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November 26, 2008

VIA ELECTRONIC MAIL
ORIGINAL BY HAND DELIVERY

Mary Cottrell, Secretary
Department of Public Utilities
One South Station, 2nd Floor
Boston, MA 02110

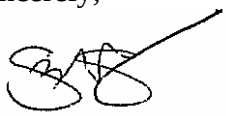
Re: The Cape Light Compact's Proposed Second Amendment to Its Approved Energy Efficiency Plan: 2007-2012
DPU 07-47

Dear Secretary Cottrell:

Please find enclosed for filing an original and six (6) copies of the Cape Light Compact's Proposed Second Amendment to its Approved Energy Efficiency Plan, in the above-referenced proceeding.

Thank you for your attention to this matter. If you require further information or have any questions, please do not hesitate to contact me.

Sincerely,



Suzy Hong

SH/drb
Enclosures
cc: Benjamin Spruill, Hearing Officer (w/enc.) (via email and hand delivery)
Jamie Tosches, Assistant Attorney General (w/enc.) (via email and first class mail)
Steven Venezia, DOER (w/enc.) (via email and first class mail)
Douglas Denny-Brown, Esq. (via email and first class mail)
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COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

The Cape Light Compact's Proposed Second Amendment to Its Approved Energy Efficiency Plan: 2007 – 2012	)))	DPU 07-47

THE CAPE LIGHT COMPACT'S PROPOSED SECOND AMENDMENT TO ITS APPROVED ENERGY EFFICIENCY PLAN: 2007 - 2012

I. INTRODUCTION

1. The Towns of Aquinnah, Barnstable, Bourne, Brewster, Chatham, Chilmark, Dennis, Edgartown, Eastham, Falmouth, Harwich, Mashpee, Oak Bluffs, Orleans, Provincetown, Sandwich, Tisbury, Truro, West Tisbury, Wellfleet, and Yarmouth, and the counties of Barnstable and Dukes County, acting together as the Cape Light Compact (the "Compact"), hereby submit to the Department of Public Utilities (the "DPU" or the "Department") their proposed second amendment (the "Proposal") to their approved multi-year Energy Efficiency Plan: 2007 – 2012 (the "EEP"). Please see Exhibit A for the Cape Light Compact Energy Efficiency Plan 2007 – 2012, 2009 EEP Update.

2. On October 1, 2008 the Department approved an amendment to the EEP to increase funding for residential energy efficiency programs for this winter (2008), DPU 07-47-A (October 1, 2008). The amendment was filed pursuant to a request from the Department to submit proposals for such increased funding. Letter from Paul J. Hibbard, Chairman of the DPU, and Tim Woolf and W. Robert Keating, Commissioners of the DPU, to Energy Efficiency Service Lists Regarding DOER Request to Increase Funding for Residential Energy Efficiency Programs (July 25, 2008). This Proposal includes funding and measures for this winter (2009) already approved by the Department in the October 1st Order.

3. On August 7, 2008, the Department issued a letter directing Program

Administrators ("PAs") to file 2009 Energy Efficiency Plans. Letter from Paul J. Hibbard, Chairman of the DPU, and Tim Woolf and W. Robert Keating, Commissioners of the DPU, to Energy Efficiency Service Lists Regarding 2009 Energy Efficiency Plans (August 7, 2008). This Proposal is submitted pursuant to the Department's letter of August 7th.

II. BACKGROUND AND HISTORY OF THE COMPACT AND ITS ENERGY EFFICIENCY PROGRAM

4. The Compact is a governmental aggregator under G.L. c. 164, §134 and consists of the twenty-one towns in Barnstable and Dukes Counties, as well as the two counties themselves. It is organized through a formal Intergovernmental Agreement under G.L. c. 40, §4A. The Compact's Aggregation Plan was approved by the Department in DTE 00-47. The Compact maintains a business office within the Barnstable County offices located at the Superior Courthouse at 3195 Main Street in Barnstable, MA 02630.

5. The purposes of the Compact include, among other things, (1) to provide the basis for aggregation of all consumers on a non-discriminatory basis; (2) to acquire the best market rate for electricity supply and transparent pricing; (3) to provide sharing of economic savings to consumers based on current electric rates and/or cost-of service ratemaking approved by the Department; (4) to provide full public accountability to consumers; and (5) to utilize and encourage demand side management and other forms of energy efficiency and to advance consumer awareness and adoption of a wide variety of energy efficiency measures through the implementation of an energy efficiency plan. See Compact Intergovernmental Agreement at Article I.

6. The Compact presently offers a competitive power supply option on an opt-out basis to over 200,000 customers, across all customer classes, who are located within the

Compact's service territory. The Department approved the Compact's current form of universal service competitive electric supply agreement in DTE 04-32 (May 4, 2004), pursuant to which the Compact has entered into supply agreements with Consolidated Edison Solutions, Inc. The Compact also operates and administers its own Energy Efficiency Plan.

7. In its Final Order of April 6, 2001, the Department approved the Compact's original Energy Efficiency Plan. Final Order, April 6, 2001, DTE 00-47C ("Final Order"). In its Final Order, the Department found that the Compact was establishing a load aggregation program for purposes of Section 134(b), and that the Energy Efficiency Plan was consistent with state energy conservation goals. See Final Order, DTE 00-47C.

8. In its Order of October 23, 2003, the Department approved the Compact's Energy Efficiency Plan, Phase II, 2003-2007 ("Phase II Plan"). Order, October 23, 2003, DTE 03-39. In certifying the Phase II Plan, the Department found that the Compact was establishing a load aggregation program for purposes of Section 134(b), and that the revised Energy Efficiency Plan was consistent with state energy conservation goals. See October 23, 2003 Order, DTE 03-39.

9. The Department stamp-approved the Compact's Energy Efficiency Plan, Phase III, 2005-2007 ("Phase III Plan"), on November 8, 2005. See Stamp Approval, DTE 05-34.

10. The Department also stamp-approved the Compact's current EEP on December 24, 2007. See Stamp Approval, DPU 07-47. The current EEP is an outgrowth of the Compact's previous energy efficiency programs which the DPU had already approved.[1]

[1] The Compact's original Energy Efficiency Plan was filed with the Department in 00-47C, the Phase II Plan was filed with the Department in 03-39 and the Phase III Plan was filed with the Department in 05-34. The Compact's Energy Efficiency Plan: 2007-2012 was filed with the Department in 07-47. Upon request, the Compact will provide the prior and existing plans to the Department or any other interested person.

III. REQUESTED PROCEDURES TO REVIEW THIS PROPOSAL

11. The EEP specifically provides for updates and amendments to the EEP as necessary to respond appropriately to market and regulatory developments as well as other changes in the Massachusetts energy efficiency industry. EEP at 4. The EEP thus clearly contemplated the need for updates and amendments over the life of the multi-year plan.

12. This Proposal is in the nature of the 2008 update, which was approved by the Department. This Proposal continues the program enhancements and increased funding already approved for 2008. Also, like the 2008 update, this Proposal is submitted at the direction of the Department, in response to new legislation and the changing environment for energy efficiency in the state.

13. The Compact therefore respectfully requests that the Department utilize the same procedures for review of this Proposal that were used for the prior proposed amendment. In that case, the Department allowed a comment period and discovery by Department staff. The Compact sees no reason to require additional procedures in this instance. As discussed in paragraph 42, the Compact's Proposal has already been subject to a highly public review process.

14. Furthermore, the Department used the same type of procedures for review of prior Compact energy efficiency plans.

15. As discussed in paragraphs 4 and 5, the Department approved the prior Compact energy efficiency plans pursuant to Section 134(b), which states that a "municipality or group of municipalities establishing a load aggregation program" may "adopt an energy plan" describing the manner in which the "municipality or group of municipalities may implement demand side management programs." Municipalities must submit the energy plan to the Department "to

certify that it is consistent with … state energy conservation goals." G.L. c. 164, §134(b).[2]

16. The Compact has already submitted a separate Memorandum on Procedures to request the specific procedures that the Department should follow in this case. See DPU 07-47, *Memorandum of Procedures to Certify the Cape Light Compact Energy Efficiency Plan: 2007 – 2012* (March 1, 2007). When the Department approved the Compact's original Energy Efficiency Plan, the Phase II Plan, the Phase III Plan, and the current EEP, the Department served discovery requests and allowed interested parties to file comments. See DTE 00-47C, DTE 03-39, DTE 05-34 and DPU 07-47. The Department should, *at most*, follow the same type of process for this Proposal. Furthermore, as this Proposal only serves to continue and enhance the Compact's existing EEP, the Compact respectfully submits that the Department need only conduct a limited review to determine whether the Proposal effects the Department's earlier determination of consistency with state energy conservation goals.

IV. SUMMARY OF THE PROPOSAL

17. In its letter of August 7th, the Department stated that it expects that Program Administrators (the "PAs") "will use program implementation in 2009 as a transition year leading into the implementation of expanded energy efficiency programs under the [Green Communities] Act, beginning in 2010." Letter from Paul J. Hibbard, Chairman of the DPU, and Tim Woolf and W. Robert Keating, Commissioners of the DPU, to Energy Efficiency Service Lists Regarding 2009 Energy Efficiency Plans (August 7, 2008).

18. The Department also requested that, in addition to standard content, 2009 plans include:

[2] The recently passed Green Communities Act (St. 2008, Chapter 169) (the "Act") provides that energy efficiency programs will continue to be "administered by . . . municipal aggregators with energy plans certified by the
Footnote continued on next page.

- a proposal for increased budgets for 2009, relative to previous years;
- for electric plans, estimates of expected funding from the Regional Greenhouse Gas Initiative ("RGGI") and Forward Capacity Market ("FCM") proceeds; and
- for electric plans, a proposal for how any remaining incremental costs will be recovered.

19. The Compact's original EEP: 2007 – 2012 filing included:

- Petition of Cape Light Compact Seeking Certification of Energy Efficiency Plan: 2007 – 2012;
- Memorandum of Procedures to Certify the Cape Light Compact Energy Efficiency Plan: 2007 – 2012;
- The Cape Light Compact Energy Efficiency Plan: 2007 – 2012;
- Cape Light Compact Measurement and Verification Plan;
- Report of the Cape Light Compact on Its Energy Efficiency Plan: 2007 – 2012; and
- Statement in Support of the Cape Light Compact Energy Efficiency Plan: 2007 – 2012 (by Synapse Energy Economics, Inc.).

20. As this Proposal is an update to the existing, approved EEP the Compact refers the Department to the documents already filed in DPU 07-47.

21. This Proposal includes an updated 2009 program plan with supporting appendices; a spreadsheet illustrating how remaining incremental costs will be recovered (please see Exhibit CLC-Z); and a spreadsheet illustrating the customer rate impacts (please see Exhibit CLC-Z-1).

[D]epartment under subsection (b) of section 134 of Chapter 169." G.L. c. 25, §19.

22. The Compact's approach to this Proposal focuses on: (i) expanding programs to address customer request backlogs due to lack of funding and to provide increased incentives to maximize program participation and provide direct financial benefits to consumers; and (ii) implementing new programs and innovative pilot programs.

23. The Proposal includes increased budgets for 2009. The total overall budget proposed for 2009 is $10,067,635. This compares to a total overall budget for 2008 of $5,842,022 (which includes the increased funding approved in DPU 07-47-A). The Compact has proposed budgets based on its estimates of proceeds from the system benefits charge, the FCM, RGGI and other funding to be approved by the Department. The Compact believes that its proposed budgets for 2009 are necessary to meet the ever-increasing need and demand for its programs.

24. The Compact estimates that expected funding from RGGI for 2009 will be approximately $440,094.

25. The Compact's estimate of expected funding from RGGI is based on its proceeds from the September 2008 RGGI auction, which are estimated to be $146,698. Since RGGI auctions are expected to take place throughout 2009, the Compact took the dollar allocation from the September 2008 auction and multiplied it by 3 to come up with an estimate for funds for program year 2009.

26. The Compact estimates that expected funding from FCM proceeds will be approximately $240,000.

27. The Compact's estimate of expected funding from FCM proceeds is based on the Compact's continued participation in the ISO New England Other Demand Resources Transition Program with monthly Installed Capacity Market Transition Payments estimated to average

$20,000 per month.

28. The Compact's increased program budgets for 2009 also include "other funding" as allowed under the Act. St. 2008, Chapter 169, §11.

29. Section 11 of the Act allows energy efficiency programs to be funded from, among other sources, "other funding as approved by the [D]epartment after consideration of: (i) the effect of any rate increases on residential and commercial consumers; (ii) the availability of other private or public funds, utility administered or otherwise, that may be available for energy efficiency or demand resources; and (iii) whether past programs have lowered the cost of electricity to residential and commercial consumers." G.L. c. 25, §19.

30. The Compact's analysis of the rate impacts of the Department-approved funding indicates that the proposed amount of such funding will result in a rate increase of 2.22 mils per kilowatt hour. In general that will amount to a $1.11/month increase on residential customer bills (assuming a usage of 500 kWh/month) and $6.65/month increase on commercial customer bills (assuming a usage of 3,000 kWh/month). Exhibit CLC-Z-1 presents information supporting the estimated rate impacts.

31. The Cape Light Compact received a $1.5 million grant from the Massachusetts Technology Collaborative Renewable Energy Trust's Green Affordable Housing Initiative, which aims to catalyze the affordable housing financing, development, and builder communities to include more green design and renewable energy in future developments. The Cape Light Compact will help 55 units on Cape Cod and Martha's Vineyard to build to LEED-H® standards and install renewable energy systems on affordable housing. The 16 completed units on Cape Cod and Martha's Vineyard were the first in the nation to achieve LEED-H Platinum standards in the multi-family and single detached housing categories. In addition, many of the Compact's

programs are joint efforts with other PAs and/or program sponsors. The Compact has thereby leveraged and maximized the available private and public funding for energy efficiency and demand resources that it is aware of.

32. Energy efficiency lowers the cost of electricity by reducing customer bills. Typical electric customer savings from comprehensive energy efficiency range from 10% to 30%, potentially more in some cases. See Tim Woolf, Commissioner, Department of Public Utilities, *Turbo-Charging Energy Efficiency in Massachusetts: A DPU Perspective* (PowerPoint presentation), presented at the Restructuring Roundtable (April 11, 2008).[3] Participating customers can see reductions on their entire bill. *Id.* Electricity rates in Massachusetts range from 14 ¢/kWh to 21 ¢/kWh. *Id.* Energy efficiency measures cost roughly 3-4 ¢/kWh. *Id.* The benefit-cost ratio is therefore very favorable from the customer's perspective.

33. Energy efficiency can also reduce wholesale energy and capacity costs. *Id.* A recent study for the Massachusetts Technology Collaborative found that eliminating electricity load growth through energy efficiency and combined heat and power could reduce wholesale electricity prices by as much as 5%.[4] These benefits accrue to everyone participating in the wholesale energy market. With regard to wholesale capacity prices in the Forward Capacity Market, demand resources represented 64% of new resources that cleared the first auction, including 660 MW of energy efficiency.[5] This will clearly help dampen the price for capacity in future auctions. Therefore, even customers who do not participate in any energy efficiency

[3] For a copy of the presentation, please contact Kevin Galligan, Energy Efficiency Program Manager, at kgalligan@capelightcompact.org.
[4] Synapse Energy Economics, Inc., *Impacts of Distributed Generation on Wholesale Electric Prices and Air Emissions in Massachusetts*, prepared for the Massachusetts Technology Collaborative (March 2008).
[5] ISO New England, Inc., Forward Capacity Auction Results Filing, Attachment A, FERC Docket No. ER08-633 (March 3, 2008).

programs will experience reductions in electricity commodity costs. These benefits will accrue to all electric customers in New England.

34. The Compact has also attached a spreadsheet illustrating how remaining incremental program funding will be recovered through other funding. Exhibit CLC-Z presents the program funding requirements forecast by month and the various funding sources needed to meet these program funding requirements. The funding sources include the system benefits charge, potential short-term borrowing and recovery (approved by the Department in DPU 07-47-A), estimated FCM and RGGI funds and other funding as approved by the Department. The Department-approved "other funding" (line 9 of Exhibit CLC-Z) is proposed to be collected through a fully reconciling mechanism between NSTAR Electric Company and the Compact upon approval of the NSTAR Electric Company proposed energy efficiency reconciling factor (the "EERF"). *See* DPU 08-10-A at 19-21 (October 1, 2008). Exhibit CLC-Z includes a description of the true-up mechanism the Compact contemplates for this Department-approved funding.

35. The Compact respectfully requests Department approval of this Proposal as soon as practicable prior to the first full week of 2009 (January 5, 2009). Timely approval of the Compact's Proposal will ensure that the Compact can prudently spend funds to fulfill commitments to vendors and ensure continuous delivery of programs and services. Since the Compact cannot prudently incur costs without Department approval of this Proposal, the Compact may have to suspend programs and services and re-start them once funding is approved. The Compact hopes to avoid stopping and starting programs and services so that vendors may manage resources more effectively and efficiently and, most importantly, so that customers can have access to programs and services without interruption during the critical

winter months of 2009.

36. The Compact's Proposal is consistent with the Department's finding in DPU 07-47 that the Compact's EEP accomplishes state energy conservation goals. The Compact's Proposal is also a step toward achieving goals set forth in the Act, such as meeting at least 25 percent of the state's electric load with demand side resources, including energy efficiency, by 2020 and reducing total energy consumption in the state by at least 10 percent by 2017 through "green communities, " such as the Compact. St. 2008, Chapter 169, §116. These are realistic goals and the Compact believes that energy efficiency programs and measures, like those included in the Proposal, will achieve the goals set forth in the Act.

37. The Compact consulted with its key program delivery vendors and confirmed that the proposed energy efficiency services can be achieved with the current and proposed expanded workforce of qualified staff and contractors. In fact, many of the Compact's current contractors will be better able to respond to increased demand due to the decrease in other work caused by current economic conditions.

38. The Compact consulted with the Department of Energy Resources (the "DOER") throughout the development of this Proposal consistent with the guidance provided by the DOER. See Massachusetts Department of Energy Resources, *Guidance for 2009 Electric Energy Efficiency Programs* (August 22, 2008). On October 3, 2008 the Compact provided DOER staff and their consultants with preliminary savings goals by program, including supporting assumptions. In addition, on November 11, 2008 the Compact provided the DOER with all materials provided at public information hearings held locally between November 10 - 24.

39. The Compact's Proposal, and all of the programs contained therein, are cost-

effective according to the Department's total resource cost ("TRC") test. On average, all of the Compact's efficiency programs in the Proposal combined are estimated to have a benefit-cost ratio of roughly 3.82 (using the TRC test without adders) and 4.14 (taking into account capacity and energy Demand Reduction Induced Price Effects). Exhibit B, Appendix A5.

40. All of the programs combined are expected to save roughly 20,600 MWh per year, leading to lifetime energy savings of roughly 208,100 MWh. Exhibit B, Appendix A6. The programs are also expected to save 3.7 MW in annual summer demand savings, leading to lifetime summer demand savings of 54.1 MW. *Id*. The Compact's investment of roughly $10.1 million in energy efficiency activities is expected to result in a total of $40.6 million in net benefits to the electricity system and the customers on Cape Cod and Martha's Vineyard, accounting for energy and capacity demand reduction induced price effects. Exhibit B, Appendices A3 and A1, respectively.

41. As the Proposal includes forecasts of budgets and program goals, the Compact will file with the Department an annual report on 2009 budgets and screening analyses, to confirm that implementation of this Proposal is consistent with state energy conservation goals and cost-effective according to the TRC test.

42. The Compact's Proposal was developed through a highly public review process. Local newspapers and radio stations provided information about new programs and raised awareness of the Proposal as it was taking shape. The Compact held four public hearings on the Proposal and solicited public feedback through surveys and written comments. A total of sixty-seven comments and surveys responses were submitted as of Tuesday, November 25, 2008.[6]

[6] Key findings of the survey include: 81% of survey respondents support an expanded Residential Home Energy Audit/MassSAVE program, 85% of survey respondents said they would be willing to pay more on their monthly
Footnote continued on next page.

The results of the survey demonstrate that Cape Cod and Martha's Vineyard residents desire to invest in long-term solutions aimed at protecting and preserving their surroundings. The results of the survey also indicate residents' willingness to pay more to ensure that effective energy efficiency improvements are implemented. The Compact has taken all comments and public input into consideration in submitting this Proposal. The Compact provided staff from the DOER, the Department of Housing and Community Development and the Low-Income Energy Affordability Network ("LEAN") with a chance to review and comment on the Proposal. Comments received by the Compact have been supportive and are reflected in this Proposal.

43. In addition, the Energy Efficiency Committee of the Compact Governing Board approved the Proposal on September 22, 2008. The Energy Efficiency Committee, like the Compact's Board in general, consists of local representatives from the Compact's member municipalities. These local representatives are actively involved in the community and accountable to their appointing authorities.

V. COMPONENTS OF THE FILING

44. The Compact is submitting the following documents with this Proposal:

Exhibit A:	The Cape Light Compact Energy Efficiency Plan 2007 – 2012, 2009 EEP Update
Exhibit B:	Appendices A - C
Exhibit CLC-Z:	Cape Light Compact Pro Forma 2009 Energy Efficiency Program Funding
Exhibit CLC-Z-1:	Cape Light Compact 2009 Energy Efficiency Program Funding Rate Impacts

electric bills to support all existing and expanding programs, with 90% of those respondents willing to pay $1 or more per month. Additional survey findings reveal that the majority of respondents participate in the Compact's energy efficiency programs because of their concern for the environment, more so than reducing usage and saving money. Comments included strong support for among other things: increasing help for low-income customers, benefitting the local workforce, making green building easier to learn and understand, increasing new construction incentives and providing greater assistance to non-profit and religious organizations.

VI. PRAYER FOR RELIEF

45. Wherefore, the Compact respectfully requests that the Department approve this proposed second amendment to its EEP.

Respectfully submitted,
THE CAPE LIGHT COMPACT

By its attorney,

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Dated: November 26, 2008

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D.P.U. 07-47
Exhibit CLC-Z

Cape Light Compact
Proforma 2009 Energy Efficiency Program Funding (1)*

Line No.	Description	Forecast Jan-09	Forecast Feb-09	Forecast Mar-09	Forecast Apr-09	Forecast May-09	Forecast Jun-09	Forecast Jul-09	Forecast Aug-09	Forecast Sep-09	Forecast Oct-09	Forecast Nov-09	Forecast Dec-09	Total	Notes
	Funding Required														
1	Proposed Budget	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 838,970	$ 10,067,635	
2	Short-term Borrowing Recovery	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 25,359	$ 304,307	A
3	Total Funding Required	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 864,329	$ 10,371,942	
	Funding Sources														
4	System Benefits Charge	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 428,151	$ 5,137,818	B
5	Short-term Borrowing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6	Carryover from Previous Year	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
7	ISO-NE FCM Funds (estimated)	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 240,000	
8	RGGI Funds (estimated)	$ -	$ -	$ -	$ 146,698	$ -	$ -	$ -	$ 146,698	$ -	$ -	$ -	$ 146,698	$ 440,094	
9	Other Funding	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 379,503	$ 4,554,030	C
10	Total Funding Sources	$ 827,654	$ 827,654	$ 827,654	$ 974,352	$ 827,654	$ 827,654	$ 827,654	$ 974,352	$ 827,654	$ 827,654	$ 827,654	$ 974,352	$ 10,371,942	

*(1) This Proforma Energy Efficiency Program Funding schedule is proposed to be used to track actual budget expenditures and actual funds received with a periodic true-up performed of the Other Funding (Line 9) based on the coordination between NSTAR Electric Company and Cape Light Compact for such reconciling funding mechanism as approved by the Department.

Note A: Estimated recovery of prior year overspending through short-term borrowing at the government bond rate (D.P.U. 07-47-A, at 17 (2008))
Note B: System Benefits Charge Detail:

Forecasted MWh Sales	Charge (mills/kWh)
2,055,127	2.5

Note C: Other Funding proposed to be collected through fully reconciling funding mechanism between NSTAR Electric Company and Cape Light Compact. Exhibit CLC-Z-1 presents estimated customer rate impacts.

Cape Light Compact
2009 Energy Efficiency Program Funding Rate Impacts

Line No.	Description	Reference			Monthly Customer Bill Impact Residential Customer (avg. 500 kWh/mo)	Monthly Customer Bill Impact Business Customer (avg. 3000 kWh/mo)
	Existing Energy Conservation Charge					
1	Total System Benefits Charge ($)	Exhibit CLC-Z Ln. 4	$	5,137,818		
2	Forecasted MWh Sales	Exhibit CLC-Z Note B		2,055,127		
3	System Benefits Charge (mills/kWh)	Exhibit CLC-Z Note B		2.50	$ 1.25	$ 7.50
	Proposed Other Additional Funding					
4	Total Other Funding	Exhibit CLC-Z Ln. 9	$	4,554,030		
5	Forecasted MWh Sales	Ln. 2 (above)		2,055,127		
6	Other Funding (mills/kWh)	Ln. 4/Ln. 5		2.22	$ 1.11	$ 6.65
7	Customer Bill Impact ($/month) with Existing and Proposed Other Additional Funding				$ 2.36	$ 14.15

The Cape Light Compact Energy Efficiency Plan 2007-2012

2009 EEP Update

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

November 26, 2008

Table of Contents

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 2009 update to the Energy Efficiency Plan. Over many months, the Compact has 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.

Throughout 2008 electricity costs in our region have continued to increase and remain extremely volatile. However, the Compact continues to set new precedents and expand savings for consumers. Preliminary results for 2007 show that over 9,600 customers participated in the energy efficiency programs on Cape Cod and Martha's Vineyard, saving the equivalent of over 17,149 MWh of energy on an annual basis. With the increased funding approval received by the Massachusetts Department of Public Utilities on October 1, 2008, winter 2008-2009 is expected to demonstrate even higher participation and savings especially for residential heating customers dealing with high energy costs and the economic uncertainty throughout our region and nation.

The Compact's competitive power supply program now supplies power to approximately 160,000 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 (RPS) through the purchase of 100% of the RECs required under the RPS. The Compact also offers customers an opportunity to participate in a clean energy option called ***Cape Light Compact Green***^{SM}. 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 2009 and beyond, the Compact intends to continue its efforts in delivering competitive power supply programs to Cape and Vineyard customers. The Compact, working in collaboration with Barnstable County, anticipates playing an instrumental role in assisting the towns with the implementation of the Green Communities Act, and looks forward to continuing to work with the towns on the Cape and Vineyard as they pursue and develop land-based wind turbines and other renewable energy systems. 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 seven and a half year program, through December of 2008, the Compact will have returned approximately $37 million, or 100% of the funds collected from electric ratepayers, in the form of energy efficiency services. 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 2009 and beyond.

Sincerely, Bob Mahoney
Chairman, Cape Light Compact

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 (currently the Department of Public Utilities (the Department or DPU)) 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 Update (EEP) on September 22, 2008. The Compact held a series of public informational meetings on November 10, 17, 20 and 24, 2008, to review and accept comments on the 2009 EEP; made available all public informational meeting documents on the website, www.capelightcompact.org; and conducted an online survey to seek customer feedback on the proposed 2009 EEP.

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

This 2009 Energy Efficiency Plan Update includes the following programs ***(The sections that are bolded and italicized indicate program enhancements as compared to the 2008 Plan Update)***:

- Massachusetts New Homes with ENERGY STAR® 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. ***In 2009, the Compact proposes to address the efficiency of homes that are undergoing major renovation.***

- 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 2009 the Compact proposes to continue the higher incentives approved in October, 2008 and proposes expanding the solar domestic hot water offering to homes with 2 and 3 residents. Also, the Compact proposes introducing deep retrofits and combined heat and power as new offerings within this program.***

- 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. ***In 2009, the Compact proposes offering Light Emitting Diode (LED) fixtures within the ENERGY STAR® Lighting program and consumer electronics measures such as TVs, set-top boxes, and Smart Strips as well as pool pumps within the ENERGY STAR Appliances program.***

- Residential High Efficiency Central Air Conditioning Program ("COOL SMART" with ENERGY STAR). ***Due to budget constraints, the Compact closed availability of this program in March 2006 and did not participate in 2007 or 2008. In 2009, the Compact proposes to participate in this program.***

- 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. ***In 2009, the Compact proposes to spend a greater percentage of total budget on existing offerings. The Compact is also proposing to continue the higher incentives approved in October, 2008 for additional heating system incentives.***

- 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. ***In 2009, the Compact***

proposes to spend a greater percentage of total budget on existing offerings. The Compact is not proposing to add any additional offerings.

- 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. ***In 2009, the Compact will continue to offer 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 reduce overhead costs and ultimately put more funds into the installation of energy efficiency measures. 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 2009, the Compact proposes to re-introduce Prescriptive Lighting incentives in order to align with statewide program administrator offerings.***

- The Large Commercial and Industrial Retrofit Program, which provides technical and financial assistance to medium and large commercial and industrial customers seeking to replace existing operating equipment and processes in their facilities with high-efficiency alternatives. ***In 2009, the Compact proposes to re-introduce Prescriptive Lighting incentives in order to align with statewide program administrator offerings and increase the incentive cap on projects from $75,000 to $150,000 in order to address larger projects in a more efficient manner. The Compact also proposes to offer a demand response initiative to C&I customers who are able to commit to reduce energy consumption by a minimum of 100 kW of demand consistent with the ISO New England programs.***

- The Small Commercial and Industrial Retrofit Program, which provides technical assistance, financial incentives and direct installation to C&I customers whose peak demands historically have been defined at less than 100 kW to replace existing operating equipment and systems with high-efficiency equipment. ***In 2009, the Compact proposes to re-introduce Prescriptive Lighting incentives in order to align with statewide program administrator offerings and increase the incentive cap on projects from $75,000 to $150,000 in order to address larger projects in a more efficient manner. The Compact also proposes to revise the definition of Small C&I Customers to include businesses whose electric demand is 300 kW or lower to encourage greater implementation of measures.***

- The Government Agencies Program, which provides technical and financial energy efficiency assistance to all government facilities, including municipal, state and federal facilities. ***In 2009, consistent with the directives of the recently passed Green Communities Act, the Compact will continue to tailor this program to the***

special needs of Municipalities including: (i) assisting the Department of Energy Resources (DOER) in delivering technical assistance and measure installations funded through the Green Communities Act, and; (ii) supporting Towns' use of an Energy Information System, sponsored by DOER, for tracking energy consumption and formulating action plans leading to energy and climate savings goals. Also, the Compact proposes to offer to selected Towns, the 2008 pilot energy management training program established and funded by Barnstable County and currently being delivered to the Town of Falmouth.

- 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. ***In 2009, the Compact proposes to continue existing offerings. The Compact is not proposing to add any additional offerings.***

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. ***In 2009, additional public education and marketing program funds will be used to support middle school programs that will maintain existing energy education programs provided at the elementary school level.***

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 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 2009 budget year within the multi-year study period. For budgets, the Compact assumes that the electricity sales in the member towns will remain flat over the timeframe of the multi-year plan. Consistent with state law, the budgets - over the multi-year plan - are allocated across the Residential, Low-Income, and Commercial & Industrial sectors generally in proportion to funding contribution by sector.

2. Program Goals

This section presents the Compact's program goals.

Appendix A1 shows the Compact's program goals for 2009. All the efficiency programs combined are expected to save roughly 20,600 MWh per year, leading to lifetime energy savings of roughly 208,100 MWh. The efficiency programs are also expected to save 3.7 MW in annual summer demand savings, leading to lifetime summer demand savings of 54.1 MW. The Compact's investment of roughly $10.1 million in energy efficiency activities is expected to result in a total of $40.6 million in net benefits to the electricity system and the customers on Cape Cod and Martha's Vineyard, accounting for energy and capacity demand reduction induced price effects.

Appendix A2 shows the Compact's program goals to date for the multi-year study period. Previous goals for 2010-2012 are not shown as these goals will change substantially due to recent funding increases per the Green Communities Act.

3. Program Budgets

This section presents the Compact's program budgets.

Appendix A3 shows the details of the Compact's 2009 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 total proposed budget is $10,067,635, with 46% for the Residential sector, 15% for Low Income, and 39% for the Commercial & Industrial sector. 90% of the lifetime savings from this proposed budget will come from the expansion of existing efforts, with the balance from new measures as shown by Appendix C1.

1. The program planning and administration column includes the costs of the Compact's database management system, 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 Low-Income Affordability Network (LEAN) and NEEP.

2. The 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.

3. The customer incentives column includes the costs that are used to provide direct financial support to customers for the installation of efficiency measures.

4. The sales, technical assistance and training, vendor implementation and vendor quality control column includes 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 (1) customer incentives and (2) sales, technical assistance and training, vendor implementation and vendor quality control budgets provides an indication of the portion of funds that are used directly to install energy efficiency measures, which represent nearly 90% of the total energy efficiency budget for 2009.)

5. The measurement and evaluation column includes costs associated with Compact specific and joint regional shared studies to review past performance of energy efficiency programs and services, confirm savings and other key assumptions for planning and reporting purposes and assess future market potential.

The Compact does not require shareholder performance incentives, thus these are not included in the budget.

The Massachusetts Restructuring Act requires that low-income customers receive at least 20% of the residential efficiency budget and in no event less than the amount funded by a charge of 0.25 mills/kWh, applied to sales to the customers on the low-income discount rate. The low-income customers (defined as within 60% of median income) in Compact member towns contributed roughly 2% of total electricity sales for all consumers on the Cape and Vineyard in 2007, 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 funding value as the floor for the low-income sector.

Appendix A4 shows the Compact's program budgets to date for the multi-year study period. Included in this summary are forecasts of funding from: ratepayer system benefits charge, the ISO New England Forward Capacity Market, funds allocated to the Compact through the auction of CO2 allowances traded under the Regional Greenhouse Gas Initiative, anticipated short-term borrowing and additional funding requested from the DPU.

4. Program Cost-Effectiveness

This section presents the costs and benefits of the Compact's efficiency programs. 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 include 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), customer benefits (e.g. reduced operation and maintenance costs), and several societal benefits associated with low-income programs. Additionally, as of 2008, all Massachusetts program administrators jointly agreed to include the societal benefit of energy and capacity demand reduction induced price effects (DRIPE) in the TRC test results. Appendix A5 shows the details of the costs and benefits of the Compact's 2009 efficiency programs. 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 4.15.

The direct economic benefits of the efficiency programs are substantial. With an investment of roughly $13 million (from both the Compact's funds and the participants' contributions), these programs will result in over $54 million in reduced energy costs and other benefits for Cape Cod and Martha's Vineyard, including the impact of energy and capacity demand reduction induced price effects. This means that the *net* benefits of these programs will be nearly $41 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.

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. Appendix A7 presents an estimate of the key air emissions that are avoided by the Compact's energy efficiency programs. Appendix A8 presents an estimate of the program's electricity and other fuel savings by end use.

5. Residential Non-Low Income Programs

5.1 Introduction and Overview

There were roughly 174,500 residential electricity customers in the Compact's member towns in 2007, and they consumed approximately 1,110 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 2007

	Number of Customers	Percent of Class	Percent of Total	Sales (MWh)	Percent of Class	Percent of Total
Low-Income	6,023	3.5%	2.1%	42,612	3.8%	2.1%
Non-Low-Income	168,490	96.5%	97.9%	1,067,748	96.2%	97.9%
Electric Heat	19,481	11.2%	9.7%	193,187	17.4%	9.4%
Non Electric Heat	155,031	88.8%	80.3%	917,172	82.6%	80.6%
Total Residential	174,512	100.0%	86.8%	1,110,359	100.0%	54.0%
Total Compact	200,955	na	100%	2,055,127	na	100%

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

Primary Objective

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

Initially Offered

1998

Performance Goals

- 404 MWh estimated Net Annual savings
- 5,975 MWh estimated Lifetime savings
- 1,376 MW estimated Lifetime savings

150 estimated no. of participants

Budget

Total planned expenditures all categories: $1,028,789 (including homes for Green Affordable Homes grant with the Massachusetts Renewable Energy Trust and the Major Renovations Pilot Program)

Joint vs. Sponsor-Specific Offering

Joint

Program Design

The sponsors continue their strong commitment to the comprehensive whole-house approach of the Massachusetts New Homes with ENERGY STAR® Program.

Builders can choose one of two ways to participate: ENERGY STAR certification or CODE Plus/energy-efficiency measure upgrades. Both require direct installation of ENERGY STAR–qualified compact fluorescent light (CFL) bulbs in appropriate sockets, on-site training, and a final verification inspection.

■ **ENERGY STAR certification:** This path requires:

- A HERS Index of 85 or less
- Meeting envelope leakage and duct leakage standards
- Completing a thermal bypass inspection list
- Meeting the U.S. Environmental Protection Agency's ENERGY STAR homes specifications (see www.energystar.gov/index.cfm ?c=new_homes.hm_index)

■ **CODE Plus/energy-efficiency measure upgrades:** This path offers a prescriptive package to builders, developers, architects, and homeowners who are interested in building energy-efficient housing but not necessarily in achieving ENERGY STAR certification. The features of this path:

- No plan review or energy modeling
- Allows builder to choose from a list of energy-efficient or ENERGY STAR measures Reimbursement of a portion of the cost of installed energy-efficiency measures

Target Market

- Builders
- Architects
- Designers
- Trade allies
- HERS raters
- Home buyers

Others involved in the construction of single- and multifamily home

Marketing Approach

Marketing strategies include direct builder outreach; information on the website (www.massenergystarhomes.com); and meeting presentations, home and trade show exhibits, participation in builders' conferences, and other public relations activities. Energy-efficiency outreach and training to educate builders, architects, HERS raters, real estate agents, building code officials, and industry players also are planned. In addition, individual program sponsors will use targeted marketing as needed to meet program participation and spending goals.

Target End Uses

- Energy-efficient building shell measures
- Proper duct and air sealing techniques
- Heating, ventilation, and air conditioning (HVAC) quality installation
- Energy-efficient lighting
- Mechanical ventilation

Recommended Technologies

- ENERGY STAR–qualified heating and cooling systems, lighting, appliances, and windows
- Increased levels of insulation
- Improved construction techniques to minimize air leakage, duct leakage, infiltration, and heat loss
- Improved HVAC installation techniques
- Incorporation of renewable-energy technologies in partnership with the Massachusetts Renewable Energy Trust

Financial Incentives

Incentive levels may be adjusted to respond to market conditions. Current levels are shown in the table on the next page. In addition, free ENERGY STAR–qualified CFL products are distributed to each home.

Participating homes are also eligible for the heating system, water heater, and thermostat rebates as detailed in Section 5.4 Residential Conservation Services (MassSAVE).

Residential New Construction Incentives, 2009

Package	Requirements	Single-Family Incentive	Multifamily Incentive
CODE Plus	6 ACH CFM 50, 8% duct leakage	$325	$225
ENERGY STAR I	HERS Index of 85 to 66	$750	$650
ENERGY STAR II	HERS Index of 65 or less	$1,250	$1,150

Delivery Mechanism

The program is administered by the program administrator in each service territory and coordinated regionally through the Joint Management Committee (JMC). The JMC will continue the transition to a market-based network of trained contractors who offer energy-efficiency and rating services to homebuilders for a fee. In 2009 this function will continue to be overseen by the program vendor; there are plans to transition to the market-based model in 2010.

The program will continue to train and support raters in meeting program objectives.

Joint Program Administrator Enhancements Planned for 2009

The JMC will introduce a third ENERGY STAR performance tier that encourages additional savings per home.

The program will require CFL bulb installation in a minimum of 50% of all appropriate sockets in each home.

Sponsor-Specific Elements

The Cape Light Compact will be offering HVAC program elements in 2009 as budgets allow and service territory demands.

Although there are few high rise multi-family new construction buildings in the Cape Light Compact territory, the Compact will encourage efficiency in this category, where applicable.

5.2.1 Residential New Construction: Major Renovation Pilot

Primary Objective

To capture lost opportunities and encourage energy-efficient additions and renovations to existing homes.

Initially Offered

2009

Performance Goals

MWh and MW savings included in a. Residential New Construction (above)
25 estimated no. of participants

Budget

Total planned expenditures all categories: included in a. Residential New Construction (above)

Joint vs. Sponsor-Specific Offering

Joint

Program Design

Participating builders can take advantage of incentives to upgrade the thermal performance of home additions and major renovations for homes that do not meet the criteria under the ENERGY STAR® homes program *and* where the additions and/or renovations affect at least 500 square feet of the existing home. This major renovation pilot includes preconstruction plans review, on-site training, a final verification inspection, and direct installation of qualified ENERGY STAR compact fluorescent light bulbs in all appropriate sockets.

This pilot project continues the strong commitment to the comprehensive whole-house approach of the ENERGY STAR homes program and fills the gap between it and the Residential Conservation Services (RCS)/MassSAVE Program. The goal: that all homes in Massachusetts undergoing major renovation be made as efficient as possible. This goal has become more important as the market for new homes has softened and construction activity through additions and renovations, which is a growing market segment.

Experience tells us that the HERS rating method can be administratively burdensome on existing homes, so the program's incentives are intended to be prescriptive in nature. In addition, HERS raters will implement the pilot project in the field and utilize existing tools from the ENERGY STAR Homes program (e.g., the thermal bypass checklist) to confirm overall building performance.

Target Market

- Builders
- Architects
- Designers
- Trade allies
- Home buyers

Others involved in the addition to and renovation of existing single-family homes or three-story or fewer multifamily buildings

Marketing Approach

Marketing strategies include direct builder outreach; website information; meeting presentations, home and trade show exhibits, participation in builders' conferences, and other public relations activities. Energy-efficiency outreach and training to educate builders, architects, homeowners and industry players also are planned. In addition, individual program sponsors will use targeted marketing as needed to meet program participation and spending goals.

Target End Uses

- Energy-efficient building shell measures
- Proper duct and air sealing techniques
- HVAC quality installation
- Mechanical ventilation to both the new-construction components and the existing home

Recommended Technologies

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

Financial Incentives

All participants will be eligible to receive the incentives available under the RCS/MassSAVE Program, including all electric incentives (see section 2a below). For example, existing homes would be treated as they would through the RCS/MassSAVE Program (air sealing, insulation, electric and heating measures). And new additions would be constructed to the national builder option package (BOP) and have a total cap of no more than the maximum of the RCS/MassSAVE incentives, currently $2,000.

Incentive levels may be adjusted to respond to market conditions.

Delivery Mechanism

The plan is to include this pilot as a coordinated offering between the Residential Conservation Services (RCS)/MassSAVE Program and the Massachusetts New Homes with ENERGY STAR Program, which is administered by the program administrator in each service territory and coordinated regionally through the Joint Management Committee.

Joint Program Administrator Enhancements Planned for 2009

N/A

Sponsor-Specific Elements

N/A

5.3 ENERGY STAR® Heating, Ventilation, and Air Conditioning (HVAC)

Primary Objective

To raise residential consumer awareness of the benefits of purchasing and properly installing high-efficiency cooling equipment and systems, and to increase the market share of ENERGY STAR–qualified warm-air furnaces equipped with an electronically commutated motor (ECM) or equivalent advanced furnace fan system and cooling equipment for existing systems to reduce duct leakage and ensure proper operation through digital tune-ups.

Initially Offered

The sponsors introduced their rebate program for ENERGY STAR–labeled central air conditioning units, which is now called COOL SMART, on April 1, 2004. The heating component of the program, a joint electric and gas offering, started in 2003.

Performance Goals

- 119 MWh estimated New Annual savings
- 1,895 MWh estimated Lifetime savings
- 2,485 MW estimated Lifetime savings
- 725 estimated no. of participants

Budget

Total planned expenditures all categories: $347,753

Joint vs. Sponsor-Specific Offering

In 2009, the COOL SMART Program will be a joint offering from NSTAR and National Grid. (COOL SMART is also available in Rhode Island, where it is delivered by the vendor that delivers the program in Massachusetts.)

Western Massachusetts Electric, Unitil, and Cape Light Compact did not offer the program in 2007 or 2008. However, all three will be offering a number of program elements in 2009 as budgets allow and service territory demands.

Program Design

The ENERGY STAR Heating, Ventilation, and Air Conditioning Program is a market transformation initiative designed to increase consumer awareness and the market share of ENERGY STAR–labeled furnaces, central air conditioning units, and air source heat pumps, and to promote quality cooling installations by HVAC technicians and contractors.

By offering training and incentives for digital checkups of existing equipment during the course of a repair or tune-up, the COOL SMART Program reduces barriers to customer and contractor participation. Seasonal HVAC service demand issues, lack of customer awareness of what makes for quality air conditioning operation, and seasonal temperature limitations, combined with limited time to complete paper-based incentive applications, present some of the greatest barriers to contractors' offering and completing third-party verification testing. The program sponsors continue to explore new strategies to minimize these market barriers.

The COOL SMART Program also promotes North American Technician Excellence (NATE) in HVAC contractor and customer educational materials. This strategy is designed to promote the value of NATE certification in the HVAC community and support best installation practices, education, and training for HVAC technicians and contractors.

Target Market

There are several target markets:

- New construction (new systems)
- New systems in existing homes (new systems)
- Replacement systems in existing homes (new equipment/old systems)
- Improvements in operational systems in existing homes (new equipment/old systems)

The program also targets the following market actors:

- Residential customers in the market to purchase HVAC equipment
- HVAC technicians responsible for installing and servicing HVAC equipment
- HVAC contractors
- Suppliers of HVAC equipment
- Manufacturers and distributors of HVAC equipment
- New-home builders and remodeling contractors
- Big-Box retailers

Marketing Approach

Program marketing is designed to promote the purchase and proper installation of ENERGY STAR residential central air conditioning and heat pump systems at multiple levels. It includes:

- Full-time circuit rider visits and calls to distributors and contractors. The circuit rider also provides technical outreach services to follow up on training events in the field and by phone with recently trained technicians.
- Development of cooperative promotions with the HVAC industry
- Sponsorship of contractor competitions and awards programs for rebates and QIV services, and an annual recognition celebration for contractors in a venue that helps recruit more contractors
- Periodic COOL Talk meetings with QIV-listed HVAC contractors and distributors
- Postcard and email mailings to HVAC distributors and contractors
- Bill inserts to residential customers
- Information on the COOL SMART website (www.mycoolsmart.com/index.html) for customers, contractors, and distributors
- Customer certificates when a quality installation is performed
- Print and media advertising targeting consumers, contractors, and distributors
- Participation at HVAC trade shows
- Writing or collaborating on HVAC trade publication articles

In addition, program sponsors will work with the following industry partners to promote best installation practices, awareness, education, and training for HVAC contractors:

- ENERGY STAR HVAC Quality Installation Program team and Best Practices Working Group
- Consortium for Energy Efficiency (CEE)
- NATE
- Air Conditioning Contractors of America (ACCA)
- Northeast Energy Efficiency Partnerships (NEEP)

Target End Uses

Residential central cooling and heating equipment

Recommended Technologies

The primary recommended cooling technologies are high-efficiency residential central air conditioner compressors, including air source heat pump condensers, that meet or exceed the 2009 ENERGY STAR minimum standard seasonal energy efficiency ratio (SEER) of 14.5, energy efficiency ratio (EER) of 12, and heating season performance factor (HSPF) of 8.2 (for heat pumps only).

The recommended minimum heating technology is a natural gas furnace with an annual fuel utilization efficiency (AFUE) of 92% or greater, equipped with an advanced ECM or equivalent energy-saving furnace fan (blower) motor.

The electric efficiency program does not address boilers.

Financial Incentives

The Cape Light Compact did not offer the program in 2008 and has no existing financial incentives. Please refer to enhancements proposed in 2009 for proposed incentives.

Delivery Mechanism

The program is administered by the program administrator in each service territory. Delivery is through a common vendor selected through a common request for proposals. Whenever possible, there is coordination with related gas utility initiatives and energy-efficiency service providers. In 2007 and 2008, the program developed cooperative promotions with several HVAC market actors.

Program initiatives are piggybacked onto the residential new construction and RCS/MassSAVE programs:

Participating residential new construction program builders and their HVAC contractors are referred to the COOL SMART Program for training and QIV.
MassSAVE participants are referred to COOL SMART for HVAC measures using COOL SMART literature, which is part of the standard MassSAVE information package.

Quality control/follow-up inspections are performed by independent inspectors on approximately 10% of installations to verify equipment installation and performance.

The program continues to use equipment distributors to process rebates, sell high-efficiency and QIV-related technology, and to provide indoor training labs for HVAC contractors.

Joint Program Administrator Enhancements Planned for 2009

- ENERGY STAR QIV for replacement systems with an Environmental Protection Agency (EPA) certificate and $100 customer incentive through participating contractors. The EPA requires sizing, duct sealing, and airflow and charge adjustments to specific American National Standards Institute/Air Conditioning Contractors of America (ACCA) standards.
    - The duct sealing requirement will be funded through the current contractor incentive of $1 per CFM of duct leakage reduction.
    - Contractors will receive a $250 incentive for verification and advanced airflow measurement instead of a standard QIV incentive.
    - If duct modifications (i.e., adding return ducts and/or turning vanes) are needed to meet airflow requirements, contractors may receive an additional $400 incentive.
- Expanded negotiated cooperative promotion opportunities in cooperation with NEEP and other interested program administrators
- A standard early-replacement component that requires an existing SEER of 8 to 10
- Joint duct sealing promotions and training in cooperation with gas utilities
- Replacement of the minimum standard for eligible equipment with the new ENERGY STAR standards described above for the $300 incentive as of May 1, 2009, if appropriate EER data are available
- A $400 customer incentive for higher CEE-tier equipment (SEER of 15, EER of 12.5 or higher)
- A $250 customer incentive for a SEER of 14.5 or greater, EER of 11.5 or greater, and HSPF of 8.2 for ENERGY STAR–rated split ductless air-to-air heat pump systems with inverter technology

- A $200 customer incentive and a $100 contractor incentive when sizing is completed for 2009 ENERGY STAR or CEE-tier equipment

In addition, we plan to investigate replacing standard permanent split capacitor motors with brushless furnace fan motors in central air conditioning systems and to develop an appropriate incentive. We also plan to investigate the opportunity to replace fixed orifice coils with TXV (thermostatic expansion valve) coils at the time of a digital checkup and to develop an appropriate incentive.

Sponsor-Specific Elements

The Compact will be offering HVAC program elements in 2009 as budgets allow and service territory demands

5.4 Residential Conservation Services (MassSAVE)

Primary Objective

To educate residential customers about saving energy in their homes and to help them identify and install cost-effective upgrades.

Initially Offered

1980

Performance Goals

- 2,072 MWh estimated Net Annual savings
- 34,282 MWh estimated Lifetime savings
- 24,530 MW estimated Lifetime savings
- 2,500 estimated no. of participants

Budget

Total planned expenditures all categories: $2,360,060

Joint vs. Sponsor-Specific Offering

Joint

Program Design

The Residential Conservation Services (RCS)/MassSAVE Program provides "one-stop shopping" for customers who are interested in making energy-efficient improvements to their homes. The program helps those customers identify and install all the equipment needed to control their future energy costs.

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 need for and general interest in making energy-efficient improvements. Customers who are

not ready to invest in energy-efficient upgrades receive Tier One service. Customers who are ready to make energy-efficient upgrades are eligible for Tier Two service. (Low-income customers are referred to appropriate low-income programs.)

- Tier One service includes general information and education about energy efficiency. It also attempts to identify customers' specific needs and direct them to other energy-efficiency programs and/or sponsor resources as appropriate.

- Tier Two service includes an on-site home energy assessment (HEA) to identify and recommend specific energy-efficient upgrades. Auditors also explain the contractor services that will be needed to install recommended measures and describe the financial incentives available for installation. The program offers an incentive of 75% of the installed cost of recommended measures, up to $2,000. In addition, incentives for high-efficiency gas heating and water heating systems are available through GasNetworks. The HEA also offers instant savings: With the customer's permission, compact fluorescent light bulbs are installed for free in all appropriate locations, as are low-flow shower heads, faucet aerators, and weather stripping.

The 2008 RCS/MassSAVE Program reintroduced and delivered the legislated statewide HEAT Loan Pilot Program as a resource to help make energy-saving improvements more affordable to program participants. HEAT Loan will continue in 2009 until all funds are expended.

All customers who have an HEA and install qualified recommended measures are eligible to apply for participation in the statewide HEAT Loan Pilot Program. The program provides 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-efficient improvements include the following:

- Attic, wall, and basement insulation
- Air sealing
- High-efficiency heating systems (after contractors submit appropriate sizing calculations)
- High-efficiency domestic hot water (DHW) systems
- Solar domestic hot water (DHW) systems
- ENERGY STAR® qualified windows
- ENERGY STAR qualified thermostats
- ENERGY STAR qualified water heaters
- Other renewable technologies on a pre-approved basis

Target Market

All non–low income residential customers living in single-family houses or one- to four-unit multifamily buildings, regardless of heating fuel, who are committed to making their homes more energy efficient

Marketing Approach

- Statewide MassSAVE toll-free number

- MassSAVE website
- Annual bill inserts
- Radio and 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 any cost-effective 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, ENERGY STAR windows, solar DHW systems, and heating/cooling systems. The program also provides general information about energy efficiency and solar DHW systems to consumers on request. Other preapproved measures may include heating system controls, superinsulation, combined heat and power (CHP) technologies, solar DHW systems, and opportunities for piloting "deep retrofit" enhancements of major renovation projects. The program refers customers with central air conditioning to the COOL SMART Program for digital checkups and incentives and to quality installation verification for replacement systems.

Financial Incentives

The incentive for recommended major building shell and renewable measures is 75% of the cost of installing those measures to a maximum of $2,000.

In addition, individual program sponsors may offer the following incentives at the agreed-on levels:

- ENERGY STAR refrigerator replacement (eligibility determined through HEA): $150
- High-efficiency furnace (annual fuel utilization efficiency gas 92%, oil 83%): gas rebate $100; oil/propane rebate $100 (also piggybacked on Residential –ENERGY STAR HVAC program)
- High-efficiency furnace with electronically commutated motor (AFUE gas 92%, oil 83%): gas rebate $400; oil/propane rebate $400
- High-efficiency steam boiler (AFUE 82%): gas rebate $200; oil/propane rebate $200
- High-efficiency hot water boiler (AFUE 85%): gas rebate $500; oil/propane rebate $500
- High-efficiency hot water boilers (AFUE 90%): gas rebate $1,000
- High-efficiency indirect water heater (attached to natural gas boiler): gas rebate $300; oil/propane (attached to boiler) $300
- High-efficiency natural gas or propane on-demand tankless water heater (energy factor of 0.82 or greater with electronic ignition): rebate $300. For whole-house or on-demand water heaters, the unit must meet ENERGY STAR specifications.

- ENERGY STAR residential water heater: gas rebate varies by product
- Weather-responsive heating controls: $100 rebate
- ENERGY STAR qualified thermostats (2 maximum): $25 rebate
- ENERGY STAR qualified windows (including skylights): $10 rebate, up to $200 cap per year.
- ENERGY STAR qualified sliders: $30 rebate, included in the $200 cap above.
- Micro-Combined Heat and Power (CHP) systems
- Solar DHW system added to an electric DHW system: $1,250 for family of five; $1,500 for family of six. The addition of rebates for families of two to four is being reviewed. To be eligible for a rebate, the system's solar fraction must be equal to or greater than 0.5, as per ENERGY STAR standards taking effect January 1, 2009.

Customers also are eligible for all COOL SMART incentives (see section 1c).

Delivery Mechanism

The program is administered within each service territory by its program administrator and is coordinated statewide through the RCS Network, a coalition of RCS/MassSAVE program administrators and program vendors working together with the Massachusetts Department of Energy Resources. 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 or similar standards set by the individual sponsors. These standards require a systematic approach to home improvement that addresses all aspects of building systems.

RCS Network members apply a "best practices" approach and work together to make quality control an integral part of the RCS/MassSAVE Program.

Joint Program Administrator Enhancements Planned for 2009

Better linkages and improved coordination will be implemented among MassSAVE, myenergystar.com, and lighting purchasing websites. Also planned are the following:

- Higher overall program incentives
- Solar DHW systems
- Boiler reset controls

Sponsor-Specific Elements

Cape Light Compact will offer, on a pilot basis, customer smart energy monitoring and demand reduction management programs through their RCS/MassSAVE delivery vendor to interested customers, subject to available funding (see R&D and Pilots b. Demand Reduction Technology Pilot).

5.5 ENERGY STAR® Lighting

Primary Objective

To increase consumer awareness of the importance and benefits of purchasing ENERGY STAR–qualified lighting products and expand the availability, consumer acceptance, and use of high-quality energy-efficient hardwired, screw-based, and portable lighting technologies.

Initially Offered

1998

Performance Goals

- 10,710 MWh estimated New Annual savings
- 76,019 MWh estimated Lifetime savings
- 4,984 MW estimated Lifetime savings
- >160,000 estimated no. of products

Budget

Total planned expenditures all categories: $633,615

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. The ongoing collection of data on overall market conditions, product availability, market share, and pricing keeps program sponsors up to date on changes in the residential lighting market. That awareness, in turn, enables 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. PEARL will continue until the U.S. Department of Energy (DOE) implements its testing components, a process slated to be completed in 2009.

The ENERGY STAR Lighting Program includes several components designed to educate consumers about the benefits of ENERGY STAR–qualified lighting products and to make these products more affordable:

- The Internet/mail-order sales channel offers education on energy-efficient lighting, rebates on a wide selection of ENERGY STAR–qualified lighting products, introductions to new products that may not be available at most retailers, and access to a variety of the sometimes-hard-to-find pin-based replacement bulbs for hardwired

compact fluorescent (CF) fixtures. Internet sales account for a high percentage of this component's sales. Recognizing the importance of Internet sales, the sponsors are working to improve the Internet/mail-order website as an educational tool for consumers.

- The program provides consumer education through the Internet/ mail-order sales channel and the www.myenergystar.com website, point-of-purchase displays in retail stores, and training retail sales staff to provide accurate information to customers and help them select the right products for their specific needs.

In 2009 the sponsors will continue to support mercury awareness efforts and promote a CFL bulb recycling infrastructure for consumers. The sponsors also are looking for innovative education and implementation strategies to support the recycling efforts. For example, they may pay higher incentives for cooperative recycling programs, and they are willing to negotiate with partners on incentive levels, cooperative advertising, and strategies to encourage recycling through retail outlets, mail-in programs, and consumer education and awareness activities.

A number of incentives make products more affordable for consumers. Negotiated cooperative promotions (NCPs), for example, include manufacturer and retailer markdowns and buydowns. Sponsors offer higher financial incentives for the markdown model than for the buydown model because product sales data and payments for markdowns are based on actual sales; buydown data and payments are based primarily on shipping and receiving documentation. NCPs continue to account for the large majority of products moved through the program — 97% in 2007. Another type of incentive, instant-rebate coupons, allows retail outlets that are not able or willing to share sales data to participate in the program.

ENERGY STAR/DOE solid-state fixtures also will be eligible for program incentives on a preapproved basis.

Target Market

All residential customers

Marketing Approach

Multiple marketing approaches are being used to increase general awareness among consumers of the benefits of using ENERGY STAR lighting products, to make it easy for consumers to identify qualifying products in stores, and to provide access to new products. In addition to direct advertising targeting consumers, these approaches include supporting national ENERGY STAR marketing campaigns, like the DOE and Environmental Protection Agency's Change the World, Start with ENERGY STAR campaign, and working with industry partners at all levels of the retail supply chain.

Specific marketing activities targeting consumers include the following:

- Retail marketing and point-of-purchase displays

- Print and radio advertising
- School/educational fundraising outreach efforts
- The Internet/mail-order sales channel
- The website (www.myenergystar.com)
- Public relations

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

- Leveraging marketing budgets through cooperative promotions with retailers, distributors, and manufacturers, including marketing promotions, cooperative advertising, and special events at retail stores and in communities
- Training and supporting retail sales staffs so they are able to tell consumers about the benefits of using ENERGY STAR–qualified lighting products and to help them choose the best products to meet their particular needs.

Target End Uses

Residential lighting

Recommended Technologies

Recommended ENERGY STAR–qualified lighting products include CFL bulbs, fluorescent and solid-state lighting (SSL) fixtures (exterior, interior, torchières, ceiling fans with light kits, and ventilation fans with light kits), and fluorescent floor and table lamps.

Financial Incentives

Rebate and incentive amounts and structure may be adjusted if market conditions change. Instant rebates currently available in retail stores or through the mail-order catalog include the following:

- $2 for CFL bulbs (single bulbs to three packs)
- $10 for exterior fixtures
- $15 for interior fixtures (including ENERGY STAR ventilation and ceiling fans with light kits)
- $4 on multipacks of four and five bulbs
- $6 on multipacks of six or more bulbs

NCPs include manufacturer and retailer markdown and buydown promotions. The maximum reimbursements are shown in the table below.

ENERGY STAR Lighting Maximum Incentives

Effective January 1, 2009, through December 31, 2009

Product	Buydown[1]	Markdown
Standard CFL bulbs, ≤ 16 watts	$1.20 per package	$1.40 per package
Standard CFL bulbs, 16–23 watts	$1.50 per package	$1.75 per package
Standard CFL bulbs, > 23 watts	$1.85 per package	$2.00 per package
Standard CFL bulb multipacks (maximum 8 per package), ≤ 23 watts	$0.60 per bulb	$..75 per bulb
Standard CFL bulb multipacks (maximum 8 per package), > 23 watts	$1.40 per bulb	$1.60 per bulb
Specialty bulbs (including reflector, dimmable, three-way, and flood preapproved product)[2]	$3.50 per bulb	$3.85 per bulb
Specialty bulb (including reflector, dimmable, three-way, and flood preapproved product)[2] multipacks (maximum 8 per package)	$2.10 per bulb	$2.45 per bulb
Fixtures	$12.00 per unit	$15.00 per unit
Additional incentives for low-mercury product (less than or equal to 1.5 mg)	$0.20 per unit	$0.30 per unit
Solid State Lighting (or LED product qualified under the Department of Energy's Solid State Lighting specification 1.0	TBD	TBD

1. Product/measure lifetime may be used to determine reimbursement levels.

2. Preapproval of covered products must be received before a proposal is submitted.

3. Sponsors will encourage NCPs that promote third-party tested and approved reflector fluorescent bulbs.

Delivery Mechanism

Contractors selected through a competitive bidding process will be performing program services in 2009:

A manufacturer/retailer outreach contractor will recruit and train retailers to participate in the program; place point-of-purchase materials and instant-rebate coupons in participating retail stores; collect in-store shelf space and pricing data; conduct product labeling and special promotions; oversee the NCP process; act as a liaison for program sponsors, manufacturers, and retailers; and provide documentation to the sponsors for program tracking and evaluation purposes.

- A marketing contractor will develop messaging and produce most of the educational materials as well as all point-of-purchase materials, assist with public relations, and coordinate regional messaging with national campaigns. This contractor also will maintain and update the www.myenergystar.com website.
- A rebate fulfillment contractor will collect data and payment requests from manufacturers, retailers, and consumers; process instant-rebate coupons and NCPs; and provide documentation to the sponsors for program tracking and evaluation purposes.
- An Internet/mail-order sales channel contractor will develop and distribute the catalog; purchase and stock products offered through the catalog and the www.estarlights.com website; staff a toll-free line for customers requesting a catalog or purchasing products from the catalog or the www.estarlights.com website; process catalog and website purchases; and provide documentation to the sponsors for program tracking and evaluation purposes.

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

- The Internet/mail-order sales channel
- Joint-sponsor instant rebates regularly available at retailers
- Special promotions
- NCPs with lighting manufacturers, distributors, and retailers

Joint Program Administrator Enhancements Planned for 2009

- Place greater emphasis on solid-state lighting as well as new fixture opportunities through ENERGY STAR's latest CFL and SSL bulb and fixture specifications
- Encourage special promotions and NCPs that have integrated and comprehensive marketing components
- Support NCPs and other efforts to encourage CFL recycling efforts in retail locations

Sponsor-Specific Elements

No Sponsor-specific items are noted at this time.

5.6 ENERGY STAR® Consumer Products (including Appliances)

Primary Objective

To raise consumer awareness of the benefits of energy-efficient ENERGY STAR–qualified consumer products, to encourage consumers to purchase ENERGY STAR–qualified appliances and consumer electronics, and to work with the Consortium for Energy Efficiency and others to promote higher efficiency standards for qualifying ENERGY STAR products and to help customers reduce energy bills by replacing or recycling inefficient products.

Initially Offered

1998

Performance Goals

- 274 MWh estimated Net Annual savings
- 2,654 MWh estimated Lifetime savings
- 666 MW estimated Lifetime savings
- 2,600 estimated no. of participants

Budget

Total planned expenditures all categories: $255,800

Joint vs. Sponsor-Specific Offering

Joint

Program Design

The ENERGY STAR Consumer Products Program educates consumers about the benefits of ENERGY STAR–qualified products to increase consumer acceptance of those appliances and consumer electronics and to encourage them to look for and purchase ENERGY STAR–qualified models when they shop.

The sponsors plan to negotiate with interested manufacturers and retailers to leverage rebate and/or marketing funding. 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 staffs to ensure they understand and can accurately market the benefits of ENERGY STAR–qualified appliances, and providing labels to identify models that meet ENERGY STAR standards. Select electronics also will be included in these activities.

The program supports raising federal and ENERGY STAR standards for appliances by promoting ENERGY STAR–qualified products. As particular ENERGY STAR–qualified products achieve a high share of market sales, the sponsors and other interested parties

are in a good position to advocate for higher minimum federal and ENERGY STAR energy-efficiency standards.

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

Target Market

All residential customers

Marketing Approach

A number of approaches are being used to increase general consumer awareness of the benefits of ENERGY STAR–qualified appliances and consumer electronics, to establish ENERGY STAR as the value leader in appliances, and to make it easy for consumers to identify qualifying products when they are shopping in stores. 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.

Among the specific marketing activities targeting consumers are the following:

- Retail marketing and point-of-purchase displays
- Print and radio advertising, especially for the refrigerator recycling component
- www.myenergystar.com
- Public relations

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

- Leveraging marketing budgets through cooperative promotions with retailers, distributors, and manufacturers, including marketing promotions, cooperative advertising, and special events at retail stores and in communities
- Training and supporting retail sales staffs so they are able to tell consumers about the benefits of using ENERGY STAR–qualified products and to help them choose the best products to meet their particular needs. Satisfied consumers are more likely to purchase ENERGY STAR–qualified products in the future.

Target End Uses

To reduce the amount of water and electricity used in homes by clothes washers, room air conditioners, refrigerators and freezers, automatic dishwashers, dehumidifiers, and consumer electronics

Recommended Technologies

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

Financial Incentives

National Grid, NSTAR, and Cape Light Compact will offer rebates on ENERGY STAR–qualified refrigerators, room air conditioners, consumer electronics, and pool pumps, where budget allows and service territory demands.

Delivery Mechanism

Contractors selected through a competitive bidding process will be performing program services in 2009. (The lighting and appliance programs issued joint requests for proposals, and the same contractors provide services for both programs.)

- A manufacturer/retailer outreach contractor will recruit and train retailers to participate in the program; place point-of-purchase materials and rebate coupons in participating retail stores; conduct product labeling and special promotions; and act as a liaison for program sponsors, manufacturers, and retailers.
- A marketing contractor will develop messaging, procure media for marketing campaigns, produce educational materials and point-of-purchase promotional materials, and maintain and update the www.myenergystar.com website.
- A rebate fulfillment contractor will process rebate applications and provide documentation to the sponsors for program tracking and evaluation purposes.

Joint Program Administrator Enhancements Planned for 2009

The sponsors plan to offer consumer incentives for qualified consumer electronics, refrigerators, room air conditioners, and pool pumps to enhance the ENERGY STAR products program. A separate targeted marketing approach may be required to promote pool pumps. The Compact also will offer a specific program component to encourage recycling of inefficient second refrigerators.

Sponsor-Specific Elements

The Cape Light Compact will support other energy efficiency program administrators in their specific elements as well as review some of the most applicable consumer products for this territory.

5.7 Education and Information

Primary Objective

To raise consumer awareness of the benefits of energy-efficiency activities and programs.

Initially Offered

2003

Performance Goals

All 3rd through 8th grade schools on Cape Cod and Martha's Vineyard

Budget

Total planned expenditures all categories: $80,000

Joint vs. Sponsor-Specific Offering

Sponsor-specific

Program Design

Educational and informational activities and funding for those activities are components of all residential programs, including low-income programs. In addition, the Cape Light Compact has energy-saving tips and information about and links to all the residential and low-income programs on its website (www.capelightcompact.org).

Target Market

All residential customers and students in elementary, secondary, and vocational technical schools.

Marketing Approach

A number of approaches are being used to increase general consumer awareness of the benefits of energy efficiency and energy-efficiency programs, with an emphasis on educational material. Much of that material is available for downloading from the website.

Target End Uses

All residential energy uses

Recommended Technologies

Both conservation activities and participation in the Compact's energy-efficiency programs are recommended.

Financial Incentives

Free information is provided on the website and through advertising and other consumer outreach methods.

Delivery Mechanism

Through public meeting presentations provided by Governing Board members and staff, community access television, radio, newspaper, teacher advisory board, participating students and teachers.

Sponsor-Specific Enhancements Planned for 2009

Please see NEED Project program description (Section 8.1) specific to Cape Light Compact that has been offered since 2003 and is proposed to be expanded in 2009.

5.8 Research and Development and Pilots

a. HEAT Loan Pilot Program

Primary Objective

To provide financial assistance to consumers for the purchase of certain cost-effective and energy-efficient improvements for their homes.

Initially Offered

2005

Performance Goals

Included as part of Retrofit 2. a. RCS/MassSAVE Program

Budget

Included in RCS/MassSAVE Program

Joint vs. Sponsor-Specific Offering

Joint. An Act Relative to Green Communities (Green Communities Act), Chapter 169 of the Acts of 2008, established the HEAT Loan Pilot Program to be administered by the Massachusetts Department of Energy Resources (DOER).

Program Design

The program provides financial assistance in the form of subsidized loan payments for loans to fund the purchase of eligible improvements. The HEAT Loan Pilot Program will utilize up to $5 million statewide in systems benefit charges (SBCs) collected from electric utility ratepayers as provided in Section 19 of Chapter 25 of the Massachusetts General Laws. The SBC funds will be used to pay down the interest rate on loans issued by participating lending institutions to borrowers who purchase eligible energy-efficient improvements.

Target Market

Participation in the loan program is open to Massachusetts consumers whose electricity is provided by an electric utility that collects/administers SBCs under Section 19. Participation as a lender is open to any qualified state or federally chartered bank or credit union doing business in the Commonwealth, subject to terms from DOER.

Marketing Approach

The HEAT Loan Pilot Program is publicized to recently audited consumers through the Residential Conservation Services (RCS)/MassSAVE Program. Other marketing methods have included strategically placed billboards, bill inserts, and direct mail.

Target End Uses

To reduce the amount of energy used in homes

Recommended Technologies

- Home insulation, including wall and pipe insulation for heating systems
- New window installation
- Advanced programmable thermostats
- Oil, gas, propane, or electric heating systems
- Solar domestic or fuel-efficient hot water systems
- Duct sealing

Other preapproved materials and equipment for use in residential dwellings that increase the energy efficiency of those dwellings

Financial Incentives

The HEAT Loan Pilot Program will subsidize borrowers' interest rate by making a lump-sum payment to the lending institution. Interest subsidy payments will reduce the effective interest rate to 0% for borrowers with an income of 80% or less of the state median income and to 3% for borrowers with an income above 80% of the state median income. Payments will be an amount equal to the net present value of the interest rate subsidy agreed on in each borrower's loan agreement.

Delivery Mechanism

The HEAT Loan Pilot Program will be administered by DOER using the existing RCS network as the primary delivery agent, in coordination with participating lending institutions operating in the Commonwealth.

Joint Program Administrator Enhancements Planned for 2009

The participating program administrators will work with DOER to evaluate the effectiveness of the loan program and to make recommendations for continuing customer services when loan funds are exhausted.

Sponsor-Specific Elements

N/A

b. Demand Reduction Technology Pilot

Primary Objective

To investigate the effectiveness of providing customers with a simple power cost monitor that gives them real-time information about their home electricity use.

Initially Offered

2007

Performance Goals

To be determined

Budget

Total planned expenditures all categories: $100,000

Joint vs. Sponsor-Specific Offering

Joint

Program Design

The pilot will assess the costs and benefits of residential smart energy monitoring and demand reduction management technology in households on the Cape and Vineyard. The pilot design includes a plan to install power monitors and gather information on customer satisfaction and behavior modification, and a plan for testing various marketing methods.

Target Market

Residential customers

Marketing Approach

Marketing methods will include free installation through Residential Conservation Services (RCS), direct-mail offers to consumers, and other methods.

Target End Uses

To reduce the amount of electricity used in homes

Recommended Technologies

Various technologies under review.

Financial Incentives

The pilot will test various financial incentives, including free installation through RCS, and at least two price offerings.

Delivery Mechanism

The Cape Light Compact will work with its RCS/MassSAVE Program delivery vendor to install the systems through the home energy assessment or special visit.

Joint Program Administrator Enhancements Planned for 2009

N/A

Sponsor-Specific Elements

N/A

c. Deep Retrofit Pilot

Primary Objective

To investigate the potential of energy savings of approximately 30% to 50% through deep retrofits of existing residential buildings.

Initially Offered

2009

Performance Goals

3 estimated no. of participants

Budget

Total planned expenditures all categories: $75,000

Joint vs. Sponsor-Specific Offering

Joint

Program Design

The pilot will assess the costs and benefits of deep energy retrofits in Massachusetts residences. The design includes a plan to support deep retrofits and to gather information on customer satisfaction, behavior modification, and energy savings. The pilot will help the Commonwealth begin to develop information on appropriate measures for deep retrofits, the correct way to model potential energy savings for deep retrofits, approaches for different housing types, training energy-retrofit contractors, customer education and marketing materials, and financing mechanisms and incentive levels.

Target Market

Residential customers

Marketing Approach

A small number of existing homes will be selected to participate in this pilot. Homes on which renovations are planned (e.g., siding and/or window replacements) will be targeted. Homeowner investments will be leveraged to maximize the effectiveness of the deep energy retrofits.

Target End Uses

To dramatically reduce the amount of energy used in homes

Recommended Technologies

- Exterior wall super insulation build-outs
- Attic insulation enhancements
- Foundation wall/slab insulation
- Extensive whole-house air sealing
- High-performance windows
- High-performance lighting, including the use of compact fluorescent light bulbs (CFLs)and light-emitting diode (LED) luminaires
- High-efficiency heating and cooling systems
- Advanced thermostatic controls
- High-efficiency appliances and products
- Mechanical ventilation
- Solar photovoltaic systems
- Solar thermal systems

Financial Incentives

High levels of incentives will be offered to ensure that deep retrofits are completed on a small number of existing homes.

Delivery Mechanism

Pilot program services will be delivered through the existing RCS network, with possible energy modeling and other assistance provided through the residential new construction program.

Joint Program Administrator Enhancements Planned for 2009

N/A

Sponsor-Specific Elements

Along with other program administrators, the Compact plans to offer this Deep Energy Retrofit pilot project in 2009.

General Support

a. Intentionally omitted.

b. DOER Support

Section 54 of Chapter 149 of the Acts of 2004 authorized the commissioner of the Department of Energy Resources (DOER) to make an assessment against gas and electric utility companies doing business in Massachusetts. This assessment is to help underwrite DOER activities related to ratepayer-supported energy-efficiency programs pursuant to Massachusetts General Laws Chapter 25A, Section 11G, for which the department has oversight and coordination responsibility. This assessment is in addition to the Residential Conservation Services assessment.

c. Sponsorship and Subscriptions

The Compact continues to provide funding to organizations like Northeast Energy Efficiency Partnerships and the Consortium for Energy Efficiency that provide services consistent with the objectives of energy-efficiency programs in Massachusetts.

d. Miscellaneous Market Research and Evaluation

The Compact has included funding in its energy-efficiency program budgets for miscellaneous market research and evaluation projects. This funding is intended to support already-identified projects that have not yielded sufficient detail to allow for development of a specific project budget. The funding also is intended to provide the Compact with the opportunity to participate in studies that support residential energy-efficiency efforts that may be identified during the year.

6. Residential Low Income Programs

6.1 Introduction and Overview

While low-income customers account for only a small portion of the total Compact electricity 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 2009, 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.

The Compact is proposing a low-income program budget of $1,500,000 among the low-income single family and multi-family programs. In addition, it is estimated that approximately 20% of the residential new construction budget will provide support for low-income homes.

6.2 Low-Income Residential New Construction

Primary Objective

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

Initially Offered

1998

Performance Goals

Approximately 20% of the Residential New Construction budget.

Budget

Total planned expenditures all categories (see above)

Joint vs. Sponsor-Specific Offering

Joint

Program Design

Please refer to Section 5.2 Residential New Construction for all of the items. Only differences specific to low-income programs are included in this section.

Target Market

To overcome market barriers and to promote the program, the Compact continues to build on relationships it has developed with public housing authorities and Weatherization Assistance Program agencies and on relationships with contractors who work in low-income and affordable housing construction. As discussed with other program administrators, Habitat for Humanity will be a focus for the year.

Marketing Approach

The Cape Light Compact will capitalize on its grant program from the Massachusetts Renewable Energy Trust, Green Affordable Homes, to continue to present at conferences and monitor the progress of affordable and low-income housing.

Target End Uses

Same as those in section 5.2

Recommended Technologies

Same as those in section 5.2

Financial Incentives

Same as those in Section 5.2 except that there is a $100 package rebate for an ENERGY STAR qualified dishwasher and refrigerator.

Financial Incentives Low-Income Residential New Construction			
Package	**Requirements**	**Single-Family Incentive**	**Multifamily Incentive**
CODE Plus	6 ACH CFM 50, 8% duct leakage	$325	$225
ENERGY STAR I	HERS Index of 85 to 66	$750	$650
ENERGY STAR II	HERS Index of 65 or less	$1,250	$1,150

Delivery Mechanism

Same as Section 5.2

Joint Program Administrator Enhancements Planned for 2009

Same as Section 5.2

Sponsor-Specific Elements

Same as Section 5.2

6.3 Retrofit

a. Appliance Management Program

Primary Objective

To deliver energy-efficient products and services directly to the homes of eligible low-income customers to help them lower their energy bills while contributing to other key energy-efficiency market transformation objectives.

Initially Offered

The Appliance Management Program (AMP) was developed in 1996 in cooperation with the Massachusetts Low-Income Energy Affordability Network (LEAN).

Performance Goals

- MWh Lifetime Savings: 6,339
- MW Lifetime Savings: 443
- No. of Participants: 1,115

Budget

Total planned expenditures all categories: $1,122,962

Joint vs. Sponsor-Specific Offering

Sponsor-specific

Program Design

The program provides a comprehensive home energy analysis of baseload appliance use. Analyses are conducted by Housing Assistance Corporation staff.

Target Market

The target market is customers living in 1- to 4-unit dwellings who are at or below 60% of median income. Customers in dwellings with more than 5 units are served through the Low-Income Multifamily Program. Low-income facilities of 5 to 20 units will continue to be eligible for nonelectric weatherization funding through AMP. In special cases, where outside grant money can enhance program services, the Compact may approve participation for customers in specific communities at 80% of median income.

Marketing Approach

In 2003 the Compact joined with other utilities and LEAN to sponsor the Energy Bucks marketing campaign. Energy Bucks is an integrated campaign combining grassroots outreach, community-based activities, and advertising to build awareness of programs

that offer low-income households greater energy efficiency, fuel assistance, and discounted utility rates.

Target End Uses

By identifying efficiency measures, the program seeks to reduce electricity and heating fuel use in low-income households. In addition, the Massachusetts Technology Collaborative has funded roof and other energy-saving home repairs and a feasibility study of bringing alternative energy to low-income housing.

Recommended Technologies

Among recommended technologies are weatherization measures (including health and safety components), installation of energy-efficient lighting and appliances, and the replacement of heating systems in conjunction with the Massachusetts Heating System Repair and Replacement Program, which is administered by LEAN. In specific circumstances, that program also replaces room air conditioners.

Financial Incentives

All low-income products and services are delivered with no copayment from customers.

Delivery Mechanism

By statute, low-income programs are implemented by the low-income weatherization and fuel assistance network. Most program services, including audits and data entry, are delivered directly by the network. However, in some cases it is more efficient or economical for the network to subcontract program components on a competitive basis (e.g., refrigerator replacement). Action, Inc., the lead vendor, serves as project coordinator and interface between the other agencies and program administrators, subcontractors, and the Compact. It subcontracts on a geographic basis to other members of the network.

AMP is administered by the Compact within its service territory. The Compact also works closely with the network on all aspects of program design and implementation. Its specific responsibilities include

- overseeing the use of SMOCERS™ software.
- providing software and technical training for the network staff.
- providing customer contact information and kWh consumption data for network use for marketing, billing, and data-tracking purposes.

The Compact works closely too with LEAN and other program administrators to continuously improve and refine the program through the Best Practices Working Group.

Sponsor-Specific Enhancements Planned for 2009

No major program changes are planned for 2009.

b. Low-Income Multifamily Program (Low-Income Multifamily)

Primary Objective

To educate multifamily customers, both tenants and owners, about ways to save energy in their homes and facilities, and to provide information and incentives to help customers replace inefficient equipment cost-effectively. The focus of the low-income sector of the Multifamily Program is to deliver energy-efficient products and services directly to the apartments of existing low-income customers.

Initially Offered

Services were first offered to low-income facilities in 1992, through the Multifamily Retrofit Program. In 1998 the program was renamed Multifamily.

Performance Goals

- MWh Lifetime Savings: 1,215
- MW Lifetime Savings: 81
- No. of Participants: 210

Budget

Total planned expenditures all categories: $409,214

Joint vs. Sponsor-Specific Offering

Sponsor-specific

Program Design

At the heart of the program is a comprehensive energy audit, followed up with energy education and installation of low-cost efficiency measures (e.g., compact fluorescent light bulbs, hot water measures, and air sealing for electrically heated buildings) — all provided to customers at no direct cost.

If the audit identifies the need for major measures in a facility with more than 20 units, the work is put out for competitive bids. Major measures include lighting fixture upgrades and replacement of inefficient refrigerators. For electrically heated facilities, major measures include heat pump testing and tune-ups, duct sealing, air sealing, thermostats, and insulation.

Custom electric saving measures (e.g., motors, pumps, and other equipment) are evaluated and provided through the Compact's Energy Initiative Program. The Low-Income Energy Affordability Network (LEAN) directly serves multifamily facilities with 25 units or less, and funding for that is included in the Low-Income Multifamily Program budget. Weatherization services for facilities with 5 to 25 units that are not heated with electricity are included in the Appliance Management Program (AMP) budget.

In larger buildings, as required by statute, the Compact coordinates with LEAN: keeping LEAN and its member agencies informed about program activities, referring customers and facilities to the program, integrating gas and electric low-income programs, and participating in site visits and meetings with building owners. Energy analysis, bidding, installation, and oversight are provided by the Compact's Multifamily vendor. The Compact and LEAN continue to discuss opportunities for LEAN agencies to become more involved in the direct delivery of services to larger multifamily facilities. This also allows the Compact to capitalize on commercial funds for those that are master metered, and thus paying into the C&I sector.

Target Market

The program targets multifamily facilities and condominium complexes with five or more dwelling units that are populated by low-income customers who are eligible for housing assistance or have income at or below 60% of the state median. All low-income customers living in these facilities/complexes, including public housing authorities, regardless of heating fuel type, who are interested in making their homes more energy efficient are eligible. The low-income multifamily sector includes buildings that are populated by at least 50% low-income customers who are eligible for housing assistance or have income at or below 60% of the state median.

Marketing Approach

The program is marketed through direct contact with interested customers and homeowners, referrals from LEAN and other low-income agencies, property owners' associations, bill inserts, customer newsletters, the Compact's website, home show exhibits, and other methods. For low-income facilities, marketing efforts are integrated with those of the low-income community action agencies within the service territory.

A vital element of the marketing plan is an outreach effort to inform customers about the availability and value of energy-efficiency services. The Compact uses its relationship with community action agencies, public housing authorities, and other low-income property managers to market the benefits of the program to low-income facilities. There is typically a waiting list for program services, though the program usually is able to serve customers within the year a participation request is made.

Target End Uses

The program targets energy-saving improvements in the facility shell, domestic hot water system, and electric heating system, and in appliances and lighting.

Recommended Technologies

- Air and duct sealing
- Insulation
- Refrigerator replacement
- Thermostats
- Ventilation
- Lighting upgrades

- Domestic hot water saving devices
- Heat pump tune-ups

Financial Incentives

If at least 50% of the facility's occupants are low income, services are delivered by means of direct installation with no copayment from the customers except in the case of refrigerator replacements. No copayments at all are required for public housing authorities. For privately owned low-income multifamily buildings, property owners pay the difference between the full cost of each refrigerator and the $300 Compact incentive for each refrigerator.

Delivery Mechanism

The program is administered by the Compact within its service territory. It is delivered by independent energy service providers selected through a competitive bidding process and by local community action agencies.

Work completed by Multifamily energy service providers and their subcontractors must meet standards set by the Building Performance Institute or similar standards set by the individual sponsor. At the initial site visit, an auditor conducts a comprehensive assessment of all end uses in an effort to identify all cost-effective efficiency upgrades. Where appropriate, this assessment includes an evaluation of efficient lighting opportunities, diagnostic tests of air leakage (with a blower door, if appropriate), duct leakage (with duct blaster or equivalent), heat pump (focused on airflow and charge), insulation levels, water heating equipment, and refrigerator efficiency. All reasonable measures are screened for cost-effectiveness, and major measures are put out to competitive bid in facilities with more than 20 units. The facility owner/manager/association signs a contract authorizing the work. Work is completed by selected subcontractors under the energy service provider's direction. The program went out to bid for vendors in the fall of 2004.

Sponsor-Specific Enhancements Planned for 2009

The Compact plans on working closely with fuel assistance agencies and other human service agencies to coordinate programs with the recent changes to fuel assistance and the utility discount rates.

Products and Services

Low-income customers are eligible to participate in the Compact's ENERGY STAR® programs. See the discussion about products and services in section IV.A.3.

Education and Information

Education and information are included in all programs. The Appliance Management Program, in particular, has a strong educational focus. Student educational activities, which are described in section IV.A.4, are available regardless of income.

Research and Development and Pilots

The Compact plans to continue working with the Massachusetts Low-Income Energy Affordability Network (LEAN) to identify new cost-effective energy-efficiency services and measures that are appropriate for low-income customers. The Compact will continue its research with LEAN on issues like moisture control and indoor air quality through participation in the Best Practices Working Group.

General Support

Low-Income Energy Affordability Network (LEAN): The Compact has agreed to fund the Low-Income Energy Affordability Network, which works in collaboration with the Compact on low-income energy-efficiency efforts.

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 2007. 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.[2]

Table 7.1 Commercial and Industrial Customers and Sales in 2007

	Number of Customers	Percent of Class	Percent of Total	Sales (MWh)	Percent of Class	Percent of Total
Small	2,881	11%	1.4%	32,560,292	3.4%	1.6%
Medium	20,925	79%	10.4%	574,807,311	60.8%	28%
Large	182	1%	0.1%	309,076,836	32.7%	15%
Streetlights	2,445	9%	1.2%	8,833,328	0.9%	0.4%
Total C&I	26,443	100%	13.2%	944,767,510	100%	45%
Total Compact	200,955	----	100%	2,055,126,848	----	100%

The C&I totals do not equal the sum of the components because the Total C&I includes 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

[2] 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.

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.

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 along with the electric distribution companies and National Grid (Gas) is a sponsor 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.

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 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, HVAC systems, 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 (LPDs) 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, the Compact waives the 20% co-payment requirement and 100% of the incremental cost, up to $150,000, 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.

New in 2009, the 80 % financial incentive will be increased from $75,000 to a maximum of $150,000 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 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 "Core Performance". 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 2009

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

The Compact waives the 20% co-payment requirement and pays 100% of project marginal cost for Government facilities up to cap of $150,000.

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 whose electric demand exceeds 300 kW (this is an increase from 100 kW from the prior plan).

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 National Grid (Gas) 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 continues to support Building Operator's Certification (BOC).

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 comprehensive 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 all 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 no longer allowed a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact 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 and/or when the existing T-8's had not been installed under a previous Cape Light Compact program. Instead of re-lamp/re-ballast, the Compact will encourage 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 LPDs based on the type of 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.

New in 2009, the 80% financial incentive will be increased from $75,000 to a maximum of $150,000 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, the Compact waives the 20% co-payment requirement and pays 100% of the cost, up to $150,000, of 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

Joint Program Administrator Enhancements Planned for 2009

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

The Compact waives the 20% co-payment requirement and pays 100% of project cost for Government facilities up to cap of $150,000.

7.4 Small 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 whose electric demand does not exceed 300 kW (this is an increase from 100 kW in the prior plan).

2001.

Joint Vs Sponsor-Specific Offering

Compact specific.

Program Design

Program offers a turnkey audit, installation and incentive, to small business customers whose demand does not exceed 300 kW. The Compact has joined the Massachusetts electric distribution companies and National Grid (Gas) 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.

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 into 2009, the Compact will provide the program vendors with the mandate 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 a subcontractor) all cost-effective electric efficiency measures on a custom basis. In 2007 the Compact ran a pilot program for screw-in CFLs; this initiative will be offered in 2009 directly through the Cape Light Compact and through the Cape Light Compact Small C&I program vendor. In the summer of 2007, the Compact through its Small C&I program vendor installed vending misers on soft drink and snack machines throughout Cape Cod and Martha's Vineyard. A policy was developed by the utilities and energy efficiency providers in the lighting program that no longer allowed a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact 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 and/or when the existing T-8s had not been installed under a previous Cape Light Compact program. Instead of re-lamp/re-ballast, the Compact will encourage replacement of an existing fixture with an energy efficient fixture.

Participants who are not eligible for gas efficiency programs from National Grid (Gas) will also be provided with educational materials and small financial incentives for non-electric efficiency measures. The Small C&I program vendor 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 $2,000 cap per project, and other measures will have to be fully paid by the customer. The Compact reviews and coordinates with other program administrators 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 hired through a competitive bidding process. Upon the written request of the customer, another vendor/installer may be used. In the request, the customer must acknowledge that he/she understands that the vendor/installer has no contractual relationship with the Cape Light Compact and does not represent the Cape Light Compact.

Joint Program Administrator Enhancements Planned for 2009

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

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.

The Compact will offer a screw-in CFL program that had been previously offered as a pilot program.

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 $150,000 (and increase from $75,000 in prior plans), of the eligible 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. Due to budget cuts resulting from a down turn in County revenues, no supplemental funds will be available from the County. Declining revenues for governmental entities reinforce the importance of eliminating co-pays for energy efficiency measure installations.

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 though 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 $150,000, of the incremental (new construction) and full (retrofit) costs of measures.

The Compact has joined the Massachusetts electric distribution companies and National Grid (Gas) 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.

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 no longer allowed a re-lamp/re-ballast retrofit of an existing T-8 equipped fixture to a "High Performance T-8" system. The Compact 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 and/or when the existing T-8's had not been installed under a previous Cape Light Compact program. Instead of re-lamp/re-ballast, the Compact will encourage 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 $150,000, 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.

The financial incentives will be limited to a maximum of $150,000 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 customers, authorized vendors, trade allies and energy service companies that are certified as Prime Contractors on the DCAM list of contractors under the Energy Management category. 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 for businesses.

Joint Program Administrator Enhancements Planned for 2009

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

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 2009 and to include wastewater facilities. A member of the Compact staff attends meetings of the Barnstable County Water Utilities Association in order to promote energy efficiency amongst the membership.

The Compact pays 100% of project cost for Government facilities up to cap of $150,000.

7.6 C&I Products and Services

Primary Objective

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

Initially Offered

2001.

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. 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. 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). The 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 administrated 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 "Core Performance," an all-inclusive set of standards for building efficiency and sustainable design. Core Performance complements the Comprehensive Design Approach with a special emphasis on smaller buildings. AB also serves to promote better commercial design practices such that advancements in the Massachusetts building code can be implemented at an accelerated rate. The Compact 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 2009, the Compact will continue to participate in the development of support materials targeted at practitioners and building owners. Also, the Compact will continue to sponsor training in coordination with other system benefits administrators across the region.

Energy Management Planning. The Compact will offer customized energy management planning and staff training to its municipalities. Barnstable County recently contracted with one of the Compact's vendors to provide planning, development of a training curriculum and delivery of staff training to the Town of Falmouth using County funds. The Compact plans to offer similar services to other municipalities using the Falmouth template.

Demand Response Services A Demand Response Pilot Program will be offered to C&I customers who are able to make a commitment to reduce energy consumption by a minimum of 100kW of demand when requested by ISO New England. The request from ISO will occur when there is a Reliability Event, a severe regional reliability problem on the wholesale electricity grid. Participants will have the option to choose a 30-minute response time or a 2-hour response time. Participants will be paid for the energy and capacity they provide to the New England grid based on measured load reduction during the Reliability Event.

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 the BOC be offered in 2009, upon successful completion the Compact will offer a reimbursement of up to $500 towards the $1275 tuition in the case of Commercial and Industrial customers and 100% in the case of Municipal employees. 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 will promote the measures to its customers and provide any technical assistance and rebates, as appropriate.

Joint Program Administrator Enhancements Planned for 2009

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® 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.

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

Background

It is a well known fact in the field of education that in order to affect change in our society, education must start at the elementary school level. The Cape Light Compact has taken this point seriously and has applied its outreach and marketing efforts accordingly. Using a model for science-based facts, the Compact's education efforts focus on the continuation and implementation of an energy education program for elementary school students on the Cape and Vineyard. Affiliated with the Department of Energy's Energy Information Services (EIA: www.eia.doe.gov), the National Energy Education Development project (NEED: www.need.org) continues to be the Compact's educational partner for curriculum materials as it is aligned with the MA State Frameworks for Science and Technology. Introduced in the fall of 2003, NEED is in concert with national and state standards for science and technology education for grade levels K-12 and is an asset to teachers on the Cape and Vineyard. In the five years of outreach implementation, the Compact's partnership with the NEED project has helped over 50 schools within our region learn about forms and sources of energy, energy efficiency and conservation and renewable energy technologies. 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 four consecutive years, the Cape Light Compact's NEED program has produced nationally recognized award winning school programs. In addition, the

Compact's Energy Education Program was awarded the 2007 Innovation Award for the "Solarize Our Schools" program by the Interstate Renewable Energy Council for including an educational component in a regional 21 town schools PV system installation project.

Presently, delivery of the Compact's education program includes in-class lessons, presentations, teacher workshops, curriculum and materials support as well as the "Change The World, Start With ENERGY STAR" campaign with free CFL "give-away", CFL school fundraisers, and solar energy lessons using NEED kits and the Compact's "Solarize Our Schools" data acquisition systems with educational web-based interface (DAS) for tracking real-time PV output data. With these resources, students also engage in public outreach efforts in an attempt to bring energy literacy to their communities. "Energy Carnivals" are held with the help of school energy clubs and community adult volunteers. Teacher training and workshops for professional development are held annually as well as teacher conferences on NEED based curriculum. Various educational kits and materials are available free for school and community use.

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

Proposed

As of the fall of 2008, the Compact's NEED Project has a presence in all Cape and Vineyard schools with elementary grade programs. Its success rate can be greatly increased through the hiring of additional contract science education professionals for delivery directly to the schools, additional kits and educational materials for each school grades 3 through 8, and the addition of teacher workshops and technical assistance program support to the middle school (grades 7 and 8) level. In so doing, continuity will allow for greater carry-over into the knowledge-base targeted for goals of energy literacy at the high school level.

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. The Compact is also a member of the Barnstable County Clean Energy Workforce Training program, that is a grant-funded program in part by the Cape Cod Economic Development Council and Commonwealth Corporation, that over the next 3-years will provide comprehensive training to the Cape's building trade industry in order to increase their knowledge about how to select, market, procure, and install renewable energy technologies and enhance their familiarity with energy efficiency and conservation measures and techniques.

8.2 Local Events

The Compact has held thirteen 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. Because of the geography, there are events hosted separately for Cape Cod (Cape) and Martha's Vineyard (MV).

Table 8.1 Results of the Energy Fairs

	Cape 2002	MV 2003	Cape 2003	MV 2004	Cape 2004	MV 2005	Cape 2005	MV 2006	Cape 2006	MV 2007	Cape 2007	MV 2008	Cape 2008
Attendance	1000	400	2000	800	1,500	500	1,500	750	1,500	800	1,000	1,200	500
Torchiere Turn-In Event	200	32	140	67	120	-	-	-	-	-	-	-	-
Lamps and Fixtures sold	968	258	1,160	590	900	-	-	Over 480	538	-	2,143	595	361
Dehumidifiers & Air Conditioners (through turn-in)	300	90	620	179	620	131	611	88	447	18	295	-	124
kWh Savings	288,000	72,405	394,000	154,770	440,000	42,182	96,600	86,152	184,086	5,796	217,141	33,915	24,441
Monetary Savings	$40,000	$10,136	$55,000	$21,667	$62,000	$6,300	$15,000	$12,900	$33,000	$1,159	$43.428	$6,783	$4,888

In the fall of 2007, the Compact improved service to customer needs by providing a lightbulb turn-in event to replace existing incandescent lightbulbs with increased incentives for ENERGY STAR® qualified lighting at the local events at multiple locations throughout the Cape. All of the Energy Fairs in 2007 and 2008 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.

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. 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 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. 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 anticipates that its evaluation and market research efforts in 2009 will also focus on developing information that will facilitate the achievement of the objectives contained in the Green Communities Act, including infrastructure related research and research about new technologies and services.

The Compact anticipates either initiating or completing the following studies in 2009:

Planned Evaluation Studies in 2009[3]

Program(s)	Study	(J)oint or (C)ompact Specific[4]
ENERGY STAR Homes	ENERGY STAR Homes MPER and analysis of correlation between HERS index and savings	J
ENERGY STAR HVAC	Statewide evaluation efforts	J
Residential Conservation Service	RCS process evaluation, pilot evaluation, and new measure screening	J
Green Affordable Homes	TBD	C
ENERGY STAR Lighting	Program theory and PY 2008 evaluation	J
ENERGY STAR Appliances	Appliance saturation survey, process evaluation, and new measures assessment	J
Large C&I Retrofit, Government Retrofit, and Small C&I	Lighting Persistence Study	J
Small Business Services and Residential Appliances	Plug load study	J
All Programs	Technical Reference Manual	J
All Programs	Avoided Cost Study	J
All Commercial & Industrial Programs	Commercial & Industrial Market Characterization Study	J
All Programs	Infrastructure related research (e.g., wage comparability/discrepancy study, white paper on barriers to infrastructure expansion and related planning efforts	J
All Programs	Omnibus Load Shape Study	J
All Residential Programs	Other Miscellaneous Residential Evaluation	C and J

[3] Evaluation priorities may change during the year, affecting both the timing and focus of studies actually completed.

[4] Some of the studies identified as Company-specific may be completed with others, if feasible. Some of the studies identified as Joint may be completed as Company-specific if it is determined that a joint effort is not practical.

Program(s)	Study	(J)oint or (C)ompact Specific[4]
All Commercial & Industrial Programs	Other Miscellaneous C&I Evaluation	C and J
All Programs	Program and Regulatory Support, including support for the NEEP EMV Forum Protocols Projects	C
All Programs	Portfolio Level Precision and Confidence	C

The Compact anticipates that additional, focused studies may be required to inform program design and implementation practices and measurement and verification requirements of the Forward Capacity Market through the year. 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 results reported in the annual report will reflect and incorporate the findings of completed evaluation studies.

10. Program Names and Acronyms Used

Table 10.1 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 10.1 Comparison of Program Names Used for the EEP and the Annual Report

Energy Efficiency Plan: Program Name	**Annual Report to DOER: Benefit Cost Ratio Activity**
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 10.2 provides a list of the Acronyms used in this Energy Efficiency Plan.

Table 10.2 List of Acronyms

Acronym	**Definition**
AB	Advanced Building
ACCA	Air Conditioning Contractors of America
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
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
BOC	Building Operators Certification
C&I	Commercial and Industrial

CCCC	Cape Cod Community College
CEE	Consortium for Energy Efficiency
CFL	Compact Fluorescent Lamp
CHP	Combined Heat and Power
CLC	Cape Light Compact
CO2	Carbon Dioxide
DAS	Data Acquisition System
DHW	Domestic Hot Water
DOE	Department of Energy
DOER	Division of Energy Resources
DPU	Department of Public Utilities
DRIPE	Demand Reduction Induced Price Effects
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
HEA	Home Energy Assessment
HERS	Home Energy Rating System
HSPF	Heating Seasonal Performance Factor
HVAC	Heating Ventilation and Air Conditioning
HVAC	Heating, Ventilation and Air Conditioning
IFB	Invitation for Bid
ISM	Instant Savings Measure
JMC	Joint Management Committee
LEAN	Low-Income Energy Affordability Network
LED	Light Emitting Diode
LPD	Lighting Power Density
MAEEP	Massachusetts Energy Efficiency Partnership
M&E	Monitoring and Evaluation
MPER	Multi-Year Program Evaluation and Reporting
MTC	Massachusetts Technology Collaborative
NATE	North American Technician Excellence
NBI	New Buildings Institute
N/C	New Construction
NCP	Negotiated Cooperative Promotions
NEED	National Energy Education Development
NEEP	Northeast Energy Partnerships, Inc.
O&M	Operation and Maintenance
PEARL	Program for the Evaluation and Analysis of Residential Lighting
PV	Photovoltaic
RCS	Residential Conservation Services
REC	Renewable Energy Credit
RFP	Request for Proposal

SEER	Seasonal Energy Efficiency Rating
TRC	Total Resource Cost
TXV	Thermostatic Expansion Valve
WAP	Weatherization Assistance Programs

11. Appendices

A1. Overview 2009 Program Goals

A2. Overview Updated Summary of Program Goals for 2007-2009 – All Sectors

A3. Overview 2009 Budget Detail

A4. Overview Updated Summary of Program Budget for 2007-2009 – All Sectors

A5. Overview 2009 Total Resource Cost (TRC) Benefit Cost Ratios

A6. Overview Benefit Detail

A7. Overview 2009 Air Emissions Avoided

A8. Overview 2009 Program Savings by End Use

B1. Program Level Budgets & Savings Goals – Residential – Energy Star Homes

B2. Program Level Budgets & Savings Goals – Residential – Energy Star HVAC

B3. Program Level Budgets & Savings Goals – Residential – RCS/MassSAVE

B4. Program Level Budgets & Savings Goals – Residential – Energy Star Lighting

B5. Program Level Budgets & Savings Goals – Residential – Energy Star Appliances

B6. Program Level Budgets & Savings Goals – Low Income – Single Family

B7. Program Level Budgets & Savings Goals – Low Income – Multi Family

B8. Program Level Budgets & Savings Goals – C&I – New Construction

B9. Program Level Budgets & Savings Goals – C&I – Gov't New Construction

B10. Program Level Budgets & Savings Goals – C&I – Products & Services

B11. Program Level Budgets & Savings Goals – C&I – Large Retrofit

B12. Program Level Budgets & Savings Goals – C&I – Gov't Large Retrofit

B13. Program Level Budgets & Savings Goals – C&I – Small Retrofit

B14. Program Level Budgets & Savings Goals – C&I – Gov't Small Retrofit

C1.- C4. Expansion of Existing Efforts vs. New Efforts

CAPE LIGHT COMPACT
DECEMBER 1, 2008

Appendix A. Overview

Figure 1. 2009 Program Goals

Sector	Lifetime Energy Savings (MWh)	Lifetime Summer Demand Savings (kW-years)	Value of Non-Electric Benefits ($000)	Total Net Benefits ($000)
Residential	120,825	34,040	$ 11,110	$ 26,398
Low-Income	7,554	525	$ 5,013	$ 4,368
Commercial and Industrial	79,716	19,531	$ 497	$ 9,872
Total	208,095	54,096	$ 16,620	$ 40,639

CAPE LIGHT COMPACT
DECEMBER 1, 2008

Appendix A. Overview

Figure 2. Updated Summary of Program Goals for 2007-2009 - 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	114,352	31,888	$ 9,020	$ 24,517
2009	208,095	54,096	$ 16,620	$ 40,639

Appendix A. Overview

Figure 3. 2009 Budget Detail

BCR Activity	Program	Program Planning & Admin	Marketing	Customer Incentives	STAT, Vendor Impl & Vendor QC	Measurement & Evaluation	Total Budget by Program	2008 Budget (including Supplemental)	Increase in Budget from 2008
A02a Residential Lost Opportunity	A02a Energy Star Homes	$ 36,066	$ 21,876	$ 530,177	$ 407,052	$ 33,241	$ 1,028,413	$ 365,210	2.82
A02b Residential HVAC	A02b Energy Star HVAC	$ 10,303	$ 6,250	$ 195,875	$ 125,829	$ 9,496	$ 347,753	$ 10,000	34.78
A03a Residential Retrofit 1-4	A03a Residential Conservation Service	$ 104,925	$ 98,480	$ 1,391,090	$ 691,901	$ 73,665	$ 2,360,062	$ 1,506,455	1.57
A04a Residential Lighting	A04a Energy Star Lighting	$ 21,531	$ 13,060	$ 361,810	$ 217,371	$ 19,844	$ 633,615	$ 399,476	1.59
A04b Residential Appliances	A04b Energy Star Appliances	$ 37,056	$ 22,477	$ 80,150	$ 81,968	$ 34,153	$ 255,804	$ 368,976	0.69
Residential		**$ 209,881**	**$ 162,143**	**$ 2,559,102**	**$ 1,524,121**	**$ 170,400**	**$ 4,625,647**	**$ 2,650,116**	**1.75**
B03a Low-Income Retrofit 1-4	B03a LI Single Family	$ 48,434	$ 36,128	$ 722,022	$ 271,738	$ 44,640	$ 1,122,962	$ 671,727	1.67
B03b Low-Income Retrofit Multifamily	B03b LI Multi-Family	$ 5,382	$ 4,014	$ 316,169	$ 78,690	$ 4,960	$ 409,214	$ 93,859	4.36
Low Income		**$ 53,815**	**$ 40,142**	**$ 1,038,191**	**$ 350,428**	**$ 49,600**	**$ 1,532,176**	**$ 765,586**	**2.00**
Residential & Low Income		**$ 263,696**	**$ 202,285**	**$ 3,597,293**	**$ 1,874,548**	**$ 220,000**	**$ 6,157,823**	**$ 3,415,702**	**1.80**
C02a C&I Lost Opportunity	C02a C&I New Construction	$ 7,232	$ 4,386	$ 127,694	$ 18,073	$ 6,665	$ 164,050	$ 89,843	1.83
	C02b C&I Govt New Construction	$ 3,906	$ 2,369	$ 48,011	$ 7,498	$ 3,600	$ 65,384	$ 48,526	1.35
	C04c C&I Products & Services	$ 4,285	$ 2,599	$ 47,117	$ 71,798	$ 3,950	$ 129,749	$ 53,241	2.44
C03a Large C&I Retrofit	C03a C&I Large Retrofit	$ 18,885	$ 23,067	$ 122,159	$ 46,154	$ 9,725	$ 219,990	$ 131,090	1.68
	C03c C&I Govt Large	$ 31,248	$ 18,954	$ 364,141	$ 77,643	$ 28,800	$ 520,786	$ 388,211	1.34
C03b Small C&I Retrofit	C03b C&I Small Retrofit	$ 85,052	$ 51,590	$ 1,476,057	$ 234,465	$ 78,390	$ 1,925,554	$ 1,056,662	1.82
	C03d C&I Govt Small	$ 53,023	$ 32,162	$ 665,329	$ 84,915	$ 48,870	$ 884,299	$ 658,746	1.34
Commercial & Industrial		**$ 203,630**	**$ 135,127**	**$ 2,850,509**	**$ 540,545**	**$ 180,000**	**$ 3,909,811**	**$ 2,426,320**	**1.61**
Total		**$ 467,327**	**$ 337,412**	**$ 6,447,802**	**$ 2,415,094**	**$ 400,000**	**$ 10,067,635**		
Percent of Total		**4.6%**	**3.4%**	**64.0%**	**24.0%**	**4.0%**	**100.0%**		
2008 Budget (including Supplemental)		$ 691,385	$ 232,188	$ 3,418,284	$ 1,258,690	$ 241,475	$ 5,842,022		
Increase in Budget from 2008		0.68	1.45	1.89	1.92	1.66	1.72		

Appendix A. Overview

Figure 4. Updated Summary of Program Budget for 2007-2009 - All Sectors

	2007	2008 (including Supplemental)	2009
Total Funding Required	$ 5,031,822	$ 5,842,022	$ 10,371,942
1. Proposed Budget			
Residential	$ 2,128,756	$ 2,650,116	$ 4,625,647
Low-Income	$ 648,746	$ 765,586	$ 1,532,176
Commercial and Industrial	$ 2,254,320	$ 2,426,320	$ 3,909,812
Total	$ 5,031,822	$ 5,842,022	$ 10,067,635
2. Borrowing Payback			$ 304,307
Established Funding Streams			
1. System Benefits Charge			
Forecasted MWh Sales (based on 2007 actuals)			
Residential	1,110,359	1,110,359	1,110,359
Commercial and Industrial	944,768	944,768	944,768
Total Forecasted Sales (MWh)	2,055,127	2,055,127	2,055,127
Charge (mills/kWh)	2.5	2.5	2.5
Total Collections (est.)	$ 5,137,818	$ 5,137,818	$ 5,137,818
2. Carryover from the Previous Year (est.)		$ 253,200	$ -
3. FCM Funds (est.)			$ 240,000
4. RGGI Funds			
RGGI Auction 1 - September 2008 (act.)		$ 146,698	
RGGI Auction 2 - December 2008 (est.)			$ 146,698
RGGI Auction 3 - March 2009 (est.)			$ 146,698
RGGI Auction 4 - June 2009 (est.)			$ 146,698
Total		$ 146,698	$ 440,094
5. Anticipated Borrowing		$ 304,307	
6. Additional DPU Requested Funding		$ -	$ 4,554,030

Appendix A. Overview

Figure 5. 2009 Total Resource Cost (TRC) Benefit Cost Ratios

BCR Activity	Program	Total Costs (000s)	without ADDERS		including Capacity DRIPE		including Capacity DRIPE and Energy DRIPE		including Capacity DRIPE, Energy DRIPE and CO2 Costs	
			Total Benefits (000s)	Benefit Cost Ratio (TRC)	Total Benefits (000s)	Benefit Cost Ratio (TRC)	Total Benefits (000s)	Benefit Cost Ratio (TRC)	Total Benefits (000s)	Benefit Cost Ratio (TRC)
A02a Residential Lost Opportunity	A02a Energy Star Homes	$ 1,176	$ 3,569	3.04	$ 3,592	3.06	$ 3,650	3.10	$ 3,806	3.24
A02b Residential HVAC	A02b Energy Star HVAC	$ 398	$ 882	2.22	$ 937	2.36	$ 957	2.41	$ 1,007	2.53
A03a Residential Retrofit 1-4	A03a Residential Conservation Service	$ 3,915	$ 17,040	4.35	$ 17,385	4.44	$ 17,668	4.51	$ 18,521	4.73
A04a Residential Lighting	A04a Energy Star Lighting	$ 817	$ 8,474	10.37	$ 8,691	10.64	$ 10,209	12.50	$ 12,846	15.73
A04b Residential Appliances	A04b Energy Star Appliances	$ 555	$ 716	1.29	$ 735	1.32	$ 774	1.39	$ 854	1.54
Residential		**$ 6,860**	**$ 30,681**	**4.47**	**$ 31,339**	**4.57**	**$ 33,259**	**4.85**	**$ 37,034**	**5.40**
B03a Low-Income Retrofit 1-4	B03a LI Single Family	$ 1,123	$ 3,438	3.06	$ 3,455	3.08	$ 3,550	3.16	$ 3,739	3.33
B03b Low-Income Retrofit Multifamily	B03b LI Multi-Family	$ 409	$ 2,336	5.71	$ 2,338	5.71	$ 2,350	5.74	$ 2,384	5.83
Low Income		**$ 1,532**	**$ 5,774**	**3.77**	**$ 5,793**	**3.78**	**$ 5,900**	**3.85**	**$ 6,123**	**4.00**
Residential & Low Income		**$ 8,393**	**$ 36,455**	**4.34**	**$ 37,132**	**4.42**	**$ 39,159**	**4.67**	**$ 43,156**	**5.14**
C02a C&I Lost Opportunity	C02a C&I New Construction	$ 173	$ 566	3.27	$ 584	3.38	$ 620	3.58	$ 714	4.13
	C02b C&I Govt New Construction	$ 67	$ 200	3.00	$ 207	3.10	$ 219	3.28	$ 251	3.76
	C04c C&I Products & Services	$ 163	$ 306	1.88	$ 321	1.97	$ 337	2.07	$ 376	2.30
C03a Large C&I Retrofit	C03a C&I Large Retrofit	$ 366	$ 755	2.06	$ 784	2.14	$ 837	2.29	$ 966	2.64
	C03c C&I Govt Large	$ 540	$ 1,538	2.85	$ 1,592	2.95	$ 1,704	3.16	$ 1,980	3.67
C03b Small C&I Retrofit	C03b C&I Small Retrofit	$ 2,315	$ 6,716	2.90	$ 6,957	3.01	$ 7,485	3.23	$ 8,739	3.78
	C03d C&I Govt Small	$ 916	$ 2,901	3.17	$ 3,005	3.28	$ 3,211	3.51	$ 3,723	4.06
Commercial & Industrial		**$ 4,539**	**$ 12,982**	**2.86**	**$ 13,449**	**2.96**	**$ 14,412**	**3.17**	**$ 16,749**	**3.69**
Total		**$ 12,932**	**$ 49,437**	**3.82**	**$ 50,581**	**3.91**	**$ 53,571**	**4.14**	**$ 59,906**	**4.63**

Appendix A. Overview

Figure 6. Benefit Detail (including benefits from capacity and energy demand-response-induced price effects)

BCR Activity	Program	Total Benefits									
			Capacity					Energy			
		Total	Generation					Winter		Summer	
		Benefits	Sum	Win	Trans	MDC	DRIPE	Peak	Off Peak	Peak	Off Peak
A - Residential		$20,229,665	$3,948,938	$0	$786,958	$4,820,202	$658,584	$3,040,502	$3,121,198	$2,161,996	$1,691,288
A02a Residential Lost Opportunity	A02a Energy Star Homes	$885,039	$160,669	$0	$31,378	$192,195	$22,948	$149,550	$132,966	$117,854	$77,479
A02b Residential HVAC	A02b Energy Star HVAC	$936,588	$291,741	$0	$59,421	$363,961	$54,879	$88,405	$20,873	$44,833	$12,475
A03a Residential Retrofit 1-4	A03a Residential Conservation Service	$9,858,815	$2,865,056	$0	$549,643	$3,366,623	$344,780	$644,937	$676,324	$919,153	$492,299
A04a Residential Lighting	A04a Energy Star Lighting	$8,118,697	$555,612	$0	$129,696	$794,403	$216,597	$2,087,729	$2,217,133	$1,044,539	$1,072,988
A04b Residential Appliances	A04b Energy Star Appliances	$430,526	$75,861	$0	$16,819	$103,019	$19,380	$69,881	$73,901	$35,617	$36,047
B - Low Income		$779,752	$56,911	$0	$13,233	$81,055	$18,145	$197,933	$209,254	$101,222	$101,998
B03a Low-Income Retrofit 1-4	B03a LI Single Family	$658,342	$48,264	$0	$11,223	$68,739	$16,460	$166,583	$176,171	$85,095	$85,807
B03b Low-Income Retrofit Multifamily	B03b LI Multi-Family	$121,409	$8,646	$0	$2,011	$12,316	$1,685	$31,351	$33,083	$16,127	$16,191
C - Commercial & Industrial		$12,952,007	$2,359,360	$0	$480,732	$2,944,531	$467,161	$2,442,445	$1,579,733	$1,705,713	$972,332
C02a C&I Lost Opportunity	C02a C&I New Construction	$566,400	$108,444	$0	$21,583	$132,200	$18,158	$103,546	$67,395	$74,798	$40,276
	C02b C&I Govt New Construction	$199,376	$39,211	$0	$7,799	$47,770	$6,534	$33,275	$21,676	$28,685	$14,426
	C04c C&I Products & Services	$320,925	$77,280	$0	$15,681	$96,048	$14,881	$53,883	$16,057	$37,466	$9,630
C03a Large C&I Retrofit	C03a C&I Large Retrofit	$754,316	$144,540	$0	$29,391	$180,020	$28,231	$125,790	$82,380	$107,380	$56,585
	C03c C&I Govt Large	$1,519,068	$273,725	$0	$55,782	$341,671	$54,257	$302,317	$197,264	$185,930	$108,122
C03b Small C&I Retrofit	C03b C&I Small Retrofit	$6,682,643	$1,173,431	$0	$240,493	$1,473,043	$241,395	$1,318,177	$862,376	$866,113	$507,616
	C03d C&I Govt Small	$2,909,280	$542,730	$0	$110,003	$673,779	$103,705	$505,457	$332,586	$405,341	$235,677
Grand Total		**$33,961,424**	**$6,365,209**	**$0**	**$1,280,923**	**$7,845,789**	**$1,143,890**	**$5,680,880**	**$4,910,185**	**$3,968,931**	**$2,765,618**

BCR Activity	Program	Total Benefits						kW Saved			MWh Saved	
		Energy				Non Electric						
		Winter DRIPE		Summer DRIPE			Non-					
		Peak	Off Peak	Peak	Off Peak	Resource	Resource	Sum	Win	Life	Ann	Life
Sec BCR Activity						ResVal	NonResVal	Sum kW	Win kW	Life kW	Ann MWh	Lifet MWh
A - Residential		$518,264	$592,302	$527,157	$281,480	$10,583,587	$526,077	2,159	3,434	34,040	13,579	120,825
A02a Residential Lost Opportunity	A02a Energy Star Homes	$15,904	$15,868	$18,618	$8,102	$2,648,119	$58,759	74	502	1,376	404	5,975
A02b Residential HVAC	A02b Energy Star HVAC	$7,878	$2,059	$8,924	$1,505	$0	$0	186	57	2,485	119	1,895
A03a Residential Retrofit 1-4	A03a Residential Conservation Service	$56,676	$65,828	$119,415	$41,643	$7,508,475	$17,614	1,123	229	24,530	2,072	34,282
A04a Residential Lighting	A04a Energy Star Lighting	$426,877	$495,853	$370,709	$224,483	$0	$571,966	699	2,629	4,984	10,710	76,019
A04b Residential Appliances	A04b Energy Star Appliances	$10,929	$12,694	$9,491	$5,747	$426,994	-$122,262	77	16	666	274	2,654
B - Low Income		$30,323	$35,222	$26,331	$15,945	$2,170,801	$2,842,024	74	182	525	821	7,554
B03a Low-Income Retrofit 1-4	B03a LI Single Family	$26,892	$31,237	$23,353	$14,142	$971,703	$1,824,733	60	160	443	675	6,339
B03b Low-Income Retrofit Multifamily	B03b LI Multi-Family	$3,431	$3,985	$2,978	$1,803	$1,199,098	$1,017,291	15	22	81	146	1,215
C - Commercial & Industrial		$288,678	$205,662	$349,618	$118,666	$0	$497,325	1,507	843	19,531	6,178	79,716
C02a C&I Lost Opportunity	C02a C&I New Construction	$10,637	$7,639	$12,741	$4,148	$0	$18,000	59	28	897	225	3,448
	C02b C&I Govt New Construction	$3,402	$2,445	$4,863	$1,475	$0	$7,424	21	9	324	77	1,177
	C04c C&I Products & Services	$6,155	$2,020	$7,229	$1,118	$0	$0	48	33	639	97	1,311
C03a Large C&I Retrofit	C03a C&I Large Retrofit	$14,649	$10,556	$21,317	$6,665	$0	$29,198	91	46	1,195	334	4,418
	C03c C&I Govt Large	$35,778	$25,692	$37,537	$13,045	$0	$72,731	175	86	2,263	730	9,466
C03b Small C&I Retrofit	C03b C&I Small Retrofit	$159,830	$115,157	$187,393	$65,015	$0	$274,499	779	415	9,724	3,402	42,227
	C03d C&I Govt Small	$58,227	$42,154	$78,538	$27,200	$0	$95,473	335	226	4,489	1,313	17,669
Grand Total		**$837,265**	**$833,186**	**$903,107**	**$416,091**	**$12,754,388**	**$3,865,426**	**3,740**	**4,459**	**54,096**	**20,577**	**208,095**

CAPE LIGHT COMPACT
DECEMBER 1, 2008

Appendix A. Overview

Figure 7. 2009 Air Emissions Avoided

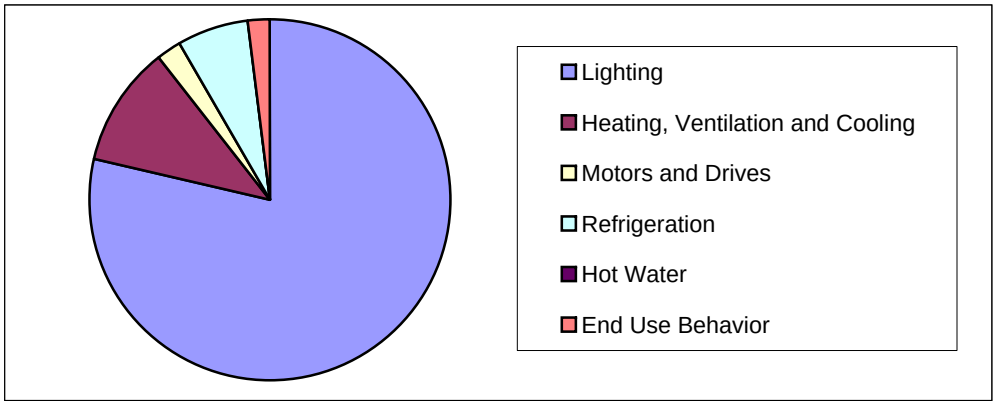
Avoided Emissions (lbs)	SO2	NOX	CO2
2009 Annual Savings	49,612	13,197	26,932,074
2009 Lifetime Savings	501,723	133,463	272,363,808

CAPE LIGHT COMPACT
DECEMBER 1, 2008

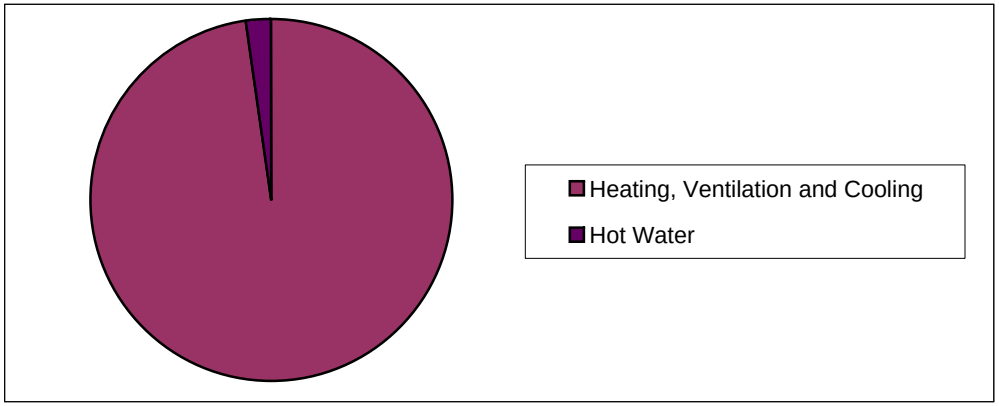
Appendix A. Overview

Figure 8. 2009 Program Savings by End Use

End Use	Annual Energy Savings (MWh)
Lighting	16,198
Heating, Ventilation and Cooling	2,191
Motors and Drives	497
Refrigeration	1,277
Hot Water	36
End Use Behavior	377



End Use	Other Fuel Savings (MMBtu)
Heating, Ventilation and Cooling	48,615
Hot Water	1,044



Appendix B. Program Level Budgets & Savings Goals

Figure 1. Residential - Energy Star Homes

Proposed Budget	$ 1,028,413
Net Annual Savings Goal (kWh)	403,769
TRC Benefit Cost Ratio	3.10

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
RNC ES Homes All Tiers (Heating)	BHVAC	150	homes	25	$1,950	$1,250
RNC ES Homes All Tiers (Cooling)	BHVAC	150	homes	25	$0	$0
RNC ES Homes All Tiers (Water Heating)	EHoWa	150	homes	15	$0	$0
RNC ES Homes 1 (Heating)	BHVAC	0		25	$1,300	$750
RNC ES Homes 1 (Cooling)	BHVAC	0		25	$0	$0
RNC ES Homes 1 (Water Heating)	EHoWa	0		15	$0	$0
RNC ES Homes 2 (Heating)	BHVAC	0		25	$1,950	$1,250
RNC ES Homes 2 (Cooling)	BHVAC	0		25	$0	$0
RNC ES Homes 2 (Water Heating)	EHoWa	0		15	$0	$0
RNC ES Homes 3 (Heating)	BHVAC	0		25	$3,000	$2,000
RNC ES Homes 3 (Cooling)	BHVAC	0		25	$0	$0
RNC ES Homes 3 (Water Heating)	EHoWa	0		15	$0	$0
CP ES Homes (Heating)	BHVAC	0		25	$0	$0
CP ES Homes (Cooling)	BHVAC	0		25	$0	$0
CP ES Homes (Water Heating)	EHoWa	0		15	$0	$0
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0		13	$0	$0
Dishwashers	EHoWa	0		12	$0	$0
Fixtures	ALght	0		11	$0	$0
ES Homes Screw-in Bulbs	ALght	2250	bulbs	7	$10	$10
GAF - Efficiency Tier 1 Cooling	BHVAC	8	homes	25	$157	$157
GAF - Efficiency Tier 1 Heating	BHVAC	8	homes	25	$497	$497
GAF - Efficiency Tier 1 Water Heating	EHoWa	8	homes	15	$0	$0
GAF - Efficiency Tier 1 Lighting	ALght	8	homes	8	$225	$225
GAF - Efficiency Tier 1 Appliances	DRefr	8	homes	14	$175	$175
GAF - Efficiency Tier 2 Cooling	BHVAC	10	homes	25	$707	$707
GAF - Efficiency Tier 2 Heating	BHVAC	10	homes	25	$2,284	$2,284
GAF - Efficiency Tier 2 Water Heating	EHoWa	10	homes	15	$50	$50
GAF - Efficiency Tier 2 Lighting	ALght	10	homes	8	$225	$225
GAF - Efficiency Tier 2 Appliances	DRefr	10	homes	14	$175	$175
GAF - Efficiency Tier 3 Cooling	BHVAC	13	homes	25	$3,324	$3,324
GAF - Efficiency Tier 3 Heating	BHVAC	13	homes	25	$4,752	$4,752
GAF - Efficiency Tier 3 Water Heating	EHoWa	13	homes	15	$100	$100
GAF - Efficiency Tier 3 Lighting	ALght	13	homes	8	$225	$225
GAF - Efficiency Tier 3 Appliances	DRefr	13	homes	14	$175	$175
GAF - Efficiency Tier 4 Cooling	BHVAC	8	homes	25	$4,715	$4,715
GAF - Efficiency Tier 4 Heating	BHVAC	8	homes	25	$9,285	$9,285
GAF - Efficiency Tier 4 Water Heating	EHoWa	8	homes	15	$750	$750
GAF - Efficiency Tier 4 Lighting	ALght	8	homes	8	$225	$225
GAF - Efficiency Tier 4 Appliances	DRefr	8	homes	14	$175	$175
LI RNC ES Homes All Tiers (Heating)	BHVAC	8	homes	25	$1,700	$1,250
LI RNC ES Homes All Tiers (Cooling)	BHVAC	8	homes	25	$0	$0
LI RNC ES Homes All Tiers (Water Heating)	EHoWa	8	homes	15	$0	$0
LI RNC ES Homes 1 (Heating)	BHVAC	0		25	$1,450	$750
LI RNC ES Homes 1 (Cooling)	BHVAC	0		25	$0	$0
LI RNC ES Homes 1 (Water Heating)	EHoWa	0		15	$0	$0
LI RNC ES Homes 2 (Heating)	BHVAC	0		25	$1,700	$1,250
LI RNC ES Homes 2 (Cooling)	BHVAC	0		25	$0	$0
LI RNC ES Homes 2 (Water Heating)	EHoWa	0		15	$0	$0
LI RNC ES Homes 3 (Heating)	BHVAC	0		25	$3,000	$2,000
LI RNC ES Homes 3 (Cooling)	BHVAC	0		25	$0	$0
LI RNC ES Homes 3 (Water Heating)	EHoWa	0		15	$0	$0
LI CP ES Homes (Heating)	BHVAC	0		25	$0	$325
LI CP ES Homes (Cooling)	BHVAC	0		25	$0	$0
LI CP ES Homes (Water Heating)	EHoWa	0		15	$0	$0
LI Refrigerator (savings over full life compared to new baseline equipment)	DRefr	8	appliances	13	$0	$0
LI Dishwashers	EHoWa	8	appliances	12	$0	$0
LI Interior Fixtures	ALght	0		20	$0	$0
LI ES Homes Screw-in Bulbs	ALght	120	bulbs	7	$10	$10
Major Renovation Pilot - Free CFL	ALght	250	bulbs	7	$7	$7
Major Renovation Pilot - Insulation, Oil	BHVAC	9	homes	25	$1,500	$750
Major Renovation Pilot - Insulation, Gas	BHVAC	9	homes	25	$1,500	$750
Major Renovation Pilot - Insulation, Electric	BHVAC	7	homes	25	$1,500	$750
Major Renovation Pilot - Insulation, Other Fuels	BHVAC	0		25	$1,500	$750
Major Renovation Pilot - Air Sealing, Oil	BHVAC	10	homes	15	$650	$325
Major Renovation Pilot - Air Sealing, Gas	BHVAC	10	homes	15	$650	$325
Major Renovation Pilot - Air Sealing, Electric	BHVAC	5	homes	15	$650	$325
Major Renovation Pilot - Air Sealing, Other Fuels	BHVAC	1		15	$650	$325
Major Renovation Pilot - Duct Seal, Oil	BHVAC	0		20	$950	$475
Major Renovation Pilot - Duct Seal, Gas	BHVAC	0		20	$950	$475
Major Renovation Pilot - Duct Seal, Electric	BHVAC	0		20	$950	$475
Major Renovation Pilot - Duct Seal, Other FF	BHVAC	0		20	$950	$475
Major Renovation Pilot - Duct Insulation, Oil	BHVAC	0		20	$550	$275
Major Renovation Pilot - Duct Insulation, Gas	BHVAC	0		20	$550	$275
Major Renovation Pilot - Duct Insulation, Electric	BHVAC	0		20	$550	$275
Major Renovation Pilot - Duct Insulation, Other FF	BHVAC	0		20	$550	$275
Major Renovation Pilot - Thermostats, Oil	BHVAC	2	homes	10	$50	$25
Major Renovation Pilot - Thermostats, Electric	BHVAC	1	homes	10	$50	$25
Major Renovation Pilot - Thermostats, Other Fuels	BHVAC	1		10	$50	$25
Major Renovation Pilot - Heating System Replacement, Oil	BHVAC	3	homes	18	$500	$400
Major Renovation Pilot - Heating System Replacement, Gas	BHVAC	0		18	$500	$400
Major Renovation Pilot - Heating System Replacement, Other Fuels	BHVAC	0		18	$500	$400
Major Renovation Pilot - Indirect Water Heater, Oil	EHoWa	1	homes	20	$600	$300
Major Renovation Pilot - Indirect Water Heater, Other Fuels	EHoWa	0		20	$600	$300
Major Renovation Pilot - Solar Hot Water, Electric (2-person)	EHoWa	0		25	$9,000	$500
Major Renovation Pilot - Solar Hot Water, Electric (3-person)	EHoWa	0		25	$9,000	$750
Major Renovation Pilot - Solar Hot Water, Electric (4-person)	EHoWa	0		25	$9,000	$1,000
Major Renovation Pilot - Solar Hot Water, Electric (5-person)	EHoWa	0		25	$11,000	$1,250
Major Renovation Pilot - Solar Hot Water, Electric (6-person)	EHoWa	0		25	$11,000	$1,500
Major Renovation Pilot - DHW ISMs, Oil	EHoWa	0		7	$17	$17
Major Renovation Pilot - DHW ISMs, Gas	EHoWa	0		7	$17	$17
Major Renovation Pilot - DHW ISMs, Electric	EHoWa	0		7	$17	$17
Major Renovation Pilot - DHW ISMs, Other Fuels	EHoWa	0		7	$17	$17
Major Renovation Pilot - ES Window, Oil	BHVAC	21	homes	25	$240	$10
Major Renovation Pilot - ES Window, Gas	BHVAC	0		25	$240	$10
Major Renovation Pilot - ES Window, Electric	BHVAC	4	homes	25	$240	$10
Major Renovation Pilot - ES Window, Other Fuels	BHVAC	4	homes	25	$240	$10
Major Renovation Pilot - Refrigerator (savings over remaining life of existing equipment)	DRefr	15	appliances	1	$244	$150
Major Renovation Pilot - Refrigerator (savings over full life compared to new baseline equipment)	DRefr	15	appliances	13	$0	$0

Supporting Assumptions

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
RNC ES Homes All Tiers (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes All Tiers (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes All Tiers (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 1 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 1 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 1 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 2 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 2 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 2 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 3 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 3 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
RNC ES Homes 3 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CP ES Homes (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CP ES Homes (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CP ES Homes (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dishwashers	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fixtures	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ES Homes Screw-in Bulbs	ALght	0%	0%	0%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 1 Cooling	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 1 Heating	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 1 Water Heating	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 1 Lighting	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 1 Appliances	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 2 Cooling	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 2 Heating	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 2 Water Heating	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 2 Lighting	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 2 Appliances	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 3 Cooling	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 3 Heating	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 3 Water Heating	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 3 Lighting	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 3 Appliances	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 4 Cooling	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 4 Heating	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 4 Water Heating	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 4 Lighting	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GAF - Efficiency Tier 4 Appliances	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes All Tiers (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes All Tiers (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes All Tiers (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 1 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 1 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 1 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 2 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 2 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 2 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 3 (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 3 (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI RNC ES Homes 3 (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI CP ES Homes (Heating)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI CP ES Homes (Cooling)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI CP ES Homes (Water Heating)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI Refrigerator (savings over full life compared to new baseline equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI Dishwashers	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI Interior Fixtures	ALght	0%	0%	0%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LI ES Homes Screw-in Bulbs	ALght	0%	0%	0%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Free CFL	ALght	2%	0%	0%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Insulation, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Insulation, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Insulation, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Insulation, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Air Sealing, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Air Sealing, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Air Sealing, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Air Sealing, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Seal, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Seal, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Seal, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Seal, Other FF	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Insulation, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Insulation, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Insulation, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Duct Insulation, Other FF	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Thermostats, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Thermostats, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Thermostats, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Heating System Replacement, Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Heating System Replacement, Gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Heating System Replacement, Other Fuels	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Indirect Water Heater, Oil	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Indirect Water Heater, Other Fuels	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Solar Hot Water, Electric (2-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Solar Hot Water, Electric (3-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Solar Hot Water, Electric (4-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Solar Hot Water, Electric (5-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Solar Hot Water, Electric (6-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - DHW ISMs, Oil	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - DHW ISMs, Gas	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - DHW ISMs, Electric	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - DHW ISMs, Other Fuels	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - ES Window, Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - ES Window, Gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - ES Window, Electric	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - ES Window, Other Fuels	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Refrigerator (savings over remaining life of existing equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Major Renovation Pilot - Refrigerator (savings over full life compared to new baseline equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Supporting Assumptions

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
RNC ES Homes All Tiers (Heating)	BHVAC	700	27%	40%	13%	20%	2.660	0%	100%	0%	0%
RNC ES Homes All Tiers (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
RNC ES Homes All Tiers (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
RNC ES Homes 1 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
RNC ES Homes 1 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
RNC ES Homes 1 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
RNC ES Homes 2 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
RNC ES Homes 2 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
RNC ES Homes 2 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
RNC ES Homes 3 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
RNC ES Homes 3 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
RNC ES Homes 3 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
CP ES Homes (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
CP ES Homes (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
CP ES Homes (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	100	27%	40%	13%	20%	0.013	100%	82%	100%	100%
Dishwashers	EHoWa	43	27%	40%	13%	20%	-	75%	100%	75%	75%
Fixtures	ALght	-	27%	40%	13%	20%	-	8%	29%	8%	8%
ES Homes Screw-in Bulbs	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
GAF - Efficiency Tier 1 Cooling	BHVAC	410	0%	0%	70%	30%	0.562	80%	0%	80%	80%
GAF - Efficiency Tier 1 Heating	BHVAC	194	75%	25%	0%	0%	0.081	0%	50%	0%	0%
GAF - Efficiency Tier 1 Water Heating	EHoWa	-	27%	26%	25%	22%	-	43%	100%	43%	43%
GAF - Efficiency Tier 1 Lighting	ALght	1,283	35%	32%	17%	16%	1.948	7%	29%	7%	7%
GAF - Efficiency Tier 1 Appliances	DRefr	474	27%	26%	25%	22%	0.653	50%	70%	50%	50%
GAF - Efficiency Tier 2 Cooling	BHVAC	433	0%	0%	70%	30%	0.594	80%	0%	80%	80%
GAF - Efficiency Tier 2 Heating	BHVAC	237	75%	25%	0%	0%	0.099	0%	50%	0%	0%
GAF - Efficiency Tier 2 Water Heating	EHoWa	-	27%	26%	25%	22%	-	43%	100%	43%	43%
GAF - Efficiency Tier 2 Lighting	ALght	1,283	35%	32%	17%	16%	1.948	7%	29%	7%	7%
GAF - Efficiency Tier 2 Appliances	DRefr	474	27%	26%	25%	22%	0.653	50%	70%	50%	50%
GAF - Efficiency Tier 3 Cooling	BHVAC	581	0%	0%	70%	30%	0.797	80%	0%	80%	80%
GAF - Efficiency Tier 3 Heating	BHVAC	282	75%	25%	0%	0%	0.118	0%	50%	0%	0%
GAF - Efficiency Tier 3 Water Heating	EHoWa	-	27%	26%	25%	22%	-	43%	100%	43%	43%
GAF - Efficiency Tier 3 Lighting	ALght	1,283	35%	32%	17%	16%	1.948	7%	29%	7%	7%
GAF - Efficiency Tier 3 Appliances	DRefr	474	27%	26%	25%	22%	0.653	50%	70%	50%	50%
GAF - Efficiency Tier 4 Cooling	BHVAC	569	0%	0%	70%	30%	0.781	80%	0%	80%	80%
GAF - Efficiency Tier 4 Heating	BHVAC	503	75%	25%	0%	0%	0.210	0%	50%	0%	0%
GAF - Efficiency Tier 4 Water Heating	EHoWa	-	27%	26%	25%	22%	-	43%	100%	43%	43%
GAF - Efficiency Tier 4 Lighting	ALght	1,283	35%	32%	17%	16%	1.948	7%	29%	7%	7%
GAF - Efficiency Tier 4 Appliances	DRefr	474	27%	26%	25%	22%	0.653	50%	70%	50%	50%
LI RNC ES Homes All Tiers (Heating)	BHVAC	700	27%	40%	13%	20%	2.660	0%	100%	0%	0%
LI RNC ES Homes All Tiers (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
LI RNC ES Homes All Tiers (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
LI RNC ES Homes 1 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
LI RNC ES Homes 1 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
LI RNC ES Homes 1 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
LI RNC ES Homes 2 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
LI RNC ES Homes 2 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
LI RNC ES Homes 2 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
LI RNC ES Homes 3 (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
LI RNC ES Homes 3 (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
LI RNC ES Homes 3 (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
LI CP ES Homes (Heating)	BHVAC		27%	40%	13%	20%		0%	100%	0%	0%
LI CP ES Homes (Cooling)	BHVAC		27%	40%	13%	20%		100%	0%	100%	100%
LI CP ES Homes (Water Heating)	EHoWa		27%	40%	13%	20%		75%	100%	75%	75%
LI Refrigerator (savings over full life compared to new baseline equipment)	DRefr	100	27%	40%	13%	20%	0.013	100%	82%	100%	100%
LI Dishwashers	EHoWa	43	27%	40%	13%	20%	-	75%	100%	75%	75%
LI Interior Fixtures	ALght	44	27%	40%	13%	20%	0.049	8%	29%	8%	8%
LI ES Homes Screw-in Bulbs	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Major Renovation Pilot - Free CFL	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Major Renovation Pilot - Insulation, Oil	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Major Renovation Pilot - Insulation, Gas	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Major Renovation Pilot - Insulation, Electric	BHVAC	2,431	27%	40%	13%	20%	0.943	72%	28%	72%	72%
Major Renovation Pilot - Insulation, Other Fuels	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Major Renovation Pilot - Air Sealing, Oil	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Major Renovation Pilot - Air Sealing, Gas	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Major Renovation Pilot - Air Sealing, Electric	BHVAC	971	27%	40%	13%	20%	0.377	72%	28%	72%	72%
Major Renovation Pilot - Air Sealing, Other Fuels	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Major Renovation Pilot - Duct Seal, Oil	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Major Renovation Pilot - Duct Seal, Gas	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Major Renovation Pilot - Duct Seal, Electric	BHVAC	1,483	27%	40%	13%	20%	0.575	72%	28%	72%	72%
Major Renovation Pilot - Duct Seal, Other FF	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Major Renovation Pilot - Duct Insulation, Oil	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Major Renovation Pilot - Duct Insulation, Gas	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Major Renovation Pilot - Duct Insulation, Electric	BHVAC	2,601	27%	40%	13%	20%	1.008	72%	28%	72%	72%
Major Renovation Pilot - Duct Insulation, Other FF	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Major Renovation Pilot - Thermostats, Oil	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Thermostats, Electric	BHVAC	143	27%	40%	13%	20%	0.031	3%	100%	3%	3%
Major Renovation Pilot - Thermostats, Other Fuels	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Heating System Replacement, Oil	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Heating System Replacement, Gas	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Heating System Replacement, Other Fuels	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Indirect Water Heater, Oil	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Indirect Water Heater, Other Fuels	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - Solar Hot Water, Electric (2-person)	EHoWa	1,550	27%	40%	13%	20%	1.198	75%	100%	75%	75%
Major Renovation Pilot - Solar Hot Water, Electric (3-person)	EHoWa	2,325	27%	40%	13%	20%	1.797	75%	100%	75%	75%
Major Renovation Pilot - Solar Hot Water, Electric (4-person)	EHoWa	3,100	27%	40%	13%	20%	2.396	75%	100%	75%	75%
Major Renovation Pilot - Solar Hot Water, Electric (5-person)	EHoWa	3,875	27%	40%	13%	20%	2.995	75%	100%	75%	75%
Major Renovation Pilot - Solar Hot Water, Electric (6-person)	EHoWa	4,650	27%	40%	13%	20%	3.594	75%	100%	75%	75%
Major Renovation Pilot - DHW ISMs, Oil	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - DHW ISMs, Gas	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - DHW ISMs, Electric	EHoWa	73	27%	40%	13%	20%	0.009	75%	100%	75%	75%
Major Renovation Pilot - DHW ISMs, Other Fuels	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Major Renovation Pilot - ES Window, Oil	BHVAC	13	0%	0%	70%	30%	-	0%	0%	0%	0%
Major Renovation Pilot - ES Window, Gas	BHVAC	-	0%	0%	70%	30%	-	0%	0%	0%	0%
Major Renovation Pilot - ES Window, Electric	BHVAC	110	27%	40%	13%	20%	0.040	70%	30%	70%	70%
Major Renovation Pilot - ES Window, Other Fuels	BHVAC	13	0%	0%	70%	30%	-	0%	0%	0%	0%
Major Renovation Pilot - Refrigerator (savings over remaining life of existing equipment)	DRefr	884	27%	40%	13%	20%	0.030	100%	82%	100%	100%
Major Renovation Pilot - Refrigerator (savings over full life compared to new baseline equipment)	DRefr	100	27%	40%	13%	20%	0.013	100%	82%	100%	100%

Supporting Assumptions

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non Resource (base year dollars)
RNC ES Homes All Tiers (Heating)	BHVAC	1	0.00	5	63.12	11	0.00	0	0.00	0	0	0	$ -	$0
RNC ES Homes All Tiers (Cooling)	BHVAC													
RNC ES Homes All Tiers (Water Heating)	EHoWa													
RNC ES Homes 1 (Heating)	BHVAC													
RNC ES Homes 1 (Cooling)	BHVAC													
RNC ES Homes 1 (Water Heating)	EHoWa													
RNC ES Homes 2 (Heating)	BHVAC													
RNC ES Homes 2 (Cooling)	BHVAC													
RNC ES Homes 2 (Water Heating)	EHoWa													
RNC ES Homes 3 (Heating)	BHVAC													
RNC ES Homes 3 (Cooling)	BHVAC													
RNC ES Homes 3 (Water Heating)	EHoWa													
CP ES Homes (Heating)	BHVAC													
CP ES Homes (Cooling)	BHVAC													
CP ES Homes (Water Heating)	EHoWa													
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Dishwashers	EHoWa	1	0.00	5	2.00	11	0.00	0	0.00	430	0	0	$ -	$0
Fixtures	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
ES Homes Screw-in Bulbs	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$3
GAF - Efficiency Tier 1 Cooling	BHVAC												$ 3	$34
GAF - Efficiency Tier 1 Heating	BHVAC	1	2.07	7	4.13								$ 1	$376
GAF - Efficiency Tier 1 Water Heating	EHoWa													$0
GAF - Efficiency Tier 1 Lighting	ALght												$ 8	$3
GAF - Efficiency Tier 1 Appliances	DRefr									5962			$ 3	
GAF - Efficiency Tier 2 Cooling	BHVAC												$ 3	$36
GAF - Efficiency Tier 2 Heating	BHVAC	1	4.10	7	8.20								$ 2	$716
GAF - Efficiency Tier 2 Water Heating	EHoWa	1	0.53	7	1.07									$88
GAF - Efficiency Tier 2 Lighting	ALght												$ 8	$3
GAF - Efficiency Tier 2 Appliances	DRefr									5962			$ 3	
GAF - Efficiency Tier 3 Cooling	BHVAC												$ 4	$48
GAF - Efficiency Tier 3 Heating	BHVAC	1	6.47	7	12.93								$ 2	$1,112
GAF - Efficiency Tier 3 Water Heating	EHoWa	1	0.70	7	1.40									$116
GAF - Efficiency Tier 3 Lighting	ALght												$ 8	$3
GAF - Efficiency Tier 3 Appliances	DRefr									5962			$ 3	
GAF - Efficiency Tier 4 Cooling	BHVAC												$ 4	$47
GAF - Efficiency Tier 4 Heating	BHVAC	1	8.20	7	16.40								$ 3	$1,417
GAF - Efficiency Tier 4 Water Heating	EHoWa	1	1.37	7	2.73									$226
GAF - Efficiency Tier 4 Lighting	ALght												$ 8	$3
GAF - Efficiency Tier 4 Appliances	DRefr									5962			$ 3	
LI RNC ES Homes All Tiers (Heating)	BHVAC	1	0.00	5	63.12	11	0.00	0	0.00	0	0	0	$ -	$0
LI RNC ES Homes All Tiers (Cooling)	BHVAC													
LI RNC ES Homes All Tiers (Water Heating)	EHoWa													
LI RNC ES Homes 1 (Heating)	BHVAC													
LI RNC ES Homes 1 (Cooling)	BHVAC													
LI RNC ES Homes 1 (Water Heating)	EHoWa													
LI RNC ES Homes 2 (Heating)	BHVAC													
LI RNC ES Homes 2 (Cooling)	BHVAC													
LI RNC ES Homes 2 (Water Heating)	EHoWa													
LI RNC ES Homes 3 (Heating)	BHVAC													
LI RNC ES Homes 3 (Cooling)	BHVAC													
LI RNC ES Homes 3 (Water Heating)	EHoWa													
LI CP ES Homes (Heating)	BHVAC													
LI CP ES Homes (Cooling)	BHVAC													
LI CP ES Homes (Water Heating)	EHoWa													
LI Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
LI Dishwashers	EHoWa	1	0.00	5	2.00	11	0.00	0	0.00	430	0	0	$ -	$0
LI Interior Fixtures	ALght	1	0.00	5	0.00	11	0.00	0	0.00	0	0	0	$ -	$0
LI ES Homes Screw-in Bulbs	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$3
Major Renovation Pilot - Free CFL	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$3
Major Renovation Pilot - Insulation, Oil	BHVAC	1	26.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Insulation, Gas	BHVAC	6	28.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Insulation, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Insulation, Other Fuels	BHVAC	11	15.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Air Sealing, Oil	BHVAC	1	6.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Air Sealing, Gas	BHVAC	6	6.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Air Sealing, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Air Sealing, Other Fuels	BHVAC	11	5.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Seal, Oil	BHVAC	1	3.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Seal, Gas	BHVAC	6	2.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Seal, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Seal, Other FF	BHVAC	11	4.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Insulation, Oil	BHVAC	1	9.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Insulation, Gas	BHVAC	6	7.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Insulation, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Duct Insulation, Other FF	BHVAC	11	7.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Thermostats, Oil	BHVAC	1	4.40	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Thermostats, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Thermostats, Other Fuels	BHVAC	11	4.40	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Heating System Replacement, Oil	BHVAC	1	8.28	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Heating System Replacement, Gas	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Heating System Replacement, Other Fuels	BHVAC	11	8.28	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Indirect Water Heater, Oil	EHoWa	1	8.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Indirect Water Heater, Other Fuels	EHoWa	11	8.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Solar Hot Water, Electric (2-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Solar Hot Water, Electric (3-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Solar Hot Water, Electric (4-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Solar Hot Water, Electric (5-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Solar Hot Water, Electric (6-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - DHW ISMs, Oil	EHoWa	1	0.61	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
Major Renovation Pilot - DHW ISMs, Gas	EHoWa	6	0.80	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
Major Renovation Pilot - DHW ISMs, Electric	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
Major Renovation Pilot - DHW ISMs, Other Fuels	EHoWa	11	0.59	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
Major Renovation Pilot - ES Window, Oil	BHVAC	1	0.33	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - ES Window, Gas	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - ES Window, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - ES Window, Other Fuels	BHVAC	11	0.33	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Refrigerator (savings over remaining life of existing equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Major Renovation Pilot - Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 2. Residential - Energy Star HVAC

Proposed Budget	$ 347,753
Net Annual Savings Goal (kWh)	119,028
TRC Benefit Cost Ratio	2.41

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
CoolSmart AC SEER 14 (Equip) - EER 11.5-11.99	BHVAC	0	units	18	$500	$300
CoolSmart HP SEER 14 (Equip) -	BHVAC	0	units	18	$500	$300
CoolSmart AC SEER 14 => (Equip) - EER>=12	BHVAC	65	units	18	$500	$300
CoolSmart HP SEER 14=> (Equip)	BHVAC	4	units	18	$500	$300
CoolSmart AC SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0	units	18	$700	$300
CoolSmart HP SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0	units	18	$700	$300
CoolSmart AC SEER 15.0 => (Equip) - EER>=12.5	BHVAC	40	units	18	$800	$400
CoolSmart HP SEER 15.0 => (Equip)	BHVAC	14	units	18	$800	$400
CoolSmart AC QIV NES	BHVAC	69	units	18	$175	$175
CoolSmart AC QIV ES	BHVAC	8	units	18	$175	$175
CoolSmart HP QIV NES	BHVAC	3	units	18	$175	$175
CoolSmart HP QIV ES	BHVAC	0	units	18	$175	$175
CoolSmart AC Digital Check-up/Tune-up	BHVAC	337	units	5	$175	$175
CoolSmart HP Digital Check-up/Tune-up	BHVAC	4	units	5	$175	$175
CoolSmart Wm Air Furnace ECM (GN Reb)	BHVAC	0	units	18	$200	$200
Duct Sealing - 100 CFM redcution in leaks 20% of flow to 10%	BHVAC	15	units	18	$200	$200
Down Size 1/2 ton	BHVAC	11	units	18	$0	$500
Mini Splits (Ductless)	BHVAC	0	units	18	$500	$300
Mini Split HP SEER 14.5, EER 12 (Ductless)	BHVAC	100	units	18	$700	$500
Equipt Tier I or II >= 12 EER w/ Sizing	BHVAC	0	units	18	$300	$300
Early Replacement of equip age 13 years old, rmng life 7 years with ES Equipment, Right sizing, & QIV	BHVAC	7	units	7	$1,000	$1,000
Early Retirement w/ Energy Star QI	BHVAC	0	units	18	$350	$350
Early Retirement E*QI w/ Duct modifications	BHVAC	0	units	18	$1,000	$750
Brushless Furnace Fan Motor	BHVAC	0	units	18	$400	$400
TXV rplcment of fixed orifice	BHVAC	0	units	7	$150	$150
Rightsizing Tier 2 14.5/12	BHVAC	24	units	18	$300	$300
Rightsizing Top Tier 15/12.5	BHVAC	24	units	18	$300	$300

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
CoolSmart AC SEER 14 (Equip) - EER 11.5-11.99	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP SEER 14 (Equip) -	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC SEER 14 => (Equip) - EER>=12	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP SEER 14=> (Equip)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC SEER 15.0 => (Equip) - EER>=12.5	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP SEER 15.0 => (Equip)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC QIV NES	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC QIV ES	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP QIV NES	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP QIV ES	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart AC Digital Check-up/Tune-up	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart HP Digital Check-up/Tune-up	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CoolSmart Wm Air Furnace ECM (GN Reb)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Sealing - 100 CFM redcution in leaks 20% of flow to 10%	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Down Size 1/2 ton	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mini Splits (Ductless)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mini Split HP SEER 14.5, EER 12 (Ductless)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Equipt Tier I or II >= 12 EER w/ Sizing	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Early Replacement of equip age 13 years old, rmng life 7 years with ES Equipment, Right sizing, & QIV	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Early Retirement w/ Energy Star QI	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Early Retirement E*QI w/ Duct modifications	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Brushless Furnace Fan Motor	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
TXV rplcment of fixed orifice	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Rightsizing Tier 2 14.5/12	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Rightsizing Top Tier 15/12.5	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Supporting Assumptions

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
CoolSmart AC SEER 14 (Equip) - EER 11.5-11.99	BHVAC	49	0%	0%	70%	30%	0.142	85%	0%	85%	85%
CoolSmart HP SEER 14 (Equip) -	BHVAC	465	62%	21%	12%	5%	0.347	35%	50%	35%	35%
CoolSmart AC SEER 14 => (Equip) - EER>=12	BHVAC	49	0%	0%	70%	30%	0.273	85%	0%	85%	85%
CoolSmart HP SEER 14=> (Equip)	BHVAC	465	62%	21%	12%	5%	0.347	67%	50%	67%	67%
CoolSmart AC SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	72	0%	0%	70%	30%	0.273	85%	0%	85%	85%
CoolSmart HP SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	488	62%	21%	12%	5%	0.347	67%	50%	67%	67%
CoolSmart AC SEER 15.0 => (Equip) - EER>=12.5	BHVAC	92	0%	0%	70%	30%	0.393	85%	0%	85%	85%
CoolSmart HP SEER 15.0 => (Equip)	BHVAC	694	62%	21%	12%	5%	0.502	67%	50%	67%	67%
CoolSmart AC QIV NES	BHVAC	35	0%	0%	70%	30%	0.164	85%	0%	85%	85%
CoolSmart AC QIV ES	BHVAC	35	0%	0%	70%	30%	0.164	85%	0%	85%	85%
CoolSmart HP QIV NES	BHVAC	319	62%	21%	12%	5%	0.237	59%	50%	59%	59%
CoolSmart HP QIV ES	BHVAC	319	62%	21%	12%	5%	0.237	59%	50%	59%	59%
CoolSmart AC Digital Check-up/Tune-up	BHVAC	45	0%	0%	70%	30%	0.212	85%	0%	85%	85%
CoolSmart HP Digital Check-up/Tune-up	BHVAC	354	62%	21%	12%	5%	0.257	70%	50%	70%	70%
CoolSmart Wm Air Furnace ECM (GN Reb)	BHVAC	600	62%	21%	12%	5%	0.116	67%	50%	67%	67%
Duct Sealing - 100 CFM redcution in leaks 20% of flow to 10%	BHVAC	212	0%	0%	70%	30%	0.300	85%	0%	85%	85%
Down Size 1/2 ton	BHVAC	203	0%	0%	70%	30%	0.030	85%	0%	85%	85%
Mini Splits (Ductless)	BHVAC	261	0%	0%	70%	30%	0.442	85%	0%	85%	85%
Mini Split HP SEER 14.5, EER 12 (Ductless)	BHVAC	720	62%	21%	12%	5%	1.039	67%	50%	67%	67%
Equipt Tier I or II >= 12 EER w/ Sizing	BHVAC	-	0%	0%	70%	30%	-	85%	0%	85%	85%
Early Replacement of equip age 13 years old, rmng life 7 years with ES Equipment, Right sizing, & QIV	BHVAC	415	0%	0%	70%	30%	0.963	85%	0%	85%	85%
Early Retirement w/ Energy Star QI	BHVAC	212	0%	0%	70%	30%	0.300	85%	0%	85%	85%
Early Retirement E*QI w/ Duct modifications	BHVAC	513	0%	0%	70%	30%	0.850	85%	0%	85%	85%
Brushless Furnace Fan Motor	BHVAC	600	62%	21%	12%	5%	0.116	67%	50%	67%	67%
TXV rplcment of fixed orifice	BHVAC	73	0%	0%	70%	30%	0.156	85%	0%	85%	85%
Rightsizing Tier 2 14.5/12	BHVAC	-	0%	0%	70%	30%	-	85%	0%	85%	85%
Rightsizing Top Tier 15/12.5	BHVAC	-	0%	0%	70%	30%	-	85%	0%	85%	85%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
CoolSmart AC SEER 14 (Equip) - EER 11.5-11.99	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP SEER 14 (Equip) -	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC SEER 14 => (Equip) - EER>=12	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP SEER 14=> (Equip)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP SEER 14.5 (Equip) - EER 12 (Jan 09 ES Spec)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC SEER 15.0 => (Equip) - EER>=12.5	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP SEER 15.0 => (Equip)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC QIV NES	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC QIV ES	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP QIV NES	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP QIV ES	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart AC Digital Check-up/Tune-up	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart HP Digital Check-up/Tune-up	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CoolSmart Wm Air Furnace ECM (GN Reb)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Sealing - 100 CFM redcution in leaks 20% of flow to 10%	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Down Size 1/2 ton	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Mini Splits (Ductless)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Mini Split HP SEER 14.5, EER 12 (Ductless)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Equipt Tier I or II >= 12 EER w/ Sizing	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Early Replacement of equip age 13 years old, rmng life 7 years with ES Equipment, Right sizing, & QIV	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Early Retirement w/ Energy Star QI	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Early Retirement E*QI w/ Duct modifications	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Brushless Furnace Fan Motor	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
TXV rplcment of fixed orifice	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Rightsizing Tier 2 14.5/12	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Rightsizing Top Tier 15/12.5	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 3. Residential - Residential Conservation Service

Proposed Budget	$ 2,360,062
Net Annual Savings Goal (kWh)	2,071,791
TRC Benefit Cost Ratio	4.51

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
Free CFL	ALght	1590	bulbs	7	$7	$7
Free CFL (piggyback on other utility audits)	ALght	5000	bulbs	7	$7	$7
Torchiere	ALght	41	lamps	8	$75	$75
Insulation, Oil	BHVAC	418	homes	25	$1,500	$750
Insulation, Gas	BHVAC	418	homes	25	$1,500	$750
Insulation, Electric	BHVAC	300	homes	25	$1,500	$750
Insulation, Other Fuels	BHVAC	10	homes	25	$1,500	$750
Air Sealing, Oil	BHVAC	380	homes	15	$650	$325
Air Sealing, Gas	BHVAC	379	homes	15	$650	$325
Air Sealing, Electric	BHVAC	210	homes	15	$650	$325
Air Sealing, Other Fuels	BHVAC	20	homes	15	$650	$325
Duct Seal, Oil	BHVAC	10	homes	20	$950	$475
Duct Seal, Gas	BHVAC	10	homes	20	$950	$475
Duct Seal, Electric	BHVAC	0	homes	20	$950	$475
Duct Seal, Other FF	BHVAC	0	homes	20	$950	$475
Duct Insulation, Oil	BHVAC	8	homes	20	$550	$275
Duct Insulation, Gas	BHVAC	8	homes	20	$550	$275
Duct Insulation, Electric	BHVAC	0	homes	20	$550	$275
Duct Insulation, Other FF	BHVAC	0	homes	20	$550	$275
Thermostats, Oil	BHVAC	51	homes	10	$50	$25
Thermostats, Electric	BHVAC	20	homes	10	$50	$25
Thermostats, Other Fuels	BHVAC	15	homes	10	$50	$25
Heating System Replacement, Oil	BHVAC	50	homes	18	$500	$400
Heating System Replacement, Gas	BHVAC	0	homes	18	$500	$400
Heating System Replacement, Other Fuels	BHVAC	0	homes	18	$500	$400
Indirect Water Heater, Oil	EHoWa	15	homes	20	$600	$300
Indirect Water Heater, Other Fuels	EHoWa	3	homes	20	$600	$300
Solar Hot Water, Electric (2-person)	EHoWa	7	homes	25	$9,000	$500
Solar Hot Water, Electric (3-person)	EHoWa	3	homes	25	$9,000	$750
Solar Hot Water, Electric (4-person)	EHoWa	1	homes	25	$9,000	$1,000
Solar Hot Water, Electric (5-person)	EHoWa	1	homes	25	$11,000	$1,250
Solar Hot Water, Electric (6-person)	EHoWa	1	homes	25	$11,000	$1,500
DHW ISMs, Oil	EHoWa	10	homes	7	$17	$17
DHW ISMs, Gas	EHoWa	10	homes	7	$17	$17
DHW ISMs, Electric	EHoWa	10	homes	7	$17	$17
DHW ISMs, Other Fuels	EHoWa	0	homes	7	$17	$17
ES Window, Oil	BHVAC	500	windows	25	$240	$10
ES Window, Gas	BHVAC	0		25	$240	$10
ES Window, Electric	BHVAC	100	windows	25	$240	$10
ES Window, Other Fuels	BHVAC	100	windows	25	$240	$10
Refrigerator (savings over remaining life of existing equipment)	DRefr	350	appliances	1	$244	$150
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	350	appliances	13	$0	$0
Deep Retrofit Pilot - Electric	BHVAC	1	homes	25	$25,000	$10,000
Deep Retrofit Pilot - Gas	BHVAC	1	homes	25	$25,000	$10,000
Deep Retrofit Pilot - Oil	BHVAC	1	homes	25	$25,000	$10,000
Deep Retrofit Pilot - Propane/Other	BHVAC	0	homes	25	$25,000	$10,000
CHP	BHVAC	10	homes	15	$6,500	$2,000

Supporting Assumptions

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Free CFL	ALght	2%	0%	0%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Free CFL (piggyback on other utility audits)	ALght	2%	0%	0%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Torchiere	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Sealing, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Sealing, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Sealing, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Sealing, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Seal, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Seal, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Seal, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Seal, Other FF	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Insulation, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Insulation, Gas	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Insulation, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Duct Insulation, Other FF	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Thermostats, Oil	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Thermostats, Electric	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Thermostats, Other Fuels	BHVAC	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating System Replacement, Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating System Replacement, Gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating System Replacement, Other Fuels	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Indirect Water Heater, Oil	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Indirect Water Heater, Other Fuels	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Hot Water, Electric (2-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Hot Water, Electric (3-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Hot Water, Electric (4-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Hot Water, Electric (5-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Solar Hot Water, Electric (6-person)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHW ISMs, Oil	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHW ISMs, Gas	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHW ISMs, Electric	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHW ISMs, Other Fuels	EHoWa	2%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ES Window, Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ES Window, Gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ES Window, Electric	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ES Window, Other Fuels	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over remaining life of existing equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Deep Retrofit Pilot - Electric	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Deep Retrofit Pilot - Gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Deep Retrofit Pilot - Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Deep Retrofit Pilot - Propane/Other	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CHP	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Supporting Assumptions

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Free CFL	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Free CFL (piggyback on other utility audits)	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Torchiere	ALght	139	27%	40%	13%	20%	0.116	8%	29%	8%	8%
Insulation, Oil	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Insulation, Gas	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Insulation, Electric	BHVAC	2,431	27%	40%	13%	20%	0.943	72%	28%	72%	72%
Insulation, Other Fuels	BHVAC	317	0%	0%	70%	30%	0.678	100%	0%	100%	100%
Air Sealing, Oil	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Air Sealing, Gas	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Air Sealing, Electric	BHVAC	971	27%	40%	13%	20%	0.377	72%	28%	72%	72%
Air Sealing, Other Fuels	BHVAC	127	0%	0%	70%	30%	0.272	100%	0%	100%	100%
Duct Seal, Oil	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Duct Seal, Gas	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Duct Seal, Electric	BHVAC	1,483	27%	40%	13%	20%	0.575	72%	28%	72%	72%
Duct Seal, Other FF	BHVAC	193	0%	0%	70%	30%	0.414	100%	0%	100%	100%
Duct Insulation, Oil	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Duct Insulation, Gas	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Duct Insulation, Electric	BHVAC	2,601	27%	40%	13%	20%	1.008	72%	28%	72%	72%
Duct Insulation, Other FF	BHVAC	339	0%	0%	70%	30%	0.726	100%	0%	100%	100%
Thermostats, Oil	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Thermostats, Electric	BHVAC	143	27%	40%	13%	20%	0.031	3%	100%	3%	3%
Thermostats, Other Fuels	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Heating System Replacement, Oil	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Heating System Replacement, Gas	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Heating System Replacement, Other Fuels	BHVAC	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Indirect Water Heater, Oil	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Indirect Water Heater, Other Fuels	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Solar Hot Water, Electric (2-person)	EHoWa	1,550	27%	40%	13%	20%	1.198	75%	100%	75%	75%
Solar Hot Water, Electric (3-person)	EHoWa	2,325	27%	40%	13%	20%	1.797	75%	100%	75%	75%
Solar Hot Water, Electric (4-person)	EHoWa	3,100	27%	40%	13%	20%	2.396	75%	100%	75%	75%
Solar Hot Water, Electric (5-person)	EHoWa	3,875	27%	40%	13%	20%	2.995	75%	100%	75%	75%
Solar Hot Water, Electric (6-person)	EHoWa	4,650	27%	40%	13%	20%	3.594	75%	100%	75%	75%
DHW ISMs, Oil	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
DHW ISMs, Gas	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
DHW ISMs, Electric	EHoWa	73	27%	40%	13%	20%	0.009	75%	100%	75%	75%
DHW ISMs, Other Fuels	EHoWa	-	27%	40%	13%	20%	-	0%	0%	0%	0%
ES Window, Oil	BHVAC	13	0%	0%	70%	30%	-	0%	0%	0%	0%
ES Window, Gas	BHVAC	-	0%	0%	70%	30%	-	0%	0%	0%	0%
ES Window, Electric	BHVAC	110	27%	40%	13%	20%	0.040	70%	30%	70%	70%
ES Window, Other Fuels	BHVAC	13	0%	0%	70%	30%	-	0%	0%	0%	0%
Refrigerator (savings over remaining life of existing equipment)	DRefr	884	27%	40%	13%	20%	0.030	100%	82%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	100	27%	40%	13%	20%	0.013	100%	82%	100%	100%
Deep Retrofit Pilot - Electric	BHVAC	4,566	27%	40%	13%	20%	9.491	100%	0%	100%	100%
Deep Retrofit Pilot - Gas	BHVAC	577	27%	40%	13%	20%	1.235	100%	0%	100%	100%
Deep Retrofit Pilot - Oil	BHVAC	594	27%	40%	13%	20%	0.230	72%	28%	72%	72%
Deep Retrofit Pilot - Propane/Other	BHVAC	594	27%	40%	13%	20%	1.235	100%	0%	100%	100%
CHP	BHVAC	4,602	27%	40%	13%	20%	1.000	100%	100%	100%	100%

Supporting Assumptions

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Free CFL	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$3
Free CFL (piggyback on other utility audits)	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$3
Torchiere	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Insulation, Oil	BHVAC	1	26.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Insulation, Gas	BHVAC	6	28.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Insulation, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Insulation, Other Fuels	BHVAC	11	15.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Air Sealing, Oil	BHVAC	1	6.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Air Sealing, Gas	BHVAC	6	6.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Air Sealing, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Air Sealing, Other Fuels	BHVAC	11	5.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Seal, Oil	BHVAC	1	3.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Seal, Gas	BHVAC	6	2.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Seal, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Seal, Other FF	BHVAC	11	4.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Insulation, Oil	BHVAC	1	9.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Insulation, Gas	BHVAC	6	7.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Insulation, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Duct Insulation, Other FF	BHVAC	11	7.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Thermostats, Oil	BHVAC	1	4.40	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Thermostats, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Thermostats, Other Fuels	BHVAC	11	4.40	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Heating System Replacement, Oil	BHVAC	1	8.28	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Heating System Replacement, Gas	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Heating System Replacement, Other Fuels	BHVAC	11	8.28	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Indirect Water Heater, Oil	EHoWa	1	8.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Indirect Water Heater, Other Fuels	EHoWa	11	8.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Solar Hot Water, Electric (2-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Solar Hot Water, Electric (3-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Solar Hot Water, Electric (4-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Solar Hot Water, Electric (5-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Solar Hot Water, Electric (6-person)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
DHW ISMs, Oil	EHoWa	1	0.61	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
DHW ISMs, Gas	EHoWa	6	0.80	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
DHW ISMs, Electric	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
DHW ISMs, Other Fuels	EHoWa	11	0.59	0	0.00	0	0.00	0	0.00	8785	0	0	$ -	$0
ES Window, Oil	BHVAC	1	0.33	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
ES Window, Gas	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
ES Window, Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
ES Window, Other Fuels	BHVAC	11	0.33	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigerator (savings over remaining life of existing equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Deep Retrofit Pilot - Electric	BHVAC	1	42.03	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Deep Retrofit Pilot - Gas	BHVAC	6	44.20	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Deep Retrofit Pilot - Oil	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Deep Retrofit Pilot - Propane/Other	BHVAC	11	26.43	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
CHP	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 4. Residential - Energy Star Lighting

Proposed Budget	$ 633,615
Net Annual Savings Goal (kWh)	10,709,780
TRC Benefit Cost Ratio	12.50

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
Screw-in Bulbs (incl. NCP and rebates)	ALght	157130	bulbs	7	$3	$2
Indoor Fixture	ALght	2150	fixtures	20	$19	$15
Outdoor Fixture	ALght	1080	fixtures	6	$16	$10
Torchiere	ALght	0	units	8	$20	$15
LED Fixtures	ALght	150	fixtures	20	$120	$30

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Screw-in Bulbs (incl. NCP and rebates)	ALght	0%	0%	0%	117%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Indoor Fixture	ALght	8%	4%	0%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Outdoor Fixture	ALght	12%	7%	0%	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Torchiere	ALght	6%	3%	0%	83%	100%	100%	100%	100%	100%	100%	100%	100%	100%
LED Fixtures	ALght	0%	0%	0%	73%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Screw-in Bulbs (incl. NCP and rebates)	ALght	57	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Indoor Fixture	ALght	44	27%	40%	13%	20%	0.049	8%	29%	8%	8%
Outdoor Fixture	ALght	156	27%	40%	13%	20%	0.095	8%	29%	8%	8%
Torchiere	ALght	139	27%	40%	13%	20%	0.116	8%	29%	8%	8%
LED Fixtures	ALght	48	27%	40%	13%	20%	0.039	8%	29%	8%	8%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Screw-in Bulbs (incl. NCP and rebates)	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$3
Indoor Fixture	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$4
Outdoor Fixture	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$4
Torchiere	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
LED Fixtures	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 3	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 5. Residential - Energy Star Appliances

Proposed Budget	$ 255,804
Net Annual Savings Goal (kWh)	274,183
TRC Benefit Cost Ratio	1.39

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
AC (retirement value)	BHVAC	400	appliances	4	$30	$30
AC (energy star value)	BHVAC	400	appliances	12	$0	$0
AC (retirement value) turn-in	BHVAC	300	appliances	4	$112	$43
AC (energy star value) turn-in	BHVAC	300	appliances	12	$0	$0
ECM Heat (CLC-specific)	BHVAC	100	appliances	20	$400	$200
Clothes Washer - oil	EHoWa	0	appliances	11	$450	$75
Clothes Washer - gas	EHoWa	0	appliances	11	$450	$75
Clothes Washer - electric	EHoWa	0	appliances	11	$450	$75
Dehumidifiers (retirement value) turn-in	BHVAC	300	appliances	4	$74	$43
Dehumidifiers (energy star value) turn-in	BHVAC	300	appliances	12	$0	$0
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	370	appliances	13	$30	$30
2nd Refrigerator Removal	DRefr	10	appliances	5	$175	$75
Consumer Electronics - TVs	HEUBe	500	appliances	6	$500	$10
Consumer Electronics - Set Top Boxes	HEUBe	500	appliances	4	$3	$3
Consumer Electronics - Smart Strips	HEUBe	100	appliances	5	$50	$10
Pool Pumps	CMoDr	30	appliances	10	$100	$100

		Impact Factors													
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
AC (retirement value)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AC (energy star value)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AC (retirement value) turn-in	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AC (energy star value) turn-in	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
ECM Heat (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Clothes Washer - oil	EHoWa	10%	0%	0%	27%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Clothes Washer - gas	EHoWa	10%	0%	0%	27%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Clothes Washer - electric	EHoWa	10%	0%	0%	27%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers (retirement value) turn-in	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers (energy star value) turn-in	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	35%	36%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2nd Refrigerator Removal	DRefr	35%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Consumer Electronics - TVs	HEUBe	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Consumer Electronics - Set Top Boxes	HEUBe	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Consumer Electronics - Smart Strips	HEUBe	0%	0%	0%	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Pool Pumps	CMoDr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
AC (retirement value)	BHVAC	56	27%	40%	13%	20%	0.112	30%	0%	30%	30%
AC (energy star value)	BHVAC	49	27%	40%	13%	20%	0.105	30%	0%	30%	30%
AC (retirement value) turn-in	BHVAC	56	27%	40%	13%	20%	0.112	30%	0%	30%	30%
AC (energy star value) turn-in	BHVAC	49	27%	40%	13%	20%	0.105	30%	0%	30%	30%
ECM Heat (CLC-specific)	BHVAC	360	27%	40%	13%	20%	0.240	0%	50%	0%	0%
Clothes Washer - oil	EHoWa	29	27%	40%	13%	20%	0.037	50%	70%	50%	50%
Clothes Washer - gas	EHoWa	29	27%	40%	13%	20%	0.037	50%	70%	50%	50%
Clothes Washer - electric	EHoWa	439	27%	40%	13%	20%	0.560	50%	70%	50%	50%
Dehumidifiers (retirement value) turn-in	BHVAC	30	27%	40%	13%	20%	0.021	80%	0%	80%	80%
Dehumidifiers (energy star value) turn-in	BHVAC	85	27%	40%	13%	20%	0.059	80%	0%	80%	80%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	100	27%	40%	13%	20%	0.013	100%	82%	100%	100%
2nd Refrigerator Removal	DRefr	325	27%	40%	13%	20%	0.043	100%	92%	100%	100%
Consumer Electronics - TVs	HEUBe	52	27%	40%	13%	20%	0.006	30%	0%	30%	30%
Consumer Electronics - Set Top Boxes	HEUBe	70	27%	40%	13%	20%	0.008	30%	0%	30%	30%
Consumer Electronics - Smart Strips	HEUBe	175	27%	40%	13%	20%	0.060	30%	0%	30%	30%
Pool Pumps	CMoDr	552	27%	40%	13%	20%	0.400	30%	0%	30%	30%

Supporting Assumptions

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
AC (retirement value)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
AC (energy star value)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
AC (retirement value) turn-in	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
AC (energy star value) turn-in	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
ECM Heat (CLC-specific)	BHVAC	1	16.50	0	0.00	0	0.00	0	0.00	0	0	0	$ (75)	$0
Clothes Washer - oil	EHoWa	1	1.40	0	0.00	0	0.00	0	0.00	8893	0	0	$ 18	$0
Clothes Washer - gas	EHoWa	5	1.40	0	0.00	0	0.00	0	0.00	8893	0	0	$ 18	$0
Clothes Washer - electric	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	8893	0	0	$ 18	$0
Dehumidifiers (retirement value) turn-in	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$0
Dehumidifiers (energy star value) turn-in	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
2nd Refrigerator Removal	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Consumer Electronics - TVs	HEUBe	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Consumer Electronics - Set Top Boxes	HEUBe	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Consumer Electronics - Smart Strips	HEUBe	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Pool Pumps	CMoDr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 6. Low Income - Single Family

Proposed Budget	$ 1,122,962
Net Annual Savings Goal (kWh)	674,677
TRC Benefit Cost Ratio	3.16

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
Baseload	HEUBe	1115	homes	5	$96	$96
Mini AMP	DRefr	0		19	$680	$680
Electric Wx	BHVAC	40	homes	20	$2,000	$2,000
Oil Wx	BHVAC	110	homes	20	$2,000	$2,000
Heating System Retrofit - Oil	BHVAC	10	homes	18	$4,500	$4,500
CFL's	ALght	3220	bulbs	16	$19	$19
Fixtures	ALght	0		20	$96	$96
Torchiere	ALght	90	units	8	$20	$20
Refrigerator (savings over remaining life of existing equipment)	DRefr	211	appliances	5	$700	$700
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	211	appliances	19	$0	$0
Replacement Freezer	DRefr	0		19	$405	$405
Waterbed	EHoWa	0		20	$440	$440
DHWater Measure (elec)	EHoWa	90	units	7	$17	$17
DHWater Measure (OIL)	EHoWa	125	units	7	$17	$17
DHWater Measure (gas&other)	EHoWa	90	units	7	$17	$17
AC or POOL Timer	HEUBe	0		5	$17	$17
Dehumidifiers retirement value (CLC-specific)	BHVAC	0		4	$74	$74
Dehumidifiers energy star value (CLC-specific)	BHVAC	0		12	$0	$0
Fuel switching (CLC-specific)	BHVAC	7	homes	20	$7,800	$7,800
Window AC Replacements	BHVAC	0		12	$290	$290
Tstats - Electric	BHVAC	0		10	$100	$100
Tstats - Oil	BHVAC	0		10	$100	$100
Tstats - Other	BHVAC	0		10	$100	$100

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Baseload	HEUBe	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mini AMP	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Electric Wx	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oil Wx	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating System Retrofit - Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CFL's	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fixtures	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Torchiere	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over remaining life of existing equipment)	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Replacement Freezer	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Waterbed	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHWater Measure (elec)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHWater Measure (OIL)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHWater Measure (gas&other)	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
AC or POOL Timer	HEUBe	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers retirement value (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers energy star value (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fuel switching (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Window AC Replacements	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tstats - Electric	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tstats - Oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tstats - Other	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Supporting Assumptions

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Baseload	HEUBe	272	27%	40%	13%	20%	0.074	35%	100%	35%	35%
Mini AMP	DRefr	704	27%	40%	13%	20%	0.093	100%	92%	100%	100%
Electric Wx	BHVAC	297	27%	40%	13%	20%	0.037	3%	100%	3%	3%
Oil Wx	BHVAC	55	27%	40%	13%	20%	0.007	3%	100%	3%	3%
Heating System Retrofit - Oil	BHVAC	55	27%	40%	13%	20%	0.007	3%	100%	3%	3%
CFL's	ALght	34	27%	40%	13%	20%	0.009	35%	100%	35%	35%
Fixtures	ALght	128	27%	40%	13%	20%	0.035	35%	100%	35%	35%
Torchiere	ALght	139	27%	40%	13%	20%	0.119	0%	0%	0%	0%
Refrigerator (savings over remaining life of existing equipment)	DRefr	624	27%	40%	13%	20%	0.083	100%	92%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	80	27%	40%	13%	20%	0.010	100%	92%	100%	100%
Replacement Freezer	DRefr	576	27%	40%	13%	20%	0.076	100%	92%	100%	100%
Waterbed	EHoWa	1,230	27%	40%	13%	20%	0.154	75%	100%	75%	75%
DHWater Measure (elec)	EHoWa	20	27%	40%	13%	20%	0.016	75%	100%	75%	75%
DHWater Measure (OIL)	EHoWa	-	27%	40%	13%	20%	0.016	0%	0%	0%	0%
DHWater Measure (gas&other)	EHoWa	-	27%	40%	13%	20%	0.016	0%	0%	0%	0%
AC or POOL Timer	HEUBe	-	27%	40%	13%	20%	-	0%	0%	0%	0%
Dehumidifiers retirement value (CLC-specific)	BHVAC	30	27%	40%	13%	20%	0.021	80%	0%	80%	80%
Dehumidifiers energy star value (CLC-specific)	BHVAC	85	27%	40%	13%	20%	0.059	80%	0%	80%	80%
Fuel switching (CLC-specific)	BHVAC	11,500	27%	40%	13%	20%	7.667	0%	50%	0%	0%
Window AC Replacements	BHVAC	100	27%	40%	13%	20%	0.214	100%	2%	100%	100%
Tstats - Electric	BHVAC	244	27%	40%	13%	20%	0.031	3%	100%	3%	3%
Tstats - Oil	BHVAC	-	27%	40%	13%	20%	-	3%	100%	3%	3%
Tstats - Other	BHVAC	-	27%	40%	13%	20%	-	3%	100%	3%	3%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Baseload	HEUBe	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 6	$70
Mini AMP	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 14	$270
Electric Wx	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 240	$4,404
Oil Wx	BHVAC	1	25.20	0	0.00	0	0.00	0	0.00	0	0	0	$ 204	$6,710
Heating System Retrofit - Oil	BHVAC	1	40.60	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$10,689
CFL's	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$3
Fixtures	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 3	$4
Torchiere	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 3	$0
Refrigerator (savings over remaining life of existing equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 18	$200
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 2	$0
Replacement Freezer	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 12	$200
Waterbed	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 25	$0
DHWater Measure (elec)	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	8785	0	0	$ 0	$0
DHWater Measure (OIL)	EHoWa	1	3.66	0	0.00	0	0.00	0	0.00	8785	0	0	$ 0	$0
DHWater Measure (gas&other)	EHoWa	5	3.66	0	0.00	0	0.00	0	0.00	8785	0	0	$ 0	$0
AC or POOL Timer	HEUBe	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Dehumidifiers retirement value (CLC-specific)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$0
Dehumidifiers energy star value (CLC-specific)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 2	$0
Fuel switching (CLC-specific)	BHVAC	6	-46.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 219	$70
Window AC Replacements	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 2	$0
Tstats - Electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Tstats - Oil	BHVAC	1	7.50	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Tstats - Other	BHVAC	11	7.50	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 7. Low Income - Multi Family

Proposed Budget	$ 409,214
Net Annual Savings Goal (kWh)	146,098
TRC Benefit Cost Ratio	5.74

Supporting Assumptions

Measure	End Use	Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost
CFL	ALght	940	bulbs	16	$19	$19
Torchiere	ALght	110	units	8	$78	$78
Refrigerator (savings over remaining life of existing equipment)	DRefr	110	appliances	1	$700	$700
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	110	appliances	13	$0	$0
DHWs	EHoWa	110	units	7	$17	$17
Dehumidifiers retirement value (CLC-specific)	BHVAC	0	appliances	4	$74	$74
Dehumidifiers energy star value (CLC-specific)	BHVAC	0	appliances	12	$0	$0
Insulation & Air Sealing - electric	BHVAC	31	sites	20	$1,000	$1,000
Insulation & Air Sealing - oil	BHVAC	70	sites	20	$1,000	$1,000
Insulation & Air Sealing - gas	BHVAC	100	sites	20	$1,000	$1,000
Insulation & Air Sealing - propane	BHVAC	10	sites	20	$1,000	$1,000

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
CFL	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Torchiere	ALght	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over remaining life of existing equipment)	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
DHWs	EHoWa	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers retirement value (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dehumidifiers energy star value (CLC-specific)	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation & Air Sealing - electric	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation & Air Sealing - oil	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation & Air Sealing - gas	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Insulation & Air Sealing - propane	BHVAC	0%	0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings					Capacity Savings				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
CFL	ALght	34	27%	40%	13%	20%	0.009	35%	100%	35%	35%
Torchiere	ALght	139	27%	40%	13%	20%	0.119	0%	0%	0%	0%
Refrigerator (savings over remaining life of existing equipment)	DRefr	624	27%	40%	13%	20%	0.083	100%	92%	100%	100%
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	80	27%	40%	13%	20%	0.010	100%	92%	100%	100%
DHWs	EHoWa	20	27%	40%	13%	20%	0.016	75%	100%	75%	75%
Dehumidifiers retirement value (CLC-specific)	BHVAC	30	27%	40%	13%	20%	0.021	80%	0%	80%	80%
Dehumidifiers energy star value (CLC-specific)	BHVAC	85	27%	40%	13%	20%	0.059	80%	0%	80%	80%
Insulation & Air Sealing - electric	BHVAC	297	27%	40%	13%	20%	0.037	3%	100%	3%	3%
Insulation & Air Sealing - oil	BHVAC	55	27%	40%	13%	20%	0.007	3%	100%	3%	3%
Insulation & Air Sealing - gas	BHVAC	55	27%	40%	13%	20%	0.007	3%	100%	3%	3%
Insulation & Air Sealing - propane	BHVAC	55	27%	40%	13%	20%	0.007	3%	100%	3%	3%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non Resource (base year dollars)
CFL	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$3
Torchiere	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 3	$0
Refrigerator (savings over remaining life of existing equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 18	$200
Refrigerator (savings over full life compared to new baseline equipment)	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 2	$0
DHWs	EHoWa	0	0.00	0	0.00	0	0.00	0	0.00	8785	0	0	$ 0	$0
Dehumidifiers retirement value (CLC-specific)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 1	$0
Dehumidifiers energy star value (CLC-specific)	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 2	$0
Insulation & Air Sealing - electric	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ 240	$4,404
Insulation & Air Sealing - oil	BHVAC	1	25.20	0	0.00	0	0.00	0	0.00	0	0	0	$ 204	$6,710
Insulation & Air Sealing - gas	BHVAC	6	29.80	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Insulation & Air Sealing - propane	BHVAC	11	13.43	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 8. Commercial & Industrial - New Construction

Proposed Budget	$ 164,050
Net Annual Savings Goal (kWh)	225,479
TRC Benefit Cost Ratio	3.58

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	7	Jobs	15	$105,285	$88,232	$12,684	$0.35	3,111
Heating, ventilation and AC	BHVAC	2	Jobs	15	$35,516	$26,308	$16,798	$1.40	1,500
Motors	CMoDr	3	Jobs	20	$26,308	$13,154	$4,400	$1.00	2,920

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	31%	6%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	33%	9%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Motors	CMoDr	21%	18%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	252,091	35%	32%	17%	16%	81.032	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	18,792	0%	0%	70%	30%	12.528	85%	0%	85%	85%
Motors	CMoDr	13,154	22%	21%	30%	27%	4.505	80%	90%	80%	80%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$22,729
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Motors	CMoDr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 9. Commercial & Industrial - Government New Construction

Proposed Budget	$ 65,384
Net Annual Savings Goal (kWh)	76,505
TRC Benefit Cost Ratio	3.28

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	3	Jobs	15	$26,406	$26,406	$10,036	$0.44	3,111
Heating, ventilation and AC	BHVAC	18	Jobs	15	$14,403	$14,403	$800	$1.75	1,500
Motors	CMoDr	1	Jobs	20	$7,202	$7,202	$13,000	$1.25	2,920

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Motors	CMoDr	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	60,357	35%	32%	17%	16%	19.401	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	8,231	0%	0%	70%	30%	5.487	85%	0%	85%	85%
Motors	CMoDr	5,761	22%	21%	30%	27%	1.973	80%	90%	80%	80%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$7,142
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Motors	CMoDr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 10. Commercial & Industrial - Products & Services

Proposed Budget	$ 129,749
Net Annual Savings Goal (kWh)	96,967
TRC Benefit Cost Ratio	2.07

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Cool Choice	ALght	20	Jobs	13	$53,737	$34,868	$1,731	$0.50	1,500
Motor Up	BHVAC	159	Jobs	15	$24,497	$12,249	$77	$0.50	2,920

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Cool Choice	ALght	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Motor Up	BHVAC	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Cool Choice	ALght	69,737	43%	18%	28%	11%	46.491	85%	59%	85%	85%
Motor Up	BHVAC	24,497	43%	18%	28%	11%	8.389	85%	59%	85%	85%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Cool Choice	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Motor Up	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 11. Commercial & Industrial - Large Retrofit

Proposed Budget	$ 219,990
Net Annual Savings Goal (kWh)	334,083
TRC Benefit Cost Ratio	2.29

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	5	Jobs	13	$182,890	$87,270	$17,187	$0.35	3,111
Heating, ventilation and AC	BHVAC	7	Jobs	12	$40,963	$17,444	$2,625	$0.58	1,500
Motors	CMoDr	5	Jobs	15	$40,963	$17,444	$3,750	$0.34	2,920

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	6%	3%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Motors	CMoDr	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	249,343	35%	32%	17%	16%	80.149	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	30,076	0%	0%	70%	30%	20.051	85%	0%	85%	85%
Motors	CMoDr	51,307	22%	21%	30%	27%	17.571	80%	90%	80%	80%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$28,789
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Motors	CMoDr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 12. Commercial & Industrial - Government Large Retrofit

Proposed Budget	$ 520,786
Net Annual Savings Goal (kWh)	729,777
TRC Benefit Cost Ratio	3.16

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	12	Jobs	13	$309,520	$309,520	$26,892	$0.44	3,111
Heating, ventilation and AC	BHVAC	1	Jobs	12	$36,414	$36,414	$55,768	$1.75	1,500
Refrigeration	DRefr	3	Jobs	13	$18,207	$18,207	$6,089	$0.44	5,843

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	1%	3%	3%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigeration	DRefr	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	707,475	35%	32%	17%	16%	227.411	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	20,808	0%	0%	70%	30%	13.872	85%	0%	85%	85%
Refrigeration	DRefr	41,616	22%	21%	30%	27%	7.122	80%	90%	80%	80%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$76,537
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigeration	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 13. Commercial & Industrial - Small Retrofit

Proposed Budget	$1,925,554
Net Annual Savings Goal (kWh)	3,401,727
TRC Benefit Cost Ratio	3.23

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	418	Jobs	13	$1,527,404	$1,204,422	$2,883	$0.38	3,111
Heating, ventilation and AC	BHVAC	99	Jobs	10	$140,144	$70,424	$710	$0.43	1,500
Refrigeration	DRefr	52	Jobs	10	$251,514	$201,211	$3,836	$0.35	5,843

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	6%	3%	3%	86%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	43%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigeration	DRefr	4%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	3,169,531	35%	32%	17%	16%	1,018.814	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	163,777	0%	0%	70%	30%	109.184	85%	0%	85%	85%
Refrigeration	DRefr	574,890	22%	21%	30%	27%	98.389	80%	90%	80%	80%

		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$314,720
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigeration	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix B. Program Level Budgets & Savings Goals

Figure 14. Commercial & Industrial - Government Small Retrofit

Proposed Budget	$ 884,299
Net Annual Savings Goal (kWh)	1,313,107
TRC Benefit Cost Ratio	3.51

Supporting Assumptions

Measure	End Use	Estimated Quantities	Units for Quantities	Measure Life	Total Resource Cost	Incentive Cost	Assumed Incentive Cost/Job	Assumed Incentive Cost/kWh Saved	Assumed Hours of Use
Lighting	ALght	86	Jobs	13	$445,770	$445,770	$5,187	$0.48	3,111
Heating, ventilation and AC	BHVAC	28	Jobs	10	$26,613	$26,613	$938	$0.75	1,500
Motors	CMoDr	6	Jobs	15	$186,292	$186,292	$33,395	$0.50	2,920
Refrigeration	DRefr	13	Jobs	10	$6,653	$6,653	$526	$0.35	5,843

		Impact Factors												
Measure	End Use	Free-Ridership Rate	Spillover [Participant] Rate	Spillover [Non-Participant] Rate	In-Service Rate	kWh Persistence	kWh Realization Rate	kWh Realization On-peak	kW-W Persistence	kW Winter Realization Rate	kW-S Persistence	kW Summer Realization Rate	NEB Persistence	NEB Realization
Lighting	ALght	1%	3%	3%	89%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heating, ventilation and AC	BHVAC	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Motors	CMoDr	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Refrigeration	DRefr	0%	0%	3%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

		Energy Savings (for all jobs in total)					Capacity Savings (for all jobs in total)				
Measure	End Use	Gross Annual kWh Saved	Winter Peak Energy %	Winter Off-Peak Energy %	Summer Peak Energy %	Summer Off-Peak Energy %	Maximum Load Reduction (kW)	Summer Coincident (%)	Winter Coincident (%)	Trans. Coincident (%)	Dist. Coincident (%)
Lighting	ALght	928,688	35%	32%	17%	16%	298.517	73%	37%	73%	73%
Heating, ventilation and AC	BHVAC	35,484	0%	0%	70%	30%	23.656	85%	0%	85%	85%
Motors	CMoDr	372,584	22%	21%	30%	27%	127.597	80%	90%	80%	80%
Refrigeration	DRefr	19,009	22%	21%	30%	27%	3.253	80%	90%	80%	80%

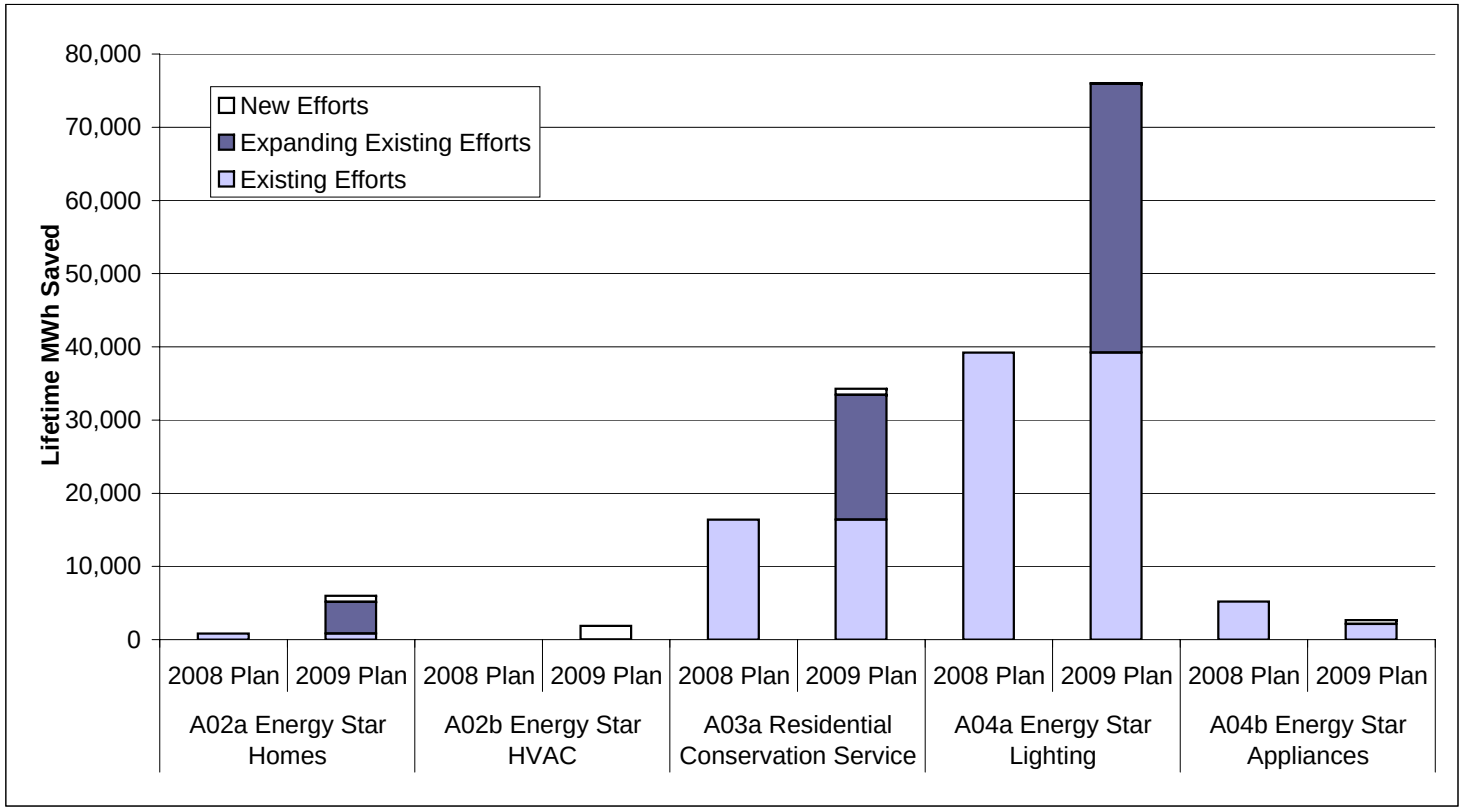
		Non-Electric Benefits												
Measure	End Use	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Annual Fossil Fuel (Type)	Annual Fossil Fuel (MMBtu/Year)	Res Water Savings (Gallons per Year)	C&I Water Savings (Gallons per Year)	C&I Sewer Savings (Gallons per Year)	Annual Non-Resource Benefit (base year dollars)	One-time Non-Resource (base year dollars)
Lighting	ALght	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$100,469
Heating, ventilation and AC	BHVAC	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Motors	CMoDr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0
Refrigeration	DRefr	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0	$ -	$0

Appendix C. Expansion of Existing Efforts vs. New Efforts
Figure 1. Overview

	Expanding Existing Efforts		New Efforts	
	Programs Affected	% Increase in Lifetime MWh Saved	Programs Affected	% Increase in Lifetime MWh Saved
Residential Programs				
A02a Energy Star Homes	☑	516%	☑	16%
A02b Energy Star HVAC			☑	All New
A03a Residential Conservation Service	☑	104%	☑	2%
A04a Energy Star Lighting	☑	94%	☑	0.1%
A04b Energy Star Appliances	☑	-59%	☑	25%
Total Non Low-Income		89%		4%
B03a LI Single Family	☑	13%		
B03b LI Multi-Family	☑	253%		
Total Low-Income		27%		
Total Residential		84%		3%
Commercial & Industrial Programs				
C02a C&I New Construction	☑	134%		
C02b C&I Govt New Construction	☑	43%		
C03a C&I Large Retrofit	☑	73%		
C03b C&I Small Retrofit	☑	43%	☑	49%
C03c C&I Govt Large	☑	43%		
C03d C&I Govt Small	☑	43%		
C04c C&I Products & Services	☑	186%	☑	26%
Total Commercial & Industrial		49%		22%
Total		**70%**		**10%**

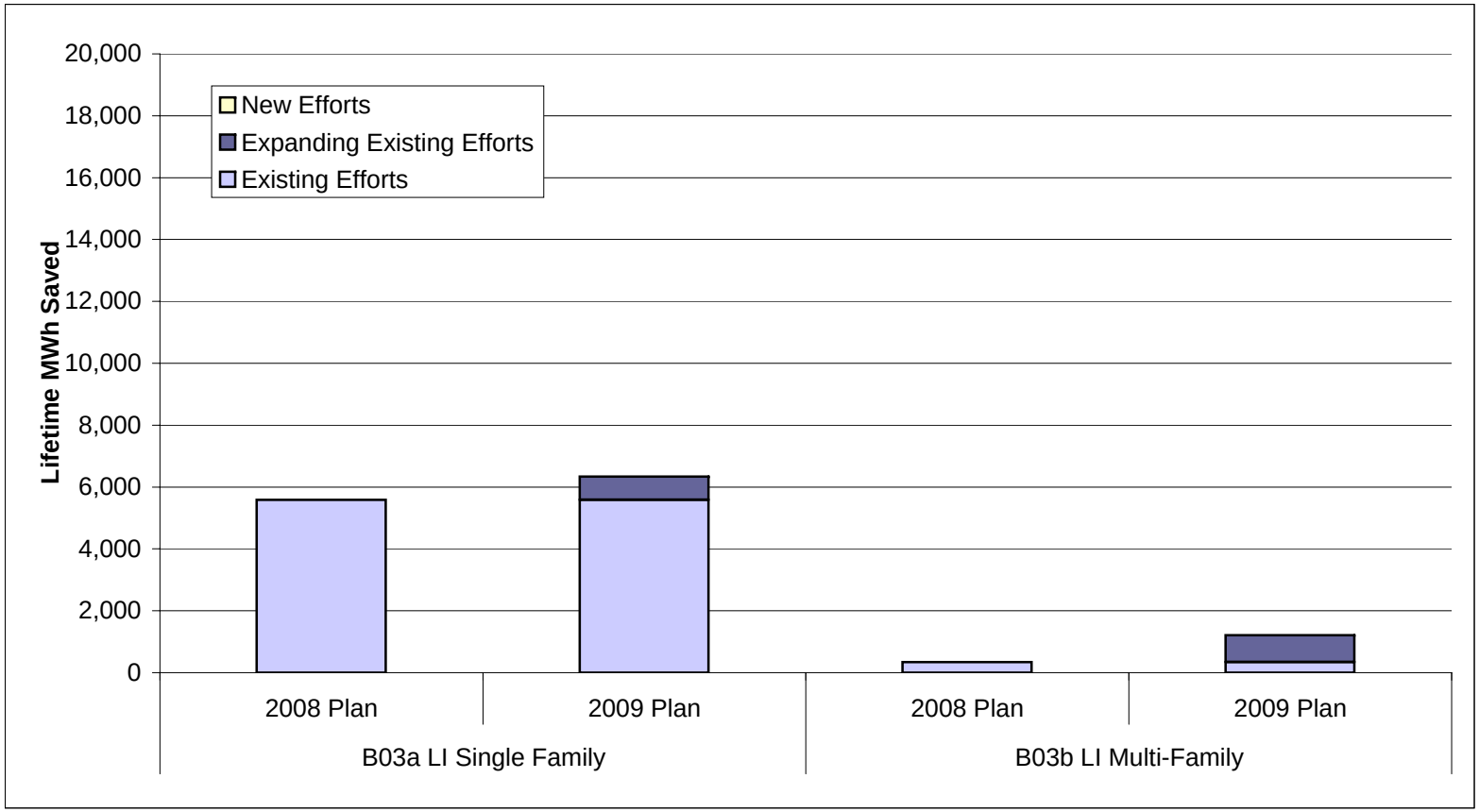
Appendix C. Expansion of Existing Efforts vs. New Efforts

Figure 2. Projected Increases in Lifetime MWh Savings for Residential Non-Low Income Programs



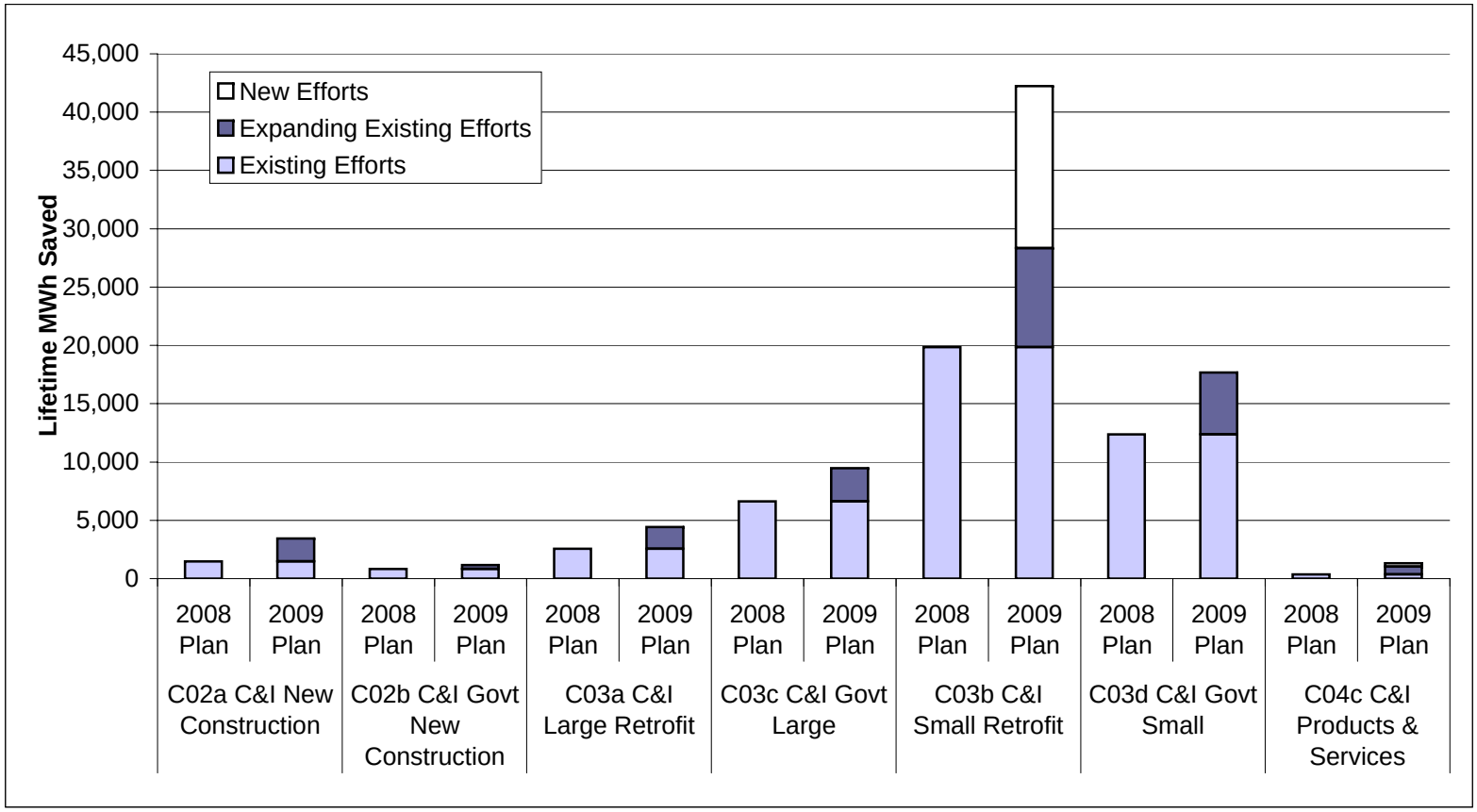
Appendix C. Expansion of Existing Efforts vs. New Efforts

Figure 3. Projected Increases in Lifetime MWh Savings for Residential Low Income Programs



Appendix C. Expansion of Existing Efforts vs. New Efforts

Figure 4. Projected Increases in Lifetime MWh Savings for Commercial & Industrial Programs



CAPE LIGHT COMPACT
DECEMBER 1, 2008

Supporting Data for Appendix C Figures

Residential

		Existing Efforts	Expanding Existing Efforts	New Efforts	Total	Expanding Existing Efforts	% Increase from Expanding Existing Efforts	% Increase from New Efforts
A02a Energy Star Homes	2008 Plan	837			837			
	2009 Plan	837	4,321	817	5,975	5,158	516%	16%
A02b Energy Star HVAC	2008 Plan	-			-			
	2009 Plan	-	-	1,895	1,895	-		
A03a Residential Conservation Service	2008 Plan	16,380			16,380			
	2009 Plan	16,380	17,068	834	34,282	33,448	104%	2%
A04a Energy Star Lighting	2008 Plan	39,227			39,227			
	2009 Plan	39,227	36,687	105	76,019	75,914	94%	0%
A04b Energy Star Appliances	2008 Plan	5,188			5,188			
	2009 Plan	2,127	-	527	2,654	2,127	-59%	25%
Total Non-Low Income	2009 Plan	61,632	58,076	4,178	120,825	116,647	89%	4%

		Existing Efforts	Expanding Existing Efforts	New Efforts	Total	Expanding Existing Efforts	% Increase from Expanding Existing Efforts	% Increase from New Efforts
B03a LI Single Family	2008 Plan	5,589			5,589			
	2009 Plan	5,589	750	-	6,339	6,339	13%	0%
B03b LI Multi-Family	2008 Plan	344			344			
	2009 Plan	344	871	-	1,215	1,215	253%	0%
Total Low Income	2009 Plan	5,933	1,621	-	7,554	7,554	27%	0%
Total Residential	2009 Plan	67,565	59,697	4,178	128,379	124,201	84%	3%

C&I

		Existing Efforts	Expanding Existing Efforts	New Efforts	Total	Expanding Existing Efforts	% Increase from Expanding Existing Efforts	% Increase from New Efforts
C02a C&I New Construction	2008 Plan	1,473			1,473			
	2009 Plan	1,473	1,975	-	3,448	3,448	134%	0%
C02b C&I Govt New Construction	2008 Plan	824			824			
	2009 Plan	824	353	-	1,177	1,177	43%	0%
C03a C&I Large Retrofit	2008 Plan	2,560			2,560			
	2009 Plan	2,560	1,858	-	4,418	4,418	73%	0%
C03c C&I Govt Large	2008 Plan	6,626			6,626			
	2009 Plan	6,626	2,840	-	9,466	9,466	43%	0%
C03b C&I Small Retrofit	2008 Plan	19,841			19,841			
	2009 Plan	19,841	8,503	13,883	42,227	28,344	43%	49%
C03d C&I Govt Small	2008 Plan	12,368			12,368			
	2009 Plan	12,368	5,301	-	17,669	17,669	43%	0%
C04c C&I Products & Services	2008 Plan	365			365			
	2009 Plan	365	678	268	1,311	1,043	186%	26%
Total C&I	2009 Plan	44,057	21,508	14,151	79,716	65,565	49%	22%
Total	2009 Plan	111,622	81,205	18,329	208,095	189,766	70%	10%

% of Increase				9%		91%		

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC UTILITIES

The Cape Light Compact's Proposed Second	)	
Amendment to Its Approved	)	DPU 07-47
Energy Efficiency Plan: 2007 – 2012	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing Proposed Second Amendment to its Approved Energy Efficiency Plan: 2007 – 2012 upon Secretary Mary Cottrell and Hearing Officer Benjamin Spruill via hand delivery and electronic mail delivery and the remaining Service List by first class mail and electronic mail delivery in this matter.

Dated this 26th day of November, 2008.

Suzy Hong, Esq.
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