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**The Cape Light Compact  
Energy Efficiency Plan:  
2007-2012**

**Providing Comprehensive Energy Efficiency Services  
to Cape Cod and Martha's Vineyard  
Through Municipal Aggregation**

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**March 1, 2007**

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# Forward

Dear Residential and Business Electric Consumers of Cape Cod and Martha's Vineyard:

I am pleased to present, on behalf of the Cape Light Compact ("Compact"), this innovative Energy Efficiency Plan for the years 2007 – 2012. Over many months, the Compact worked with consumers, elected officials, state agencies and many energy efficiency experts to build on the success of and enhance our existing programs so the Compact may bring increased benefits to all customers within the Compact's territory.

Electricity costs in our region have continued to increase and remain volatile in 2006; however, the Compact continues to set new precedents and expand savings for consumers. Preliminary results for 2006 show that over 9,550 customers participated in the energy efficiency programs on Cape Cod and Martha's Vineyard saving the equivalent of over 18,500 MWh of energy. High energy costs, weather effects and the efforts of all consumers to be more efficient in their use of electricity have contributed to about a 4% drop in electricity sales in our region for the calendar year 2006 as compared to 2005.

The Compact's competitive power supply program now supplies power to approximately 170,000 customers. Customers being served under the Compact's basic service power supply program are supporting renewable energy through the Compact's purchase of renewable energy certificates (RECs). The Compact is the only competitive supplier of its size and mix that is complying with the Massachusetts Renewable Portfolio Standards (MARPS) through the purchase of 100% of the RECs required under the MARPS. The Compact also offers customers an opportunity to participate in a clean energy option called *Cape Light Compact Green*<sup>SM</sup>. By choosing to participate in this option, customers are supporting the development of cleaner renewable energy sources located on the Cape and Vineyard, and throughout New England.

Looking ahead to 2007 and beyond, the Compact intends to continue its efforts in delivering competitive power supply programs to Cape and Vineyard customers. The Compact looks forward to continuing to work with the towns on the Cape and Vineyard as they pursue and develop land-based wind turbines. The Compact will also work with local environmental advocacy groups to ensure that the renewable energy produced through these facilities stays on the Cape and Vineyard as part of the Compact's power supply program.

Since July 2001, the Compact has been administering the energy efficiency program on the Cape and Vineyard. During this five and a half year program, the Compact has returned approximately \$26 million, or 100% of the funds collected from electric ratepayers, in the form of energy efficiency services.

From 2007 to 2012 the Compact will continue to deliver these essential energy efficiency services with minimal overhead and at the highest professional standards. Coupled with the Compact's power supply program, the Compact looks forward to continuing to serve consumers through reduced electric bills, lower kWh consumption and environmental benefits in 2007 and beyond.

Sincerely,

Bob Mahoney,  
Chairman, Cape Light Compact

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# 1. Introduction and Overview

## **The Cape Light Compact as Municipal Aggregator**

The Massachusetts Electric Utility Restructuring Act of 1997 allows municipalities that aggregate electricity customers to: (1) formulate an Energy Efficiency Plan, (2) submit the plan to town meetings for approval, (3) submit the plan to the Massachusetts Department of Telecommunications and Energy (the Department) for review and certification; and (4) recover the energy efficiency funds raised from consumers for use in implementing local energy efficiency programs.

The Cape Light Compact (the Compact) was formed in 1997 following two years of study and votes of town meeting, boards of selectmen, and town council. It is organized through a formal intergovernmental agreement signed by the towns and Barnstable and Dukes counties. The Compact's Aggregation Plan was approved by the Department in DTE 00-47 (August 10, 2000).

The purpose of the Compact, among other things, is to advance the interests of consumers in a competitive electric supply market, including the promotion of energy efficiency. Each participating municipality has a representative on the Compact Governing Board, which sets policy and works with technical and legal support to put the Compact programs in place.

The Energy Efficiency Committee of the Compact Governing Board unanimously approved this Energy Efficiency Plan (EEP) on November 8, 2006. The Compact held a public informational meeting on February 1, 2007, to review and accept comments on the 2007-2012 EEP and made available all public informational meeting documents on the website, [www.capelightcompact.org](http://www.capelightcompact.org).

## **Overview of the Energy Efficiency Programs**

The programs included in this EEP are designed to advance consumer awareness and adoption of a wide variety of energy efficiency measures. Energy efficiency initiatives at the community level present opportunities for extensive local involvement, and help develop an energy efficiency ethic that can support market transformation beyond the implementation of individual technologies or practices, resulting in long-term, sustained energy efficiency savings.

The Compact's programs are designed to comply with state energy efficiency goals and policies. In general, the programs are structured according to customer types, as well as the types of electricity end-uses utilized by customers. In this way, the marketing and delivery of the programs can address the unique interests and market barriers of each customer type, as well as the unique opportunities and challenges of each end-use type.

The programs are broadly divided into three areas: (a) residential customers, (b) low-income customers, and (c) commercial and industrial customers (including municipal and

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government customers). In addition, there is a core public education and marketing program that underlies the delivery of each of the Compact's programs.

The Energy Efficiency Plan includes the following programs (*program enhancements as compared to the Phase III Plan are noted by bold and italic text*):

- Massachusetts New Homes with ENERGY STAR<sup>®</sup> Program, which provides home buyers, home builders, and construction trade allies with technical assistance and financial incentives to increase the efficiency of homes that are newly built or undergo major renovations. *Newly redesigned in 2007, the program includes enhanced rebates for participating homes that exceed residential energy code requirements.*
- The Residential Massachusetts Home Energy Services Program ("MassSAVE"), which provides interested residential customers with a home energy audit and financial incentives for numerous electric and non-electric efficiency measures. *In 2007 the Compact is offering on a pilot basis for a limited time an increase in customer incentives from 50% to 75% of the value of eligible thermal measures for customers with household incomes between 60% and 80% of median income to assist customers who wish to implement cost-effective measures. In addition, in 2007, the Compact is adding a central air conditioning or heat pump tune-up offering to encourage customers to maximize the efficiency of and reduce energy demand of their existing HVAC systems.*
- The Residential ENERGY STAR Products and Services Program, which seeks to increase the availability and use of efficient lighting and appliances. This program is used to implement the Northeast Energy Efficiency Partnerships Appliance and Lighting ("NEEP") initiative and other regional market transformation efforts.
- Residential High Efficiency Central Air Conditioning Program ("MA COOL SMART" with ENERGY STAR). *Due to budget constraints, the Compact closed availability of this program in March 2006 and is not planning to participate in 2007. The Compact will re-evaluate participation in future program years.*
- The Low-Income Single Family Program, which provides low-income customers in single-family dwellings with assistance in purchasing and installing efficient lighting, appliances, and weatherization measures. *The Compact has been working closely with the program vendor, the Low Income Energy Affordability Network ("LEAN") best practices working group and the Department of Housing and Community Development to increase program funding to 90% of the total low income budget dedicated to single family in 2007.*
- The Low-Income Multi-Family Program, which provides owners and managers of low-income multi-family dwellings with assistance in purchasing and installing efficient lighting, appliances and space heating measures. *Because low-income multifamily projects are classified as commercial accounts, on a case-by-case basis, the Compact may allocate additional funds, from the Commercial and*

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***Industrial (“C&I”) Sector, toward low-income multi-family projects based on availability of funds and building characteristics.***

- The Low-Income New Construction Program, which provides low-income housing development agencies, weatherization assistance program (“WAP”) providers, and residential construction trade allies with incentives to increase the home energy rating of new low-income housing. ***The Compact is offering this service through the same vendor that delivers the Residential MA New Homes with ENERGY STAR Program. This new streamlined process will help the low-income vendor to reduce overhead costs and ultimately put more funds into the installation of energy efficiency measure. The Residential New Homes with ENERGY STAR vendor will work with the local low-income vendor to insure that outreach and new construction leads are fully served.***
- The Commercial and Industrial (“C&I”) New Construction Program, which provides technical assistance and financial incentives to increase the efficiency in the construction, renovation, and/or remodeling of all commercial, industrial, government and multi-family housing facilities. ***In 2007 the Compact is offering assistance through its sponsorship of Advanced Buildings, a nationwide program offered by the New Buildings Institute, White Salmon, WA. Advanced Buildings is a resource to improve the way buildings are designed, built and used. It provides design materials, training, marketing strategies and technical support for Architects, Engineers and Building Committees contemplating new construction in the Cape Light Compact service territory.***
- The Large Commercial and Industrial Retrofit Program, which provides technical and financial assistance to medium and large commercial and industrial customers seeking to replace of existing operating equipment and processes in their facilities with high-efficiency alternatives.
- The Small Commercial and Industrial Retrofit Program, which provides technical assistance, financial incentives and direct installation to C&I customers whose peak demands are less than 100 kW to replace existing operating equipment and systems with high-efficiency equipment.
- The Government Agencies Program, which provides technical and financial energy efficiency assistance to all government facilities, including municipal, state and federal facilities.
- The Commercial and Industrial Products and Services Program, which seeks to increase the availability and use of more efficient motors, lighting designs, and HVAC systems. This program is used to implement NEEP and other regional market transformation initiatives.
- Streamlined C&I Rebate Applications ***In 2007 the Compact is streamlining its rebate applications with the goal of alignment with the Massachusetts electric distribution companies in order to make the application process easier for***

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*customers and vendors that operate over multiple service territories. The Compact has joined the Massachusetts electric distribution companies and KeySpan in sponsoring the Massachusetts Energy Efficiency Partnership (MAEEP) housed at the University of Massachusetts, Amherst, in order to provide sophisticated training and technical assistance to the C&I sector.*

In addition, the public education and marketing program is designed to utilize the extensive network and opportunities that the Compact has at the community and local government level. Public education and marketing support are designed to help overcome common barriers of energy efficiency awareness and facilitate participation in the Compact's programs.

### **A Multi-Year Energy Efficiency Plan**

This Energy Efficiency Plan is a multi-year plan, running from 2007 through 2012, which is the remaining period of the energy efficiency system benefits charge in Massachusetts.

The purpose of filing a multi-year plan is to provide some long-term perspective to the Compact's energy efficiency activities. The programs described in this plan provide a blueprint for the next six years. During that time, the Compact may make some significant changes to certain programs, in response to market developments or other changes to the energy efficiency industry in Massachusetts. In these cases, the Compact will submit an updated EEP for comment by the Division of Energy Resources ("DOER") and for approval by the Department. In each year of this planning period, the Compact will file an updated budget and screening analysis, consistent with the analyses and schedules of the other energy efficiency Program Administrators in the state.

The sections below provide forecasts of budgets and program goals for the multi-year study period. For budgets, the Compact assumes that the electricity sales in the member towns will continue to increase at a modest rate of 0.3% per year. These budgets are allocated across the Residential, Low-Income, and Commercial & Industrial sectors using the same approach that is used for 2007 budgets. The forecast of program goals takes a similar approach, where savings and net benefits are assumed to grow at the same rate as program budgets.

## 2. Program Goals

Table 2.1 presents the Compact's program goals for 2007. All the efficiency programs combined are expected to save roughly 11,458 MWh per year, leading to lifetime energy savings of 106,389 MWh. The efficiency programs are also expected to save 1.6 MW in annual summer demand savings, leading to lifetime summer demand savings of 18.8 MW. The Compact's investment of roughly \$5 million in energy efficiency activities is expected to result in a total of \$13.8 million in net benefits to the electricity system and the customers on Cape Cod and Martha's Vineyard.

**Table 2.1 Program Goals for 2007**

Sector	Lifetime Energy Savings (MWh)	Lifetime Summer Demand Savings (kW-years)	Value of Non-Electric Benefits (\$000)	Total Net Benefits (\$000)
Residential	56,435	7,680	4,628	7,322
Low-Income	5,488	305	1,606	1,416
Commercial & Industrial	44,465	10,768	383	4,990
Total	106,389	18,754	6,617	13,826

Table 2.2 presents a forecast of program goals for the multi-year study period. Electricity sales to Compact member towns are assumed to increase at an average rate of 0.3% per year. Program budgets are assumed to increase at the same rate, leading to all of the energy savings goals also increasing at that same rate. While it is likely that some of these goals will vary over time due to variations in efficiency program activity and variations in electricity sales, the forecast is nonetheless indicative of the general trend of the Compact's program goals.

**Table 2.2 Program Goals for 2007 through 2012 – All Sectors**

Year	Lifetime Energy Savings (MWh)	Lifetime Summer Demand Savings (kW-years)	Value of Non-Electric Benefits (\$000)	Total Net Benefits (\$000)
2007	106,389	18,754	6,617	13,826
2008	106,708	18,810	6,637	13,867
2009	107,028	18,867	6,657	13,909
2010	107,349	18,923	6,677	13,951
2011	107,671	18,980	6,697	13,993
2012	107,994	19,037	6,717	14,035

### 3. Program Budgets

Table 3.1 presents a summary of the Compact’s total energy efficiency budgets for the multi-year study period of 2007 through 2012. Electricity sales to the Compact member towns have been essentially flat since 2003, so the Compact assumes that sales in 2007 will increase by 0.1% relative to 2006, and that sales in all following years will increase by 0.3%. In future budget updates, the Compact will modify its budget forecast using the most recent sales information available.

**Table 3.1 Program Budget Summary: 2007 through 2012**

	2007	2008	2009	2010	2011	2012
<b>Total Estimated Collections</b>						
Forecasted MWh Sales						
Residential	1,151,001	1,154,454	1,157,917	1,161,391	1,164,875	1,168,370
Commercial and Industrial	941,728	944,553	947,387	950,229	953,080	955,939
Total Forecasted Sales (MWh)	2,092,729	2,099,007	2,105,304	2,111,620	2,117,955	2,124,309
Efficiency charge (mills/kWh)	2.5	2.5	2.5	2.5	2.5	2.5
Total Estimated Collections (\$)	5,231,822	5,247,518	5,263,260	5,279,050	5,294,887	5,310,772
<b>Total Estimated Allocations</b>						
Residential	2,228,756	2,235,443	2,242,149	2,248,875	2,255,622	2,262,389
Low-Income	648,746	650,692	652,644	654,602	656,566	658,536
Commercial and Industrial	2,354,320	2,361,383	2,368,467	2,375,573	2,382,699	2,389,847
Total	5,231,822	5,247,518	5,263,260	5,279,050	5,294,887	5,310,772

The Massachusetts Restructuring Act requires that low-income customers receive at least 20% of the residential efficiency budget, or approximately \$445,751, and in no event less than the amount funded by a charge of 0.25 mills/kWh, applied to sales of the customers on the low-income discount rate, or about \$523,182. The low-income customers (defined as within 60% of median income) in Compact member towns contributed roughly 11% of total electricity sales for all consumers on the Cape and Vineyard, whether served by the Compact’s competitive supplier, NSTAR or some other supplier. Applying the full 2.5 mills/kWh efficiency charge to this portion of electricity sales results in low-income program funding that is higher than both of these two statutory funding “floors.” The Compact has chosen to use this higher means, or \$648,746, of allocating funds to the low-income sector. Furthermore, in 2006 and 2007 the Compact allocated slightly more than this amount to the low-income efficiency programs, to meet the demand for program services as estimated by the Housing Assistance Corporation.

Table 3.2 presents the details of the Compact’s efficiency budget, by program. The program costs are broken out by planning and administration; marketing; financial incentives to customers; sales, technical assistance and training; and evaluation and market research. The Compact does not require shareholder performance incentives, thus these are not included in the budget.

The “program planning and administration” column includes the costs of the Compact’s Management Contractor, technical support consultants, legal support, a portion of the Compact in-house staff members compensation, and program-specific costs such as membership dues to the LEAN and NEEP.

The “program marketing” column includes all the costs incurred by the Compact to conduct its program marketing and education campaign. The education program is described in Chapter 8 of this EEP. This column does not include any of the marketing expenses incurred by the program vendors.

**Table 3.2 Program Budget Details for 2007**

	Program Planning & Admin	Program Marketing	Customer Incentives	Sales, Tech Assist & Training	Evaluation and Market Research	Total Program
<b>Residential Programs</b>						
LI Single Family	71,632	32,723	324,140	130,020	25,358	583,871
LI Multi-Family	7,959	3,636	39,333	11,129	2,818	64,875
<u>Total Low-Income</u>	<u>79,591</u>	<u>36,359</u>	<u>363,472</u>	<u>141,149</u>	<u>28,175</u>	<u>648,746</u>
New Construction	27,088	14,398	181,907	80,701	34,378	338,472
P&S - Lighting	34,574	15,032	176,981	112,824	24,758	364,169
P&S - Appliances	33,412	14,308	165,917	106,022	27,823	347,482
P&S - HVAC	6,824	2,717	29,903	20,730	6,628	66,801
MassSAVE	98,930	44,101	537,962	294,414	36,426	1,011,832
<u>Total Non Low-Income</u>	<u>200,829</u>	<u>90,556</u>	<u>1,092,669</u>	<u>614,690</u>	<u>130,013</u>	<u>2,128,756</u>
<u>Total Residential</u>	<u>280,419</u>	<u>126,916</u>	<u>1,456,141</u>	<u>755,839</u>	<u>158,188</u>	<u>2,777,502</u>
<b>Commercial &amp; Industrial Programs</b>						
New Construction	6,389	3,396	58,489	11,439	1,875	81,587
Large Retrofit	9,448	5,022	58,351	24,316	22,773	119,910
Small Retrofit	78,375	41,659	721,283	112,439	28,000	981,756
Government New Construction	3,599	1,913	33,706	4,811	1,056	45,086
Government Large Retrofit	28,795	15,305	255,459	52,682	8,450	360,691
Government Small Retrofit	48,861	25,971	461,971	55,907	19,339	612,048
Products and Services	22,499	2,391	19,550	7,480	1,320	53,241
<u>Total Commercial &amp; Industrial</u>	<u>197,966</u>	<u>95,658</u>	<u>1,608,809</u>	<u>269,074</u>	<u>82,813</u>	<u>2,254,320</u>
<b>Total Compact</b>	478,385	222,574	3,064,951	1,024,913	241,000	5,031,822
Percent of Total Program	9.5%	4.4%	60.9%	20.4%	4.8%	100.0%

The “customer incentives” column includes the costs that are used to provide direct financial support to customers for the installation of efficiency measures. The “sales, technical assistance and training” budgets include the costs incurred by the program vendors to market, deliver, and provide technical assessments of efficiency measures. It also includes the costs of the Compact’s quality control initiatives and a portion of the costs of the Compact in-house staff members. The combination of these two budgets provides an indication of the portion of funds that are used directly to install energy efficiency measures. These budgets combined represent over 81% of the total energy efficiency budgets.

## 4. Program Cost-Effectiveness

The costs and benefits of the Compact's efficiency programs are summarized in Table 4.1. The costs and benefits are calculated according to the total resource cost (TRC) test, as required by the Department in DTE 98-100. The TRC test requires that the cost of each efficiency measure includes the cost to the Compact, the cost to the participating customer, and any other costs associated with installing the measure. The TRC test also requires that the program benefits include certain non-electric benefits, such as non-electric resource savings (e.g., oil, gas, water), and customer benefits (e.g. reduced operation and maintenance (O&M) costs), and several societal benefits associated with low-income programs. Where possible, these costs and benefits have been included in the results presented below.

As indicated in Table 4.1, the Compact's energy efficiency programs are very cost-effective. On average, all of the Compact's energy efficiency programs combined are estimated to have a benefit-cost ratio of roughly 2.9.

**Table 4.1 Program Cost-Effectiveness**

BCR Activity	TRC Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)
<b>Residential</b>					
A02a Residential Lost Opportunity	1.65	\$778	\$1,980	\$1,201	\$338
A03a Residential Retrofit 1-4	2.08	\$1,564	\$3,007	\$1,443	\$1,079
A04a Residential Lighting	7.40	\$3,071	\$3,551	\$480	\$364
A04b Residential Appliances	2.96	\$2,007	\$3,033	\$1,026	\$347
<b>Subtotal: Residential</b>	<b>2.79</b>	<b>\$7,420</b>	<b>\$11,571</b>	<b>\$4,150</b>	<b>\$2,129</b>
<b>Low Income</b>					
B03a Low-Income Retrofit 1-4	3.14	\$1,250	\$1,833	\$584	\$584
B03b Low-Income Retrofit Multifamily	3.57	\$167	\$232	\$65	\$65
<b>Subtotal: Low Income</b>	<b>3.18</b>	<b>\$1,416</b>	<b>\$2,065</b>	<b>\$649</b>	<b>\$649</b>
<b>Com/Ind</b>					
C02a C&I Lost Opportunity	2.09	\$240	\$460	\$220	\$180
C03a Large C&I Retrofit	2.87	\$1,036	\$1,591	\$555	\$481
C03b Small C&I Retrofit	3.05	\$3,713	\$5,529	\$1,816	\$1,594
<b>Subtotal: C&amp;I</b>	<b>2.93</b>	<b>\$4,990</b>	<b>\$7,580</b>	<b>\$2,591</b>	<b>\$2,254</b>
<b>Grand Total</b>	<b>2.87</b>	<b>\$13,826</b>	<b>\$21,216</b>	<b>\$7,390</b>	<b>\$5,032</b>

The direct economic benefits of the efficiency programs are substantial. With an investment of roughly \$7 million (from both the Compact's funds and the participants' contributions), these programs will result in over \$21 million in reduced energy costs and other benefits for Cape Cod and Martha's Vineyard. This means that the *net* benefits of these programs will be nearly \$14 million. No other investment in electricity resources and infrastructure offers this type of return for the investment.

In addition, these results do not account for the indirect economic and employment benefits that occur when lower electric bills result in increased disposable income and improved productivity for businesses and industries.

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Furthermore, all of the Compact’s energy efficiency programs result in significant environmental benefits that are not accounted for in the cost-benefit results above. By helping to avoid the construction and operation of power plants within New England, these programs can help mitigate some of the gravest environmental threats facing our society today, including climate change, ground-level ozone, acid rain, and damages from fine particulate matter, mercury and other air toxics. Table 4.2 presents an estimate of the key air emissions that are avoided by the Compact’s energy efficiency programs.

**Table 4.2 Air Emissions Avoided by the Compact’s Energy Efficiency Programs**

Avoided Emissions (lbs)	SO2	NOX	CO2
2007 Annual Savings	27,103	7,210	14,713,025
2007 Lifetime Savings	250,469	66,627	135,969,023
2007-2012 Annual Savings	163,842	43,584	88,942,891

## 5. Residential Programs

### 5.1 Introduction and Overview

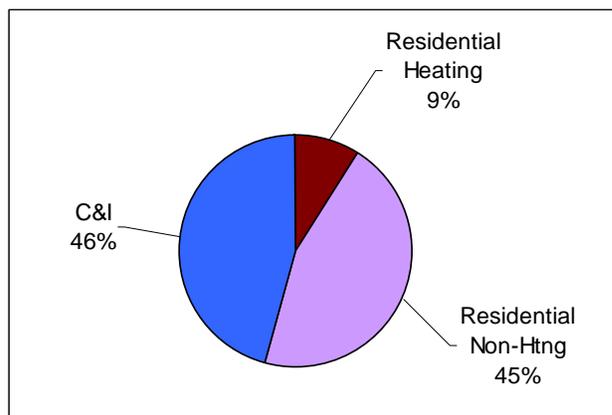
There were roughly 174,900 residential electricity customers in the Compact's member towns in 2006, and they consumed approximately 1,090 GWh of electricity throughout the year. Residential customers represent 87 percent of all Compact electricity customers, but their electricity consumption represents only 54 percent of total electricity consumption, due to the lower amount of electricity consumed per customer.

**Table 5.1 Residential Customers and Sales in 2006**

	Number of Customers	Percent of Class	Percent of Total	Sales (MWh)	Percent of Class	Percent of Total
Low-Income	29,028	16.6%	14.4%	221,322	20.3%	11.0%
Non-Low-Income	145,841	83.4%	72.4%	868,933	79.7%	43.2%
Electric Heat	19,604	11.2%	9.7%	186,771	17.1%	9.3%
Non Electric Heat	155,265	88.8%	77.1%	903,485	82.9%	45.0%
Total Residential	174,869	100.0%	86.8%	1,090,256	100.0%	54.3%
Total Compact	201,356	na	100%	2,009,527	na	100%

Table 5.1 provides a breakdown of different types of residential customers in the Compact's member towns. Low-income customers are roughly 14% of the total customers, and consume roughly 11% of the total electricity sold within the Compact. Customers with electric space heat (both low-income and non-low-income) are responsible for roughly 9% of the total electricity consumption within the Compact.

**Figure 5.1 Compact Sales Breakdown**



The Compact's residential energy efficiency programs are designed to address all of the main residential electricity end-uses, including space heating, water heating,

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refrigeration, lighting and major appliances. They are also structured to be available to all of the various customer types, including low-income, new customers, high-use customers, and moderate-use customers. In addition, the programs are linked together, so that customers participating in one residential program will be informed of, and encouraged to participate in, other residential programs.

## **5.2 Residential New Construction Program**

### **Primary Objective**

To capture lost opportunities and encourage the construction of energy efficient homes.

### **Initially Offered**

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### **Joint Vs Sponsor-Specific Offering**

Joint.

### **Program Design**

Builders can choose from three participation paths. All three paths include direct installation of ENERGY STAR<sup>®</sup> qualified CFL bulbs in all appropriate sockets, on-site training and a final verification inspection.

CODE Plus/Energy Efficiency Measure Upgrade path: This path offers a prescriptive package to builders, developers, architects, or homeowners interested in building energy-efficient housing, but not necessarily achieving ENERGY STAR certification. Following this path requires:

- No plan review or energy modeling;
- Allows builder to choose from a list of energy-efficient or ENERGY STAR measures; and
- A portion of the cost of installed energy-efficiency measures will be reimbursed.

ENERGY STAR certification--Performance Path: Following this path requires:

- A HERS index score of 85 or less;
- Meeting envelope leakage standards and, if applicable, duct leakage standards; and
- Completing a thermal bypass inspection list.

ENERGY STAR certification—Builder Option Package (BOP): Following this path requires:

- 
- Meeting a list of prescribed standards, all of which must be met, including:
  - Meeting envelope leakage standards and, if applicable, duct leakage standards; and
  - Completing a thermal bypass inspection list.

### **Target Market**

Builders, architects, designers, trade allies and others involved in the construction of single family homes or three-story or fewer multi-family buildings, and home buyers.

### **Marketing Approach**

Direct builder outreach, website, newsletter, public relations activities including meeting presentations, home and trade show exhibits, participation in builder conferences. Duct sealing outreach and training to educate builders, architects, and industry players will also be provided. Individual program sponsors (“Sponsors”) may provide target marketing as needed to meet program participation and spending goals.

### **Target End Uses**

Energy efficient building shell measures, proper duct and air sealing techniques, and mechanical ventilation.

### **Recommended Technologies**

Recommended technologies include:

- ENERGY STAR heating and cooling systems, lighting, appliances and windows;
- Increased levels of insulation;
- Improved construction techniques to minimize air leakage, infiltration, and heat loss;
- Improved construction techniques to minimize duct leakage ; and
- In partnership with the Massachusetts Technology Collaborative, renewable technologies including solar water heating and photovoltaics where practical.

## Financial Incentives

Package:	ENERGY STAR Performance Path or BOP	Code Plus #2	Code Plus #1
Requirements:	Meet minimum specifications of ENERGY STAR	Air Seal (6 ACH CFM 50) Duct Seal (8% Leakage**)	Air Seal (8 ACH CFM 50) Duct Seal (10% Leakage**)
Amount*:	\$750 per qualifying home	\$325 per qualifying home	\$250 per qualifying home
Other:	FREE Compact Fluorescent Lights (CFL) Eligible GasNetworks rebates FREE home verification	FREE CFL's Eligible GasNetworks rebates FREE home verification	FREE CFL's Eligible GasNetworks rebates FREE home verification

\* Rebate amounts are subject to change and may include additional incentives for low income eligible homes. \*\* Duct leakage rate is % of floor area leakage to outdoors tested at 25 Pascal pressure.

## Delivery Mechanism

The Program is administered by each Program Administrator within its service territory and coordinated regionally through the Joint Management Committee (JMC). All aspects of the 2007 program year were put out to bid in 2006.

## Joint Program Administrator Enhancements Planned for 2007

Introduce the CODE Plus/Energy Efficiency Measure Upgrade path for homes either not achieving, or not striving to achieve, ENERGY STAR certification.

## Sponsor Specific Elements

The Compact plans to leverage grant funds received from MTC to introduce a multi-year green affordable housing initiative (GAHI) that will promote more sustainable green building practices and include the installation of renewable energy components (such as photovoltaic electric systems). The GAHI grant totals approximately \$1.5 million and will extend the Residential New Construction Program benefits to more homes.

The Massachusetts Program Sponsors sought proposals from qualified manufacturers and/or vendors to receive and fulfill ENERGY STAR qualified lighting orders as part of statewide direct install lighting programs. These programs are made available to residential electric customers throughout Massachusetts and include the following programs: ENERGY STAR New Construction, MassSAVE, and low-income assistance programs.

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## **5.3 Massachusetts Home Energy Services Program ("MassSAVE")**

### **Primary Objective**

Educate residential customers about how to save energy in their homes, help residential customers who plan to invest in energy efficiency upgrades identify appropriate upgrades, and encourage customers to install recommended upgrades.

### **Initially Offered**

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### **Joint Vs Sponsor-Specific Offering**

Joint.

### **Program Design**

The MassSAVE Program is designed to provide a "one-stop shopping" service to help non-low income customers interested in making energy efficiency improvements to their homes identify and install cost effective improvements that will help them control their future energy costs. Low income customers are referred to appropriate low-income programs.

Two tiers of service are available. All customers who call the MassSAVE toll-free number to learn about the program are asked several questions to determine their needs and general interest in making energy-efficient improvements. Customers who are not ready to invest in energy efficiency upgrades receive Tier One services. Customers who are ready to invest in energy efficiency upgrades are eligible for Tier Two services.

- The Tier One service provides customers with general energy efficiency information and education. This service also attempts to identify the customer's specific needs and direct them to other energy efficiency programs and/or other Sponsor resources as appropriate.
- Tier Two services include an on-site Home Energy Assessment (HEA) to identify and recommend appropriate energy efficiency upgrades. Auditors also explain the contractor services that will be needed to install recommended measures and describe the financial incentives available for installing recommended measures. The program offers an incentive of 50% of the installed cost of recommended measures, up to \$1,500, to encourage customers to install recommended measures. In addition, incentives for high-efficiency gas heating and water heating systems available through GasNetworks help leverage program resources. The HEA also includes a lighting component where, with the customer's permission, CFL bulbs will be installed for free in all appropriate locations, and free installation of the following instant saving measures that can be easily installed at the time of the HEA: low-flow shower heads, faucet aerators and weather stripping.

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The 2006 MassSAVE program promoted and delivered the legislated statewide HEAT Loan program as a resource to help make energy saving improvements more affordable to program participants. As of now there has been no decision on additional funding for 2007. Should funds remain at the end of 2006, the assumption is that, at minimum, there will be some level of funds carried over to satisfy any outstanding loan obligations.

All customers who have an HEA and install qualified recommended measures are eligible to apply for participation in the statewide HEAT Loan Program. The HEAT Loan Program provides qualifying customers with no-interest or low-interest loans (up to 3%) for the installation of eligible energy-efficient improvements in their homes. Loans up to \$15,000 with terms up to seven years are available. Eligible energy-efficiency improvements include:

- Attic, Wall, and Basement Insulation
- High Efficiency Heating Systems
- High Efficiency Domestic Hot Water Systems
- Solar Hot Water System
- ENERGY STAR® Windows
- ENERGY STAR Thermostats

#### **Target Market**

All non-low income residential customers, regardless of heating fuel, interested in making their homes more energy efficient and living in single family homes or one to four unit multifamily facilities.

#### **Marketing Approach**

Statewide MassSAVE toll-free number, the MassSAVE website, annual bill inserts and media advertising (radio and/or print advertising). All marketing approaches include the statewide MassSAVE toll-free number for interested customers to call for more information. Individual Sponsors may conduct additional marketing and may ramp their marketing up or down as needed to meet participation and budget goals.

#### **Target End Uses**

The Program targets energy saving improvements in the house shell and hot water/heating systems, and energy-efficient lighting.

#### **Recommended Technologies**

Recommended technologies include air sealing, duct sealing, insulation, refrigerators, thermostats, ventilation, solar domestic hot water systems, and heating/cooling systems. The Program also provides general energy efficiency and solar domestic hot water information to consumers on request.

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## Financial Incentives

Recommended major building shell and renewable measures:

- 50% of the cost of installing recommended measures up to a maximum of \$1,500.

The following are optional incentives that may be offered by the individual program sponsors at the agreed upon incentive levels.

- ENERGY STAR® refrigerator replacement incentive (for eligible inefficient refrigerators, as determined through the energy assessment): \$150.

Measure	Gas Rebate	Oil/Propane Rebate	A.F.U.E.
High Efficiency Furnace	\$100	\$300	Gas: 90% Oil: 83%
High Efficiency Furnace with ECM	\$400	\$400	Gas: 92% Oil: 83%
High Efficiency Steam Boilers	\$200	\$400	82%
High Efficiency Hot Water Boilers	\$500	\$500	85%
High Efficiency Hot Water Boilers	\$800	-----	90%
ENERGY STAR® Thermostats	\$25 ( $\leq 2$ )	\$25 ( $\leq 2$ )	NA
ENERGY STAR® Windows (inc. Skylights)	\$10	\$10	NA
ENERGY STAR® Sliders	\$30	\$30	NA

## Delivery Mechanism

The Program is administered by each Program Administrator within its service territory and coordinated statewide through the RCS Network, a coalition of RCS/MassSAVE program administrators and program vendors working together with the DOER. The Program is delivered by independent contractors selected through a competitive bidding process.

Work completed by MassSAVE energy service providers and their subcontractors must meet standards set by the Building Performance Institute (BPI) or similar standards set by the individual Sponsors. These standards require a systematic approach to home improvement that addresses all aspects of the building systems.

RCS Network members apply a “best practices” approach and work together to make quality control an integral part of the MassSAVE program.

## Joint Program Administrator Enhancements Planned for 2007

No major program changes are planned for 2007.

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### **Sponsor Specific Elements**

The Compact will promote on a test basis, an increased incentive level called the “75% pilot” that will provide for 75% of the cost of recommended measures with no cost limit provided the customer household income is 80% of median income or less for non-low-income customers. This pilot program is designed to assist customers who recognize the benefits of energy efficiency measures but still have financial constraints to implement.

The Compact will also offer, as part of the MassSAVE home energy assessment, central air conditioning or heat pump system efficiency measures to encourage customers to maximize the efficiency and reduce energy demand of existing HVAC systems. This new HVAC “tune-up” service may include the following elements:

1. Correcting air flow by means of: cleaning indoor coil and blower vanes; adjusting the blower speed and time delay settings; replacing air filters and removing duct restrictions.
2. Correcting refrigerant charge to the proper amount. When complete evacuation of charge is necessary, refrigerant will be reclaimed and new proper charge weighed in, under strict accordance with EPA and manufacturer requirements.
3. Make adjustments at the outdoor (condenser) unit. These will include cleaning the outdoor coil and adjusting the defrost timer, if necessary.
4. Make improvements in control through an evaluation of the indoor thermostat wiring connections to ensure that all stages operate correctly. In the case of heat pumps, additional improvements may include: ensuring that the electric resistance heat is not wired to come on with the first stage of heat pump operation; and, the installation of an outdoor cut-out thermostat (if not already existing and properly functioning) to keep resistance heat from energizing in mild weather. This thermostat would be set to keep the resistance heat from functioning when the outdoor temperature exceeds 35 degrees F, except while in emergency heat mode.
5. Eligibility for this HVAC “tune-up” service will not apply to any units under existing warranty of service contract. This is a one-time service designed to assist customer realize benefits of improved efficiency through proper maintenance and regular service.
6. Other cost-effective incentives may be offered depending on level of customer interest and budget availability.

The Massachusetts Program Sponsors sought proposals from qualified manufacturers and/or vendors to receive and fulfill ENERGY STAR<sup>®</sup> qualified lighting orders as part of statewide direct install lighting programs. These programs are made available to residential electric customers throughout Massachusetts and include the following programs: ENERGY STAR New Construction, MassSave, and low-income assistance programs.

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## 5.4 Residential Energy Star Lighting Program

### Primary Objective

Increase consumer awareness of the importance and benefits of purchasing ENERGY STAR<sup>®</sup> lighting products and expand the availability, consumer acceptance, and use of energy-efficient hard-wired, screw-based, and portable lighting technologies.

### Initially Offered

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### Joint Vs Sponsor-Specific Offering

Joint.

### Program Design

The Residential ENERGY STAR lighting program includes interaction with all the key market players in the residential lighting market, from manufacturers to retail sales staff, with the emphasis on involving upstream market players to leverage program resources. Ongoing market data collection covering overall lighting market conditions and product availability, market share and pricing helps ensure the program Sponsors are aware of changes occurring in the residential lighting market. Awareness of current and changing market conditions enables program Sponsors to adapt program offerings as needed to maintain momentum in increasing the market share of energy-efficient lighting products. The program also supports the Program for the Evaluation and Analysis of Residential Lighting (PEARL), which was created to independently verify ENERGY STAR standards on randomly tested lighting products.

The program includes several components designed to educate consumers about the benefits of ENERGY STAR lighting products and to make ENERGY STAR lighting products more affordable.

- A variety of rebate approaches make products more affordable for consumers. These approaches include instant coupons and Negotiated Cooperative Promotions (NCP) that encompass manufacturer and retailer buy-down, markdown and creative coupon promotions. While the buy-down approach has become increasingly popular with manufacturer and retail partners, the program Sponsors are emphasizing the markdown and creative coupon promotions because product sales data and payments for these approaches are based on actual sales data; buy-down data and payments are based primarily on shipping and receiving documentation. NCPs now account for the large majority of products moved through the program—over 90% in 2005. Instant rebate coupons allow retail outlets that are not able or not willing to share sales data to participate in the program.
- The Internet/Mail Order Sales Channel provides education on energy-efficient lighting, offers rebates on a wide selection of ENERGY STAR lighting products,

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introduces new products that may not be available at most retailers, and includes a variety of sometimes hard to find pin-based replacement bulbs for hardwired CFL fixtures. Internet sales account for nearly 40% of all this component's sales. Recognizing the importance of internet sales, the Sponsors are striving to improve the internet/mail order website as an educational tool for consumers. One example of this is tying the internet/mail order web site ([www.estarlights.com](http://www.estarlights.com)) more closely to the overall program web site ([www.myenergystar.com](http://www.myenergystar.com)). Also, Sponsors expect to devote more resources to enhance the overall online mechanism with the goals of increasing product variety, availability and sales.

- The program provides consumer education through not only the Internet/Mail Order Sales Channel, but the [www.myenergystar.com](http://www.myenergystar.com) website, by point of purchase displays in retail stores and by training retail sales staff to provide accurate information to customers and help them select products appropriate for their specific needs.

### **Target Market**

The target market is all residential customers.

### **Marketing Approach**

Multiple marketing approaches are employed to increase general consumer awareness of the benefits of using ENERGY STAR lighting products, make it easy for consumers to identify qualifying products when shopping in retail establishments, and provide access to new products. In addition to direct advertising targeting consumers, these approaches include supporting national ENERGY STAR marketing campaigns, such as the DOE and EPA's Change a Light Pledge campaign, and working with industry partners at all levels of the retail supply chain.

Specific marketing activities targeting consumers include:

- Retail marketing and point-of-purchase displays;
- Media advertising—print and radio;
- Internet/Mail Order Sales Channel;
- Web site ([www.myenergystar.com](http://www.myenergystar.com)); and
- Public relations.

Work with industry partners at all levels of the retail supply chain includes:

- Leveraging marketing budgets through cooperative promotions with retailers, distributors, and manufacturers including marketing promotions, co-operative advertising, and via special events at retail stores and the community level.
- Training and supporting retail sales staff to ensure they are able to tell consumers about the benefits of using ENERGY STAR lighting products and help them choose products that will best meet their particular needs, which will result in satisfied consumers likely to purchase additional ENERGY STAR lighting products.

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## Target End Uses

Residential lighting.

## Recommended Technologies

Recommended ENERGY STAR lighting products include compact fluorescent light (CFL) bulbs, fluorescent fixtures (exterior, interior, torchieres, ceiling fans with light kits and ventilation fans with light kits), and fluorescent torchiere, floor, and table lamps.

## Financial Incentives

Rebate amounts and structure may be adjusted if market conditions change.

Rebates available as “instant rebates” in retail stores or through the mail order catalog include:

- \$2 for compact fluorescent light bulbs (single bulbs to three packs);
- \$10 for exterior fixtures;
- \$15 for interior fixtures (including ENERGY STAR ventilation and ceiling fans with light kits);
- \$20 for ENERGY STAR torchieres;
- \$4 on multi-packs of 4 and 5 bulbs; and
- \$6 on multi-packs of 6 or more bulb packs.

Negotiated Cooperative Promotions (NCP) include manufacturer and retailer buy-down, markdown and creative coupon promotions. In buy-down and markdown promotions, products are discounted directly by the manufacturer or retailer. In creative coupon promotions, the coupons are processed similarly to instant coupons. Incentives vary by the wattage and type of bulb. Maximum incentive levels in a recent NCP RFP to manufacturers and retailers were:

- Standard Compact Fluorescent Bulbs  $\leq$  16 watts  
Buy-Down: Up to \$1.40 per package  
Product Mark-Downs and “Creative” Coupons: Up to \$1.60 per package
- Standard Compact Fluorescent Bulbs  $>$  16 watts  
Buy-Down: Up to \$1.60 per package  
Product Mark-Downs and “Creative” Coupons: Up to \$1.85 per package
- Standard Compact Fluorescent Bulbs  $>$  23 watts  
Buy-Down: Up to \$1.85 per package  
Product Mark-Downs and “Creative” Coupons: Up to \$2.00 per package
- Multi-packs-Standard bulbs (max 8 per package)  
Buy-Down: Up to \$0.85 per bulb  
Product Mark-Downs and “Creative” Coupons: Up to \$1.00 per bulb
- Multi-packs- $>$ 23 watts (max 8 per package)  
Buy-Down: Up to \$1.45 per bulb  
Product Mark-Downs and “Creative” Coupons: Up to \$1.65 per bulb
- Multi-packs-“Specialty” bulbs (max 8 per package)  
Buy-Down: Up to \$2.10 per bulb

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- Product Mark-Downs and “Creative” Coupons: Up to \$2.45 per bulb
  - “Specialty” bulbs including dimmable, 3-way, reflector, flood, pre-approved\* “covered” product
    - Buy-Down: Up to \$2.50 per bulb
    - Product Mark-Downs and “Creative” Coupons: Up to \$2.85 per bulb
  - Fixtures
    - Buy-Down: Up to \$12.00 per unit
    - Product Mark-Downs and “Creative” Coupons: Up to \$15.00 per unit

\*Pre-approval of “covered” products must be received prior to proposal submission.

\*There are additional incentives for PNNL-passed high temperature reflectors.

### **Delivery Mechanism**

Four contractors, each selected through a competitive bidding process, will be performing program services in 2007:

- A manufacturer/retailer outreach contractor recruits and trains retailers to participate in the program; places point-of-purchase materials and instant rebate coupons in participating retail stores; conducts product labeling and special promotions; oversees the NCP process; acts as a liaison between the program Sponsors, manufacturers, and retailers; and provides documentation to the Sponsors for program tracking and evaluation purposes.
- A marketing contractor develops messaging and produces most of the educational material as well as all Point of Purchase material. This contractor also maintains and updates the [www.myenergystar.com](http://www.myenergystar.com) website.
- A rebate fulfillment contractor intakes data and payment requests from manufacturers, retailers, and consumers; processes instant rebate coupons and NCP promotions; and provides documentation to the Sponsors for program tracking and evaluation purposes.
- An Internet/Mail Order Sales Channel contractor develops and distributes the catalog, purchases and stocks products offered through the catalog and [www.estarlights.com](http://www.estarlights.com) website; staffs a toll-free line for customers requesting a catalog or purchasing products from the catalog or [www.estarlights.com](http://www.estarlights.com) website; processes catalog and website purchases; and provides documentation to the Sponsors for program tracking and evaluation purposes.

Customer incentives are delivered via rebate or discount pricing through one of four mechanisms:

- Internet/Mail Order Sales Channel;
- Joint Sponsor instant rebates regularly available at retailers;
- Special promotions; and
- Negotiated Cooperative Promotions (NCP) with lighting manufacturers, distributors and retailers.

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### **Joint Program Administrator Enhancements Planned for 2007**

Greater emphasis on sales-based NCP promotions (markdowns) and building a stronger link between the ENERGY STAR Lights catalog website ([www.estarlights.com](http://www.estarlights.com)) and [www.myenergystar.com](http://www.myenergystar.com).

### **Sponsor Specific Elements**

For the NCPs, the Compact will increase the incentive (in accordance with the rest of the Massachusetts sponsors) for reflectors that have passed Pacific Northwest National Laboratories (PNNL) testing. The Compact will continue to promote efficient lighting products at community events, energy fairs, retailer events, turn-in events and school fundraisers, including offering special promotional rebates. These events are highly successful and promote broad customer awareness of energy efficiency.

## **5.5 Residential Energy Star Appliances Program**

### **Primary Objective**

Raise consumer awareness of the benefits of energy-efficient ENERGY STAR<sup>®</sup>-qualified appliances, encourage consumers to purchase ENERGY STAR-qualified appliances, and work with Consortium for Energy Efficiency (CEE) and others to encourage higher efficiency standards for qualifying ENERGY STAR appliances.

### **Initially Offered**

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### **Joint Vs Sponsor-Specific Offering**

Joint.

National Grid, NSTAR and Cape Light Compact plan to offer rebates for very high efficiency clothes washers. Western Massachusetts Electric Company plans on supporting efforts to promote ENERGY STAR-qualified appliances, but will not offer rebates. Unitil will not participate in the joint 2007 program.

### **Program Design**

The ENERGY STAR Appliance Program educates consumers about the benefits of ENERGY STAR-qualified appliances to increase consumer acceptance of ENERGY STAR appliances and to encourage consumers to look for and purchase ENERGY STAR models when shopping for qualifying appliances.

The program offers year-round rebates for very high-efficiency clothes washers with a Modified Energy Factor (MEF) of at least 2.0. Year-round rebates provide continuity for customers, manufacturers, and retailers. Consistent annual rebates make it easier for the

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program to capitalize on manufacturers' marketing efforts and for manufacturers and retailers to schedule matching rebate offers anytime during the year.

The Sponsors anticipate negotiating with interested manufacturers and retailers to leverage rebate and/or marketing funding. Federal tax credits available to domestic manufacturers increasing their production of high-efficiency models provide an excellent opportunity to work with manufacturers.

The program promotes all high-efficiency ENERGY STAR-qualifying appliances at the point of sale by providing promotional literature and displays to retailers, working with sales staff to ensure they understand and can accurately market the benefits of ENERGY STAR appliances, and providing labels to identify models that meet ENERGY STAR standards.

The program supports increasing federal appliance standards, and ENERGY STAR standards, by promoting ENERGY STAR appliances. As particular ENERGY STAR appliances achieve a high share of market sales the Sponsors, and other interested parties, are in a good position to advocate for raising both minimum federal and ENERGY STAR appliance energy-efficiency standards.

The program also actively participates in national ENERGY STAR awareness campaigns developed by the Environmental Protection Agency (EPA).

### **Target Market**

The target market is all residential customers.

### **Marketing Approach**

Multiple marketing approaches are employed to increase general consumer awareness of the benefits of using ENERGY STAR appliances, establish ENERGY STAR as the value leader in appliances, and make it easy for consumers to identify qualifying products when shopping in retail establishments. In addition to direct advertising targeting consumers, these approaches include supporting national ENERGY STAR marketing campaigns and working with industry partners at all levels of the retail supply chain.

Specific marketing activities targeting consumers include:

- Retail marketing and point-of-purchase displays;
- Media advertising—print and radio;
- Web site ([www.myenergystar.com](http://www.myenergystar.com)); and
- Public relations.

Work with industry partners at all levels of the retail supply chain includes:

- Leveraging marketing budgets through cooperative promotions with retailers, distributors, and manufacturers including marketing promotions, co-operative advertising, and special events at retail stores and the community level.
- Training and supporting retail sales staff to ensure they are able to tell consumers about the benefits of using ENERGY STAR appliances and help them choose

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products that will best meet their particular needs, which will result in satisfied consumers likely to purchase ENERGY STAR appliances in the future.

### **Target End Uses**

The program seeks to reduce the amount of water and electricity used in homes by clothes washers, room air conditioners, refrigerator and freezers, automatic dishwashers, dehumidifiers and consumer electronics.

### **Recommended Technologies**

The recommended technologies are ENERGY STAR clothes washers, room air conditioners, refrigerators, freezers and dishwashers. Working with the national and regional campaigns, other appliances may be targeted for special efforts.

### **Financial Incentives**

National Grid, NSTAR and Cape Light Compact will offer \$75 rebates for ENERGY STAR Clothes Washers with an MEF of at least 2.0.

### **Delivery Mechanism**

Three contractors, each selected through a competitive bidding process, will be performing program services in 2007, as noted below. (The lighting and appliance programs issued joint requests for proposals, and the same contractors provide services for both programs.)

- A manufacturer/retailer outreach contractor recruits and trains retailers to participate in the program; places point-of-purchase materials and rebate coupons in participating retail stores; conducts product labeling and special promotions; and acts as a liaison between the program Sponsors, manufacturers, and retailers.
- A marketing contractor develops messaging, procures media for marketing campaigns, produces educational materials and point-of-purchase promotional materials; and maintains and updates the [www.myenergystar.com](http://www.myenergystar.com) website.
- A rebate fulfillment contractor processes rebate applications and provides documentation to the Sponsors for program tracking and evaluation purposes.

### **Joint Program Administrator Enhancements Planned for 2007**

No major changes planned for 2007 other than limiting rebates to very high-efficiency clothes washers.

### **Sponsor Specific Elements**

The Compact will continue to promote efficient appliances through community events, energy fairs, retailer events, and turn-in events including, offering special promotional rebates. These events are highly successful and promote broad customer awareness of energy efficiency.

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## 6. Low-Income Programs

### 6.1 Introduction and Overview

There are roughly 29,000 residential electricity customers eligible for the Compact's low-income programs, which is roughly 17% of all residential customers. These low-income customers consumed 221 GWh of electricity throughout the year, which is roughly 20% of sales to all residential customers. Table 6.1 provides information regarding the low-income customers in the Compact's member towns.

**Table 6.1 Low-Income Customers and Sales in 2006**

	Number of Customers	Percent of Class	Percent of Total	Sales (MWh)	Percent of Class	Percent of Total
Low-Income	29,028	17%	14%	221,322	20%	11%
Non-Low-Income	145,841	83%	72%	868,933	80%	43%
Total Residential	174,869	100%	87%	1,090,256	100%	54%
Total Compact	201,356	na	100%	2,009,527	na	100%

*The number of low-income customers is based on census data. The sales to these customers have been estimated by multiplying the number of customers by the usage per customer of all customers on the discount/assistance electric rate.*

While low-income customers account for only 11% of the total sales, they are an important component of the Compact's efficiency initiatives because they tend to use more electricity than other residential customers. One reason for this is that they rely more heavily upon electricity for space heating. Roughly twenty percent of customers on the low-income electric rate rely upon electric space heating, while only ten percent of other residential customers do. Low-income customers are also important because their electricity bills tend to represent a larger portion of their total expenses, relative to other residential customers, and reducing low-income electricity bills offers several societal benefits.

In 2007 the Compact will continue using the recently established criterion for determining the eligibility of customers for the low-income programs. Residential customers will be eligible for these programs if their household income is 60% or less of the median income for their family size in their county.

In recent years, the Massachusetts electric companies have coordinated their low-income efficiency programs through the LEAN. This network provides support in the design of low-income programs, and provides a connection to the local weatherization agencies that operate throughout Massachusetts. The Compact will continue to coordinate its low-income programs with the LEAN initiatives and the statewide best practices working group. The program designs in this EEP are based on the LEAN programs and measures, and the delivery of these programs will be coordinated with the local weatherization agency on Cape Cod and Martha's Vineyard.

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The Compact is committing \$648,746 to low-income single-family and low-income multi-family programs in 2007. It is anticipated that low-income new-construction projects served under a new streamlined vendor process could result in the low-income program budget significantly exceeding state mandated amounts. The Compact and the low-income vendor are supportive of this new process.

## **6.2 Low-Income Single-Family**

### **Primary Objective**

Educate low-income customers about how to save energy in their homes, help residential customers to install energy efficiency upgrades.

### **Initially Offered**

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### **Joint Vs Sponsor-Specific Offering**

Joint through the low-income weatherization and fuel assistance network.

### **Program Design**

This program addresses all low-income customers living in single-family (which is defined as one to four unit) dwellings. The program will be made available to all customers that are presently billed on NSTAR's Residential Assistance Rate. Other eligible households include those who receive assistance from government agencies such as Fuel Assistance, Weatherization Assistance Program (WAP), Aid to Families With Dependent Children, Supplemental Social Security, Women Infants and Children programs, or customers whose household income level falls below 60% of the median household income in their county.

Through this program, eligible customers will receive an energy audit, including direct installation of low-cost measures addressing lighting, thermal measures, and water heating end-uses. Customers will also be provided with education materials providing advice on how to reduce electric bills through more efficient practices.

The Compact will work with the program vendor to ensure that participants are properly screened before being visited for an energy audit. If a customer has electric space heat, then the vendor will send an auditor who is trained to provide weatherization audits, assistance and education, as well as the electricity-based audits and assistance. The Compact will also ensure that weatherization funds are appropriately coordinated for participating customers.

### **Target Market**

Low-Income single family (1-4 units) residents.

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## **Marketing Approach**

Promotional material and literature will also be distributed through the WAP networks, local social service agencies, town governments, and other networks available to the Compact. In addition, the Compact has joined the statewide campaign, Energy Bucks, and provided the campaign's coordinator, Housing Assistance Corporation (HAC), with a portion of the marketing budget to better market the relationship between Cape Light Compact and HAC to low-income clients. In early 2007, the Compact and other program administrators will review results of the Energy Bucks campaign and assess the best approach to continuing a statewide campaign.

In 2007 the Compact will continue its efforts to identify and serve customers that might not be easily identified as eligible for the low-income programs. If the Compact's MassSAVE auditor identifies a customer that is eligible for a low-income program, that auditor will provide the appropriate low-income audit and program materials at the time of the visit. This will help prevent the inefficiencies and barriers created by having two separate visits and audits and better market the programs to low-income clients. The Compact will also actively market to the fuel assistance list.

## **Target End Uses**

The Program, along with other leveraged programs, targets energy saving improvements in the house shell, hot water/heating systems, water saving devices, and energy efficient lights and appliances.

## **Recommended Technologies**

This program offers participants site visit diagnostics, customer education, disaggregation of the customer's electricity bill, analysis of high-use appliances, and installation of efficiency measures. The package of measures also includes compact fluorescent lightbulbs, hot water flow restrictors, pipe insulation and water heating tank wraps as applicable, replacement of existing refrigerators where applicable, and replacement of electrically-heated water beds with standard mattresses.

The space heating component of this program will provide weatherization measures such as air sealing, insulation, thermostat controls, interior storm windows, and pipe and hot water tank wraps. These measures will also be provided at no cost to the participant.

Electric space-heating customers will be provided with an analysis of the costs and benefits of replacing the existing electric space heating system with an efficient gas, oil or propane system. In order to qualify for Compact funding, a gas furnace must have an AFUE rating of 90 percent or greater, and a gas boiler must have an AFUE rating of 85 percent or greater. Oil and propane systems will also be required to meet comparable efficiency ratings.

The space heating analysis will take account of the specific characteristics of the customer's home, e.g., the availability of natural gas or propane, whether there is existing ductwork in the home, whether there is an existing flue for the home, the remaining life of the existing system, and whether a partial space heating system (i.e., an area heater) would be appropriate. For those applications where fuel-switching is cost-effective,

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participants will be offered a low-income program incentive as well as leveraged incentives from other available programs to replace the electric system at little or no cost.

### **Financial Incentives**

Most materials and measures will be provided at no cost to the program participant. Where applicable, building owners (or tenants) will also be informed about any other relevant measures offered to customers through the Residential ENERGY STAR Products and Services Program.

### **Delivery Mechanism**

By statute, the low-income programs are implemented by the low-income weatherization and fuel assistance network. The lead agency for this program, the Housing Assistance Corporation (“HAC”), serves as the project coordinator and provides direction to other agencies and subcontractors.

The Low Income Best Practices Network provides for an opportunity for energy efficiency program providers to work together to make quality control an integral part of the Low-Income Programs.

### **Joint Program Administrator Enhancements Planned for 2007**

The Best Practices Group is offering contractor training and support.

### **Sponsor Specific Elements**

The Massachusetts Program Sponsors sought proposals from qualified manufacturers and/or vendors to receive and fulfill ENERGY STAR<sup>®</sup> qualified lighting orders as part of statewide direct install lighting programs. These programs are made available to residential electric customers throughout Massachusetts and include the following programs: ENERGY STAR New Construction, MassSave, and low-income assistance programs.

## **6.3 Low-Income Multi-Family**

### **Primary Objective**

This program addresses all low-income housing units that are newly built or that undergo major gut rehabilitation. The program is targeted to low-income housing development agencies, WAP agencies, home builders, and the residential construction trade allies. The program is available to all new low-income housing units, regardless of the type of heating fuel used.

This program will offer the same services that are provided by the Residential New Construction with ENERGY Program with enhanced rebates for low income clients

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### **Initially Offered**

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### **Joint Vs Sponsor-Specific Offering**

Joint through the Long Island Best Practices Group.

### **Program Design**

This program addresses all low-income customers living in multi-family housing, which is defined as including more than four dwelling units. The program will be made available to all customers that are presently billed on NSTAR's Residential Assistance Rate. Other eligible households include those who receive assistance from government agencies such as Fuel Assistance, WAP, Aid to Families With Dependent Children, Supplemental Social Security, Women Infants and Children programs, or customers whose household income level falls below 60% of the median household income level of their county.

The program includes an energy audit with a "one-stop shopping" approach, including direct installation of low-cost measures addressing primarily the lighting and water heating end-uses. During the audit process, technicians will identify the need for additional services such as space heating measures or refrigerator replacements. Customers will also be provided with education materials providing advice on how to reduce electric bills through more efficient practices. Customers will not be required to incur any costs of program participation except in special cases of fuel neutral heating system work.

In 2007 the Compact will continue to work with LEAN and the program vendors to ensure that the program auditors are trained to provide weatherization audits, assistance and education, as well as the electricity-based audits and assistance. The Compact will also ensure that weatherization funds are appropriately utilized for participating customers.

### **Target Market**

All low-income residential customers in multi-family homes (over 4 units).

### **Marketing Approach**

Promotional material and literature will also be distributed through the WAP networks, local social service agencies, town governments, and other networks available to the Compact.

### **Target End Uses**

The Program targets energy saving improvements in the house shell and hot water/heating systems, energy efficient lighting and appliances.

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### **Recommended Technologies**

This program offers participants site visit diagnostics, customer education, disaggregation of the customer's electricity bill, analysis of high-use appliances, and installation of efficiency measures. The package of measures also includes compact fluorescent lightbulbs, hot water flow restrictors, pipe insulation and water heating tank wraps as applicable, replacement of existing refrigerators where applicable, and replacement of electrically-heated water beds with standard mattresses.

The space heating component of this program provides weatherization measures such as air sealing, insulation, thermostat controls, interior storm windows, and pipe and hot water tank wraps.

Public housing authorities, building owners, and managers of properties serving low-income families are provided with educational materials offering advice on how to improve electricity efficiency and reduce operating costs through energy management and maintenance practices.

### **Financial Incentives**

Most materials and measures are provided at no cost to the program participant. Where applicable, building owners (or tenants) will also be informed about any other relevant measures offered to customers through the Residential ENERGY STAR Products and Services Program.

### **Delivery Mechanism**

By statute, the low-income programs are implemented by the low-income weatherization and fuel assistance network. The lead agency for this program is the Housing Assistance Corporation.

### **Joint Program Administrator Enhancements Planned for 2007**

Through the Low Income Best Practices Group, the energy efficiency programs offer contractor training and support.

### **Sponsor Specific Elements**

The Massachusetts Program Sponsors sought proposals from qualified manufacturers and/or vendors to receive and fulfill ENERGY STAR<sup>®</sup> qualified lighting orders as part of statewide direct install lighting programs. These programs are made available to residential electric customers throughout Massachusetts and include the following programs: ENERGY STAR New Construction, *MassSave*, and low-income assistance programs.

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## 6.4 Low-Income New Construction and Rehabilitation

### Primary Objective

To capture lost opportunities and encourage the construction of low-income energy efficient homes.

### Initially Offered

The Cape Light Compact assumed the responsibility for management of this program in July 2001.

### Joint Vs Sponsor-Specific Offering

Joint.

### Program Design

Builders can choose from the three participation paths described below. All three paths include direct installation of ENERGY STAR CFL bulbs in all appropriate sockets, on-site training and a final verification inspection. Customers will not be required to incur any costs of program participation except in special cases of fuel neutral heating system work.

CODE Plus/Energy Efficiency Measure Upgrade path: This path offers a prescriptive package to builders, developers, architects, or homeowners interested in building energy-efficient housing, but not necessarily achieving ENERGY STAR certification. Path highlights include:

- No plan review or energy modeling;
- Allows builder to choose from a list of energy-efficient or ENERGY STAR measures; and
- A portion of the cost of installed energy-efficiency measures will be reimbursed.

ENERGY STAR certification--Performance Path. Following this path requires:

- A HERS index score of 85 or less;
- Meeting envelope leakage standards and, if applicable, duct leakage standards; and
- Completing a thermal bypass inspection list.

ENERGY STAR certification—Builder Option Package (BOP). Following this path requires:

- Meeting a list of prescribed standards, such as envelope leakage standards and, if applicable, duct leakage standards.
- Completing a thermal bypass inspection list.

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## Target Market

Builders, architects, designers, trade allies and others involved in the construction of single family, low-income homes or three-story or fewer multi-family buildings, and home buyers.

## Marketing Approach

Direct builder outreach, website, newsletter, public relations activities including meeting presentations, home and trade show exhibits, participation in builder conferences. Duct sealing outreach and training to educate builders, architects, and industry players will also be provided. Individual program Sponsors may provide target marketing as needed to meet program participation and spending goals. Information is also sent out through the Low Income network and leads will be coordinated between programs.

## Target End Uses

Energy efficient building shell measures, proper duct and air sealing techniques, and mechanical ventilation.

## Recommended Technologies

Recommended technologies include:

- ENERGY STAR heating and cooling systems, lighting, appliances and windows;
- Increased levels of insulation;
- Improved construction techniques to minimize air leakage, infiltration, and heat loss;
- Improved construction techniques to minimize duct leakage; and
- In partnership with the Massachusetts Technology Collaborative, renewable technologies including solar water heating and photovoltaics where practical.

## Financial Incentives

Package:	ENERGY STAR <b>Performance Path or BOP</b>	Code Plus #2	Code Plus #1
Requirements:	Meet minimum specifications of ENERGY STAR	Air Seal (6 ACH CFM 50) Duct Seal (8% Leakage**)	Air Seal (8 ACH CFM 50) Duct Seal (10% Leakage**)
Amount*:	\$750 per qualifying home	\$325 per qualifying home	\$250 per qualifying home
Other:	FREE Compact Fluorescent Lights (CFL) Eligible GasNetworks rebates FREE home verification	FREE CFL's Eligible GasNetworks rebates FREE home verification	FREE CFL's Eligible GasNetworks rebates FREE home verification

\* Rebate amounts are subject to change and may include additional incentives for low income eligible homes. \*\* Duct leakage rate is % of floor area leakage to outdoors tested at 25 Pascal pressure.

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### **Delivery Mechanism**

The Program is administered by each Program Administrator within its service territory and coordinated regionally through the Joint Management Committee (JMC) and the Low Income Best Practices Groups. All aspects of the 2007 program year were put out to bid in 2006.

### **Joint Program Administrator Enhancements Planned for 2007**

Introduce the CODE Plus/Energy Efficiency Measure Upgrade path for homes either not achieving, or not striving to achieve, ENERGY STAR certification.

### **Sponsor Specific Elements**

The Compact plans to leverage grant funds received from MTC to introduce a multi-year green affordable housing initiative (GAHI) that will promote more sustainable green building practices and include the installation of renewable energy components (such as photovoltaic electric systems). The GAHI grant totals approximately \$1.5 million and will extend the Residential New Construction Program benefits to more homes.

The Massachusetts Program Sponsors sought proposals from qualified manufacturers and/or vendors to receive and fulfill ENERGY STAR<sup>®</sup> qualified lighting orders as part of statewide direct install lighting programs. These programs are made available to residential electric customers throughout Massachusetts and include the following programs: ENERGY STAR New Construction, *MassSave*, and low-income assistance programs.

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## 7. Commercial and Industrial Programs

### 7.1 Introduction and Overview

Table 7.1 presents an overview of the commercial and industrial customers and sales within the Compact member towns in 2006. The information is broken out by small versus medium/large customers. The small and medium customer categories are defined according to the DOER definitions prescribed for the Annual Report on Energy Efficiency Activities. The small customer category includes customers on the G7 and GENSEASONAL rates, and the medium customer category includes those on the G-1, G5 and G6 rates.<sup>1</sup>

**Table 7.1 Commercial and Industrial Customers and Sales in 2006**

	Number of Customers	Percent of Class	Percent of Total	Sales (MWh)	Percent of Class	Percent of Total
Small	2,490	9%	1%	32,437	4%	2%
Medium	21,293	80%	11%	552,723	60%	28%
Large	181	1%	0%	303,608	33%	15%
Streetlights	2523	10%	1%	8,951	1%	0%
Total C&I	26,487	100%	13%	919,271	100%	46%
Total Compact	201,356	----	100%	2,009,527	----	100%

*The C&I totals do not equal the sum of the components because the Total C&I includes the two CON accounts.*

The Compact's C&I programs differ from the residential programs in that they offer customers and vendors both prescriptive and custom approaches to energy efficiency measures. Under the prescriptive approach, customers are informed of energy efficiency measures and services that are available, along with pre-determined levels of financial support for each. Under the custom approach, Compact technical assistance providers and contractors, as well as customers and their vendors, are free to propose efficiency improvements that are specifically tailored to the individual customer's needs and interests. The Compact will then review each proposal to ensure that it is cost-effective and meets relevant program guidelines. Under this approach, customers or vendors will be reimbursed for a certain percentage of the incremental cost of the installed efficiency measures.

### 7.2 C&I New Construction and Rehabilitation

#### Primary Objective

The C&I New Construction Program promotes energy efficiency in the design and construction of all new commercial, industrial, institutional, and government facilities.

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<sup>1</sup> Note that the small, medium and large customer categories used here are not the same as the categories used in defining eligibility for the Small versus Medium and Large C&I Retrofit programs. Many of the medium-size customers presented here are eligible for the Small C&I Retrofit program; and the remainder are eligible for the Medium and Large C&I Retrofit program.

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## **Initially Offered**

July 2001.

## **Joint Vs Sponsor-Specific Offering**

This program is similar to the C&I new construction programs being offered by electric distribution companies in the region in order to help eliminate customer confusion and achieve consistent approaches to C&I energy efficiency.

## **Program Design**

Participating customers will be offered technical support, financial assistance, education, project design and commissioning services. The Program is available to customers at the time of new or substantial reconstruction, renovation, remodeling of existing buildings, or equipment replacement at the end of its useful life. The intent is to help customers overcome the first-cost and other barriers to investing in energy efficiency. An additional component of the program includes marketing and implementation of regional market transformation initiatives such as Massachusetts MotorUp and Massachusetts Cool Choice.

The Compact has joined the electric distribution companies and KeySpan in sponsoring Advanced Buildings, a nationwide program offered by the New Buildings Institute, White Salmon, WA. Advanced Buildings is a resource to improve the way buildings are designed, built and used. It will provide design materials, training, marketing strategies and technical support for Architects, Engineers and Building Committees contemplating new construction in the Cape Light Compact service territory.

## **Target Market**

The C&I New Construction Program targets all time-dependent energy efficiency opportunities in the commercial and industrial sector. Special attention will be given to new building owners, architects, engineers, distributors and other trade allies for new equipment.

## **Marketing Approach**

Eligible customers and vendors are encouraged to submit proposals for site-specific projects, i.e., the program is vendor-driven. Qualified vendors and customers will be encouraged to propose projects to be serviced by this program. In some cases vendors and customers will take the initiative of performing engineering studies as appropriate, identifying efficiency measures, documenting the incremental costs and savings of the measures, installing all qualifying measures, performing any on-going O&M services, and demonstrating the savings that are achieved over time. In many cases, however, these services will be encouraged or directly provided by the Compact. For example, the Compact will provide technical and design assistance early in the development of designs to ensure efficient measures are analyzed and included in projects where appropriate and cost effective. For customers interested in these services, the Compact will work out

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financial arrangements where the customer may contribute some portion to these service costs.

### **Target End Uses**

Targeted end uses include but are not limited to lighting equipment and controls, lighting design, motors, heating, ventilation and air conditioning systems (HVAC), envelope measures, compressed air and industry-specific industrial processes.

### **Recommended Technologies**

This program covers a wide range of efficiency measures, depending upon the customer's electricity end-uses and measure cost-effectiveness. The technologies supported include, but are not limited to, lighting, variable speed drives, building envelope measures, controls, energy management systems, HVAC and process improvements.

### **Financial Incentives**

Prescriptive efficiency criteria and financial incentives are offered for selected lighting, motor, variable frequency drive and HVAC measures. The Compact along with the electric distribution companies has adopted a two-tier Performance Lighting incentive which rewards customers for achieving Lighting Power Densities (LPD) based on the type of building or space. All other cost effective measures are promoted with custom incentives. Financial incentives are based on the incremental equipment and labor costs of installing efficient equipment, as compared to the costs of standard efficiency equipment. Two types of rebates are offered: prescriptive and custom. Prescriptive rebates are fixed amounts provided for specific measures, while custom rebates are based on the unique energy savings criteria of a customer's efficiency project. In general, rebates are designed to cover up to 80% of the incremental cost of the efficiency measure or to buy down the cost of the equipment to a one and a half year payback period, whichever is less (in the case of Government Agencies, 100% of the incremental cost, up to \$75,000, of efficiency measures are supported by the program (see Section 7.5 Government Agencies for further description)).

This program also offers design incentives, where appropriate, to cover 50 to 100 percent of incremental architectural and design costs for efficiency improvements.

The financial incentives will be limited to a maximum of \$75,000 per project. Upon a vote of the Governing Board of the Compact, requests to exceed this limit may be approved on a project-by-project basis.

### **Delivery Mechanism**

The Compact will deliver financial incentives along with technical assistance, training, and commissioning. Financial incentives reduce the cost barrier to investing in energy efficiency. Technical assistance provides information and education to participants in the use of energy efficient engineering practices to advance better design in buildings. Technical assistance also provides the customer with criteria related to energy efficiency options that can be used when the customer specifies new equipment. Additional

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education opportunities for customers and trade allies are offered through the Compact's participation in the regional and national market transformation initiatives, such as Advanced Buildings "Benchmark". Additionally, commissioning ensures that the designs and systems specified for efficient buildings operate as intended by the design professionals.

#### **Joint Program Administrator Enhancements Planned for 2007**

The Program Administrators have more closely aligned eligibility requirements and incentives.

The Compact has streamlined its rebate applications with an eye towards alignment with the Massachusetts electric distribution companies in order to make the application process easier for the customer and vendors that operate over multiple territories.

#### **Sponsor Specific Elements**

New measures have been added to HVAC for demand control ventilation and electronically commutated motors.

### **7.3 Large Commercial and Industrial Retrofit**

#### **Primary Objective**

To focus on energy efficiency opportunities associated with existing mechanical and electric systems in commercial, industrial and institutional buildings served by rates G-2, G-3 ,G-7 and G-5 (if demand exceeds 100 kW).

#### **Initially Offered**

2001.

#### **Joint Vs Sponsor-Specific Offering**

Compact specific.

#### **Program Design**

The program offers customers financial assistance, education, technical assistance and commissioning services. It covers a wide range of efficiency measures, depending upon the customer's electricity end-uses and measure cost-effectiveness. The technologies supported include, but are not limited to, lighting, variable speed drives, building envelope measures, controls, energy management systems, HVAC and process improvements. Financial incentives are based on the total equipment and labor costs of installing efficient equipment.

The Compact has joined the Massachusetts electric distribution companies and KeySpan in sponsoring the Massachusetts Energy Efficiency Partnership (MAEEP) housed at the University of Massachusetts, Amherst in order to provide sophisticated training and

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technical assistance to the C&I sector. The Compact will continue to support Building Operator's Certification (BOC) course if it continues to be offered by NEEP.

### **Target Market**

Market includes customers and trade allies such as equipment vendors and energy services companies.

### **Marketing Approach**

This program is marketed using media advertisements, direct mail to customers, Cape Cod Chamber of Commerce and trade allies, customer site visits, the Cape Light Compact web site, and construction bulletins. Eligible customers and vendors are encouraged to submit proposals for site-specific projects, i.e., the program is vendor-driven. Qualified vendors and customers will be encouraged to propose projects to be serviced by this program. In most cases, vendors and customers will have the responsibility for performing engineering studies as appropriate, identifying efficiency measures, documenting the incremental costs and savings of the measures, installing all qualifying measures, performing any on-going O&M services, and demonstrating the savings that are achieved over time.

### **Target End Uses**

Targeted end uses include but are not limited to lighting and lighting controls, motors & drives, heating, energy management systems, compressed air and industrial processes.

### **Recommended Technologies**

More frequently recommended technologies include but are not limited to efficient lamp technologies, efficient lighting fixtures, lighting controls, efficient motors and motor drive systems, efficient HVAC and compressed air systems.

A policy was developed by the utilities and energy efficiency providers in the lighting program that will no longer allow a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact has joined in adopting a similar provision but makes an exception when a project is granted a specific waiver. The waiver will ordinarily be granted when, for the sake of maintenance efficiency, the customer wishes to minimize the number of different replacement lamps to keep in stock. Instead of re-lamp/re-ballast, the Compact will promote replacement of an existing fixture with an energy efficient fixture.

### **Financial Incentives**

Two types of rebates are offered: prescriptive and custom. Prescriptive rebates are fixed amounts provided for specific measures, while custom rebates are based on the unique energy savings criteria of a customer's efficiency project. Prescriptive incentives are offered for selected lighting control measures only. The Compact along with the electric distribution companies has adopted a two-tier Performance Lighting incentive which rewards customers for achieving Lighting Power Densities (LPD) based on the type of

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building or space. Any other electrical efficiency measures that pass the cost-effectiveness criteria are eligible for custom incentives. In general, rebates are designed to cover up to 50% of the cost of the efficiency measure or to buy down the cost of the equipment to a one and a half year payback period, whichever is less. This program also offers design incentives, where appropriate, to cover 50 to 100 percent of incremental architectural and design costs for efficiency improvements.

The financial incentives will be limited to a maximum of \$75,000 per project. Upon a vote of the Governing Board of the Compact, requests to exceed this limit may be approved on a project-by-project basis.

In the case of Government Agencies, 100% of the cost of cost, up to \$75,000, effective efficiency measures are supported by the program. See Section 7.5 Government Agencies for further description.)

### **Delivery Mechanism**

Program implementation activities are directed through trade allies, energy service companies, and customers. The Compact contracts for support of certain activities including technical review of some applications, technical assistance for comprehensive design, chiller, and other projects, and post installation inspection. The Compact has also established partnerships with the Cape Cod Chamber of Commerce and local Chambers of Commerce and trade associations to promote all C&I programs (please see Cape Cod Chamber of Commerce commitment letter dated February 9, 2007 (Appendix C)).

### **Joint Program Administrator Enhancements Planned for 2007**

The Program Administrators have more closely aligned eligibility requirements and incentives.

The Compact has streamlined its rebate applications with an eye towards alignment with the Massachusetts electric distribution companies in order to make the application process easier for the customer and vendors that operate over multiple territories.

### **Sponsor Specific Elements**

New measures have been added to HVAC for demand control ventilation and electronically commutated motors.

## **7.4 Small Commercial and Industrial Retrofit**

### **Primary Objective**

New measures have been added to HVAC for demand control ventilation and electronically commutated motors.

### **Initially Offered**

2001.

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## **Joint Vs Sponsor-Specific Offering**

Compact specific.

## **Program Design**

Program offers a turnkey audit, installation and incentive, to small business customers served by rate G-1 and G-5 if demand does not exceed 100kW.

The Compact has joined the Massachusetts electric distribution companies and KeySpan in sponsoring the Massachusetts Energy Efficiency Partnership (MAEEP) housed at the University of Massachusetts, Amherst in order to provide sophisticated training and technical assistance to the C&I sector. The Compact will continue to support the Building Operator's Certification (BOC) course if it continues to be offered by NEEP.

## **Target Market**

Eligible customers include small offices, retail and light industrial facilities.

## **Marketing Approach**

Vendors selected through a competitive bid process will be responsible for all aspects of delivering this program, including developing and implementing the marketing plan, identifying eligible participants, conducting the energy audits, and installing measures or coordinating and managing third party installations as warranted.

The program vendors have the primary responsibility for marketing this program. The Compact has also established partnerships with the Cape Cod Chamber of Commerce and local Chambers of Commerce and trade associations to promote all C&I programs.

## **Target End Uses**

Targeted end uses include but are not limited to lighting and lighting controls, HVAC and refrigeration. Other energy savings opportunities can be served through a custom approach.

## **Recommended Technologies**

The specific technologies addressed will depend upon the needs of each participant. All end-uses are eligible for efficiency improvements, within cost-effectiveness constraints. The primary opportunities are likely to come from lighting, refrigeration, water heating and HVAC end-uses. Where appropriate, retrofitting multiple and interacting end-uses will be coordinated to ensure optimal system design (e.g., re-sizing and replacement of cooling equipment at the time of a comprehensive lighting replacement).

In the past, lighting and refrigeration efficiency measures have dominated the Small C&I programs because of their short pay-back periods. Beginning in 2005 and continuing in 2007, the Compact will continue to provide the program vendors with the mandate and the financial incentives (for the vendor) to expand the range of efficiency measures that are promoted to customers. Some additional measures may become standard practice. In addition, the contractor will be expected to identify and install (either directly or through

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a subcontractor) all cost effective electric efficiency measures on a custom basis. In 2007 the Compact will run a pilot program for screw-in CFL's. In the summer of 2007, the Compact through its contract vendor will install vending misers on soft drink and snack machines throughout Cape Cod and Martha's Vineyard. The program will be marketed to businesses through the Chamber of Commerce and delivered at no charge to the end user for a finite period of time depending on demand. The contract vendor will work with the Cape Cod Community College Environmental Technology program to identify a summer intern who will be trained to do the installations.

A policy was developed by the utilities and energy efficiency providers in the lighting program that will no longer allow a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact has joined in adopting a similar provision but makes an exception when a project is granted a specific waiver. The waiver will ordinarily be granted when, for the sake of maintenance efficiency, the customer wishes to minimize the number of different replacement lamps to keep in stock. Instead of re-lamp/re-ballast, the Compact will promote replacement of an existing fixture with an energy efficient fixture.

Participants who are not eligible for gas efficiency programs from KeySpan will also be provided with educational materials and small financial incentives for non-electric efficiency measures. The program vendors will present such participants with a list of non-electric efficiency measures, such as faucet aerators, weather stripping, insulation, duct sealing measures, commercial dishwasher efficiency measures, and others. Certain low-cost measures will be installed for free, some measures will be covered by the Compact with an 80% rebate up to a total \$2000 cap per project, and other measures will have to be fully paid by the customer. The Compact reviews and coordinates with other program administrators, such as the Massachusetts Electric Company, its prescriptive and custom C&I offerings to ensure current technologies and other energy efficiency measures are up to date.

#### **Financial Incentives**

Participants will be provided with audits to identify cost effective opportunities free of charge. Most participants will receive from the Compact a rebate equal to 80% of the total equipment and labor costs of installing efficient measures.

#### **Delivery Mechanism**

This program is delivered utilizing a contract vendor that is hired through a competitive bidding process.

#### **Joint Program Administrator Enhancements Planned for 2007**

None.

#### **Sponsor Specific Elements**

The Compact retains the services of a Registered Professional Engineer on a consulting basis for the purpose of providing technical assistance to small business customers.

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In the summer of 2007, the Compact through its contract vendor will install vending misers on soft drink and snack machines throughout Cape Cod and Martha's Vineyard. The program will be marketed to businesses through the Chamber of Commerce and delivered at no charge to the end user for a finite period of time depending on demand. The contract vendor will work with the Cape Cod Community College Environmental Technology program to identify a summer intern who will be trained to do the installations.

The Compact will conduct a pilot screw-in CFL project with a select number of small C&I customers, with high use lighting demand and usage, to address a growing demand for this measure.

## **7.5 Government Agencies**

### **Primary Objective**

To deliver all energy efficiency services in the C&I sector to the government sector and continuation of the Government Agencies Program that the Compact is currently offering.

### **Initially Offered**

2001.

### **Joint Vs Sponsor-Specific Offering**

Compact specific.

### **Program Design**

The Compact is aware that many government agencies do not have the funding or authority to pay for even 20% of the cost of efficiency investments. As a result, this program will cover 100% of the costs, up to \$75,000, of the efficiency improvements. In prior years, the Compact has been able to secure supplemental funding from Barnstable County, which has been used to provide additional financial incentives to improve the efficiency of the facilities in Barnstable County and the government customers in its constituent municipalities. The Compact will seek supplemental/leverage funds as they may become available from Barnstable County or other sources.

This program addresses all government facilities, including municipal, state and federal facilities. These customers will be offered the same efficiency services that are offered through the C&I New Construction, C&I Large and Medium, and C&I Small Customer Programs, depending upon their size and needs. The primary difference between this program and the other C&I programs will be in the marketing and financial incentives. The Compact will market, on a limited basis subject to budget limitations, its C&I programs to all government customers through its government agency network on the Cape and Vineyard. In addition, technical and design assistance will be provided at no cost, and measure financial incentives will cover 100%, up to \$75,000, of the incremental (new construction) and full (retrofit) costs of measures.

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The Compact has joined the Massachusetts electric distribution companies and KeySpan in sponsoring the Massachusetts Energy Efficiency Partnership (MAEEP) housed at the University of Massachusetts, Amherst in order to provide sophisticated training and technical assistance to the C&I sector. The Compact will continue to support the Building Operator's Certification (BOC) course if it continues to be offered by NEEP.

### **Target Market**

Market includes all government facilities in the Compact service territory.

### **Marketing Approach**

For small government customers, the same vendor that implements the Small C&I Program will implement this program. For new construction, and large government agencies, the same strategies and services will be used as for non-governmental customers.

### **Target End Uses**

Targeted end uses include but are not limited to lighting and lighting controls, motors & drives, heating, energy management systems and compressed air.

### **Recommended Technologies**

More frequently recommended technologies include but are not limited to efficient lamp technologies, efficient lighting fixtures, lighting controls, efficient motors and motor drive systems, efficient HVAC and compressed air systems.

A policy was developed by the utilities and energy efficiency providers in the lighting program that will no longer allow a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact has joined in adopting a similar provision but makes an exception when a project is granted a specific waiver. The waiver will ordinarily be granted when, for the sake of maintenance efficiency, the customer wishes to minimize the number of different replacement lamps to keep in stock. Instead of re-lamp/re-ballast, the Compact will promote replacement of an existing fixture with an energy efficient fixture.

### **Financial Incentives**

Government agencies will be offered the same efficiency measures and technical support as the customers in other C&I programs. The Compact will provide all participating government agencies with financial incentives to cover 100%, up to \$75,000, of the incremental costs of new efficiency measures as the budget will allow. This increase in the financial incentives will help address the fact that many government agencies currently have very limited budgets and are unable to contribute toward a portion of the efficiency costs.

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The financial incentives will be limited to a maximum of \$75,000 per project. Upon a vote of the Governing Board of the Compact, requests to exceed this limit may be approved on a project-by-project basis.

### **Delivery Mechanism**

Program implementation activities are directed through trade allies, energy service companies, and customers. The Compact contracts for support of certain activities including technical review of some applications, technical assistance for comprehensive design, chiller, and other projects, and post installation inspections. The Compact has also established partnerships with the Cape Cod Chamber of Commerce and local Chambers of Commerce and trade associations to promote all C&I programs.

### **Joint Program Administrator Enhancements Planned for 2007**

The Program Administrators have more closely aligned eligibility requirements and incentives.

The Compact has streamlined its rebate applications with an eye towards alignment with the Massachusetts electric distribution companies in order to make the application process easier for the customer and vendors that operate over multiple territories.

### **Sponsor Specific Elements**

In December 2004, the Compact issued an Invitation for Bid (“IFB”) for the purpose of qualifying one or more vendors to support an initiative to install adjustable frequency drives (“AFD”) to motors used in pumping water at several Water Districts and Departments on Cape Cod and Martha’s Vineyard. The first project at the Harwich Water Department began in 2005 since then seven other Water Districts and Departments have received these targeted energy efficiency upgrades. Due to the cost-effectiveness of this popular program, the Compact expects to continue on a high level through 2008. A member of the Compact staff attends monthly meetings of the Barnstable County Water Utilities Association in order to promote energy efficiency amongst the membership

New measures have been added to HVAC for demand control ventilation and electronically commutated motors.

## **7.6 C&I Products and Services**

### **Primary Objective**

To transform the markets for particular energy efficiency products, services and practices.

### **Initially Offered**

2001.

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## Joint Vs Sponsor-Specific Offering

Joint.

### Program Design

The Compact will continue to participate in the regional C&I market transformation programs that are being designed and coordinated through regional efficiency agencies. This includes the following initiatives:

Massachusetts MotorUp. This is a continuation of the program formerly offered by NEEP to transform the market for motors by offering customers rebates for purchasing and installing premium-efficiency motors as qualified by the Consortium for Energy Efficiency. The sponsors of this program – including the Massachusetts electric distribution companies and energy service providers have hired a contractor which is responsible for identifying, recruiting, and training trade allies to support program efforts, and for broad-based print advertising targeted to trade allies and customers.

Massachusetts Cool Choice. This is a continuation of the program formerly offered by NEEP designed to increase the adoption of energy efficient unitary HVAC products through marketing, customer rebates, promotion of high-efficiency unitary HVAC equipment among consumers, equipment specifiers, and vendors, and working with other organizations to promote higher national standards for unitary HVAC equipment. The program is delivered through a regional circuit-rider who informs unitary HVAC vendors about the program and distributes the appropriate rebate information.

National Standards. Through the Compact's involvement in CEE and NEEP's national and regional premium efficiency motor and unitary HVAC initiatives a collaborative effort continues to promote higher national standards.

Training and Education. The Compact will offer best practices workshops in motors, compressed air, fan system efficiency, chilled water, pump systems, process heating and benchmarking through the Massachusetts Energy Efficiency Partnership (MAEEP) to C&I customers.

Building Operator's Certification (BOC). Offered through NEEP, this course trains and certifies individuals in energy and resource efficient operation of building systems at two levels: Level I - Building System Maintenance and Level II - Equipment Troubleshooting and Maintenance. Participants attend classes, complete tests and in-facility projects, and receive Building Operator Certification. Students attend 8 days (60 hours) of training over 3 to 4 month period. Students must complete 5 project assignments in their facilities. An exam is administered and the student is certified based on passing grade.

Advanced Buildings. In 2007, the Compact became a sponsor of Advanced Buildings (AB) program model developed by the New Buildings Institute (NBI) in cooperation with US EPA, ASHRAE, the US Green Buildings Council and the national Building Operators and Managers Association. A key element of the AB is "Benchmark," an all-inclusive set of standards for building efficiency and sustainable design. The "Benchmark" design tool complements the Comprehensive Design Approach with a special emphasis on smaller buildings. AB also serves to promote better commercial design practices such

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that advancements in the Massachusetts building code can be implemented at an accelerated rate. The Company has played a lead role nationally in the development and refinement of Advance Buildings along with other stakeholders, including other gas and electric utilities. For 2007, the Company will continue to participate in the development of support materials targeted at practitioners and building owners. Also, the Company will continue to sponsor training in coordination with other system benefits administrators across the region.

### **Target Market**

The market includes all commercial, industrial and government facilities, owners and building operators in the Compact service territory, as well as builders, developers, contractors, retailers, and other trade allies.

### **Marketing Approach**

This program is marketed using media advertisements, direct mail to customers, Cape Cod Chamber of Commerce and trade allies, customer site visits, the Cape Light Compact web site, and construction bulletins.

### **Target End Uses**

Targeted end uses include but are not limited to lighting and lighting controls, motors & drives, heating, energy management systems and compressed air.

### **Recommended Technologies**

Massachusetts Cool Choice and Massachusetts MotorUp will promote high efficiency HVAC and NEMA Premium Efficiency motors. Best Practices workshops will include but are not limited to: compressed air, chillers, fans, pumps and process heating.

### **Financial Incentives**

Financial incentives will vary by program. Massachusetts Cool Choice and Massachusetts MotorUp offer prescriptive rebates. Incentives to attend best practices workshops offered through MAEEP will vary based on the specific workshop. Should NEEP offer BOC in 2007, the Compact will offer \$700 towards the \$1400 tuition. Advanced Buildings incentives will include those offered in the New Construction program.

### **Delivery Mechanism**

The program is primarily delivered through the vendor network. Massachusetts MotorUp is provided through a vendor who is responsible for identifying, recruiting, and training trade allies to support program efforts. Massachusetts Cool Choice is provided through the same vendor who acts as a regional circuit rider and informs HVAC retailers about the programs and distributes the appropriate rebate information. The Best Practices Workshops are provided by staff and consultants hired by MAEEP. For Massachusetts MotorUp and Massachusetts Cool Choice (the unitary HVAC program), the Compact

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will promote the measures to its customers and provide any technical assistance and rebates, as appropriate.

**Joint Program Administrator Enhancements Planned for 2007**

The Program Administrators have more closely aligned eligibility requirements and incentives.

**Sponsor Specific Elements**

The Compact will continue to encourage C&I customers to participate in the Residential ENERGY STAR<sup>®</sup> Products and Services Program, where appropriate. For example, owners of hotels, inns, small shops and restaurants will be informed of the rebates available for purchasing new efficient room air conditioners. As another example, small C&I customers will be informed of the rebates available for purchasing new efficient dehumidifiers.

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## **8. Public Education and Marketing**

The Cape and Vineyard communities – like all communities – continue to struggle with a lack of consumer awareness and corresponding limited knowledge of energy efficiency technology and practices. Well-designed programs and consumer education are key to overcoming these barriers. Building on lessons learned during Phase I, II & III of the Compact’s energy efficiency program, the Compact has revised several aspects of the education and marketing plan in this Plan. The revisions are described below.

The representatives of the Compact Governing Board (the “Board”) will remain a vital link to consumers. Board members provide educational information to consumers through: (1) regular updates to town Boards of Selectmen and Councilors on the Compact energy efficiency programs (most of these meetings are televised on a local government access channel); (2) speaking engagements and membership on various civic and business committees per member; and (3) outreach to the media, including daily and weekly newspapers and radio spots.

Looking ahead, the Compact will continue to utilize the extensive network and opportunities it has at the community level to deliver its public education and marketing programs, including working with local environmental groups who share the same goals as the Compact, to advance existing and emerging energy efficiency services, technologies, and practices.

### **8.1 Cape Light Compact Schools Initiative**

The Compact’s education efforts will focus on the continuation and implementation of an energy education program for elementary school students on the Cape and Vineyard. Introduced in the fall of 2003, the National Energy Education (NEED) project is aligned with the national and state standards for science and technology for the targeted grade levels and is an asset to teachers on the Cape and Vineyard. The Cape Light Compact was honored with NEED’s Region of the Year Award in 2004 for ongoing efforts in energy education. Since then, for three consecutive years, the Cape Light Compact’s NEED program has produced nationally recognized award winning school programs.

The Compact continues to work with a Teacher Advisory Committee consisting of teachers, school administrators, Compact Board members and staff. This group assists with assessment, implementation and evaluation of the Energy Education Program.

The NEED Project is now used in 100% of the elementary schools on Martha’s Vineyard and 95% of the elementary schools across the Cape. Teacher workshops and technical assistance will continue to be provided.

The Compact also incorporated education in both the non low-income residential program through the first CFL School Fundraiser in Massachusetts. Other energy efficiency programs in the state have since followed suit. In 2007, the Compact plans to continue the popular school fundraiser for students that currently use the NEED materials.

in their classroom. All monies from the fundraiser (as paid through the non low-income residential products and services) will be paid directly to the schools for energy education purposes. The Compact also supports the Renewable Energy Education program coordinated by the Cape Cod Community College (“CCCC”). In 2004, the CCCC received a National Science Foundation Grant to build a trained workforce able to support renewable energy technologies. Students at CCCC learn about energy efficiency and renewable energy technologies and participate in hands-on diagnostics of their homes or businesses using Cape Light Compact audit protocols.

## 8.2 Local Events

The Compact has held nine successful Energy Fairs. The Energy Fairs were designed to feature Compact efficiency programs and feature community "turn-in" events that focus on efficient lighting and home appliances such as air conditioners and dehumidifiers. The Compact was recognized by the Association for Energy Service Professionals (AESP) for innovation in marketing through our energy fairs.

**Table 8.1 Results of the Energy Fairs**

	Cape 2002	Vineyard 2003	Cape 2003	Vineyard 2004	Cape 2004	Vineyard 2005	Cape 2005	Vineyard 2006	Cape 2006
Attendance	1000	400	2000	800	1,500	500	1,500	750	1,500
Torchiere Turn-In Event	200	32	140	67	120	-	-	-	-
Lamps and Fixtures sold	968	258	1,160	590	900	-	-	Over 480	538
Dehumidifiers & Air Conditioners (through turn-in)	300	90	620	179	620	131	611	88	447
kWh Savings	288,000	72,405	394,000	154,770	440,000	42,182	96,600	86,152	184,086
Monetary Savings	\$40,000	\$10,136	\$55,000	\$21,667	\$62,000	\$6,300	\$15,000	\$12,900	\$33,000

In 2005, the Compact improved service to customer needs by transforming the local events into multiple staged turn-in events through the Cape, and is seeking to hold more shared community-based Energy Fairs with like-minded organizations. Many of the 2006 Energy Fairs were held at and with assistance of local appliance and lighting retailers.

In addition to Energy Fairs, the Compact will continue to participate and sponsor community events that provide demonstrations of existing and emerging technologies and services in energy efficiency.

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### **8.3 Marketing Materials**

The Compact will continue to participate in energy efficiency service provider and utility initiatives that market energy efficiency services to targeted customer groups. Over the past years the Compact has worked successfully with energy efficiency service providers and the regional utilities to design, implement and market commercial and industrial programs, as well as the products and services programs for the residential and commercial sector.

The Compact will also dedicate resources to the development of educational materials in-house where possible that describe the Compact's programs and the purpose of energy efficiency and more fully utilize its website [www.capelightcompact.org](http://www.capelightcompact.org). These materials and methods will help to cost-effectively increase consumer awareness about the Compact's programs and will complement the Compact's other educational efforts.

## 9. Program Monitoring and Verification Plan

In planning evaluation activities for the coming year, the Compact considers several factors including the length of time since a program or end-use was evaluated, the maturity of the program (particularly for process evaluation issues), the significance of expected savings for the end-use or project in the recently completed program year, the stability of prior evaluation results for the program aspect under consideration, and expected opportunities to participate in joint-utility studies, including market assessments, in the coming year.

In addition, the Compact seeks input from interested stakeholders about its evaluation plans as those plans are developed so that significant issues are addressed through the studies that the Compact sponsors. The Compact intends that the evaluation studies initiated starting in 2007 will be performed in accordance with ISO M&V Manual requirements, which are expected to be approved in March 2007.

The Compact anticipates either initiating or completing the following studies in 2007:

### Planned Evaluation Studies in 2007<sup>2</sup>

Program	Study	(J)oint or (C)ompact Specific <sup>3</sup>
RCS/MassSAVE	MassSAVE Impact Evaluation - Combined Billing Analysis and Measure Specific Analysis	J
ENERGY STAR Lighting	Market Progress and Evaluation Report (MPER): Estimate market penetration, product pricing assessment, consumer survey, retailer survey, and net-to-gross analysis.	J
Retail Lighting and Direct Installation Lighting Programs	Cross-Program Lighting Persistence Study	J
ENERGY STAR Appliances	Market Progress and Evaluation Report (MPER): Studies for ENERGY STAR Appliances include a net-to-gross analysis for ENERGY STAR clothes washers and qualitative assessment of room air conditioner program implementation features.	J
Residential New Construction/ENERGY STAR Homes	ENERGY STAR Homes (Focus to be determined by JMC Evaluation Group)	J
Residential HVAC	Residential HVAC – Evaluation of Mini-Split HVAC Systems	J

<sup>2</sup> Evaluation priorities may change during the year, affecting both the timing and focus of studies actually completed.

<sup>3</sup> Some of the studies identified as Compact-specific may be completed with others, if feasible. Some of the studies identified as Joint may be completed as Compact-specific if it is determined that a joint effort is not practical.

Program	Study	(J)oint or (C)ompact Specific <sup>3</sup>
Multiple Residential Programs	Residential Peak Coincidence	J
Low Income Programs	Energy Bucks Market Research	J
All Programs	Avoided Cost Study	J
C&I and Government New Construction, Large and Small Retrofit	Custom Non-Energy Benefits (NEBS) Research	J
C&I and Government New Construction	C&I Construction Baseline	J
Small C&I	C&I Peak Coincidence	J
Various Residential and Commercial & Industrial Programs	Regional Effort - Common Measure Lives	J
Various Residential and Commercial & Industrial Programs	Literature Review - Savings Persistence	J
Various Residential and Commercial & Industrial Programs	Primary Research - Savings Persistence	J
C&I and Government New Construction	C&I New Construction Market Characterization	J
C&I and Government New Construction, Large and Small Retrofit	Review/Consistence in Impact Evaluation of Large and Custom Projects	J
C&I and Government New Construction, Large and Small Retrofit	Incremental Cost Study for Efficient HVAC	J
Energy Education	Market assessment and impact study (e.g., NEED Project)	C
All Programs	Miscellaneous Evaluation	C and J
All Programs	Program and Regulatory Support	C

The Compact anticipates that additional, focused studies may be required to inform program design and implementation practices through the year. The Compact may join Massachusetts’ utilities in additional studies addressing issues of particular interest to state regulators. In addition, evaluation priorities may also change during the year. Changes in focus may affect the timing of studies completed during the year.

The Compact will continue to file annual reports about the progress of its energy efficiency programs. The Compact will also file annual updates of proposed evaluation studies. The results reported in the annual report will reflect and incorporate the findings of completed evaluation studies.

## Appendix A. Benefit/Cost Analysis

**Table A.1 Benefit – Cost Summary: Avoided Costs Include DRIPE**

BCR Activity	TRC Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)
<b>Residential</b>					
A02a Residential Lost Opportunity	1.65	\$778	\$1,980	\$1,201	\$338
A03a Residential Retrofit 1-4	2.08	\$1,564	\$3,007	\$1,443	\$1,079
A04a Residential Lighting	7.40	\$3,071	\$3,551	\$480	\$364
A04b Residential Appliances	2.96	\$2,007	\$3,033	\$1,026	\$347
<b>Subtotal: Residential</b>	<b>2.79</b>	<b>\$7,420</b>	<b>\$11,571</b>	<b>\$4,150</b>	<b>\$2,129</b>
<b>Low Income</b>					
B03a Low-Income Retrofit 1-4	3.14	\$1,250	\$1,833	\$584	\$584
B03b Low-Income Retrofit Multifamily	3.57	\$167	\$232	\$65	\$65
<b>Subtotal: Low Income</b>	<b>3.18</b>	<b>\$1,416</b>	<b>\$2,065</b>	<b>\$649</b>	<b>\$649</b>
<b>Com/Ind</b>					
C02a C&I Lost Opportunity	2.09	\$240	\$460	\$220	\$180
C03a Large C&I Retrofit	2.87	\$1,036	\$1,591	\$555	\$481
C03b Small C&I Retrofit	3.05	\$3,713	\$5,529	\$1,816	\$1,594
<b>Subtotal: C&amp;I</b>	<b>2.93</b>	<b>\$4,990</b>	<b>\$7,580</b>	<b>\$2,591</b>	<b>\$2,254</b>
<b>Grand Total</b>	<b>2.87</b>	<b>\$13,826</b>	<b>\$21,216</b>	<b>\$7,390</b>	<b>\$5,032</b>

**Table A.2 Benefit – Cost Summary: Avoided Costs Do Not Include DRIPE**

BCR Activity	TRC Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)
<b>Residential</b>					
A02a Residential Lost Opportunity	1.16	\$187	\$1,388	\$1,201	\$338
A03a Residential Retrofit 1-4	1.94	\$1,350	\$2,793	\$1,443	\$1,079
A04a Residential Lighting	5.96	\$2,380	\$2,860	\$480	\$364
A04b Residential Appliances	2.22	\$1,251	\$2,277	\$1,026	\$347
<b>Subtotal: Residential</b>	<b>2.25</b>	<b>\$5,168</b>	<b>\$9,318</b>	<b>\$4,150</b>	<b>\$2,129</b>
<b>Low Income</b>					
B03a Low-Income Retrofit 1-4	3.00	\$1,166	\$1,750	\$584	\$584
B03b Low-Income Retrofit Multifamily	3.40	\$156	\$220	\$65	\$65
<b>Subtotal: Low Income</b>	<b>3.04</b>	<b>\$1,322</b>	<b>\$1,970</b>	<b>\$649</b>	<b>\$649</b>
<b>Com/Ind</b>					
C02a C&I Lost Opportunity	1.20	\$44	\$264	\$220	\$180
C03a Large C&I Retrofit	1.66	\$365	\$920	\$555	\$481
C03b Small C&I Retrofit	1.84	\$1,517	\$3,332	\$1,816	\$1,594
<b>Subtotal: C&amp;I</b>	<b>1.74</b>	<b>\$1,925</b>	<b>\$4,516</b>	<b>\$2,591</b>	<b>\$2,254</b>
<b>Grand Total</b>	<b>2.14</b>	<b>\$8,415</b>	<b>\$15,804</b>	<b>\$7,390</b>	<b>\$5,032</b>

**Table A.3 Cost Detail by BCR Activity**

Sector	BCR Activity	Program	Total TRC Costs (\$000)	Total PA Costs (\$000)	Program Implementation (\$000)	Participant (\$000)	Evaluation (\$000)
<b>A - Residential</b>			<b>\$4,150</b>	<b>\$2,129</b>	<b>\$1,999</b>	<b>\$2,021</b>	<b>\$130</b>
	A02a Residential Lost Opportunity		\$1,201	\$338	\$304	\$863	\$34
		A02a Energy Star Homes	\$329	\$229	\$195	\$100	\$34
		A02b GAF - Renewables Portion	\$692	\$14	\$14	\$678	\$0
		A02b GAF - Efficiency Portion	\$181	\$95	\$95	\$85	\$0
	A03a Residential Retrofit 1-4		\$1,443	\$1,079	\$1,036	\$364	\$43
		A03a Residential Conservation Service	\$1,443	\$1,079	\$1,036	\$364	\$43
	A04a Residential Lighting		\$480	\$364	\$339	\$116	\$25
		A04a Energy Star Lighting	\$480	\$364	\$339	\$116	\$25
	A04b Residential Appliances		\$1,026	\$347	\$320	\$678	\$28
		A04b Energy Star Appliance	\$1,026	\$347	\$320	\$678	\$28
<b>B - Low Income</b>				\$649	\$621	\$0	\$28
	B03a Low-Income Retrofit 1-4		\$584	\$584	\$559	\$0	\$25
		B03a LI Single Family	\$584	\$584	\$559	\$0	\$25
	B03b Low-Income Retrofit Multifamily		\$65	\$65	\$62	\$0	\$3
		B03b LI Multi-Family	\$65	\$65	\$62	\$0	\$3
<b>C - Commercial &amp; Industrial</b>				\$2,254	\$2,172	\$337	\$83
	C02a C&I Lost Opportunity		\$220	\$180	\$176	\$40	\$4
		C02a C&I New Construction	\$100	\$82	\$80	\$19	\$2
		C02b C&I Govt New Construction	\$46	\$45	\$44	\$1	\$1
		C04c C&I Products & Services	\$74	\$53	\$52	\$21	\$1
	C03a Large C&I Retrofit		\$555	\$481	\$449	\$74	\$31
		C03a C&I Large Retrofit	\$180	\$120	\$97	\$60	\$23
		C03c C&I Govt Large	\$375	\$361	\$352	\$14	\$8
	C03b Small C&I Retrofit		\$1,816	\$1,594	\$1,546	\$222	\$47
		C03b C&I Small Retrofit	\$1,180	\$982	\$954	\$199	\$28
		C03d C&I Govt Small	\$635	\$612	\$593	\$23	\$19
<b>Grand Total</b>			<b>\$7,390</b>	<b>\$5,032</b>	<b>\$4,791</b>	<b>\$2,358</b>	<b>\$241</b>

**Table A.4 Benefit Detail by BCR Activity**

BCR Activity	Total Benefits											Load Reduction				MWh Saved	
	Total Benefits	Capacity				Energy				Non Electric		Annual	Summer	Winter	Lifetime	Annual	Lifetime
		Generation		Trans	MDC	Winter		Summer		Resource	Non-Resource						
		Summer	Winter			Peak	Off Peak	Peak	Off Peak								
Sector	Data																
BCR Activity	Total Ben	SumCapVal	WinCapVal	TransVal	DistVal	WinPkVal	WinOffVal	SumPkVal	SumOffVal	ResVal	NonResVal	Ann kW	Sum kW	Win kW	Life kW	Ann MWh	Lifet MWh
<b>Residential</b>	<b>\$11,570,665</b>	<b>\$556,464</b>	<b>\$0</b>	<b>\$138,798</b>	<b>\$518,348</b>	<b>\$1,332,646</b>	<b>\$1,098,069</b>	<b>\$553,078</b>	<b>\$492,790</b>	<b>\$3,977,620</b>	<b>\$650,342</b>	<b>5,947</b>	<b>754</b>	<b>1,927</b>	<b>7,680</b>	<b>7,526</b>	<b>56,435</b>
A02a Residential Lost Opportunity	\$1,979,906	\$163,893	\$0	\$38,811	\$144,942	\$92,659	\$73,114	\$112,698	\$55,616	\$547,872	\$158,384	394	114	92	2,489	475	6,125
A03a Residential Retrofit 1-4	\$3,006,931	\$52,184	\$0	\$13,248	\$49,476	\$323,977	\$179,902	\$95,113	\$78,280	\$2,096,212	-\$95,647	685	82	271	690	1,108	11,747
A04a Residential Lighting	\$3,550,853	\$143,861	\$0	\$38,079	\$142,209	\$858,870	\$778,144	\$299,025	\$324,588	\$0	\$275,365	4,415	309	1,294	1,912	5,590	34,760
A04b Residential Appliances	\$3,032,975	\$196,526	\$0	\$48,660	\$181,721	\$57,140	\$66,908	\$46,241	\$34,306	\$1,333,535	\$312,241	452	249	271	2,589	352	3,803
<b>Low Income</b>	<b>\$2,065,205</b>	<b>\$22,984</b>	<b>\$0</b>	<b>\$5,827</b>	<b>\$21,761</b>	<b>\$169,134</b>	<b>\$75,569</b>	<b>\$39,438</b>	<b>\$29,235</b>	<b>\$295,116</b>	<b>\$1,311,276</b>	<b>252</b>	<b>36</b>	<b>109</b>	<b>305</b>	<b>465</b>	<b>5,488</b>
B03a Low-Income Retrofit 1-4	\$1,833,397	\$20,253	\$0	\$5,134	\$19,173	\$157,261	\$69,131	\$34,781	\$25,892	\$260,398	\$1,157,822	230	32	99	269	420	5,031
B03b Low-Income Retrofit Multifamily	\$231,809	\$2,731	\$0	\$693	\$2,587	\$11,873	\$6,439	\$4,657	\$3,342	\$34,718	\$153,454	22	4	9	36	44	457
<b>Com/Ind</b>	<b>\$7,580,376</b>	<b>\$806,425</b>	<b>\$0</b>	<b>\$196,477</b>	<b>\$733,753</b>	<b>\$859,362</b>	<b>\$622,790</b>	<b>\$567,088</b>	<b>\$347,018</b>	<b>\$0</b>	<b>\$382,909</b>	<b>1,195</b>	<b>835</b>	<b>473</b>	<b>10,768</b>	<b>3,468</b>	<b>44,465</b>
C02a C&I Lost Opportunity	\$460,444	\$50,927	\$0	\$12,288	\$45,891	\$47,691	\$31,804	\$35,262	\$18,239	\$0	\$22,012	59	46	22	694	164	2,504
C03a Large C&I Retrofit	\$1,591,186	\$177,274	\$0	\$43,155	\$161,164	\$190,098	\$137,875	\$114,617	\$69,546	\$0	\$25,782	243	182	90	2,365	728	9,500
C03b Small C&I Retrofit	\$5,528,746	\$578,225	\$0	\$141,034	\$526,698	\$621,573	\$453,112	\$417,210	\$259,234	\$0	\$335,116	894	608	361	7,710	2,575	32,460
<b>Grand Total</b>	<b>\$21,216,247</b>	<b>\$1,385,873</b>	<b>\$0</b>	<b>\$341,103</b>	<b>\$1,273,861</b>	<b>\$2,361,141</b>	<b>\$1,796,428</b>	<b>\$1,159,604</b>	<b>\$869,043</b>	<b>\$4,272,735</b>	<b>\$2,344,526</b>	<b>7,394</b>	<b>1,625</b>	<b>2,509</b>	<b>18,754</b>	<b>11,458</b>	<b>106,389</b>

## Appendix B. Program Names and Acronyms Used

Table B.1 includes a comparison of the program names that are used in this Energy Efficiency Plan and the program names (by BCR Activity) used in the Compact's Annual Report on Energy Efficiency Activities submitted to DOER. The names used in the Annual Report are determined by DOER and are used consistently by all efficiency Program Administrators in Massachusetts. As indicated, some of the programs described in this EEP are included within other programs in the Annual Report.

**Table B.1 Comparison of Program Names Used for the EEP and the Annual Report**

<b>Energy Efficiency Plan: Program Name</b>	<b>Annual Report to DOER: Benefit Cost Ratio Activity</b>
Residential New Construction (Massachusetts New Homes with Energy Star®)	Residential Lost Opportunity
Residential Home Energy Services (RCS/MassSAVE)	Residential Retrofit 1-4
Residential ENERGY STAR Products and Services -- Lighting	Residential Lighting
Residential ENERGY STAR Products and Services -- Appliances	Residential Appliances
Low-Income Single-Family	Low-Income Retrofit 1-4
Low-Income Multi-Family	Low-Income Multifamily Retrofit
Low-Income New Construction and Rehabilitation	Low-Income Lost Opportunity
C&I New Construction and Rehabilitation	C&I Lost Opportunity
Large Commercial and Industrial Retrofit	Large C&I Retrofit
Small Commercial and Industrial Retrofit	Small C&I Retrofit
Government Agencies	(Included in Small C&I Retrofit)
C&I Products and Services	(Included in Large C&I Retrofit)

Table B.2 provides a list of the Acronyms used in this Energy Efficiency Plan.

**Table B.2 List of Acronyms**

<b>Acronym</b>	<b>Definition</b>
ACEEE	American Council for an Energy Efficient Economy
AFD	Adjustable Frequency Drives
AFUE	Annual Fuel Utilization Efficiency
AESC	Avoided Energy Supply Costs
AESP	Association of Energy Service Professionals
AHAM	Association of Home Appliance Manufacturers
BOC	Building Operators Course
C&I	Commercial and Industrial
CCCC	Cape Cod Community College
CEE	Consortium for Energy Efficiency
CFL	Compact Fluorescent Lamp

CLC	Cape Light Compact
CO2	Carbon Dioxide
DOE	Department of Energy
DOER	Division of Energy Resources
DTE	Department of Telecommunications and Energy
ECM	Electronic Commutated Motor
EEI	Energy Efficiency Incentive
EEP	Energy Efficiency Plan
EER	Energy Efficiency Ratio
EPA	Environmental Protection Agency
FR&SP	Free-ridership and Spillover
HAC	Housing Assistance Corporation
HERS	Home Energy Rating Scale
HSPF	Heating Seasonal Performance Factor
HVAC	Heating Ventilation and Air Conditioning
HVAC	Heating, Ventilation and Air Conditioning
IFD	Invitation for Bid
ISM	Instant Savings Measure
JMC	Joint Management Committee
LEAN	Low-Income Energy Affordability Network
LED	Light Emitting Diode
M&E	Monitoring and Evaluation
MPER	Multi-Year Program Evaluation and Reporting
MTC	Massachusetts Technology Collaborative
NATE	North American Technician Excellence
N/C	New Construction
NCP	Negotiated Cooperative Promotions
NEED	National Energy Education Development
NEEP	Northeast Energy Partnerships, Inc.
O&M	Operation and Maintenance
PV	Photovoltaic
RCS	Residential Conservation Services
RFP	Request for Proposal
SEER	Seasonal Energy Efficiency Rating
TRC	Total Resource Cost
TXV	Thermostatic Expansion Valve
WAP	Weatherization Assistance Programs

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## **Appendix C.**

### **Cape Cod Chamber of Commerce Letter**



February 9, 2007

Kevin F. Galligan, Program Manager  
PO Box 427  
Barnstable, MA 02630

Re: Cape Light Compact C&I Energy Efficiency Program

Dear Kevin:

Please acknowledge this letter as a commitment by the Cape Cod Chamber of Commerce / Convention & Visitors Bureau (Chamber) to continue its partnership with the Cape Light Compact for purposes of marketing and promoting the Commercial & Industrial Energy Efficient Programs administered by the Cape Light Compact (Compact).

Recently, the Chamber and the Compact worked collaboratively on an event targeting the hotel and hospitality industry. This event was very successful and resulted in the participants saving energy and reducing their electric costs; over \$34,000 in Compact-funded energy efficiency projects were delivered to businesses that attended. We look forward to participating in several more of these events in 2007.

I was pleased to hear at a recent meeting that over the past five and one-half years the Compact has invested \$18.7 million of ratepayer funds in energy efficiency measures on Cape Cod and Martha's Vineyard. I look forward to meeting with you soon to map out a 2007 and beyond marketing plan.

Sincerely,

*Signed electronically*

Wendy K. Northcross, CCE  
Chief Executive Officer  
Cape Cod Chamber of Commerce / CVB  
5 Shoot Flying Hill Road, Centerville, MA 02632