies on a combination of relatively generous incentive payments and turn-key services to surmount the financial and transactional barriers faced by smaller businesses.

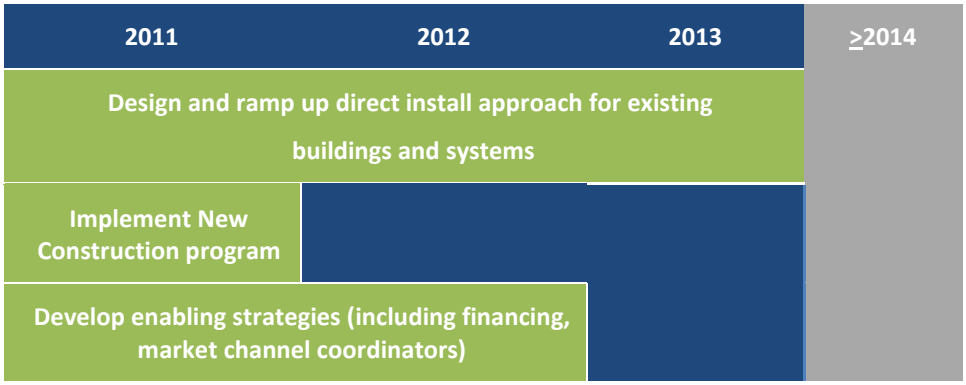
The Direct Install implementer begins with a facility walk-through similar to the one provided through Efficiency Maine's current Small Business Energy Audit program. After the walk-through, customers are presented with a suggested set of efficiency measures for implementation. The customer also receives a detailed explanation of the cost of the measures before and after Efficiency Maine incentives and a presentation of the potential for positive cash-flow if part or all of the customer cost is financed. If the customer agrees to proceed, the implementer handles all aspects of project implementation, from material procurement through installation and quality control. The most common measures that will be installed using this approach will be high efficiency lighting and controls, HVAC and refrigeration controls, simple HVAC system improvements, air and duct sealing, and water heating measures including solar water heating.

New Construction. Although new construction in the small business segment represents a small portion of the efficiency potential in the business sector, it does provide an important opportunity to capture savings from building shell improvements and other systems that are much harder and more expensive to acquire later. This is particularly important for fossil-fuel savings. Therefore, small businesses will be targeted by the Advanced Buildings Program for new construction, based on the Core Performance concept and also implemented for medium-sized businesses.

Financial Services. To help small businesses access capital for efficiency investments, the Small Business Program will offer financial services arranged through a variety of third party financing vehicles including on-bill financing through Maine utilities. These may include reduced interest or no-cost financing, pre-arranged loan terms, or reduced application and qualification requirements. The goal of financing is to generate positive cash flow from the efficiency investment immediately after project completion.

In FY 2011, the Trust will undertake the following activities aimed at small businesses:

- Develop the scope of work for the Direct Install implementer and determine how they will deliver services within the program (either in-house or via competitively selected contractor); begin developing selected delivery mechanism.
- Enhance Market Channel Coordination activities to improve project initiation from Qualified Partners resulting in more participation in the prescriptive incentive program and identification of potential custom projects.
- Implement the Advanced Buildings Program for new construction using information collected from Efficiency Maine's experience.



In FY 2012, continue to grow the program with the following additional activities:

- Direct Install provider aggressively markets program and acquires customers.
- Market Channel Coordinators begin efforts to move incentives "upstream" to capture more cost-effective savings in the lost opportunity market.
- Develop financing options in conjunction with other state and private entities.

In FY 2013, the Trust will continue the following aggressive outreach and program activities:

- Perform evaluation of program processes to confirm customer interactions and program flows are meeting design criteria.
- Make adjustments to the Direct Install program to incorporate evaluation findings.
- Define funding sources, budgets and program changes for second Triennial Plan.

Energy Savings

Total savings are expected to be 354 billion Btu in 2013. Table 21 provides a more detailed breakdown of energy savings by year and by fuel type.

Table 21: Projected Energy Savings - Small Business Program

	FY 2011	FY 2012	FY 2013
Electric (MWh)	5,000	22,000	44,000
Electric (MW)	2	4	8
Natural Gas (MMBtu)	0	5,000	10,000
Fossil Fuels (MMBtu)	49,000	156,000	194,000
Total (MMBtu)	66,060	236,064	354,128

Investments

To achieve these goals, the Trust will require an estimated budget totaling almost $18 million (see Table 22). It is expected that participants in the Trust's Small Business Program will invest approximately $24 million.

Table 22: Annual Small Business Program and Participant Investments (Million $)

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$2.9	$7.7	$7.3	$17.9
Participant Investments*	$4.5	$9.5	$9.8	$23.8
Total Investments	$7.4	$17.2	$17.1	$41.7

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

Prescriptive Program

Market Profile

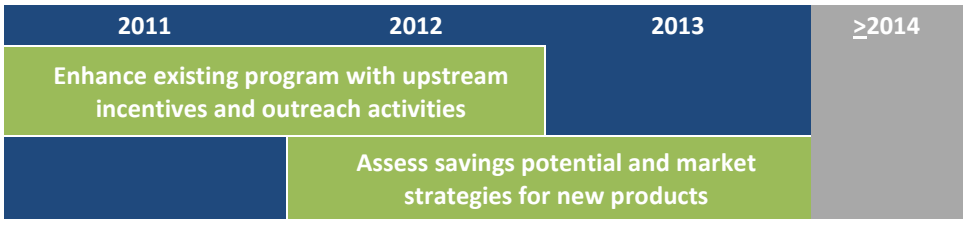
Although much of the energy efficiency potential in Maine (as elsewhere) stems from early retirement or upgrades to existing buildings, equipment, and systems, opportunities stemming from planned and unplanned equipment replacement represents an important component of a comprehensive efficiency strategy. These "lost opportunity" transactions are a common target of energy efficiency programs and lend themselves to standard approaches and incentives. A "prescriptive" program typically addresses opportunities arising from common, standardized equipment (e.g., linear fluorescent lighting fixtures or packaged air conditioning units). The emphasis is on influencing the purchaser to buy higher- efficiency-than-standard equipment at the time that a purchase is already occurring. The market is limited by the rate at which equipment fails or otherwise reaches the end of its useful life.

Current Programs

Efficiency Maine's prescriptive program provides financial incentives for a portion of the incremental cost of efficient electric equipment relative to standard equipment. The program is well established, having processed roughly 1200 applications in 2009. Prescriptive rebates are offered for some of the most common equipment found in nearly every business: lighting, refrigeration, HVAC units, variable speed drives, motors, small- to medium-sized boilers and furnaces, and equipment related to milking operations.

Triennial Plan Priorities

The Trust's Prescriptive Program is designed to allow customers to easily access program offerings with little effort or research. The program will continue Efficiency Maine's effort to provide incentives to encourage customers to upgrade the efficiency level of the most common energy-consuming equipment. The Trust will promote additional measures, including space heating and water heating equipment. Although the program is limited to customers that pay into Maine's system benefit fund, most opportunities for the equipment promoted by this program are found in this customer group.



This program will be enhanced by extensive efforts to engage the product supply chain in supporting the eventual installation of high-efficiency equipment at customer facilities. The Market Channel Coordinator is primarily responsible for the success of the Prescriptive Program, for it is through the efforts of businesses throughout the supply chain that high-efficiency equipment is stocked, promoted, specified, and marketed to customers.

Rather than rely exclusively on existing program partners and participating retailers, the Market Channel Coordinator will proactively develop and support market channels in an effort to influence the purchasing decisions of consumers. The Coordinator's role will be to encourage upstream market actors to stock efficient products over standard equipment and to ensure that customers are made aware of the financial benefits of efficiency. This effort will require a comprehensive and widespread campaign across various market areas, including the following activities:

- Consistent outreach and "circuit riding" to distributors and vendors selling program compliant equipment.[17] This includes contractor and distributor sales staff training, prescriptive form restocking, and general information dissemination including prescriptive form updates.

- Moving incentives upstream by providing financial incentives for efficiency equipment directly to manufacturers and distributors, who in turn reduce the cost of the efficient products on the shelf. With this "buy-down" strategy, customers do not have to fill out forms or apply for rebates. Because the incentive is applied before retail mark-up, the per-unit incentive is typically lower than with customer-directed incentives, saving the program money and increasing program cost-effectiveness.

- Outreach to program allies including program partners. A primary function of the Market Channel Coordinator is to increase outreach to potential program partners and other market actors as to help build customer awareness and increase program participation.

In FY 2011, the Trust will engage in the following primary activities:

- Assess the potential costs and savings for additional measures – both for fossil fuels and electricity.

- Evaluate current measures for applicability and incentive cost coverage using current market data.

In FY 2012, to the Trust will continue the Prescriptive Program with the following activities:

- Conduct measure impact evaluations.

- Addition of new measures.

In FY 2013, the Trust will continue the Prescriptive Program by continuing the existing activities and adding/removing/revising measures as determined by the evaluation process.

[17] Circuit Riding refers to regular visits and contact with program partners to promote the program.

Energy Savings

Total energy savings from the Prescriptive Program are expected to reach 435 billion Btu in 2013 (see Table 23).

Table 23: Projected Energy Savings - Prescriptive Program

	FY 2011	FY 2012	FY 2013
Electric (MWh)	17,000	33,000	53,000
Electric (MW)	2	5	8
Natural Gas (MMBtu)	10,000	20,000	31,000
Fossil Fuels (MMBtu)	74,000	204,000	224,000
Total (MMBtu)	142,004	336,596	435,836

Investments

To achieve these goals, the Trust is proposing an estimated budget totaling over $28 million. It is expected that participants in the Trust's program will invest over $38 million.

	FY 2011	FY 2012	FY 2013	TOTAL
Program Investments	$9.1	$11.1	$8.3	$28.5
Participant Investments*	$12.6	$14.6	$11.4	$38.6
Total Investments	$21.7	$25.7	$19.7	$67.1

** Participant investments are net of program incentives, but may include federal tax credits or other financial support.*

ENABLING STRATEGY

Overview

Enabling strategies go beyond individual program markets and the Triennial Plan timeline to provide broad, market-wide support for meeting long term energy efficiency targets. Initiatives that cut across customer sectors and program, such as a state-wide education and awareness campaign, financing efforts and work on market channel coordination support all programs, and avoid unnecessary program 'silos.' Long-term strategies such as work on building labeling, innovation and codes and standards prepare the groundwork needed to leverage the efforts of other market actors (e.g. banks, realtors), to remove barriers and better integrate energy efficiency into market decisions, and to constantly replenish the pool of savings opportunities. Although it can be difficult to quantify the energy savings associated with these strategies, particularly in the short-term, they are considered vital towards meeting Maine's long-term goals.

This section outlines efforts in the following seven areas:

1. Awareness Campaign
2. Financing
3. Labeling
4. Market Channel Coordination
5. Training
6. Codes and Standards
7. Innovation

Additionally, the Enabling budget also includes funds for independent program evaluation, a critical step to continuously improving the Trust's strategies and ensuring they are effectively meeting or exceeding their targets.

Table 25 summarizes Triennial Plan investments in these efforts.

Table 25: Enabling Strategy Budgets, Energy Savings, and Total Resource Cost (TRC) Ratios

	FY 2011	FY 2012	FY 2013	TOTAL	FY 2013 Energy Savings (BBtu)	Lifetime (TRC)* B/C Ratios
Financing, Training, Labeling, Market Channel Coordinator	$2.1	$2.1	$2.1	**$6.3**	-	**N/A**
Codes & Standards	$0.3	$0.3	$0.2	**$0.8**	**19,672**	**N/A**
Education & awareness	$2.4	$2.4	$2.2	**$7.0**	**52,587**	**N/A**
Innovation	$0.2	$0.3	$0.3	**$0.8**	-	**N/A**
Evaluation	$0.6	$0.9	$1.1	**$2.6**	-	**N/A**
TOTAL ENABLING STRATEGY	**$5.6**	**$5.9**	**$5.9**	**$17.4**	**72,259**	**0.7***

** The Trust may implement individual programs not satisfying the Total Resource Cost (TRC) test where benefits are known to exist but cannot be quantified with accuracy, the program satisfies some other statutory goal or objective, and the entire portfolio of program benefits substantially exceeds total portfolio program costs. 65-407 Maine Code of Regulations Chapter 380, Section 4.B. While all of the costs of enabling programs are counted here, only a fraction of their total benefits that are easily quantifiable are reflected here. The remainder is either counted in the Residential and Business programs or occurs in future years (e.g., from compliance with building energy codes) and is not easily quantifiable.*

Awareness Campaigns

Background

Educational campaigns come in multiple forms and serve several overlapping goals. Forms can range from broad marketing campaigns, to curricula for public schools, to targeted direct marketing and outreach – even to the use of new information tools to help consumers understand and manage their energy consumption. In all of these, partnerships with market actors, communities and stakeholders can prove valuable to leveraging existing relationships.

Broadly speaking, these campaigns seek to raise awareness, provide information on behavioral changes and available measures, and incite action, within or outside of specific incentive-based programs.[18]

Existing Efforts

Efficiency Maine currently provides financial support for two educational programs serving 4th through 12th grade teachers and students: (1) the Maine Energy Education Program (MEEP), which is managed by a non-profit organization, and (2) the BE Energy-Wise Program (BEEP), run by Maine Public Service. These programs educate students about energy and related issues, such as climate change, and teach general awareness and practical skills that enable students to be save energy in their daily lives. Through its Power Sleuth Maine Education Curriculum Project, Efficiency Maine has developed energy education materials for students in grades 4 through 8. Teachers and students have access via the web to a suite of activities, video clips, lesson plans, links and other resources.

Efficiency Maine conducts extensive marketing and outreach within each major program category. Residential program marketing, in particular for lighting programs, has historically also included general awareness messages concerning energy efficiency. A particularly innovative effort has been the provision and promotion of 'Kill-A-Watt' electricity usage monitors in all public libraries in the state.

Triennial Plan Priorities

Activities during the Triennial Plan period will focus on the following five areas:

- *General Marketing Campaign*: The Trust will revise Efficiency Maine's current marketing campaigns to reflect new initiatives, including the Home Energy Diagnostic (below).

- *Home Energy Diagnostic*: The Trust will develop a home energy survey that will identify potential energy savings from behavioral changes and retrofit measures. Survey results will tie into existing programs and provide opportunity for easy follow-up by program leads; they will also be designed to provide a preliminary 'home energy rating score' that will tie in with eventual labeling efforts. To the extent possible, the survey will build on existing, available tools such as the U.S. Department of Energy's (DOE) Home Energy Survey, the U.S. Environmental Protection Agency's Home Energy Yardstick, and new tools such as Google's Power Meter, Microsoft's Holm and/or OPower. The

[18] Note that this section discusses broad efforts beyond program-specific marketing and outreach.

survey will also incorporate a peer benchmarking component.

- *Work with Utilities toward On-Bill Ratings*: Benchmarking a home or business' actual energy use on its energy bills is an effective way to increase awareness and encourage action. Benchmarking can compare a home's energy consumption to state averages or to a state rating scale. Benchmarking against peers – other homes in the same neighborhood, for example – has been shown to be particularly effective, though is not without its own challenges. The Trust will work with utilities to encourage experimentation with on-bill ratings and benchmarking.

- *Community-Based Awareness*: The Trust will conduct outreach to communities and work with interested communities to develop tailored energy efficiency initiatives and projects. In particular, the Home Energy Diagnostic marketing will include co-promotion with towns and cities throughout the state. If there is sufficient interest, the Trust may contribute, for each survey completed, a set dollar amount for energy efficiency projects selected by the community.

- *Existing Educational Activities*: Efficiency Maine's existing educational curricula and Kill-A-Watt meter lending programs will be continued.

In FY 2011, the Trust will design and develop the home energy diagnostic (or adapt existing tools to the Maine context); begin outreach to communities and utilities, continue educational programs, and expand its general marketing campaign significantly. **FY 2012 and 2013** will see the launch of the home energy diagnostic program, continued educational programs and an ongoing general marketing campaign.

While savings from most "Enabling Strategies" are rolled into the programs they support and/or are expected to occur in years following the initial Triennial Plan, the Trust expects its Awareness campaign to generate quantifiable energy savings. These savings are estimated at approximately 2 percent for participating residential customers.[19]

[19] In other regions, energy savings from effective marketing and home energy diagnostic programs have been shown to be on the order of 1.5 to 3.5 percent of home energy use in other regions.

Financing

Background

Access to capital is a key barrier for most energy efficiency markets. Too few consumers and businesses have the upfront capital on hand to invest in measures – often with high up-front costs – that can reduce their energy bills. By providing access to a suite of financial services, consumers and businesses can tap into capital resources to pay for projects that would not otherwise be initiated. Financial services that apply to Maine include the following options:

- Property Assessed Clean Energy (PACE) tax district financing,
- energy improvement mortgages and home equity loans,
- on-bill financing, and
- sponsored financing and equipment leasing (for commercial customers).

Existing Efforts

Maine's financing efforts consist of a low-interest energy efficiency loan program administered by Efficiency Maine. Funded annually under a DOE grant, Efficiency Maine provides low interest loans (currently at 1.0 percent) up to $35,000 to small businesses. To qualify, eligible small businesses must first complete an energy audit of their facilities. Funds may be used to install insulation, efficient windows, refrigeration, and eligible renewable energy technologies. The low interest loan program received an additional $1.3 million under the Federal government's ARRA legislation.

Efficiency Maine recently submitted a proposal to test on-bill financing with a pilot effort through Maine Public Service and Bangor Hydro, and there is a bill under consideration in the legislature authorizing PACE-type financing through municipalities.

Triennial Plan Priorities

Establishing multiple points of access to long term financing is an effective tool that provides needed assistance to prospective customers and leverages the incentives funded through the Trust. This means that Maine will need to expand its current low-interest loan program to the residential sector and recruit local governments to foster clean energy programs in their local communities.

Property Assessed Clean Energy (PACE) Districts: As noted above, local governments will need to play an active role in the state's energy savings objectives. Accordingly, the Trust will work with local communities to establish Property Assessed Clean Energy (PACE) tax district financing.

PACE legislation, currently under consideration in the Maine State Legislature, would enable local governments to raise money, through the issuance of bonds or other instruments, to finance clean energy projects. Assuming this legislation passes, participating customers would repay the funds provided by the municipality over a predetermined number of years – generally the expected life of the

energy savings measures – through a special assessment on their property tax bill. Financing would be secured with a lien on the property.

This form of financing has several advantages. For the customer, repayment periods may be longer, upfront capital may not be necessary, and through pooled financing, lower interest rates and reduced transaction costs can be expected. Perhaps most importantly, tying the loan to the property removes the split incentive between current and future owners. Indeed, if the property is sold before the end of the repayment period, the new owner would inherit both the repayment obligation and, simultaneously, the energy savings. Thus by tying repayment obligations to bill savings, the customer is relieved of the risk of having to reimburse a loan for which the benefits have not fully accrued.

For the municipality, PACE also results in an improved housing stock, and additional, locally-sourced jobs. Tax district financing also provides a means for local officials to support climate-friendly building improvements in their communities, at very little direct cost to the government. Finally, it is worth noting that financing remains entirely voluntary and individualized – only those who choose to benefit from the opportunity are called upon to pay an additional assessment.

Other residential options: The Efficiency Maine Trust will also work to encourage development of other energy efficient financing offers in the residential sector. These may include:

- *Private Financing*: Energy Improvement Mortgages (EIMs) provide homeowners the opportunity to borrow additional capital at the time of purchase in order to make energy efficient improvements to their home. The money borrowed is rolled into the new mortgage, and spread over the mortgage term (usually 30 years). A similar product – energy efficiency refinancing loans (EERLs) – fund energy efficiency retrofits using the same principle. By definition, EIMs and EERLs *do not* add to owners' repayment burden because additional repayments are designed to be offset by equivalent (or greater) energy savings. Through its outreach programs, the Trust will encourage – though not require – the development and active marketing of EIMs and EERLs by financial institutions.

- *On-Bill Financing*: Depending on the success of its efforts with PACE financing, the Trust may also work with interested utilities to provide transferable, on-bill financing. With on bill financing, repayment is tied to the meter, not the homeowner, removing the split incentive between current and future owners. To make on-bill financing attractive, the monthly charge is generally set to be lower than the expected savings from the efficiency improvements, and charged for a period no greater than the expected life of the efficiency measures being financed.

Commercial Customers: In the commercial sector, the Trust will work to encourage the development and/or promotion of finance vehicles tied into its incentives programs. These vehicles may include:

- *Sponsored Energy Efficiency Loans:* The Trust, working with partners like MaineHousing and Fame, will encourage private sector lending institutions to provide secured and unsecured loans for energy efficiency improvements. As a means to encourage bank participation, the Trust will consider providing credit enhancements to enable competitive loan offerings, for example by negotiating loan-loss reserves, interest buy-downs or loan guarantees.

- *Equipment Leases*: Again, working with private lenders, the Trust will seek to integrate equipment leasing into its program offerings to address customer's upfront capital challenges.

Leasing is often easier to initiate because ownership of the equipment (in most cases) is retained by the leasing company, minimizing credit worthiness issues.

In **FY 2010**, the Trust will work first and foremost to develop its financing strategy, and to recruit and support "early adopter" partners, including both financial institutions and, assuming passage of LD 1717 (PACE enabling legislation, currently under review), interested municipalities. Throughout **FY 2011 and 2012**, the Trust will continue to recruit participating lending institutions and municipalities, to assist them in developing competitive financial products and/or in creating appropriate tax districts, and expects to see financing offers gradually roll out throughout the state.

Energy Performance Labeling

Background

Building energy performance labeling is a powerful and increasingly prevalent tool for moving both residential home and commercial building markets to value energy performance. By allowing buyers and renters to assess and compare the relative energy efficiency of buildings, they create a powerful 'pull' towards energy savings measures, as building owners improve energy performance in order to obtain higher sale or rental values.

Under a time of sale labeling policy, home and building owners include a valid energy performance label in all sale-related advertising. Before putting a property on the market, the owner obtains an energy rating from an independent evaluator, who models the building's energy consumption under standardized conditions. This allows potential purchasers to easily compare buildings on their energy performance early in their decision-making. Experience from other jurisdictions has shown that, once well established, time of sale labeling can cause purchasers to give greater considerations and value to efficient buildings. This can create a powerful financial incentive for high performance construction and building retrofits, and increases the certainty of owner payback for longer-term efficiency investments. Over time, time of sale labeling can be extended to rental markets as well.

Under a scheduled public disclosure policy, designated commercial building owners obtain an energy rating annually and post it to a publicly available database. Ratings in this case are of the lower-cost "operational" variety, and reflect the building's *actual* (as opposed to modeled) energy consumption in the past year. Annual ratings create multiple benefits: building owners and managers gain valuable information about their building's performance, and benchmarking metrics to facilitate continuous improvements; Efficiency Maine Trust, as well as energy service companies, can use this information to more effectively market their value-added services to those who need them most; and stakeholders can support owners to improve performance over time.

Well-established rating systems exist for both residential and commercial markets, and multiple initiatives are currently underway to improve these rating systems and ensure that low-cost, reliable systems are made available. Notably, the federal DOE is developing rating systems which should be available in FY 2011.

Existing Efforts

Efficiency Maine has been involved in recent policy research on the development of a building energy performance rating in the state. In 2009, the state legislature enacted Chapter 134 LD 935, Resolve, Regarding Building Energy Efficiency and Carbon Performance Ratings. This resolve directed the PUC to develop a standardized rating system for building energy efficiency and carbon performance, introduce its use in PUC-sponsored activities, and encourage their use by stakeholders. The PUC convened a stakeholder group and produced an options report on February 1, 2010. The report recommended the use of two existing rating systems for residential and commercial ratings, and Efficiency Maine is currently working to incorporate these rating systems into existing programs.

Triennial Plan Priorities

Throughout the Triennial Plan period, the Trust will focus on implementing the use of rating systems within its existing programs, and encouraging adoption and promotion of rating systems by other stakeholders. It will work with regional and national organizations on the refinement of rating systems to ensure that they are low-cost, accurate and consistent. Over time, the Trust will also work with legislators and stakeholders to support the implementation of appropriate rating and disclosure legislation.

In FY 2011, the Trust will focus on ensuring the integration of rating systems in its programs wherever possible, while liaising with regional and national organizations on the refinement of existing rating systems and/or development of new ones. **In FY 2012 and 2013**, the Trust will monitor and review the results of program-level rating efforts, conduct outreach to stakeholder groups on the use of rating systems, and begin work on possible legislation.

Market Channel Coordinator

Background

Because Maine's customer base is large and varied, it is not cost effective to reach out to every customer. Instead, the primary goal is to influence their purchasing decisions by providing information and incentives within the purchasing channels through which energy efficiency equipment and services are delivered. This involves substantial work with 'upstream' market actors throughout the retail products, building equipment, and services supply chain.

Market actors and channels are diverse – from product manufacturers and retailers, to building architects and engineers, to contractors and equipment installers. Multiple energy efficiency programs may need to work with the same market actor. For example, small commercial customers and residential customers shop at many of the same places, especially large stores like Home Depot. Managing such an account is therefore not a residential or commercial activity but a "Market Channel Coordinator" activity. Whenever this is the case, it is vital to provide market actors with a simple and streamlined point of contact, rather than multiple, redundant and fragmented contacts within separate program silos.

Existing Efforts

Efficiency Maine currently provides enhanced outreach and technical services to active and potential market actors via specific programs. These services focus on two general market areas: retail outlets and equipment vendors. The residential lighting program actively supports existing retail partners and recruits new store locations. As a retail partner, Efficiency Maine provides store owners the opportunity to offer instant rebates on hundreds of efficient lighting fixtures and eligible appliances, as well as free point-of-purchase marketing materials, cooperative advertising funds, and training sessions. Efficiency Maine also actively recruits equipment vendors and engineers as "Qualified Partners." Qualified Partners gain access to a host of benefits including free or subsidized training, technical product information and advice, joint sales presentations, promotional materials and cooperative advertising funds.

Triennial Plan Priorities

The focus of the Market Channel Coordinator role will be to maintain existing relationships with market actors and to establish new working relationships throughout the retail products, building equipment and services supply chain. By working with the supply chain, the Trust's team will be able to leverage relationships to keep distribution channels well informed and *motivated* to influence the purchasing decisions of their customers. This *markets approach* relies on market actors upstream from the customer to promote energy efficiency by positively affecting the selection and stocking of efficient equipment.

The Market Channel Coordinator and his/her team will apply this approach wherever market actors are relevant to multiple programs, particularly for the following markets:

- electrical, mechanical, and building envelope contractors and distributors;
- suppliers of services;
- efficient products retailers and manufacturers (largely residential and small commercial activity); and
- home builders, contractors, home energy raters, multifamily building consultants and engineers.

In some cases, the Market Channel Coordinator functions noted above can be managed as part of individual programs. The key strategy here, however, is to coordinate outreach initiatives across multiple market channels and sectors to maximize the Trust's impact on the marketplace. By managing outreach efforts through a coordinated team approach, the Trust will effectively address multiple channels, and potential customers, simultaneously.

The Trust's efforts throughout the Triennial Plan period are more specifically defined in the Residential and Business sector strategies.

Builder Training

Background

Successful retrofit and new construction programs will require a solid base of well-trained builders and contractors.

In residential markets, a 2008 baseline study of residential new construction practices in Maine found that while Maine builders generally produce a reasonable home, there are "numerous opportunities for energy improvements… (and those opportunities) are greater than in other parts of the Northeast region." Similarly, significant opportunities for home energy retrofits exist. All of this will require expanding the current base of qualified contractors, notably through additional training and certification.

There is a similar shortage of trained market actors and accessible energy efficiency training in the commercial market, made more complex by the diverse set of market actors, including architects, engineers, contractors, technicians and building managers, and their varied levels of interaction on specific projects.

Existing Efforts

Efficiency Maine and MaineHousing are working actively with community colleges in Maine to develop and implement residential weatherization and auditor certification programs. BPI certification has been accepted as the standard for energy auditors. The DOE's Core Competencies has been recognized as the standard for Weatherization Technicians. The Building Performance Institute is a nationally recognized industry body that certifies energy professionals. The two organizations are in the process of finalizing these efforts and training programs are ongoing.

In the commercial sector, Efficiency Maine offers or facilitates the delivery of a building operator certification program, commercial auditor training, energy manager training and general facility manager training, as well as various specific commercial and industrial training sessions. Efficiency Maine also offers a specialized course for interested realtors, known as the "Energy Smart Real Estate Specialist" course.

Triennial Plan Priorities

Residential sector: The Trust will continue to work with MaineHousing, community colleges and builder associations to develop a builder training program delivered through existing trades training and standalone continuing education courses. These will be complemented by less formal training delivered through the Trust's residential and commercial sector programs (for example, circuit riders in new construction programs will provide on-site training where relevant).

In **FY 2011**, the Trust will sponsor the development of training units on 2009 IECC compliance, new construction program standards and targeted technical skills (e.g., insulation practices, HVAC sizing). The Trust will further conduct outreach to community colleges to ensure that these units are integrated

into existing trades programs. In **FY 2012 and 2013**, the Trust will continue to liaise with community colleges and the builder community, and will sponsor and partially subsidize core content continuing education for already-practicing builders.

***Commercial sector*:** The Trust will play a dual role, offering targeted continuing-education courses and conducting outreach to connect regional and national resources with state institutions. The Trust will continue to offer standalone building operator, facility manager and auditor training programs. More broadly, it will conduct outreach to community colleges, universities and professional organizations to ensure access to energy efficiency design and building training for architects, engineers and technicians. This work may include participation in NEEP's regional workforce training efforts, among others.

Codes and Standards

Background

Energy codes and standards are among the most cost-effective ways to lock in energy savings over the long term.

Building energy codes set the floor for energy efficiency in new construction by establishing minimum efficiency requirements for all new and substantially renovated residential and commercial buildings. Improving energy codes can – assuming they are properly enforced – result in significant, "locked-in" energy savings that grow over time with growth in housing and construction markets. These savings are generally inexpensive to implement, because it is far easier to adapt building practices and adopt new materials at the outset, than it is to renovate and retrofit existing buildings long after the fact.

A recent study ranked Maine eighth in the country with respect to building energy codes.[20] This ranking was based on a combination of theory and practice. On one hand, the State received high marks for having recently adopted legislation mandating construction practices based on the latest national model energy code.[21] On the other hand, the State scored very low on enforcement of its *existing* building code.

Energy efficiency standards – applicable to appliances and other stand-alone products – have been a vital contributor to energy efficiency in the United States since their development in the 1980s. Although federal energy efficiency standards supersede state standards, states and coalitions of states have historically led the way by adopting aggressive legislation. Regional organizations such as Northeast Energy Efficiency Partnerships (NEEP), along with national organizations such as the Appliance Standards Awareness Project (ASAP), have proven to be effective vehicles for improving federal standards and developing state level ones.

This is a particularly active time for efficiency standards. Indeed, the DOE is in the process of developing national standards for 26 common residential and business products. Furthermore, NEEP is working on a regionally-adapted package of additional standards that could come into effect toward the end of the Triennial Plan period.

Existing Efforts

Efficiency Maine works closely with the Maine Building and Energy Codes Board to facilitate code enforcement, primarily through training. It notably provides support, through use of ARRA funds, for the Board's training program offered to municipal building officials, local enforcement officers and third-

[20] *The 2009 State Energy Efficiency Scoreboard*, American Council for an Energy-Efficient Economy (ACEEE), October 2009.

[21] On April 24, 2008, the state legislature established the Maine Uniform Building and Energy Code, setting the 2009 versions of the IECC, IBC, IRC, IEBC, and ASHRAE 90.1 as the mandatory building code standards for residential and commercial buildings statewide. Code requirements will come into effect in two phases (July 2010 for communities with pre-existing codes, and July 2012 for communities without pre-existing codes). Only towns with 2,000 residents or less will be exempt.

party inspectors. Efficiency Maine is also involved in NEEP's upstream efforts targeting improvements in energy codes.

Triennial Plan Priorities

The Trust will devote significant resources in the first Triennial Plan to supporting others' efforts at ensuring compliance with the new building codes, and will furthermore work to support adoption of new energy efficiency standards, where appropriate.

Building Codes – emphasis on enforcement: Throughout **FY 2011,** the Trust will continue to fund the Building and Energy Codes Board's training for code enforcement staff, while implementing a process for monitoring compliance. **In FY 2012 and 2013,** the Trust will continue to fund training as needed (although funding levels may change as certification fees are introduced), but expects to shift its emphasis to sustained compliance monitoring and, if needed, to additional, targeted efforts to support compliance and enforcement in areas where performance may be lagging.[22] The Trust will also continue to pursue its collaboration with state, regional, and national organizations as needed.

Standards – emphasis on adoption**:** ,The Trust sees significant potential for adoption of new standards by the end of the three year timeframe, in particular through active standard-setting efforts currently underway nationally (DOE) and at the regional level (NEEP)., The Trust will devote resources throughout the Triennial Plan period to support these efforts, and will work collaboratively with state officials to that end. The Trust expects that savings from these new standards will only "kick in" in the year following the Triennial Plan period.

While savings from most "Enabling Strategies" are rolled into the programs they support and/or are expected to occur in years following the initial Triennial Plan, the Trust expects its code enforcement efforts to generate quantifiable energy savings. To this end, the Trust has made what it believes to be a very conservative assumption that its efforts will increase compliance by 5 percent in the initial years.

[22] This work will be complemented by builder training as described in the Builder Training section, and may further integrate building energy performance labeling efforts.

Innovation

Background

Technological improvements are a cornerstone of energy efficiency, and early investments in technology innovation can pay off handsomely in terms of both energy savings and economic development.

Across the nation, both private and public sector players are increasingly recognizing the role that energy efficient and renewable energy technologies will play in the economies of the future, and are directing unprecedented funding at associated research, development, demonstration and commercialization efforts. Maine can ensure that its own businesses benefit from this movement, both through R&D to advance promising in-state technologies, and through funding to bring new technologies to the state and to adapt them to meeting Maine's unique characteristics. When these technologies are commercialized, Trust programs should stand ready to help transform the market.

Existing Efforts

While focusing primarily on operating cost-effective resource acquisition programs, Efficiency Maine has supported state organizations with responsibilities in these areas, including the University of Maine System, community colleges, private educational institutions, state agencies, the Maine Technology Institute, and associations such as E2Tech.

Triennial Plan Priorities

Throughout the Triennial Plan period, the Trust will continue its outreach and networking efforts with existing public and private organizations. It will also develop a new Innovation Fund, aimed at financing pilot programs for commercialized products or new ways of delivering cost-effective measures. This Fund could also promote limited demonstration projects for near-commercial technologies that show substantial energy savings opportunities for the state. Examples could include cold-climate heat pumps, advanced biomass-based heating systems, or energy information technologies, among others. The fund will seek to leverage the efforts of other agencies and organizations.

Efforts during **FY 2011** will focus on analyzing existing institutional capacity and efforts, developing criteria and guidelines for the fund, and funding its first projects. **FY 2012 and 2013** will see funding of additional projects and, depending on the results of its initial projects, integration of newly-identified opportunities in its incentive-based, consumer-oriented programs.

APPENDIX A: COST-EFFECTIVENESS ANALYSIS

Methodology

The primary purpose of the cost-effectiveness analysis is to compare the costs of investing in energy efficiency with the resulting benefits. The costs of efficiency are determined relative to a "baseline" of standard equipment and practices. The benefits are based primarily on the value of energy savings (electricity, natural gas, oil, propane and kerosene). For each efficiency measure installed, analysis is performed to compare the costs and benefits over the measure's expected lifetime. The analysis ultimately seeks to answer the question, "*What return does Maine get for every dollar it invests in efficiency?*"

Total Resource Cost (TRC)

To answer this question, we use the "Total Resource Cost (TRC)" test. The TRC is applied to tally up the costs and benefits to society as a whole, and uses the following approach:[23]

- **Costs:** In its simplest form, costs include the increased cost of efficient equipment relative to baseline costs, as well as any administrative and marketing costs for carrying out the efficiency programs. The incentives paid to participants are not *specifically* counted as costs, because they are effectively a transfer of funds from one group of people to another, but are typically already included in the overall cost. The TRC also accounts for the cost of any *increased* energy use, such as for increased use of wood pellets or chips when converting from fossil fuels, as well as any additional maintenance costs where applicable.

- **Benefits:** The benefits of saved energy are determined by the amount of energy saved on an annual basis, the number of years for which savings are expected to occur, and the "avoided cost" of supplying that energy. Measure-related savings are based on the difference in energy consumption between the new efficient "measure" (e.g., a compact fluorescent bulb) and the technology or practice that is assumed to be the baseline (e.g., an incandescent bulb). Note that the baseline is then adjusted to account for the share of program participants that might have chosen the efficient measure in the absence of the program, as well as other similar effects. The Triennial Plan used the avoided costs of energy specific to Maine, as determined in the regional *Avoided Energy Supply Costs in New England: 2009 Report*, by Synapse Energy Economics.

  It is worth noting that for purposes of the TRC, the Trust chose *not* to attribute a monetary value to the reduction in carbon emissions or to other environmental benefits. The Trust recognizes that this may need to evolve in future plans, and that monetary value may nonetheless accrue over time.

[23] The specific components of the TRC used for this analysis are wholly consistent with and reflective of 65-407 Code of Maine Rules Chapter 380, Section 4. For a more complete definition of the standard TRC methodology, see: *California Standard Practice Manual: Economic Analysis Of Demand-Side Programs And Projects*, July 2002, available at http://www.calmac.org/events/SPM_9_20_02.pdf.

- **Discounting:** The use of discount rates is standard practice in economic analysis, and allows for an "apples-to-apples" comparison of costs and benefits over time. A real discount rate is applied to future costs and benefits in order to properly assess their "present value," because a dollar saved in the future is assumed to be less interesting than a dollar saved today. This analysis used the discount rate (2.22 percent in real terms) approved by the PUC, also from the Synapse report referenced previously.

If the discounted, "present value" of benefits exceeds the present value of costs, the benefit-to-cost ratio (B/C ratio) will be greater than 1, and the efficiency measure or program will be considered to be cost-effective. A B/C ratio of 2 means that for every dollar invested, society gets two dollars in benefits. Applying zero monetary value to carbon emissions reductions, as this plan has chosen to do for now, reduces the B/C ratio for measures that include fuel switching or reductions in fossil fuel consumption.

Constraints

This Triennial Plan is based on a "budget-constrained" analysis. The plan assumed a pre-determined level of funding, as well as constraints as to how funding was to be distributed to sectors (e.g., residential), to sub-sectors (e.g., low-income weatherization), and to fuels (e.g.,. electricity, natural gas or other heating fuels). These allocations were determined by the Trust's volunteer Board of Directors, based on projections of a variety of potential funding sources and their associated requirements.

Estimating Costs and Savings

Residential Programs

To estimate the projected energy savings and program costs for the residential sector, analysts began by reviewing the most recent reported costs and savings from Efficiency Maine's existing programs, as well as from MaineHousing's weatherization program for low-income households. Analysts also reviewed the most recent reported program results of other efficiency programs in the region, including programs in Massachusetts, Vermont, Connecticut and New York. In addition, they reviewed recent, relevant energy efficiency potential studies from the region, including studies for Maine (all fuels, 2009), Vermont (electric, 2009, and all fuels, 2007), New Hampshire (2009), and New York (natural gas, 2008). They also developed some analyses "from the ground up," where innovative initiatives, strategies or technologies were deemed more appropriate. Finally, the consultants used their own technical experience in designing, assessing and implementing energy efficiency programs in a variety of regions and under a variety of conditions, adapting estimates to account for Maine's unique characteristics.

Business Programs

For the commercial and industrial sectors, analysts gauged the relevance of the various efficiency programs and potential studies based on program size and maturity, the types of programs offered (e.g., direct install, prescriptive, etc.), and customer demographics. For each study, they determined the cost per unit of saved energy, the incentives paid as a percent of program costs, and the participant costs

relative to incentives and program costs. Where appropriate, program metrics were segmented by program type, target market, and energy/fuel type, so that these could be mapped and calibrated most closely to corresponding components of the programs of the Triennial Plan. They also took into account other factors – including projected codes and standards to the extent they could influence baselines – in finalizing our assessments. Based on these metrics, the consultants projected the energy savings, incentives and participant costs relative to projected overall program budgets.

Results

Table A-1 presents the results of the cost-effectiveness analysis for the Residential and Business Programs, as well as for the Enabling Strategies.

All initiatives proposed in this plan are shown to be cost-effective because they have a B/C ratio of more than one based on the TRC test, with the exception of the Solar and Wind Energy Rebate program and the Enabling Strategies. Given the nature of these latter activities, which are basically to set the foundation for long-term energy savings, the investments are not designed to generate significant results during the first Triennial Plan period.

Table A-1: All Strategies – TRC Benefits, Costs and B/C Ratios

	Present Value (Million $2010)			B/C
	Benefits	Costs	Net Benfits	TRC Ratio
Residential Strategies				
Low-income Retrofit	$47.8	$38.9	$8.8	$1.2
Low-income Lighting & Appliances	$10.6	$7.4	$3.2	$1.4
Home Energy Retrofit	$80.0	$71.0	$8.9	$1.1
Lighting, Appliances & Electronics	$206.2	$34.6	$171.6	$6.0
Efficient Energy Systems	$106.1	$45.9	$60.2	$2.3
Old Refrigerator Recycle	$18.3	$6.2	$12.1	$3.0
New Construction	$6.2	$3.8	$2.4	$1.6
Wind & Solar	$2.2	$5.6	-$3.4	$0.4
Sub-total	$477.3	$213.4	$263.9	$2.2
Business Strategies				
Medium and Large Businesses	$121.7	$60.5	$61.2	$2.0
Small Businesses	$99.4	$30.7	$68.7	$3.2
Prescriptives Products	$129.3	$45.5	$83.8	$2.8
Sub-total	$350.4	$136.7	$213.7	$2.6
Enabling Strategies	$11.8	$16.9	-$5.1	$0.7
Total - Triennial Plan	$839.6	$367.0	$472.6	$2.3

*See explanation of Enabling Strategy benefit to cost ratios in Table 25, *supra*.

APPENDIX B: DETAILED TABLES

Table B-1: Annual Program Investments (M$)

	FY 2011	FY 2012	FY 2013	TOTAL
Low-Income Home Energy Retrofit	$27.3	$6.4	$6.4	$40.1
Low-Income Lighting & Appliances	$2.6	$2.6	$2.6	$7.8
Home Energy Retrofit	$3.9	$5.5	$6.3	$15.6
Lighting, Appliances & Electronics	$4.4	$5.7	$5.5	$15.7
Efficient Heating Systems	$2.3	$4.2	$6.8	$13.3
Refrigerator Recycling	$1.7	$2.4	$2.4	$6.5
New Construction	$0.2	$0.6	$1.8	$2.6
Solar & Wind	$0.4	$0.4	$0.4	$1.3
TOTAL RESIDENTIAL	**$42.8**	**$27.8**	**$32.2**	**$102.8**
Small Business	$2.9	$7.7	$7.3	$17.9
Medium and Large Business	$7.1	$8.9	$9.1	$25.1
Prescriptive Program	$9.1	$11.1	$8.3	$28.5
TOTAL BUSINESS	**$19.1**	**$27.7**	**$24.7**	**$71.6**
Financing, Training, Labeling, Market Channel Coordinator	$2.1	$2.1	$2.1	$6.3
Building Codes & Standards	$0.3	$0.3	$0.2	$0.8
Awareness Campaign	$2.4	$2.4	$2.2	$7.0
Innovation	$0.2	$0.3	$0.3	$0.8
Evaluation	$0.6	$0.9	$1.1	$2.6
TOTAL ENABLING	**$5.6**	**$5.9**	**$5.9**	**$17.4**
TOTAL	**$67.5**	**$61.5**	**$62.8**	**$191.8**

Table B-2: Annual Participant Investments (M$)

	FY 2011	FY 2012	FY 2013	TOTAL
Low-Income Home Energy Retrofit	$0.0	$0.0	$0.0	$0.0
Low-Income Lighting & Appliances	$0.0	$0.0	$0.0	$0.0
Home Energy Retrofit	$17.1	$20.0	$22.8	$59.9
Lighting, Appliances & Electronics	$8.4	$10.6	$11.4	$30.5
Efficient Heating Systems	$10.9	$19.1	$35.8	$65.8
Refrigerator Recycling	$0.0	$0.0	$0.0	$0.0
New Construction	$0.0	$0.1	$1.4	$1.5
Solar & Wind	$1.6	$1.6	$1.5	$4.6
TOTAL RESIDENTIAL	$38.0	$51.3	$72.9	$162.3
Small Business	$4.5	$9.5	$9.8	$23.8
Medium and Large Business	$14.4	$16.1	$24.5	$54.9
Prescriptive Program	$12.6	$14.6	$11.4	$38.6
TOTAL BUSINESS	$31.4	$40.2	$45.6	$117.3
Financing, Training, Labeling, Market Channel Coordinator	$0.0	$0.0	$0.0	$0.0
Building Codes & Standards	$0.0	$0.0	$0.0	$0.0
Awareness Campaign	$0.0	$0.6	$0.8	$1.4
Innovation	$0.0	$0.0	$0.0	$0.0
Evaluation	$0.0	$0.0	$0.0	$0.0
TOTAL ENABLING	$0.0	$0.6	$0.8	$1.4
TOTAL	$69.5	$92.2	$119.4	$281.0

Table B-3: Cumulative Annual Carbon Emissions Reductions (Tons)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	4,573	5,637	6,702
Low-Income Lighting & Appliances	1,729	3,458	5,188
Home Energy Retrofit	2,993	8,264	14,472
Lighting, Appliances & Electronics	36,489	82,486	128,445
Efficient Heating Systems	4,046	13,179	27,790
Refrigerator Recycling	3,299	7,873	12,470
New Construction	0	62	716
Solar & Wind	146	294	443
TOTAL RESIDENTIAL	**53,275**	**121,254**	**196,227**
Small Business	4,787	17,829	29,654
Medium and Large Business	9,988	20,099	34,356
Prescriptive Program	12,138	26,855	37,281
TOTAL BUSINESS	**26,913**	**64,782**	**101,290**
Financing, Training, Labeling, Market Channel Coordinator	n.a.	n.a.	n.a.
Building Codes & Standards	n.a.	n.a.	n.a.
Awareness Campaign	n.a.	n.a.	n.a.
Innovation	n.a.	n.a.	n.a.
Evaluation	n.a.	n.a.	n.a.
TOTAL ENABLING	**369**	**2,158**	**5,039**
TOTAL	**80,557**	**188,195**	**302,556**

Table B-4: Cumulative Annual Energy Savings – All Fuels (BBtu)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	81	100	119
Low-Income Lighting & Appliances	14	27	41
Home Energy Retrofit	53	143	250
Lighting, Appliances & Electronics	285	644	1003
Efficient Heating Systems	75	245	520
Refrigerator Recycling	26	61	97
New Construction	0	1	12
Solar & Wind	2	3	5
TOTAL RESIDENTIAL	**535**	**1,226**	**2,047**
Small Business	67	235	353
Medium and Large Business	132	266	470
Prescriptive Program	142	338	436
TOTAL BUSINESS	**341**	**839**	**1,258**
Financing, Training, Labeling, Market Channel Coordinator	0	0	0
Building Codes & Standards	7	13	20
Awareness Campaign	0	19	53
Innovation	0	0	0
Evaluation	0	0	0
TOTAL ENABLING	**7**	**32**	**72**
TOTAL	**883**	**2,097**	**3,378**

**Electric savings converted to Btu's based on a conversion factor of 3,412,000 Btu/MWh.*

Table B-5 - Cumulative Annual Energy Savings - Liquid Fuels (BBtu)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	73	89	106
Low-Income Lighting & Appliances	0	0	0
Home Energy Retrofit	47	125	217
Lighting, Appliances & Electronics	0	0	0
Efficient Heating Systems	70	233	500
Refrigerator Recycling	0	0	0
New Construction	0	1	11
Solar & Wind	1	1	2
TOTAL RESIDENTIAL	**191**	**450**	**836**
Small Business	49	156	194
Medium and Large Business	81	162	305
Prescriptive Program	74	204	224
TOTAL BUSINESS	203	522	723
Financing, Training, Labeling, Market Channel Coordinator	0	0	0
Building Codes & Standards	6	12	17
Awareness Campaign	0	13	35
Innovation	0	0	0
Evaluation	0	0	0
TOTAL ENABLING	**6**	**24**	**52**
TOTAL	**400**	**996**	**1,610**

Table B-6- Cumulative Annual Energy Savings - Natural Gas (BBtu)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	3	4	5
Low-Income Lighting & Appliances	0	0	0
Home Energy Retrofit	2	6	10
Lighting, Appliances & Electronics	0	0	0
Efficient Heating Systems	4	10	17
Refrigerator Recycling	0	0	0
New Construction	0	0	1
Solar & Wind	0	0	0
TOTAL RESIDENTIAL	**10**	**21**	**33**
Small Business	0	5	10
Medium and Large Business	16	32	54
Prescriptive Program	10	20	31
TOTAL BUSINESS	**26**	**58**	**94**
Financing, Training, Labeling, Market Channel Coordinator	0	0	0
Building Codes & Standards	0	1	1
Awareness Campaign	0	1	2
Innovation	0	0	0
Evaluation	0	0	0
TOTAL ENABLING	**0**	**1**	**3**
TOTAL	**36**	**80**	**130**

Table B-7 - Cumulative Annual Energy Savings - Electricity (GWh at the meter)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	2	2	2
Low-Income Lighting & Appliances	4	8	12
Home Energy Retrofit	1	4	6
Lighting, Appliances & Electronics	81	184	287
Efficient Heating Systems	0	1	1
Refrigerator Recycling	8	18	29
New Construction	0	0	0
Solar & Wind	0	0	1
TOTAL RESIDENTIAL	**96**	**216**	**338**
Small Business	5	22	44
Medium and Large Business	10	21	33
Prescriptive Program	17	33	53
TOTAL BUSINESS	**33**	**76**	**129**
Financing, Training, Labeling, Market Channel Coordinator	0	0	0
Building Codes & Standards	0	0	0
Awareness Campaign	0	2	5
Innovation	0	0	0
Evaluation	0	0	0
TOTAL ENABLING	**0**	**2**	**5**
TOTAL	**129**	**294**	**472**

Table B-8 - Cumulative Annual Capacity Savings - Electricity (Summer MW at the meter)

	FY 2011	FY 2012	FY 2013
Low-Income Home Energy Retrofit	0	0	0
Low-Income Lighting & Appliances	1	1	2
Home Energy Retrofit	0	1	1
Lighting, Appliances & Electronics	13	30	46
Efficient Heating Systems	0	0	0
Refrigerator Recycling	1	3	5
New Construction	0	0	0
Solar & Wind	0	0	1
TOTAL RESIDENTIAL	**16**	**36**	**56**
Small Business	2	4	8
Medium and Large Business	2	3	5
Prescriptive Program	2	5	8
TOTAL BUSINESS	**6**	**12**	**21**
Financing, Training, Labeling, Market Channel Coordinator	0	0	0
Building Codes & Standards	0	0	0
Awareness Campaign	0	0	1
Innovation	0	0	0
Evaluation	0	0	0
TOTAL ENABLING	**0**	**0**	**1**
TOTAL	**22**	**49**	**78**

Detailed Table B-9 – Revenue Sources (M$)

	FY 2011	FY 2012	FY 2013	TOTAL
RGGI - Regional Greenhouse Gas Initiative	$8.7	$8.5	$8.2	$25.4
MSHA - including ARRA funds	$27.3	$6.4	$6.4	$40.1
ARRA Stimulus Funds	$14.3	$7.3		$21.6
DOE - State Energy Program	$0.2	$0.2	$0.2	$0.7
FCM - Forward Capacity Market	$1.8	$2.0	$2.2	$6.0
RRF - Renewable Resource Fund	$0.7	$0.4	$0.4	$1.5
Solar/Wind Rebate Assessment	$0.6	$0.6	$0.6	$1.7
SBC - Electricity	$13.2	$20.9	$29.6	$63.7
SBC - Gas (now Unitil)	$0.8	$0.9	$0.9	$2.6
Heating Fuel Savings Charge	$0.0	$14.3	$14.3	$28.6
TOTAL	**$67.5**	**$61.5**	**$62.8**	**$191.8**