Cape Light Compact

Plan-Year Report on Energy Efficiency Activities for 2014

Submitted to the
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and the Massachusetts Department of Energy Resources
June 5, 2015

Cape Light Compact

D.P.U. 15-49

2014 Energy Efficiency Plan-Year Report

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SECTION I:
INTRODUCTION AND OVERVIEW

Cape Light Compact Overview

The Cape Light Compact ("Compact") is pleased with the results for the second year ("2014 Plan-Year") of its 2013-2015 Three-Year Energy Efficiency Plan ("2013-2015 Three-Year Plan"), the second of such plans envisioned by the Green Communities Act ("GCA") and approved by the Department of Public Utilities ("Department" or "DPU"). The Compact and the other Massachusetts Energy Efficiency Program Administrators (the "Program Administrators" or "PAs")[1] diligently implemented their respective plans over the past two years, successfully making progress toward their three-year goals. Program year 2014 continued to build on the nationally acclaimed accomplishments of the 2013 Plan-Year and the 2010-2012 Three-Year Energy Efficiency Plan ("2010-2012 Three-Year Plan"), showing remarkable success with respect to goal attainment and achievement of real benefits for the environment and the economy in the Commonwealth of Massachusetts. The Compact was able to deliver on its goals during both 2013 and 2014, while maintaining the balance between meeting the budget for its program and complying with the directives of the GCA in ensuring that it makes available all cost-effective energy efficiency opportunities.

Notable 2014 awards and accomplishments for the Cape Light Compact's energy efficiency programs are provided below.

- 2014 ENERGY STAR® Partner of the Year Award – Energy Efficiency Program Delivery – Lighting and Products Sponsors of Mass Save®
- 2014 ENERGY STAR® Partner of the Year Award - Sustained Excellence - Energy Efficiency Program Delivery - Sponsors of NEEP
- 2014 ENERGY STAR® Certified Homes Market Leader Award
- 2014 ENERGY STAR® Award for Sustained Excellence for ongoing commitment to regional collaboration and dedication to continued innovation in EE programs – given to sponsoring organizations of Northeast Energy Efficiency Partnerships
- 2014 NEEP Business Leader Award – Falmouth Ice Arena

[1] The Massachusetts Program Administrators are: Bay State Gas Company d/b/a Columbia Gas of Massachusetts, The Berkshire Gas Company, Blackstone Gas Company, Cape Light Compact, Fitchburg Gas and Electric Light Company d/b/a Unitil, National Grid, New England Gas Company, NSTAR Electric Company, NSTAR Gas Company, and Western Massachusetts Electric Company.

- 2014 National Energy Education Development Program State and National Youth Awards
    - Eastham Elementary School: Elementary Level State School of the Year
    - Harwich Cares, Harwich Middle School: Junior Level State School of the Year and National Junior Level Finalist
    - SPIT and SPARKS, Forestdale School: Junior Level State Finalist
    - Sandwich High School, Nicolas Blackmon: Senior Level State Runner-up
    - Martha's Vineyard Regional High School: Senior Level State Rookie of the Year
- The Compact's new construction initiatives for each of the three customer sectors has already exceeded their three-year plan goals by the end of 2014.

The results of the first and second years of the 2013-2015 Three-Year Plan, presented in this 2014 annual report ("Plan-Year Report"), indicate that the Compact is on track to reach its three-year goals by the end of 2015. Including actual results from both 2013 and 2014, the Compact achieved 69% of its three-year lifetime energy savings goal, achieved 68% of its three-year total benefit goal, and spent 75% of its planned three-year budget. Based on these results in combination with the 2015 planned values, over the three-year term, the Compact expects to achieve:

- robustly cost-effective programs with a benefit-cost ratio ("BCR") of 3.58,
- net benefits of $268 million,
- annual energy savings of 117 GWh,
- lifetime energy savings of 1,173 GWh,
- total benefits of $371 million, and
- program costs of $90 million.

Organization of Plan-Year Report[2]

The Compact's 2014 Plan-Year Report is organized as follows:

- Section I provides an overview of the 2014 Plan-Year.
- Section II provides Compact-specific data tables at the core initiative level, including planned, preliminary, and evaluated data, and comparisons across the three different types of data.
- Appendix 1 provides explanations for (a) significant variances at the core initiative level and (b) any non-cost-effective core initiatives over the three-year term, consistent with the D.P.U. 11-120, Phase II, Energy Efficiency Plan-Year Report Template.
- Appendix 2 provides the Compact's evaluated benefit-cost ratio screening tool in Microsoft Excel format.
- Appendix 3 provides the 2014 Program Year – Report Version of the statewide Technical Reference Manual ("TRM").
- Appendix 4 provides detail on the year's evaluation efforts, including summaries for each statewide evaluation study and a complete copy of each evaluation study.
- Appendix 5 provides the statewide performance incentive model. Since the Compact does not collect any performance incentives, this section is not applicable to the Compact.
- Appendix 6 provides the Compact's town activity reports for the 2014 Plan-Year.
- Appendix 7 provides the Compact's Energy Education Outreach activities for the 2014 Plan-Year.

[2] In previous annual reports, the Cape Light Compact provided information on its financial reports. The Compact continues to provide its financial reports on its website at: http://www.capelightcompact.org/report/financialreports.

SECTION II:
CAPE LIGHT COMPACT DATA TABLES[3]

[3] Note that the 2013 preliminary and evaluated lifetime therm savings have been updated in the Compact's master data tab.

Significant Variances Summary

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Is a Significant Variance explanation required?	Significant Lifetime Savings Variances: Planned v Preliminary (15% Decrease)	Significant Total Benefits Variances (2013$): Planned v Preliminary (15% Decrease)	Significant Resource Benefits Variances (2013$): Preliminary v Evaluated (15% Decrease)	Significant Planned Budget v Actual Expenditures Variances (nominal$) (15% Increase or Decrease)
Residential				
1. Residential Whole House				
Residential New Construction & Major Renovation	74.6%	84.2%	0.9%	***-37.3%***
Residential Multi-Family Retrofit	***-57.1%***	***-64.9%***	-0.8%	***-15.7%***
Residential Home Energy Services	18.0%	15.4%	1.2%	***45.0%***
Residential Behavior/Feedback Program	***-100.0%***	***-100.0%***	0.0%	***221.7%***
2. Residential Products				
Residential Cooling & Heating Equipment	59.8%	53.0%	3.4%	***48.4%***
Residential Lighting	-14.7%	***-16.8%***	9.8%	***-20.4%***
Residential Consumer Products	***-51.8%***	***-47.3%***	-11.8%	***-27.2%***
Low-Income				
4. Low-Income Whole House				
Low-Income New Construction	337.9%	42.5%	0.7%	***-37.5%***
Low-Income Single Family Retrofit	23.5%	***-16.7%***	7.1%	-13.4%
Low-Income Multi-Family Retrofit	42.1%	***-48.9%***	20.0%	***-25.2%***
Commercial & Industrial				
6. C&I New Construction				
C&I New Construction	54.1%	52.5%	***-24.6%***	14.7%
7. C&I Retrofit				
C&I Retrofit	***-21.9%***	***-27.6%***	-0.8%	-13.6%
C&I Direct Install	-14.2%	-5.9%	0.1%	1.0%

Significant variances, which require explanation, are defined as:

(1) variances between *planned and actual* core initiative budget of *15 percent or greater;*
(2) variances between *planned and preliminary* core initiative *total lifetime savings* showing a *decrease of 15 percent or greater;*
(3) variances between *planned and preliminar* y core initiative *total benefits* showing a *decrease of 15 percent or greater;* and
(4) variances between *preliminary and evaluated* core initiative *total resource benefits* showing a *decrease of 15 percent or greater* .

Cells highlighted in the above table indicate that a variance is significant enough to require explanation. Refer to Appendix 1 for explanations of significant variances.

Planned v Preliminary Savings: Plan-Year Analysis

Savings Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Planned	**81,789**	**38,379**	**383,925**	**6,742**
Residential	**79,520**	**16,458**	**151,108**	**1,856**
1. Residential Whole House	**8,746**	**5,724**	**69,782**	**632**
Residential New Construction & Major Renovation	110	281	3,508	30
Residential Multi-Family Retrofit	600	1,236	21,111	93
Residential Home Energy Services	6,036	3,764	44,718	448
Residential Behavior/Feedback Program	2,000	444	444	61
2. Residential Products	**70,774**	**10,734**	**81,327**	**1,224**
Residential Cooling & Heating Equipment	1,748	834	11,133	121
Residential Lighting	60,064	8,178	55,977	873
Residential Consumer Products	8,962	1,722	14,216	229
Low-Income	**825**	**1,474**	**12,302**	**191**
4. Low-Income Whole House	**825**	**1,474**	**12,302**	**191**
Low-Income New Construction	25	25	354	3
Low-Income Single Family Retrofit	400	1,012	9,642	149
Low-Income Multi-Family Retrofit	400	437	2,307	40
Commercial & Industrial	**1,444**	**20,447**	**220,514**	**4,695**
6. C&I New Construction	**742**	**6,748**	**77,419**	**1,759**
C&I New Construction	742	6,748	77,419	1,759
7. C&I Retrofit	**702**	**13,699**	**143,096**	**2,936**
C&I Retrofit	88	6,154	67,326	1,549
C&I Direct Install	614	7,544	75,770	1,387
Preliminary	**90,738**	**47,905**	**526,189**	**7,365**
Residential	**87,366**	**14,024**	**153,889**	**1,390**
1. Residential Whole House	**4,721**	**6,172**	**70,110**	**460**
Residential New Construction & Major Renovation	173	472	8,350	96
Residential Multi-Family Retrofit	443	548	7,376	48
Residential Home Energy Services	4,105	5,152	54,384	316
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**82,645**	**7,852**	**83,779**	**929**
Residential Cooling & Heating Equipment	1,840	1,108	17,658	167
Residential Lighting	77,785	5,931	59,541	634
Residential Consumer Products	3,020	813	6,581	128
Low-Income	**1,271**	**1,607**	**15,290**	**205**
4. Low-Income Whole House	**1,271**	**1,607**	**15,290**	**205**
Low-Income New Construction	52	25	485	14
Low-Income Single Family Retrofit	790	1,270	11,693	159
Low-Income Multi-Family Retrofit	429	312	3,112	32
Commercial & Industrial	**2,101**	**32,274**	**357,010**	**5,771**
6. C&I New Construction	**1,512**	**16,728**	**175,060**	**3,510**
C&I New Construction	1,512	16,728	175,060	3,510
7. C&I Retrofit	589	15,546	181,950	2,261
C&I Retrofit	118	9,242	102,927	829
C&I Direct Install	471	6,304	79,023	1,432

Planned v Preliminary Variances: (Prelim - Plan) / Plan	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Total Annual Variance	**11%**	**25%**	**37%**	**9%**
Residential	**10%**	**-15%**	**2%**	**-25%**
1. Residential Whole House	**-46%**	**8%**	**0%**	**-27%**
Residential New Construction & Major Renovation	57%	68%	138%	220%
Residential Multi-Family Retrofit	-26%	-56%	-65%	-48%
Residential Home Energy Services	-32%	37%	22%	-29%
Residential Behavior/Feedback Program	-100%	-100%	-100%	-100%
2. Residential Products	**17%**	**-27%**	**3%**	**-24%**
Residential Cooling & Heating Equipment	5%	33%	59%	38%
Residential Lighting	30%	-27%	6%	-27%
Residential Consumer Products	-66%	-53%	-54%	-44%
Low-Income	**54%**	**9%**	**24%**	**7%**
4. Low-Income Whole House	**54%**	**9%**	**24%**	**7%**
Low-Income New Construction	108%	2%	37%	455%
Low-Income Single Family Retrofit	98%	25%	21%	7%
Low-Income Multi-Family Retrofit	7%	-29%	35%	-20%
Commercial & Industrial	**45%**	**58%**	**62%**	**23%**
6. C&I New Construction	**104%**	**148%**	**126%**	**100%**
C&I New Construction	104%	148%	126%	100%
7. C&I Retrofit	**-16%**	**13%**	**27%**	**-23%**
C&I Retrofit	34%	50%	53%	-47%
C&I Direct Install	-23%	-16%	4%	3%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Planned v Evaluated Savings: Plan-Year Analysis

Savings Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Planned	**81,789**	**38,379**	**383,925**	**6,742**
Residential	**79,520**	**16,458**	**151,108**	**1,856**
1. Residential Whole House	**8,746**	**5,724**	**69,782**	**632**
Residential New Construction & Major Renovation	110	281	3,508	30
Residential Multi-Family Retrofit	600	1,236	21,111	93
Residential Home Energy Services	6,036	3,764	44,718	448
Residential Behavior/Feedback Program	2,000	444	444	61
2. Residential Products	**70,774**	**10,734**	**81,327**	**1,224**
Residential Cooling & Heating Equipment	1,748	834	11,133	121
Residential Lighting	60,064	8,178	55,977	873
Residential Consumer Products	8,962	1,722	14,216	229
Low-Income	**825**	**1,474**	**12,302**	**191**
4. Low-Income Whole House	**825**	**1,474**	**12,302**	**191**
Low-Income New Construction	25	25	354	3
Low-Income Single Family Retrofit	400	1,012	9,642	149
Low-Income Multi-Family Retrofit	400	437	2,307	40
Commercial & Industrial	**1,444**	**20,447**	**220,514**	**4,695**
6. C&I New Construction	**742**	**6,748**	**77,419**	**1,759**
C&I New Construction	742	6,748	77,419	1,759
7. C&I Retrofit	**702**	**13,699**	**143,096**	**2,936**
C&I Retrofit	88	6,154	67,326	1,549
C&I Direct Install	614	7,544	75,770	1,387
Evaluated	**90,738**	**50,389**	**494,299**	**7,563**
Residential	**87,366**	**15,635**	**153,882**	**2,023**
1. Residential Whole House	**4,721**	**7,208**	**69,842**	**880**
Residential New Construction & Major Renovation	173	482	8,370	102
Residential Multi-Family Retrofit	443	545	7,335	45
Residential Home Energy Services	4,105	6,181	54,138	733
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**82,645**	**8,427**	**84,040**	**1,143**
Residential Cooling & Heating Equipment	1,840	1,158	18,356	176
Residential Lighting	77,785	6,601	59,814	870
Residential Consumer Products	3,020	669	5,870	97
Low-Income	**1,271**	**1,928**	**17,693**	**311**
4. Low-Income Whole House	**1,271**	**1,928**	**17,693**	**311**
Low-Income New Construction	52	26	486	14
Low-Income Single Family Retrofit	790	1,544	13,662	250
Low-Income Multi-Family Retrofit	429	358	3,546	46
Commercial & Industrial	**2,101**	**32,827**	**322,724**	**5,230**
6. C&I New Construction	**1,512**	**17,274**	**140,239**	**3,026**
C&I New Construction	1,512	17,274	140,239	3,026
7. C&I Retrofit	589	15,553	182,484	2,204
C&I Retrofit	118	9,274	103,785	757
C&I Direct Install	471	6,279	78,699	1,447

Planned v Evaluated Variances: (Eval - Plan) / Plan	**Sum of Participants**	**Sum of Energy (annual MWh)**	**Sum of Energy (Lifetime MWh)**	**Sum of Summer Capacity (kW)**
Total Annual Variance	**11%**	**31%**	**29%**	**12%**
Residential	**10%**	**-5%**	**2%**	**9%**
1. Residential Whole House	**-46%**	**26%**	**0%**	**39%**
Residential New Construction & Major Renovation	57%	71%	139%	239%
Residential Multi-Family Retrofit	-26%	-56%	-65%	-51%
Residential Home Energy Services	-32%	64%	21%	64%
Residential Behavior/Feedback Program	-100%	-100%	-100%	-100%
2. Residential Products	**17%**	**-21%**	**3%**	**-7%**
Residential Cooling & Heating Equipment	5%	39%	65%	45%
Residential Lighting	30%	-19%	7%	0%
Residential Consumer Products	-66%	-61%	-59%	-58%
Low-Income	**54%**	**31%**	**44%**	**63%**
4. Low-Income Whole House	**54%**	**31%**	**44%**	**63%**
Low-Income New Construction	108%	4%	37%	466%
Low-Income Single Family Retrofit	98%	53%	42%	68%
Low-Income Multi-Family Retrofit	7%	-18%	54%	16%
Commercial & Industrial	**45%**	**61%**	**46%**	**11%**
6. C&I New Construction	**104%**	**156%**	**81%**	**72%**
C&I New Construction	104%	156%	81%	72%
7. C&I Retrofit	**-16%**	**14%**	**28%**	**-25%**
C&I Retrofit	34%	51%	54%	-51%
C&I Direct Install	-23%	-17%	4%	4%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Preliminary v Evaluated Savings: Plan-Year Analysis

Savings Table 3

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Preliminary	**90,738**	**47,905**	**526,189**	**7,365**
Residential	**87,366**	**14,024**	**153,889**	**1,390**
1. Residential Whole House	**4,721**	**6,172**	**70,110**	**460**
Residential New Construction & Major Renovation	173	472	8,350	96
Residential Multi-Family Retrofit	443	548	7,376	48
Residential Home Energy Services	4,105	5,152	54,384	316
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**82,645**	**7,852**	**83,779**	**929**
Residential Cooling & Heating Equipment	1,840	1,108	17,658	167
Residential Lighting	77,785	5,931	59,541	634
Residential Consumer Products	3,020	813	6,581	128
Low-Income	**1,271**	**1,607**	**15,290**	**205**
4. Low-Income Whole House	**1,271**	**1,607**	**15,290**	**205**
Low-Income New Construction	52	25	485	14
Low-Income Single Family Retrofit	790	1,270	11,693	159
Low-Income Multi-Family Retrofit	429	312	3,112	32
Commercial & Industrial	**2,101**	**32,274**	**357,010**	**5,771**
6. C&I New Construction	**1,512**	**16,728**	**175,060**	**3,510**
C&I New Construction	1,512	16,728	175,060	3,510
7. C&I Retrofit	**589**	**15,546**	**181,950**	**2,261**
C&I Retrofit	118	9,242	102,927	829
C&I Direct Install	471	6,304	79,023	1,432
Evaluated	**90,738**	**50,389**	**494,299**	**7,563**
Residential	**87,366**	**15,635**	**153,882**	**2,023**
1. Residential Whole House	**4,721**	**7,208**	**69,842**	**880**
Residential New Construction & Major Renovation	173	482	8,370	102
Residential Multi-Family Retrofit	443	545	7,335	45
Residential Home Energy Services	4,105	6,181	54,138	733
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**82,645**	**8,427**	**84,040**	**1,143**
Residential Cooling & Heating Equipment	1,840	1,158	18,356	176
Residential Lighting	77,785	6,601	59,814	870
Residential Consumer Products	3,020	669	5,870	97
Low-Income	**1,271**	**1,928**	**17,693**	**311**
4. Low-Income Whole House	**1,271**	**1,928**	**17,693**	**311**
Low-Income New Construction	52	26	486	14
Low-Income Single Family Retrofit	790	1,544	13,662	250
Low-Income Multi-Family Retrofit	429	358	3,546	46
Commercial & Industrial	**2,101**	**32,827**	**322,724**	**5,230**
6. C&I New Construction	**1,512**	**17,274**	**140,239**	**3,026**
C&I New Construction	1,512	17,274	140,239	3,026
7. C&I Retrofit	589	15,553	182,484	2,204
C&I Retrofit	118	9,274	103,785	757
C&I Direct Install	471	6,279	78,699	1,447

Preliminary v Evaluated Variances: (Eval - Prelim) / Prelim	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Total Annual Variance	**0%**	**5%**	**-6%**	**3%**
Residential	**0%**	**11%**	**0%**	**46%**
1. Residential Whole House	**0%**	**17%**	**0%**	**91%**
Residential New Construction & Major Renovation	0%	2%	0%	6%
Residential Multi-Family Retrofit	0%	0%	-1%	-6%
Residential Home Energy Services	0%	20%	0%	132%
Residential Behavior/Feedback Program	0%	0%	0%	0%
2. Residential Products	**0%**	**7%**	**0%**	**23%**
Residential Cooling & Heating Equipment	0%	4%	4%	5%
Residential Lighting	0%	11%	0%	37%
Residential Consumer Products	0%	-18%	-11%	-24%
Low-Income	**0%**	**20%**	**16%**	**52%**
4. Low-Income Whole House	**0%**	**20%**	**16%**	**52%**
Low-Income New Construction	0%	2%	0%	2%
Low-Income Single Family Retrofit	0%	22%	17%	58%
Low-Income Multi-Family Retrofit	0%	15%	14%	44%
Commercial & Industrial	**0%**	**2%**	**-10%**	**-9%**
6. C&I New Construction	**0%**	**3%**	**-20%**	**-14%**
C&I New Construction	0%	3%	-20%	-14%
7. C&I Retrofit	**0%**	**0%**	**0%**	**-2%**
C&I Retrofit	0%	0%	1%	-9%
C&I Direct Install	0%	0%	0%	1%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Savings for the Three-Year Term

Savings Table 4

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
2013				
Evaluated	**55,874**	**28,625**	**293,122**	**4,975**
Residential	52,733	13,159	115,891	1,678
1. Residential Whole House	**4,493**	**5,892**	**52,396**	**697**
Residential New Construction & Major Renovation	122	337	4,378	98
Residential Multi-Family Retrofit	364	284	4,718	8
Residential Home Energy Services	4,007	5,271	43,300	591
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**48,240**	**7,267**	**63,495**	**982**
Residential Cooling & Heating Equipment	1,773	1,091	16,811	159
Residential Lighting	43,728	5,349	40,099	705
Residential Consumer Products	2,739	827	6,584	118
Low-Income	1,718	1,828	17,237	291
4. Low-Income Whole House	**1,718**	**1,828**	**17,237**	**291**
Low-Income New Construction	276	110	1,527	14
Low-Income Single Family Retrofit	854	1,349	12,065	231
Low-Income Multi-Family Retrofit	588	369	3,645	46
Commercial & Industrial	1,423	13,639	159,994	3,006
6. C&I New Construction	**944**	**7,182**	**77,739**	**1,418**
C&I New Construction	944	7,182	77,739	1,418
7. C&I Retrofit	**479**	**6,457**	**82,255**	**1,587**
C&I Retrofit	81	2,140	28,267	632
C&I Direct Install	398	4,317	53,988	955
2014				
Evaluated	**90,738**	**50,389**	**494,299**	**7,563**
Residential	87,366	15,635	153,882	2,023
1. Residential Whole House	**4,721**	**7,208**	**69,842**	**880**
Residential New Construction & Major Renovation	173	482	8,370	102
Residential Multi-Family Retrofit	443	545	7,335	45
Residential Home Energy Services	4,105	6,181	54,138	733
Residential Behavior/Feedback Program	-	-	-	-
2. Residential Products	**82,645**	**8,427**	**84,040**	**1,143**
Residential Cooling & Heating Equipment	1,840	1,158	18,356	176
Residential Lighting	77,785	6,601	59,814	870
Residential Consumer Products	3,020	669	5,870	97
Low-Income	1,271	1,928	17,693	311
4. Low-Income Whole House	**1,271**	**1,928**	**17,693**	**311**
Low-Income New Construction	52	26	486	14
Low-Income Single Family Retrofit	790	1,544	13,662	250
Low-Income Multi-Family Retrofit	429	358	3,546	46
Commercial & Industrial	2,101	32,827	322,724	5,230
6. C&I New Construction	**1,512**	**17,274**	**140,239**	**3,026**
C&I New Construction	1,512	17,274	140,239	3,026
7. C&I Retrofit	**589**	**15,553**	**182,484**	**2,204**
C&I Retrofit	118	9,274	103,785	757
C&I Direct Install	471	6,279	78,699	1,447
2015				
Planned	**84,230**	**38,276**	**385,265**	**6,770**
Residential	81,938	16,696	156,226	1,912
1. Residential Whole House	**10,261**	**5,937**	**72,291**	**668**
Residential New Construction & Major Renovation	132	231	3,069	25
Residential Multi-Family Retrofit	600	1,250	21,197	95
Residential Home Energy Services	6,529	3,757	47,326	456
Residential Behavior/Feedback Program	3,000	699	699	92
2. Residential Products	**71,677**	**10,760**	**83,935**	**1,243**
Residential Cooling & Heating Equipment	2,070	942	12,326	146
Residential Lighting	60,215	8,113	57,629	868
Residential Consumer Products	9,392	1,705	13,980	229
Low-Income	925	1,647	14,330	231
4. Low-Income Whole House	**925**	**1,647**	**14,330**	**231**
Low-Income New Construction	25	21	292	2
Low-Income Single Family Retrofit	500	1,171	11,615	189
Low-Income Multi-Family Retrofit	400	455	2,423	41
Commercial & Industrial	1,367	19,934	214,709	4,627
6. C&I New Construction	**665**	**6,235**	**72,284**	**1,690**
C&I New Construction	665	6,235	72,284	1,690
7. C&I Retrofit	**702**	**13,699**	**142,425**	**2,936**
C&I Retrofit	88	6,154	67,240	1,549
C&I Direct Install	614	7,544	75,185	1,387

Savings for the Three-Year Term

Savings Table 4

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Savings for the Three-Year Term: Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	Sum of Participants	Sum of Energy (annual MWh)	Sum of Energy (Lifetime MWh)	Sum of Summer Capacity (kW)
Total	**230,841**	**117,291**	**1,172,685**	**19,308**
Residential	**222,036**	**45,490**	**425,999**	**5,613**
1. Residential Whole House	**19,475**	**19,036**	**194,529**	**2,245**
Residential New Construction & Major Renovation	427	1,050	15,817	224
Residential Multi-Family Retrofit	1,407	2,079	33,250	148
Residential Home Energy Services	14,641	15,208	144,763	1,780
Residential Behavior/Feedback Program	3,000	699	699	92
2. Residential Products	**202,561**	**26,454**	**231,470**	**3,368**
Residential Cooling & Heating Equipment	5,683	3,191	47,493	481
Residential Lighting	181,727	20,063	157,542	2,443
Residential Consumer Products	15,151	3,200	26,435	444
Low-Income	**3,914**	**5,402**	**49,260**	**833**
4. Low-Income Whole House	**3,914**	**5,402**	**49,260**	**833**
Low-Income New Construction	353	157	2,305	31
Low-Income Single Family Retrofit	2,144	4,063	37,342	670
Low-Income Multi-Family Retrofit	1,417	1,181	9,613	132
Commercial & Industrial	**4,891**	**66,399**	**697,426**	**12,862**
6. C&I New Construction	**3,121**	**30,691**	**290,262**	**6,134**
C&I New Construction	3,121	30,691	290,262	6,134
7. C&I Retrofit	**1,770**	**35,708**	**407,164**	**6,728**
C&I Retrofit	287	17,569	199,292	2,938
C&I Direct Install	1,483	18,140	207,872	3,790

Significant Lifetime Savings Variances: Planned v Preliminary

Savings Table 5

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Sum of Energy (Lifetime MWh)	Planned 2013	Planned 2014	Planned 2015	Planned Total	Preliminary 2013	Preliminary 2014	Preliminary 2015	Preliminary Total
Residential	**135,146**	**151,108**	**156,226**	**442,480**	**117,666**	**153,889**		**271,555**
1. Residential Whole House	**53,196**	**69,782**	**72,291**	**195,269**	**57,264**	**70,110**		**127,373**
Residential New Construction & Major Renovation	3,853	3,508	3,069	10,430	4,501	8,350		12,851
Residential Multi-Family Retrofit	7,061	21,111	21,197	49,369	4,718	7,376		12,094
Residential Home Energy Services	42,100	44,718	47,326	134,144	48,045	54,384		102,429
Residential Behavior/Feedback Program	182	444	699	1,325	-	-		-
2. Residential Products	**81,949**	**81,327**	**83,935**	**247,211**	**60,402**	**83,779**		**144,182**
Residential Cooling & Heating Equipment	9,053	11,133	12,326	32,512	14,598	17,658		32,256
Residential Lighting	59,784	55,977	57,629	173,390	39,225	59,541		98,766
Residential Consumer Products	13,112	14,216	13,980	41,309	6,580	6,581		13,161
Low-Income	**11,299**	**12,302**	**14,330**	**37,931**	**16,366**	**15,290**		**31,656**
4. Low-Income Whole House	**11,299**	**12,302**	**14,330**	**37,931**	**16,366**	**15,290**		**31,656**
Low-Income New Construction	172	354	292	818	1,819	485		2,304
Low-Income Single Family Retrofit	8,819	9,642	11,615	30,076	11,104	11,693		22,797
Low-Income Multi-Family Retrofit	2,308	2,307	2,423	7,037	3,443	3,112		6,555
Commercial & Industrial	**266,421**	**220,514**	**214,709**	**701,644**	**159,929**	**357,010**		**516,939**
6. C&I New Construction	**86,578**	**77,419**	**72,284**	**236,281**	**77,724**	**175,060**		**252,784**
C&I New Construction	86,578	77,419	72,284	236,281	77,724	175,060		252,784
7. C&I Retrofit	**179,842**	**143,096**	**142,425**	**465,363**	**82,205**	**181,950**		**264,155**
C&I Retrofit	100,666	67,326	67,240	235,232	28,217	102,927		131,145
C&I Direct Install	79,176	75,770	75,185	230,131	53,988	79,023		133,010
Grand Total	**412,865**	**383,925**	**385,265**	**1,182,055**	**293,962**	**526,189**		**820,151**

Planned v Preliminary Savings Variances	Planned Three-Year Goal Cumulative Achievement by Year 2013	2014	2015	Actual Plan-Year Three-Year Goal Cumulative Achievement 2013	2014	Difference in Plan-Year Three-Year Goal Cumulative Achievement
Residential	**31%**	**65%**	**100%**	**27%**	**61%**	**-5%**
1. Residential Whole House	**27%**	**63%**	**100%**	**29%**	**65%**	**4%**
Residential New Construction & Major Renovation	37%	71%	100%	43%	123%	75%
Residential Multi-Family Retrofit	14%	57%	100%	10%	24%	-57%
Residential Home Energy Services	31%	65%	100%	36%	76%	18%
Residential Behavior/Feedback Program	14%	47%	100%	0%	0%	-100%
2. Residential Products	**33%**	**66%**	**100%**	**24%**	**58%**	**-12%**
Residential Cooling & Heating Equipment	28%	62%	100%	45%	99%	60%
Residential Lighting	34%	67%	100%	23%	57%	-15%
Residential Consumer Products	32%	66%	100%	16%	32%	-52%
Low-Income	**30%**	**62%**	**100%**	**43%**	**83%**	**34%**
4. Low-Income Whole House	**30%**	**62%**	**100%**	**43%**	**83%**	**34%**
Low-Income New Construction	21%	64%	100%	222%	282%	338%
Low-Income Single Family Retrofit	29%	61%	100%	37%	76%	23%
Low-Income Multi-Family Retrofit	33%	66%	100%	49%	93%	42%
Commercial & Industrial	**38%**	**69%**	**100%**	**23%**	**74%**	**6%**
6. C&I New Construction	**37%**	**69%**	**100%**	**33%**	**107%**	**54%**
C&I New Construction	37%	69%	100%	33%	107%	54%
7. C&I Retrofit	**39%**	**69%**	**100%**	**18%**	**57%**	**-18%**
C&I Retrofit	43%	71%	100%	12%	56%	-22%
C&I Direct Install	34%	67%	100%	23%	58%	-14%
Grand Total	**35%**	**67%**	**100%**	**25%**	**69%**	**3%**

Plan-year core initiative significant variance explanations are required for: (2) variances between planned and preliminary core initiative total lifetime savings showing a decrease of 15 percent or greater. See Appendix 1 for more information.

Variances are calculated by percent of three-year goal (i.e., variance calculated as the percentage difference between the percentage of the Three-Year Plan goals planned to be achieved through the Plan-Year Report year compared to the percentage of the Three-Year Plan goals actually achieved through the Plan-Year Report year).

Planned v Preliminary Benefits (2013$): Plan-Year Analysis

Benefits Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Planned	**$ 38,933,420**	**$ 16,240,521**	**$ 2,630,022**	**$ 26,501,869**	**$ 84,305,831**	**$ 33,533,702**	**$ 117,839,533**	**$ 1,031**
Residential	**$ 15,205,646**	**$ 4,040,550**	**$ 3,214,455**	**$ 20,711,719**	**$ 43,172,370**	**$ 26,901,790**	**$ 70,074,160**	**$ 543**
1. Residential Whole House	**$ 7,010,303**	**$ 2,022,016**	**$ 3,268,357**	**$ 20,711,719**	**$ 33,012,395**	**$ 26,066,947**	**$ 59,079,343**	**$ 3,774**
Residential New Construction & Major Renovation	$ 351,224	$ 79,648	$ 96,090	$ 170,613	$ 697,576	$ 267,835	$ 965,410	$ 6,342
Residential Multi-Family Retrofit	$ 2,155,931	$ 166,087	$ 20,533	$ 834,910	$ 3,177,461	$ 2,368,868	$ 5,546,329	$ 5,296
Residential Home Energy Services	$ 4,468,274	$ 1,767,547	$ 3,151,734	$ 19,706,196	$ 29,093,750	$ 23,430,245	$ 52,523,995	$ 4,820
Residential Behavior/Feedback Program	$ 34,874	$ 8,735	$ -	$ -	$ 43,608	$ -	$ 43,608	$ 22
2. Residential Products	**$ 8,195,343**	**$ 2,018,534**	**$ (53,902)**	**$ -**	**$ 10,159,975**	**$ 834,842**	**$ 10,994,817**	**$ 144**
Residential Cooling & Heating Equipment	$ 1,092,793	$ 389,398	$ (53,902)	$ -	$ 1,428,289	$ 287,448	$ 1,715,737	$ 817
Residential Lighting	$ 5,676,273	$ 1,228,263	$ -	$ -	$ 6,904,536	$ 547,394	$ 7,451,930	$ 115
Residential Consumer Products	$ 1,426,278	$ 400,872	$ -	$ -	$ 1,827,150	$ -	$ 1,827,150	$ 204
Low-Income	**$ 1,215,179**	**$ 516,983**	**$ 143**	**$ 5,317,817**	**$ 7,050,122**	**$ 2,807,864**	**$ 9,857,986**	**$ 8,546**
4. Low-Income Whole House	**$ 1,215,179**	**$ 516,983**	**$ 143**	**$ 5,317,817**	**$ 7,050,122**	**$ 2,807,864**	**$ 9,857,986**	**$ 8,546**
Low-Income New Construction	$ 34,932	$ 7,089	$ -	$ 214,086	$ 256,107	$ 174,561	$ 430,668	$ 10,244
Low-Income Single Family Retrofit	$ 952,386	$ 454,361	$ 143	$ 4,581,443	$ 5,988,334	$ 1,857,727	$ 7,846,061	$ 14,971
Low-Income Multi-Family Retrofit	$ 227,861	$ 55,533	$ -	$ 522,288	$ 805,682	$ 775,576	$ 1,581,257	$ 2,014
Commercial & Industrial	**$ 22,512,595**	**$ 11,682,988**	**$ (584,576)**	**$ 472,333**	**$ 34,083,339**	**$ 3,824,048**	**$ 37,907,386**	**$ 23,603**
6. C&I New Construction	**$ 8,014,640**	**$ 4,493,057**	**$ (102,586)**	**$ 13,515**	**$ 12,418,626**	**$ -**	**$ 12,418,626**	**$ 16,737**
C&I New Construction	$ 8,014,640	$ 4,493,057	$ (102,586)	$ 13,515	$ 12,418,626	$ -	$ 12,418,626	$ 16,737
7. C&I Retrofit	**$ 14,497,954**	**$ 7,189,931**	**$ (481,990)**	**$ 458,818**	**$ 21,664,712**	**$ 3,824,048**	**$ 25,488,760**	**$ 30,861**
C&I Retrofit	$ 6,630,826	$ 4,050,152	$ 107,511	$ -	$ 10,788,488	$ 1,769,883	$ 12,558,371	$ 122,596
C&I Direct Install	$ 7,867,129	$ 3,139,779	$ (589,501)	$ 458,818	$ 10,876,224	$ 2,054,165	$ 12,930,389	$ 17,714
Preliminary	**$ 52,997,166**	**$ 17,739,087**	**$ 5,933,806**	**$ 26,768,226**	**$ 103,438,285**	**$ 40,793,845**	**$ 144,232,129**	**$ 1,140**
Residential	**$ 15,261,453**	**$ 3,216,274**	**$ 7,062,056**	**$ 25,145,787**	**$ 50,685,569**	**$ 27,858,781**	**$ 78,544,350**	**$ 580**
1. Residential Whole House	**$ 7,001,361**	**$ 1,037,240**	**$ 7,116,424**	**$ 25,048,610**	**$ 40,203,636**	**$ 27,167,693**	**$ 67,371,329**	**$ 8,516**
Residential New Construction & Major Renovation	$ 832,835	$ 430,739	$ 7,117	$ 526,921	$ 1,797,612	$ 227,334	$ 2,024,946	$ 10,391
Residential Multi-Family Retrofit	$ 735,715	$ 78,490	$ 25,007	$ 568,004	$ 1,407,216	$ 597,105	$ 2,004,321	$ 3,177
Residential Home Energy Services	$ 5,432,811	$ 528,011	$ 7,084,299	$ 23,953,686	$ 36,998,808	$ 26,343,254	$ 63,342,062	$ 9,013
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 8,260,091**	**$ 2,179,033**	**$ (54,368)**	**$ 97,177**	**$ 10,481,934**	**$ 691,088**	**$ 11,173,021**	**$ 127**
Residential Cooling & Heating Equipment	$ 1,696,240	$ 585,788	$ (66,998)	$ -	$ 2,215,029	$ 289,961	$ 2,504,990	$ 1,204
Residential Lighting	$ 5,905,158	$ 1,364,010	$ -	$ -	$ 7,269,168	$ 401,127	$ 7,670,295	$ 93
Residential Consumer Products	$ 658,694	$ 229,235	$ 12,630	$ 97,177	$ 997,736	$ -	$ 997,736	$ 330
Low-Income	**$ 1,505,939**	**$ 592,911**	**$ 36**	**$ 3,423,632**	**$ 5,522,518**	**$ 2,557,692**	**$ 8,080,210**	**$ 4,345**
4. Low-Income Whole House	**$ 1,505,939**	**$ 592,911**	**$ 36**	**$ 3,423,632**	**$ 5,522,518**	**$ 2,557,692**	**$ 8,080,210**	**$ 4,345**
Low-Income New Construction	$ 48,602	$ 71,671	$ -	$ -	$ 120,273	$ 20,406	$ 140,680	$ 2,313
Low-Income Single Family Retrofit	$ 1,154,451	$ 453,972	$ 36	$ 3,408,142	$ 5,016,600	$ 2,445,770	$ 7,462,370	$ 6,350
Low-Income Multi-Family Retrofit	$ 302,885	$ 67,269	$ -	$ 15,490	$ 385,644	$ 91,516	$ 477,160	$ 899
Commercial & Industrial	**$ 36,229,775**	**$ 13,929,902**	**$ (1,128,286)**	**$ (1,801,193)**	**$ 47,230,198**	**$ 10,377,371**	**$ 57,607,569**	**$ 22,480**
6. C&I New Construction	**$ 18,392,713**	**$ 7,860,494**	**$ (581,386)**	**$ (2,716,254)**	**$ 22,955,568**	**$ 3,493,971**	**$ 26,449,539**	**$ 15,182**
C&I New Construction	$ 18,392,713	$ 7,860,494	$ (581,386)	$ (2,716,254)	$ 22,955,568	$ 3,493,971	$ 26,449,539	$ 15,182
7. C&I Retrofit	**$ 17,837,061**	**$ 6,069,408**	**$ (546,901)**	**$ 915,061**	**$ 24,274,630**	**$ 6,883,400**	**$ 31,158,030**	**$ 41,213**
C&I Retrofit	$ 9,885,962	$ 2,237,748	$ (61,719)	$ (217,870)	$ 11,844,122	$ 4,381,747	$ 16,225,869	$ 100,374
C&I Direct Install	$ 7,951,099	$ 3,831,660	$ (485,182)	$ 1,132,931	$ 12,430,508	$ 2,501,653	$ 14,932,161	$ 26,392

Planned v Preliminary Variances: (Prelim - Plan) / Plan	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Total Annual Variance	**36%**	**9%**	**126%**	**1%**	**23%**	**22%**	**22%**	**11%**
Residential	**0%**	**-20%**	**120%**	**21%**	**17%**	**4%**	**12%**	**7%**
1. Residential Whole House	**0%**	**-49%**	**118%**	**21%**	**22%**	**4%**	**14%**	**126%**
Residential New Construction & Major Renovation	137%	441%	-93%	209%	158%	-15%	110%	64%
Residential Multi-Family Retrofit	-66%	-53%	22%	-32%	-56%	-75%	-64%	-40%
Residential Home Energy Services	22%	-70%	125%	22%	27%	12%	21%	87%
Residential Behavior/Feedback Program	-100%	-100%	0%	0%	-100%	0%	-100%	0%
2. Residential Products	**1%**	**8%**	**1%**	**0%**	**3%**	**-17%**	**2%**	**-12%**
Residential Cooling & Heating Equipment	55%	50%	24%	0%	55%	1%	46%	47%
Residential Lighting	4%	11%	0%	0%	5%	-27%	3%	-19%
Residential Consumer Products	-54%	-43%	0%	0%	-45%	0%	-45%	62%
Low-Income	**24%**	**15%**	**-75%**	**-36%**	**-22%**	**-9%**	**-18%**	**-49%**
4. Low-Income Whole House	**24%**	**15%**	**-75%**	**-36%**	**-22%**	**-9%**	**-18%**	**-49%**
Low-Income New Construction	39%	911%	0%	-100%	-53%	-88%	-67%	-77%
Low-Income Single Family Retrofit	21%	0%	-75%	-26%	-16%	32%	-5%	-58%
Low-Income Multi-Family Retrofit	33%	21%	0%	-97%	-52%	-88%	-70%	-55%
Commercial & Industrial	**61%**	**19%**	**93%**	**-481%**	**39%**	**171%**	**52%**	**-5%**
6. C&I New Construction	**129%**	**75%**	**467%**	**-20198%**	**85%**	**0%**	**113%**	**-9%**
C&I New Construction	129%	75%	467%	-20198%	85%	0%	113%	-9%
7. C&I Retrofit	**23%**	**-16%**	**13%**	**99%**	**12%**	**80%**	**22%**	**34%**
C&I Retrofit	49%	-45%	-157%	0%	10%	148%	29%	-18%
C&I Direct Install	1%	22%	-18%	147%	14%	22%	15%	49%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Planned v Evaluated Benefits (2013$): Plan-Year Analysis

Benefits Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Planned	**$ 38,933,420**	**$ 16,240,521**	**$ 2,630,022**	**$ 26,501,869**	**$ 84,305,831**	**$ 33,533,702**	**$ 117,839,533**	**$ 1,031**
Residential	**$ 15,205,646**	**$ 4,040,550**	**$ 3,214,455**	**$ 20,711,719**	**$ 43,172,370**	**$ 26,901,790**	**$ 70,074,160**	**$ 543**
1. Residential Whole House	**$ 7,010,303**	**$ 2,022,016**	**$ 3,268,357**	**$ 20,711,719**	**$ 33,012,395**	**$ 26,066,947**	**$ 59,079,343**	**$ 3,774**
Residential New Construction & Major Renovation	$ 351,224	$ 79,648	$ 96,090	$ 170,613	$ 697,576	$ 267,835	$ 965,410	$ 6,342
Residential Multi-Family Retrofit	$ 2,155,931	$ 166,087	$ 20,533	$ 834,910	$ 3,177,461	$ 2,368,868	$ 5,546,329	$ 5,296
Residential Home Energy Services	$ 4,468,274	$ 1,767,547	$ 3,151,734	$ 19,706,196	$ 29,093,750	$ 23,430,245	$ 52,523,995	$ 4,820
Residential Behavior/Feedback Program	$ 34,874	$ 8,735	$ -	$ -	$ 43,608	$ -	$ 43,608	$ 22
2. Residential Products	**$ 8,195,343**	**$ 2,018,534**	**$ (53,902)**	**$ -**	**$ 10,159,975**	**$ 834,842**	**$ 10,994,817**	**$ 144**
Residential Cooling & Heating Equipment	$ 1,092,793	$ 389,398	$ (53,902)	$ -	$ 1,428,289	$ 287,448	$ 1,715,737	$ 817
Residential Lighting	$ 5,676,273	$ 1,228,263	$ -	$ -	$ 6,904,536	$ 547,394	$ 7,451,930	$ 115
Residential Consumer Products	$ 1,426,278	$ 400,872	$ -	$ -	$ 1,827,150	$ -	$ 1,827,150	$ 204
Low-Income	**$ 1,215,179**	**$ 516,983**	**$ 143**	**$ 5,317,817**	**$ 7,050,122**	**$ 2,807,864**	**$ 9,857,986**	**$ 8,546**
4. Low-Income Whole House	**$ 1,215,179**	**$ 516,983**	**$ 143**	**$ 5,317,817**	**$ 7,050,122**	**$ 2,807,864**	**$ 9,857,986**	**$ 8,546**
Low-Income New Construction	$ 34,932	$ 7,089	$ -	$ 214,086	$ 256,107	$ 174,561	$ 430,668	$ 10,244
Low-Income Single Family Retrofit	$ 952,386	$ 454,361	$ 143	$ 4,581,443	$ 5,988,334	$ 1,857,727	$ 7,846,061	$ 14,971
Low-Income Multi-Family Retrofit	$ 227,861	$ 55,533	$ -	$ 522,288	$ 805,682	$ 775,576	$ 1,581,257	$ 2,014
Commercial & Industrial	**$ 22,512,595**	**$ 11,682,988**	**$ (584,576)**	**$ 472,333**	**$ 34,083,339**	**$ 3,824,048**	**$ 37,907,386**	**$ 23,603**
6. C&I New Construction	**$ 8,014,640**	**$ 4,493,057**	**$ (102,586)**	**$ 13,515**	**$ 12,418,626**	**$ -**	**$ 12,418,626**	**$ 16,737**
C&I New Construction	$ 8,014,640	$ 4,493,057	$ (102,586)	$ 13,515	$ 12,418,626	$ -	$ 12,418,626	$ 16,737
7. C&I Retrofit	**$ 14,497,954**	**$ 7,189,931**	**$ (481,990)**	**$ 458,818**	**$ 21,664,712**	**$ 3,824,048**	**$ 25,488,760**	**$ 30,861**
C&I Retrofit	$ 6,630,826	$ 4,050,152	$ 107,511	$ -	$ 10,788,488	$ 1,769,883	$ 12,558,371	$ 122,596
C&I Direct Install	$ 7,867,129	$ 3,139,779	$ (589,501)	$ 458,818	$ 10,876,224	$ 2,054,165	$ 12,930,389	$ 17,714
Evaluated	**$ 50,351,794**	**$ 15,796,343**	**$ 6,040,066**	**$ 27,056,798**	**$ 99,245,001**	**$ 39,800,935**	**$ 139,045,935**	**$ 1,094**
Residential	**$ 15,846,827**	**$ 4,061,732**	**$ 7,062,056**	**$ 24,816,977**	**$ 51,787,592**	**$ 27,708,088**	**$ 79,495,680**	**$ 593**
1. Residential Whole House	**$ 7,187,709**	**$ 1,612,824**	**$ 7,116,424**	**$ 24,719,800**	**$ 40,636,757**	**$ 27,167,550**	**$ 67,804,307**	**$ 8,608**
Residential New Construction & Major Renovation	$ 842,446	$ 437,840	$ 7,117	$ 526,921	$ 1,814,324	$ 227,334	$ 2,041,658	$ 10,487
Residential Multi-Family Retrofit	$ 731,950	$ 70,363	$ 25,007	$ 568,004	$ 1,395,323	$ 596,962	$ 1,992,285	$ 3,150
Residential Home Energy Services	$ 5,613,313	$ 1,104,622	$ 7,084,299	$ 23,624,875	$ 37,427,110	$ 26,343,254	$ 63,770,364	$ 9,117
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 8,659,118**	**$ 2,448,908**	**$ (54,368)**	**$ 97,177**	**$ 11,150,835**	**$ 540,538**	**$ 11,691,373**	**$ 135**
Residential Cooling & Heating Equipment	$ 1,762,040	$ 596,224	$ (66,998)	$ -	$ 2,291,265	$ 139,411	$ 2,430,676	$ 1,245
Residential Lighting	$ 6,312,932	$ 1,666,187	$ -	$ -	$ 7,979,120	$ 401,127	$ 8,380,247	$ 103
Residential Consumer Products	$ 584,146	$ 186,497	$ 12,630	$ 97,177	$ 880,450	$ -	$ 880,450	$ 292
Low-Income	**$ 1,803,239**	**$ 739,490**	**$ 36**	**$ 3,412,736**	**$ 5,955,501**	**$ 2,570,431**	**$ 8,525,932**	**$ 4,686**
4. Low-Income Whole House	**$ 1,803,239**	**$ 739,490**	**$ 36**	**$ 3,412,736**	**$ 5,955,501**	**$ 2,570,431**	**$ 8,525,932**	**$ 4,686**
Low-Income New Construction	$ 49,063	$ 72,009	$ -	$ -	$ 121,072	$ 20,411	$ 141,483	$ 2,328
Low-Income Single Family Retrofit	$ 1,399,180	$ 575,316	$ 36	$ 3,397,246	$ 5,371,778	$ 2,456,271	$ 7,828,048	$ 6,800
Low-Income Multi-Family Retrofit	$ 354,996	$ 92,166	$ -	$ 15,490	$ 462,652	$ 93,748	$ 556,401	$ 1,078
Commercial & Industrial	**$ 32,701,728**	**$ 10,995,120**	**$ (1,022,026)**	**$ (1,172,915)**	**$ 41,501,907**	**$ 9,522,416**	**$ 51,024,323**	**$ 19,753**
6. C&I New Construction	**$ 14,830,241**	**$ 5,061,849**	**$ (479,506)**	**$ (2,101,776)**	**$ 17,310,809**	**$ 2,639,015**	**$ 19,949,824**	**$ 11,449**
C&I New Construction	$ 14,830,241	$ 5,061,849	$ (479,506)	$ (2,101,776)	$ 17,310,809	$ 2,639,015	$ 19,949,824	$ 11,449
7. C&I Retrofit	**$ 17,871,487**	**$ 5,933,271**	**$ (542,520)**	**$ 928,861**	**$ 24,191,098**	**$ 6,883,400**	**$ 31,074,499**	**$ 41,071**
C&I Retrofit	$ 9,953,258	$ 2,060,223	$ (57,338)	$ (204,070)	$ 11,752,073	$ 4,381,747	$ 16,133,820	$ 99,594
C&I Direct Install	$ 7,918,229	$ 3,873,048	$ (485,182)	$ 1,132,931	$ 12,439,026	$ 2,501,653	$ 14,940,678	$ 26,410

Planned v Evaluated Variances: (Eval - Plan) / Plan	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Total Annual Variance	**29%**	**-3%**	**130%**	**2%**	**18%**	**19%**	**18%**	**6%**
Residential	**4%**	**1%**	**120%**	**20%**	**20%**	**3%**	**13%**	**9%**
1. Residential Whole House	**3%**	**-20%**	**118%**	**19%**	**23%**	**4%**	**15%**	**128%**
Residential New Construction & Major Renovation	140%	450%	-93%	209%	160%	-15%	111%	65%
Residential Multi-Family Retrofit	-66%	-58%	22%	-32%	-56%	-75%	-64%	-41%
Residential Home Energy Services	26%	-38%	125%	20%	29%	12%	21%	89%
Residential Behavior/Feedback Program	-100%	-100%	0%	0%	-100%	0%	-100%	0%
2. Residential Products	**6%**	**21%**	**1%**	**0%**	**10%**	**-35%**	**6%**	**-6%**
Residential Cooling & Heating Equipment	61%	53%	24%	0%	60%	-52%	42%	52%
Residential Lighting	11%	36%	0%	0%	16%	-27%	12%	-11%
Residential Consumer Products	-59%	-53%	0%	0%	-52%	0%	-52%	43%
Low-Income	**48%**	**43%**	**-75%**	**-36%**	**-16%**	**-8%**	**-14%**	**-45%**
4. Low-Income Whole House	**48%**	**43%**	**-75%**	**-36%**	**-16%**	**-8%**	**-14%**	**-45%**
Low-Income New Construction	40%	916%	0%	-100%	-53%	-88%	-67%	-77%
Low-Income Single Family Retrofit	47%	27%	-75%	-26%	-10%	32%	0%	-55%
Low-Income Multi-Family Retrofit	56%	66%	0%	-97%	-43%	-88%	-65%	-46%
Commercial & Industrial	**45%**	**-6%**	**75%**	**-348%**	**22%**	**149%**	**35%**	**-16%**
6. C&I New Construction	**85%**	**13%**	**367%**	**-15651%**	**39%**	**0%**	**61%**	**-32%**
C&I New Construction	85%	13%	367%	-15651%	39%	0%	61%	-32%
7. C&I Retrofit	**23%**	**-17%**	**13%**	**102%**	**12%**	**80%**	**22%**	**33%**
C&I Retrofit	50%	-49%	-153%	0%	9%	148%	28%	-19%
C&I Direct Install	1%	23%	-18%	147%	14%	22%	16%	49%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Preliminary v Evaluated Benefits (2013$): Plan-Year Analysis

Benefits Table 3

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Preliminary	**$ 52,997,166**	**$ 17,739,087**	**$ 5,933,806**	**$ 26,768,226**	**$ 103,438,285**	**$ 40,793,845**	**$ 144,232,129**	**$ 1,140**
Residential	**$ 15,261,453**	**$ 3,216,274**	**$ 7,062,056**	**$ 25,145,787**	**$ 50,685,569**	**$ 27,858,781**	**$ 78,544,350**	**$ 580**
1. Residential Whole House	**$ 7,001,361**	**$ 1,037,240**	**$ 7,116,424**	**$ 25,048,610**	**$ 40,203,636**	**$ 27,167,693**	**$ 67,371,329**	**$ 8,516**
Residential New Construction & Major Renovation	$ 832,835	$ 430,739	$ 7,117	$ 526,921	$ 1,797,612	$ 227,334	$ 2,024,946	$ 10,391
Residential Multi-Family Retrofit	$ 735,715	$ 78,490	$ 25,007	$ 568,004	$ 1,407,216	$ 597,105	$ 2,004,321	$ 3,177
Residential Home Energy Services	$ 5,432,811	$ 528,011	$ 7,084,299	$ 23,953,686	$ 36,998,808	$ 26,343,254	$ 63,342,062	$ 9,013
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 8,260,091**	**$ 2,179,033**	**$ (54,368)**	**$ 97,177**	**$ 10,481,934**	**$ 691,088**	**$ 11,173,021**	**$ 127**
Residential Cooling & Heating Equipment	$ 1,696,240	$ 585,788	$ (66,998)	$ -	$ 2,215,029	$ 289,961	$ 2,504,990	$ 1,204
Residential Lighting	$ 5,905,158	$ 1,364,010	$ -	$ -	$ 7,269,168	$ 401,127	$ 7,670,295	$ 93
Residential Consumer Products	$ 658,694	$ 229,235	$ 12,630	$ 97,177	$ 997,736	$ -	$ 997,736	$ 330
Low-Income	**$ 1,505,939**	**$ 592,911**	**$ 36**	**$ 3,423,632**	**$ 5,522,518**	**$ 2,557,692**	**$ 8,080,210**	**$ 4,345**
4. Low-Income Whole House	**$ 1,505,939**	**$ 592,911**	**$ 36**	**$ 3,423,632**	**$ 5,522,518**	**$ 2,557,692**	**$ 8,080,210**	**$ 4,345**
Low-Income New Construction	$ 48,602	$ 71,671	$ -	$ -	$ 120,273	$ 20,406	$ 140,680	$ 2,313
Low-Income Single Family Retrofit	$ 1,154,451	$ 453,972	$ 36	$ 3,408,142	$ 5,016,600	$ 2,445,770	$ 7,462,370	$ 6,350
Low-Income Multi-Family Retrofit	$ 302,885	$ 67,269	$ -	$ 15,490	$ 385,644	$ 91,516	$ 477,160	$ 899
Commercial & Industrial	**$ 36,229,775**	**$ 13,929,902**	**$ (1,128,286)**	**$ (1,801,193)**	**$ 47,230,198**	**$ 10,377,371**	**$ 57,607,569**	**$ 22,480**
6. C&I New Construction	**$ 18,392,713**	**$ 7,860,494**	**$ (581,386)**	**$ (2,716,254)**	**$ 22,955,568**	**$ 3,493,971**	**$ 26,449,539**	**$ 15,182**
C&I New Construction	$ 18,392,713	$ 7,860,494	$ (581,386)	$ (2,716,254)	$ 22,955,568	$ 3,493,971	$ 26,449,539	$ 15,182
7. C&I Retrofit	**$ 17,837,061**	**$ 6,069,408**	**$ (546,901)**	**$ 915,061**	**$ 24,274,630**	**$ 6,883,400**	**$ 31,158,030**	**$ 41,213**
C&I Retrofit	$ 9,885,962	$ 2,237,748	$ (61,719)	$ (217,870)	$ 11,844,122	$ 4,381,747	$ 16,225,869	$ 100,374
C&I Direct Install	$ 7,951,099	$ 3,831,660	$ (485,182)	$ 1,132,931	$ 12,430,508	$ 2,501,653	$ 14,932,161	$ 26,392
Evaluated	**$ 50,351,794**	**$ 15,796,343**	**$ 6,040,066**	**$ 27,056,798**	**$ 99,245,001**	**$ 39,800,935**	**$ 139,045,935**	**$ 1,094**
Residential	**$ 15,846,827**	**$ 4,061,732**	**$ 7,062,056**	**$ 24,816,977**	**$ 51,787,592**	**$ 27,708,088**	**$ 79,495,680**	**$ 593**
1. Residential Whole House	**$ 7,187,709**	**$ 1,612,824**	**$ 7,116,424**	**$ 24,719,800**	**$ 40,636,757**	**$ 27,167,550**	**$ 67,804,307**	**$ 8,608**
Residential New Construction & Major Renovation	$ 842,446	$ 437,840	$ 7,117	$ 526,921	$ 1,814,324	$ 227,334	$ 2,041,658	$ 10,487
Residential Multi-Family Retrofit	$ 731,950	$ 70,363	$ 25,007	$ 568,004	$ 1,395,323	$ 596,962	$ 1,992,285	$ 3,150
Residential Home Energy Services	$ 5,613,313	$ 1,104,622	$ 7,084,299	$ 23,624,875	$ 37,427,110	$ 26,343,254	$ 63,770,364	$ 9,117
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 8,659,118**	**$ 2,448,908**	**$ (54,368)**	**$ 97,177**	**$ 11,150,835**	**$ 540,538**	**$ 11,691,373**	**$ 135**
Residential Cooling & Heating Equipment	$ 1,762,040	$ 596,224	$ (66,998)	$ -	$ 2,291,265	$ 139,411	$ 2,430,676	$ 1,245
Residential Lighting	$ 6,312,932	$ 1,666,187	$ -	$ -	$ 7,979,120	$ 401,127	$ 8,380,247	$ 103
Residential Consumer Products	$ 584,146	$ 186,497	$ 12,630	$ 97,177	$ 880,450	$ -	$ 880,450	$ 292
Low-Income	**$ 1,803,239**	**$ 739,490**	**$ 36**	**$ 3,412,736**	**$ 5,955,501**	**$ 2,570,431**	**$ 8,525,932**	**$ 4,686**
4. Low-Income Whole House	**$ 1,803,239**	**$ 739,490**	**$ 36**	**$ 3,412,736**	**$ 5,955,501**	**$ 2,570,431**	**$ 8,525,932**	**$ 4,686**
Low-Income New Construction	$ 49,063	$ 72,009	$ -	$ -	$ 121,072	$ 20,411	$ 141,483	$ 2,328
Low-Income Single Family Retrofit	$ 1,399,180	$ 575,316	$ 36	$ 3,397,246	$ 5,371,778	$ 2,456,271	$ 7,828,048	$ 6,800
Low-Income Multi-Family Retrofit	$ 354,996	$ 92,166	$ -	$ 15,490	$ 462,652	$ 93,748	$ 556,401	$ 1,078
Commercial & Industrial	**$ 32,701,728**	**$ 10,995,120**	**$ (1,022,026)**	**$ (1,172,915)**	**$ 41,501,907**	**$ 9,522,416**	**$ 51,024,323**	**$ 19,753**
6. C&I New Construction	**$ 14,830,241**	**$ 5,061,849**	**$ (479,506)**	**$ (2,101,776)**	**$ 17,310,809**	**$ 2,639,015**	**$ 19,949,824**	**$ 11,449**
C&I New Construction	$ 14,830,241	$ 5,061,849	$ (479,506)	$ (2,101,776)	$ 17,310,809	$ 2,639,015	$ 19,949,824	$ 11,449
7. C&I Retrofit	**$ 17,871,487**	**$ 5,933,271**	**$ (542,520)**	**$ 928,861**	**$ 24,191,098**	**$ 6,883,400**	**$ 31,074,499**	**$ 41,071**
C&I Retrofit	$ 9,953,258	$ 2,060,223	$ (57,338)	$ (204,070)	$ 11,752,073	$ 4,381,747	$ 16,133,820	$ 99,594
C&I Direct Install	$ 7,918,229	$ 3,873,048	$ (485,182)	$ 1,132,931	$ 12,439,026	$ 2,501,653	$ 14,940,678	$ 26,410

Preliminary v Evaluated Variances: (Eval - Prelim) / Prelim	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Total Annual Variance	**-5%**	**-11%**	**2%**	**1%**	**-4%**	**-2%**	**-4%**	**-4%**
Residential	**4%**	**26%**	**0%**	**-1%**	**2%**	**-1%**	**1%**	**2%**
1. Residential Whole House	**3%**	**55%**	**0%**	**-1%**	**1%**	**0%**	**1%**	**1%**
Residential New Construction & Major Renovation	1%	2%	0%	0%	1%	0%	1%	1%
Residential Multi-Family Retrofit	-1%	-10%	0%	0%	-1%	0%	-1%	-1%
Residential Home Energy Services	3%	109%	0%	-1%	1%	0%	1%	1%
Residential Behavior/Feedback Program	0%	0%	0%	0%	0%	0%	0%	0%
2. Residential Products	**5%**	**12%**	**0%**	**0%**	**6%**	**-22%**	**5%**	**6%**
Residential Cooling & Heating Equipment	4%	2%	0%	0%	3%	-52%	-3%	3%
Residential Lighting	7%	22%	0%	0%	10%	0%	9%	10%
Residential Consumer Products	-11%	-19%	0%	0%	-12%	0%	-12%	-12%
Low-Income	**20%**	**25%**	**0%**	**0%**	**8%**	**0%**	**6%**	**8%**
4. Low-Income Whole House	**20%**	**25%**	**0%**	**0%**	**8%**	**0%**	**6%**	**8%**
Low-Income New Construction	1%	0%	0%	0%	1%	0%	1%	1%
Low-Income Single Family Retrofit	21%	27%	0%	0%	7%	0%	5%	7%
Low-Income Multi-Family Retrofit	17%	37%	0%	0%	20%	2%	17%	20%
Commercial & Industrial	**-10%**	**-21%**	**-9%**	**-35%**	**-12%**	**-8%**	**-11%**	**-12%**
6. C&I New Construction	**-19%**	**-36%**	**-18%**	**-23%**	**-25%**	**-24%**	**-25%**	**-25%**
C&I New Construction	-19%	-36%	-18%	-23%	-25%	-24%	-25%	-25%
7. C&I Retrofit	**0%**	**-2%**	**-1%**	**2%**	**0%**	**0%**	**0%**	**0%**
C&I Retrofit	1%	-8%	-7%	-6%	-1%	0%	-1%	-1%
C&I Direct Install	0%	1%	0%	0%	0%	0%	0%	0%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Benefits for the Three-Year Term (2013$)

Benefits Table 4

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
2013								
Evaluated	**$ 32,553,159**	**$ 11,275,666**	**$ 5,218,218**	**$ 26,037,662**	**$ 75,084,705**	**$ 32,193,124**	**$ 107,277,829**	**$ 1,344**
Residential	$ 12,807,857	$ 2,823,343	$ 5,105,580	$ 20,711,425	$ 41,448,205	$ 24,595,824	$ 66,044,029	$ 786
1. Residential Whole House	**$ 5,735,143**	**$ 1,071,385**	**$ 5,162,258**	**$ 20,711,425**	**$ 32,680,211**	**$ 24,169,014**	**$ 56,849,224**	**$ 7,274**
Residential New Construction & Major Renovation	$ 477,451	$ 400,458	$ -	$ 606,961	$ 1,484,870	$ 140,676	$ 1,625,546	$ 12,171
Residential Multi-Family Retrofit	$ 494,036	$ 11,690	$ 19,943	$ 7,039	$ 532,708	$ 221,580	$ 754,288	$ 1,463
Residential Home Energy Services	$ 4,763,656	$ 659,236	$ 5,142,315	$ 20,097,425	$ 30,662,632	$ 23,806,758	$ 54,469,390	$ 7,652
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 7,072,713**	**$ 1,751,959**	**$ (56,677)**	**$ -**	**$ 8,767,995**	**$ 426,810**	**$ 9,194,805**	**$ 182**
Residential Cooling & Heating Equipment	$ 1,787,947	$ 540,954	$ (56,677)	$ -	$ 2,272,224	$ 121,833	$ 2,394,057	$ 1,282
Residential Lighting	$ 4,557,673	$ 1,029,242	$ -	$ -	$ 5,586,916	$ 304,977	$ 5,891,893	$ 128
Residential Consumer Products	$ 727,093	$ 181,762	$ -	$ -	$ 908,855	$ -	$ 908,855	$ 332
Low-Income	$ 1,878,169	$ 669,208	$ 271,692	$ 3,814,657	$ 6,633,725	$ 3,774,194	$ 10,407,919	$ 3,861
4. Low-Income Whole House	**$ 1,878,169**	**$ 669,208**	**$ 271,692**	**$ 3,814,657**	**$ 6,633,725**	**$ 3,774,194**	**$ 10,407,919**	**$ 3,861**
Low-Income New Construction	$ 165,370	$ 42,631	$ 270,803	$ 194,223	$ 673,027	$ 706,981	$ 1,380,007	$ 2,439
Low-Income Single Family Retrofit	$ 1,322,211	$ 544,224	$ 889	$ 3,378,553	$ 5,245,877	$ 2,607,066	$ 7,852,944	$ 6,143
Low-Income Multi-Family Retrofit	$ 390,588	$ 82,353	$ -	$ 241,881	$ 714,821	$ 460,147	$ 1,174,968	$ 1,216
Commercial & Industrial	$ 17,867,134	$ 7,783,115	$ (159,054)	$ 1,511,580	$ 27,002,775	$ 3,823,106	$ 30,825,881	$ 18,976
6. C&I New Construction	**$ 8,752,925**	**$ 3,327,926**	**$ (207,310)**	**$ 712,773**	**$ 12,586,314**	**$ 1,366,169**	**$ 13,952,483**	**$ 13,333**
C&I New Construction	$ 8,752,925	$ 3,327,926	$ (207,310)	$ 712,773	$ 12,586,314	$ 1,366,169	$ 13,952,483	$ 13,333
7. C&I Retrofit	**$ 9,114,209**	**$ 4,455,189**	**$ 48,256**	**$ 798,808**	**$ 14,416,461**	**$ 2,456,937**	**$ 16,873,398**	**$ 30,097**
C&I Retrofit	$ 3,199,621	$ 1,795,302	$ 281,084	$ 59,753	$ 5,335,760	$ 837,025	$ 6,172,784	$ 65,874
C&I Direct Install	$ 5,914,588	$ 2,659,887	$ (232,828)	$ 739,055	$ 9,080,702	$ 1,619,912	$ 10,700,614	$ 22,816
2014								
Evaluated	**$ 50,351,794**	**$ 15,796,343**	**$ 6,040,066**	**$ 27,056,798**	**$ 99,245,001**	**$ 39,800,935**	**$ 139,045,935**	**$ 1,094**
Residential	$ 15,846,827	$ 4,061,732	$ 7,062,056	$ 24,816,977	$ 51,787,592	$ 27,708,088	$ 79,495,680	$ 593
1. Residential Whole House	**$ 7,187,709**	**$ 1,612,824**	**$ 7,116,424**	**$ 24,719,800**	**$ 40,636,757**	**$ 27,167,550**	**$ 67,804,307**	**$ 8,608**
Residential New Construction & Major Renovation	$ 842,446	$ 437,840	$ 7,117	$ 526,921	$ 1,814,324	$ 227,334	$ 2,041,658	$ 10,487
Residential Multi-Family Retrofit	$ 731,950	$ 70,363	$ 25,007	$ 568,004	$ 1,395,323	$ 596,962	$ 1,992,285	$ 3,150
Residential Home Energy Services	$ 5,613,313	$ 1,104,622	$ 7,084,299	$ 23,624,875	$ 37,427,110	$ 26,343,254	$ 63,770,364	$ 9,117
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 8,659,118**	**$ 2,448,908**	**$ (54,368)**	**$ 97,177**	**$ 11,150,835**	**$ 540,538**	**$ 11,691,373**	**$ 135**
Residential Cooling & Heating Equipment	$ 1,762,040	$ 596,224	$ (66,998)	$ -	$ 2,291,265	$ 139,411	$ 2,430,676	$ 1,245
Residential Lighting	$ 6,312,932	$ 1,666,187	$ -	$ -	$ 7,979,120	$ 401,127	$ 8,380,247	$ 103
Residential Consumer Products	$ 584,146	$ 186,497	$ 12,630	$ 97,177	$ 880,450	$ -	$ 880,450	$ 292
Low-Income	$ 1,803,239	$ 739,490	$ 36	$ 3,412,736	$ 5,955,501	$ 2,570,431	$ 8,525,932	$ 4,686
4. Low-Income Whole House	**$ 1,803,239**	**$ 739,490**	**$ 36**	**$ 3,412,736**	**$ 5,955,501**	**$ 2,570,431**	**$ 8,525,932**	**$ 4,686**
Low-Income New Construction	$ 49,063	$ 72,009	$ -	$ -	$ 121,072	$ 20,411	$ 141,483	$ 2,328
Low-Income Single Family Retrofit	$ 1,399,180	$ 575,316	$ 36	$ 3,397,246	$ 5,371,778	$ 2,456,271	$ 7,828,048	$ 6,800
Low-Income Multi-Family Retrofit	$ 354,996	$ 92,166	$ -	$ 15,490	$ 462,652	$ 93,748	$ 556,401	$ 1,078
Commercial & Industrial	$ 32,701,728	$ 10,995,120	$ (1,022,026)	$ (1,172,915)	$ 41,501,907	$ 9,522,416	$ 51,024,323	$ 19,753
6. C&I New Construction	**$ 14,830,241**	**$ 5,061,849**	**$ (479,506)**	**$ (2,101,776)**	**$ 17,310,809**	**$ 2,639,015**	**$ 19,949,824**	**$ 11,449**
C&I New Construction	$ 14,830,241	$ 5,061,849	$ (479,506)	$ (2,101,776)	$ 17,310,809	$ 2,639,015	$ 19,949,824	$ 11,449
7. C&I Retrofit	**$ 17,871,487**	**$ 5,933,271**	**$ (542,520)**	**$ 928,861**	**$ 24,191,098**	**$ 6,883,400**	**$ 31,074,499**	**$ 41,071**
C&I Retrofit	$ 9,953,258	$ 2,060,223	$ (57,338)	$ (204,070)	$ 11,752,073	$ 4,381,747	$ 16,133,820	$ 99,594
C&I Direct Install	$ 7,918,229	$ 3,873,048	$ (485,182)	$ 1,132,931	$ 12,439,026	$ 2,501,653	$ 14,940,678	$ 26,410
2015								
Planned	**$ 38,426,087**	**$ 16,972,427**	**$ 2,617,828**	**$ 30,200,058**	**$ 88,216,400**	**$ 36,872,266**	**$ 125,088,667**	**$ 1,047**
Residential	$ 15,590,184	$ 4,373,935	$ 3,111,249	$ 22,828,237	$ 45,903,605	$ 29,681,694	$ 75,585,299	$ 560
1. Residential Whole House	**$ 7,245,100**	**$ 2,138,363**	**$ 3,161,491**	**$ 22,828,237**	**$ 35,373,192**	**$ 28,771,650**	**$ 64,144,841**	**$ 3,447**
Residential New Construction & Major Renovation	$ 306,248	$ 70,565	$ 90,810	$ 158,600	$ 626,223	$ 316,482	$ 942,705	$ 4,744
Residential Multi-Family Retrofit	$ 2,166,587	$ 176,730	$ 19,023	$ 836,031	$ 3,198,371	$ 2,369,550	$ 5,567,921	$ 5,331
Residential Home Energy Services	$ 4,718,112	$ 1,877,772	$ 3,051,658	$ 21,833,607	$ 31,481,148	$ 26,085,617	$ 57,566,766	$ 4,822
Residential Behavior/Feedback Program	$ 54,153	$ 13,297	$ -	$ -	$ 67,450	$ -	$ 67,450	$ 22
2. Residential Products	**$ 8,345,083**	**$ 2,235,572**	**$ (50,242)**	**$ -**	**$ 10,530,413**	**$ 910,045**	**$ 11,440,458**	**$ 147**
Residential Cooling & Heating Equipment	$ 1,197,252	$ 483,340	$ (50,242)	$ -	$ 1,630,350	$ 357,574	$ 1,987,924	$ 788
Residential Lighting	$ 5,766,970	$ 1,337,503	$ -	$ -	$ 7,104,473	$ 552,470	$ 7,656,943	$ 118
Residential Consumer Products	$ 1,380,862	$ 414,729	$ -	$ -	$ 1,795,591	$ -	$ 1,795,591	$ 191
Low-Income	$ 1,401,627	$ 681,743	$ 151	$ 6,892,841	$ 8,976,362	$ 3,383,859	$ 12,360,221	$ 9,704
4. Low-Income Whole House	**$ 1,401,627**	**$ 681,743**	**$ 151**	**$ 6,892,841**	**$ 8,976,362**	**$ 3,383,859**	**$ 12,360,221**	**$ 9,704**
Low-Income New Construction	$ 28,656	$ 5,934	$ -	$ 168,356	$ 202,947	$ 173,512	$ 376,458	$ 8,118
Low-Income Single Family Retrofit	$ 1,135,459	$ 616,266	$ 151	$ 6,251,490	$ 8,003,366	$ 2,465,963	$ 10,469,329	$ 16,007
Low-Income Multi-Family Retrofit	$ 237,512	$ 59,542	$ -	$ 472,995	$ 770,050	$ 744,384	$ 1,514,434	$ 1,925
Commercial & Industrial	$ 21,434,277	$ 11,916,749	$ (493,572)	$ 478,980	$ 33,336,433	$ 3,806,713	$ 37,143,147	$ 24,387
6. C&I New Construction	**$ 7,308,382**	**$ 4,497,601**	**$ (69,218)**	**$ 13,680**	**$ 11,750,445**	**$ -**	**$ 11,750,445**	**$ 17,670**
C&I New Construction	$ 7,308,382	$ 4,497,601	$ (69,218)	$ 13,680	$ 11,750,445	$ -	$ 11,750,445	$ 17,670
7. C&I Retrofit	**$ 14,125,894**	**$ 7,419,148**	**$ (424,354)**	**$ 465,300**	**$ 21,585,988**	**$ 3,806,713**	**$ 25,392,702**	**$ 30,749**
C&I Retrofit	$ 6,508,712	$ 4,183,813	$ 91,671	$ -	$ 10,784,196	$ 1,767,665	$ 12,551,862	$ 122,548
C&I Direct Install	$ 7,617,182	$ 3,235,335	$ (516,025)	$ 465,300	$ 10,801,792	$ 2,039,048	$ 12,840,840	$ 17,592

Benefits for the Three-Year Term (2013$)

Benefits Table 4

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Benefits for the Three-Year Term (2013$): Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	Sum of Total Energy Benefits	Sum of Total Capacity Benefits	Sum of Total Gas Benefits	Sum of Total Other Resource Benefits	Sum of Total Resource Benefits	Sum of Total Non Resource Benefits	Sum of Total Benefits	Sum of Resource Benefits per Participant
Total	**$ 121,331,041**	**$ 44,044,435**	**$ 13,876,112**	**$ 83,294,518**	**$ 262,546,106**	**$ 108,866,324**	**$ 371,412,431**	**$ 1,137**
Residential	**$ 44,244,868**	**$ 11,259,011**	**$ 15,278,885**	**$ 68,356,639**	**$ 139,139,402**	**$ 81,985,606**	**$ 221,125,009**	**$ 627**
1. Residential Whole House	**$ 20,167,953**	**$ 4,822,572**	**$ 15,440,173**	**$ 68,259,462**	**$ 108,690,160**	**$ 80,108,213**	**$ 188,798,373**	**$ 5,581**
Residential New Construction & Major Renovation	$ 1,626,145	$ 908,863	$ 97,927	$ 1,292,481	$ 3,925,417	$ 684,492	$ 4,609,909	$ 9,193
Residential Multi-Family Retrofit	$ 3,392,573	$ 258,782	$ 63,973	$ 1,411,074	$ 5,126,402	$ 3,188,091	$ 8,314,493	$ 3,643
Residential Home Energy Services	$ 15,095,081	$ 3,641,630	$ 15,278,272	$ 65,555,907	$ 99,570,891	$ 76,235,629	$ 175,806,520	$ 6,801
Residential Behavior/Feedback Program	$ 54,153	$ 13,297	$ -	$ -	$ 67,450	$ -	$ 67,450	$ 22
2. Residential Products	**$ 24,076,915**	**$ 6,436,439**	**$ (161,288)**	**$ 97,177**	**$ 30,449,243**	**$ 1,877,393**	**$ 32,326,636**	**$ 150**
Residential Cooling & Heating Equipment	$ 4,747,238	$ 1,620,518	$ (173,918)	$ -	$ 6,193,838	$ 618,819	$ 6,812,657	$ 1,090
Residential Lighting	$ 16,637,575	$ 4,032,933	$ -	$ -	$ 20,670,508	$ 1,258,575	$ 21,929,083	$ 114
Residential Consumer Products	$ 2,692,101	$ 782,988	$ 12,630	$ 97,177	$ 3,584,896	$ -	$ 3,584,896	$ 237
Low-Income	**$ 5,083,034**	**$ 2,090,441**	**$ 271,879**	**$ 14,120,234**	**$ 21,565,588**	**$ 9,728,483**	**$ 31,294,071**	**$ 5,510**
4. Low-Income Whole House	**$ 5,083,034**	**$ 2,090,441**	**$ 271,879**	**$ 14,120,234**	**$ 21,565,588**	**$ 9,728,483**	**$ 31,294,071**	**$ 5,510**
Low-Income New Construction	$ 243,089	$ 120,574	$ 270,803	$ 362,579	$ 997,045	$ 900,904	$ 1,897,948	$ 2,824
Low-Income Single Family Retrofit	$ 3,856,850	$ 1,735,806	$ 1,076	$ 13,027,289	$ 18,621,021	$ 7,529,300	$ 26,150,320	$ 8,685
Low-Income Multi-Family Retrofit	$ 983,096	$ 234,061	$ -	$ 730,366	$ 1,947,523	$ 1,298,279	$ 3,245,802	$ 1,374
Commercial & Industrial	**$ 72,003,139**	**$ 30,694,984**	**$ (1,674,652)**	**$ 817,646**	**$ 101,841,116**	**$ 17,152,235**	**$ 118,993,351**	**$ 20,822**
6. C&I New Construction	**$ 30,891,549**	**$ 12,887,376**	**$ (756,034)**	**$ (1,375,323)**	**$ 41,647,568**	**$ 4,005,185**	**$ 45,652,753**	**$ 13,344**
C&I New Construction	$ 30,891,549	$ 12,887,376	$ (756,034)	$ (1,375,323)	$ 41,647,568	$ 4,005,185	$ 45,652,753	$ 13,344
7. C&I Retrofit	**$ 41,111,590**	**$ 17,807,608**	**$ (918,618)**	**$ 2,192,969**	**$ 60,193,548**	**$ 13,147,050**	**$ 73,340,598**	**$ 34,008**
C&I Retrofit	$ 19,661,591	$ 8,039,338	$ 315,417	$ (144,317)	$ 27,872,029	$ 6,986,438	$ 34,858,466	$ 97,115
C&I Direct Install	$ 21,449,999	$ 9,768,270	$ (1,234,035)	$ 2,337,286	$ 32,321,519	$ 6,160,613	$ 38,482,132	$ 21,795

Significant Total Benefits Variances (2013$): Planned v Preliminary

Benefits Table 5

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Sum of Total Benefits

	Planned 2013	Planned 2014	Planned 2015	Planned Total	Preliminary 2013	Preliminary 2014	Preliminary 2015	Preliminary Total
Residential	**$ 64,517,568**	**$ 70,074,160**	**$ 75,585,299**	**$ 210,177,028**	**$ 65,634,883**	**$ 78,544,350**	**$ -**	**$ 144,179,233**
1. Residential Whole House	**$ 52,984,793**	**$ 59,079,343**	**$ 64,144,841**	**$ 176,208,977**	**$ 56,927,493**	**$ 67,371,329**	**$ -**	**$ 124,298,822**
Residential New Construction & Major Renovation	$ 1,017,533	$ 965,410	$ 942,705	$ 2,925,649	$ 1,628,236	$ 2,024,946	$ -	$ 3,653,181
Residential Multi-Family Retrofit	$ 2,307,907	$ 5,546,329	$ 5,567,921	$ 13,422,157	$ 754,276	$ 2,004,321	$ -	$ 2,758,597
Residential Home Energy Services	$ 49,637,325	$ 52,523,995	$ 57,566,766	$ 159,728,085	$ 54,544,981	$ 63,342,062	$ -	$ 117,887,043
Residential Behavior/Feedback Program	$ 22,028	$ 43,608	$ 67,450	$ 133,086	$ -	$ -	$ -	$ -
2. Residential Products	**$ 11,532,775**	**$ 10,994,817**	**$ 11,440,458**	**$ 33,968,050**	**$ 8,707,390**	**$ 11,173,021**	**$ -**	**$ 19,880,411**
Residential Cooling & Heating Equipment	$ 1,501,716	$ 1,715,737	$ 1,987,924	$ 5,205,377	$ 2,417,348	$ 2,504,990	$ -	$ 4,922,338
Residential Lighting	$ 8,242,845	$ 7,451,930	$ 7,656,943	$ 23,351,718	$ 5,381,659	$ 7,670,295	$ -	$ 13,051,954
Residential Consumer Products	$ 1,788,214	$ 1,827,150	$ 1,795,591	$ 5,410,955	$ 908,382	$ 997,736	$ -	$ 1,906,119
Low-Income	**$ 12,286,511**	**$ 9,857,986**	**$ 12,360,221**	**$ 34,504,719**	**$ 9,996,930**	**$ 8,080,210**	**$ -**	**$ 18,077,140**
4. Low-Income Whole House	**$ 12,286,511**	**$ 9,857,986**	**$ 12,360,221**	**$ 34,504,719**	**$ 9,996,930**	**$ 8,080,210**	**$ -**	**$ 18,077,140**
Low-Income New Construction	$ 664,916	$ 430,668	$ 376,458	$ 1,472,042	$ 1,420,928	$ 140,680	$ -	$ 1,561,607
Low-Income Single Family Retrofit	$ 10,058,029	$ 7,846,061	$ 10,469,329	$ 28,373,418	$ 7,444,729	$ 7,462,370	$ -	$ 14,907,100
Low-Income Multi-Family Retrofit	$ 1,563,567	$ 1,581,257	$ 1,514,434	$ 4,659,259	$ 1,131,273	$ 477,160	$ -	$ 1,608,433
Commercial & Industrial	**$ 47,221,377**	**$ 37,907,386**	**$ 37,143,147**	**$ 122,271,910**	**$ 31,420,807**	**$ 57,607,569**	**$ -**	**$ 89,028,376**
6. C&I New Construction	**$ 14,427,174**	**$ 12,418,626**	**$ 11,750,445**	**$ 38,596,245**	**$ 14,478,377**	**$ 26,449,539**	**$ -**	**$ 40,927,916**
C&I New Construction	$ 14,427,174	$ 12,418,626	$ 11,750,445	$ 38,596,245	$ 14,478,377	$ 26,449,539	$ -	$ 40,927,916
7. C&I Retrofit	**$ 32,794,203**	**$ 25,488,760**	**$ 25,392,702**	**$ 83,675,665**	**$ 16,942,430**	**$ 31,158,030**	**$ -**	**$ 48,100,460**
C&I Retrofit	$ 18,485,206	$ 12,558,371	$ 12,551,862	$ 43,595,439	$ 6,241,984	$ 16,225,869	$ -	$ 22,467,853
C&I Direct Install	$ 14,308,997	$ 12,930,389	$ 12,840,840	$ 40,080,225	$ 10,700,445	$ 14,932,161	$ -	$ 25,632,606
Grand Total	**$ 124,025,457**	**$ 117,839,533**	**$ 125,088,667**	**$ 366,953,656**	**$ 107,052,620**	**$ 144,232,129**	**$ -**	**$ 251,284,749**

Planned v Preliminary Benefit Variances	Planned Three-Year Goal Cumulative Achievement by Year 2013	2014	2015	Actual Plan-Year Three-Year Goal Cumulative Achievement 2013	2014	Difference in Plan-Year Three-Year Goal Cumulative Achievement
Residential	**31%**	**64%**	**100%**	**31%**	**69%**	**7%**
1. Residential Whole House	**30%**	**64%**	**100%**	**32%**	**71%**	**11%**
Residential New Construction & Major Renovation	35%	68%	100%	56%	125%	84%
Residential Multi-Family Retrofit	17%	59%	100%	6%	21%	-65%
Residential Home Energy Services	31%	64%	100%	34%	74%	15%
Residential Behavior/Feedback Program	17%	49%	100%	0%	0%	-100%
2. Residential Products	**34%**	**66%**	**100%**	**26%**	**59%**	**-12%**
Residential Cooling & Heating Equipment	29%	62%	100%	46%	95%	53%
Residential Lighting	35%	67%	100%	23%	56%	-17%
Residential Consumer Products	33%	67%	100%	17%	35%	-47%
Low-Income	**36%**	**64%**	**100%**	**29%**	**52%**	**-18%**
4. Low-Income Whole House	**36%**	**64%**	**100%**	**29%**	**52%**	**-18%**
Low-Income New Construction	45%	74%	100%	97%	106%	43%
Low-Income Single Family Retrofit	35%	63%	100%	26%	53%	-17%
Low-Income Multi-Family Retrofit	34%	67%	100%	24%	35%	-49%
Commercial & Industrial	**39%**	**70%**	**100%**	**26%**	**73%**	**5%**
6. C&I New Construction	**37%**	**70%**	**100%**	**38%**	**106%**	**52%**
C&I New Construction	37%	70%	100%	38%	106%	52%
7. C&I Retrofit	**39%**	**70%**	**100%**	**20%**	**57%**	**-17%**
C&I Retrofit	42%	71%	100%	14%	52%	-28%
C&I Direct Install	36%	68%	100%	27%	64%	-6%
Grand Total	**34%**	**66%**	**100%**	**29%**	**68%**	**4%**

Plan-year core initiative significant variance explanations are required for: (3) variances between planned and preliminary core initiative total benefits showing a decrease of 15 percent or greater. See Appendix 1 for more information.

Variances are calculated by percent of three-year goal (i.e., variance calculated as the percentage difference between the percentage of the Three-Year Plan goals planned to be achieved through the Plan-Year Report year compared to the percentage of the Three-Year Plan goals actually achieved through the Plan-Year Report year).

Significant Resource Benefits Variances (2013$): Preliminary v Evaluated

Benefits Table 6

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

Sum of Total Resource Benefits	Preliminary	Evaluated	Preliminary v Evaluated Benefit
Residential	**$ 50,685,569**	**$ 51,787,592**	**2%**
1. Residential Whole House	**$ 40,203,636**	**$ 40,636,757**	**1%**
Residential New Construction & Major Renovation	$ 1,797,612	$ 1,814,324	1%
Residential Multi-Family Retrofit	$ 1,407,216	$ 1,395,323	-1%
Residential Home Energy Services	$ 36,998,808	$ 37,427,110	1%
Residential Behavior/Feedback Program	$ -	$ -	0%
2. Residential Products	**$ 10,481,934**	**$ 11,150,835**	**6%**
Residential Cooling & Heating Equipment	$ 2,215,029	$ 2,291,265	3%
Residential Lighting	$ 7,269,168	$ 7,979,120	10%
Residential Consumer Products	$ 997,736	$ 880,450	-12%
Low-Income	**$ 5,522,518**	**$ 5,955,501**	**8%**
4. Low-Income Whole House	**$ 5,522,518**	**$ 5,955,501**	**8%**
Low-Income New Construction	$ 120,273	$ 121,072	1%
Low-Income Single Family Retrofit	$ 5,016,600	$ 5,371,778	7%
Low-Income Multi-Family Retrofit	$ 385,644	$ 462,652	20%
Commercial & Industrial	**$ 47,230,198**	**$ 41,501,907**	**-12%**
6. C&I New Construction	**$ 22,955,568**	**$ 17,310,809**	**-25%**
C&I New Construction	$ 22,955,568	$ 17,310,809	-25%
7. C&I Retrofit	**$ 24,274,630**	**$ 24,191,098**	**0%**
C&I Retrofit	$ 11,844,122	$ 11,752,073	-1%
C&I Direct Install	$ 12,430,508	$ 12,439,026	0%
Grand Total	**$ 103,438,285**	**$ 99,245,001**	**-4%**

Plan-year core initiative significant variance explanations are required for: (4) variances between preliminary and evaluated core initiative total resource benefits showing a decrease of 15 percent or greater. See Appendix 1 for more information.

Variances are calculated by percent change between preliminary and evaluated benefits for the Plan-Year (i.e., variance calculated as the percentage difference between the Plan-Year's preliminary total benefits compared to the Plan-Year's evaluated total benefits). The 2014 evaluated benefits account for evaluation studies included in both the 2013 and 2014 Plan-Year Reports.

Planned Budget v Actual Expenditures (nominal$): Plan-Year Analysis

Budget Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Program Planning and Administration	Sum of Marketing and Advertising	Sum of Participant Incentive	Sum of Sales, Technical Assistance & Training	Sum of Evaluation and Market Research	Sum of Total Program Costs	Sum of Performance Incentive	Sum of Participant Costs	Sum of Total Resource Costs	Sum of Cost per Participant	Sum of Resource Benefit per Dollar Spent
Planned	**$ 1,350,797**	**$ 774,208**	**$ 19,490,797**	**$ 3,455,085**	**$ 914,028**	**$ 25,984,914**	**$ -**	**$ 3,627,654**	**$ 29,612,569**	**$ 318**	**$ 3.24**
Residential	**$ 645,112**	**$ 592,133**	**$ 10,703,619**	**$ 1,802,600**	**$ 498,437**	**$ 14,241,901**	**$ -**	**$ 2,617,634**	**$ 16,859,535**	**$ 179**	**$ 3.03**
1. Residential Whole House	**$ 436,088**	**$ 184,514**	**$ 8,728,800**	**$ 911,391**	**$ 400,534**	**$ 10,661,327**	**$ -**	**$ 1,531,321**	**$ 12,192,648**	**$ 1,219**	**$ 3.10**
Residential New Construction & Major Renovation	$ 21,795	$ 15,090	$ 344,750	$ 124,794	$ 7,242	$ 513,671	$ -	$ 157,800	$ 671,471	$ 4,670	$ 1.36
Residential Multi-Family Retrofit	$ 21,568	$ 16,414	$ 518,815	$ 39,588	$ 39,647	$ 636,032	$ -	$ -	$ 636,032	$ 1,060	$ 5.00
Residential Home Energy Services	$ 392,726	$ 153,009	$ 7,821,235	$ 747,009	$ 353,644	$ 9,467,624	$ -	$ 1,373,521	$ 10,841,144	$ 1,568	$ 3.07
Residential Behavior/Feedback Program	$ -	$ -	$ 44,000	$ -	$ -	$ 44,000	$ -	$ -	$ 44,000	$ 22	$ 0.99
2. Residential Products	**$ 114,189**	**$ 160,434**	**$ 1,904,819**	**$ 502,209**	**$ 86,514**	**$ 2,768,165**	**$ -**	**$ 1,086,313**	**$ 3,854,478**	**$ 39**	**$ 3.67**
Residential Cooling & Heating Equipment	$ 31,858	$ 21,203	$ 602,325	$ 90,934	$ 13,759	$ 760,079	$ -	$ 528,434	$ 1,288,513	$ 435	$ 1.88
Residential Lighting	$ 61,991	$ 109,641	$ 1,001,494	$ 274,801	$ 56,973	$ 1,504,900	$ -	$ 360,829	$ 1,865,729	$ 25	$ 4.59
Residential Consumer Products	$ 20,340	$ 29,590	$ 301,000	$ 136,473	$ 15,782	$ 503,186	$ -	$ 197,050	$ 700,236	$ 56	$ 3.63
3. Residential Hard-to-Measure	**$ 94,834**	**$ 247,185**	**$ 70,000**	**$ 389,000**	**$ 11,389**	**$ 812,409**	**$ -**	**$ -**	**$ 812,409**		
Residential Statewide Marketing	$ -	$ 122,185	$ -	$ -	$ -	$ 122,185	$ -	$ -	$ 122,185		
Residential DOER Assessment	$ 89,134	$ -	$ -	$ -	$ 11,389	$ 100,523	$ -	$ -	$ 100,523		
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Residential Sponsorship & Subscriptions	$ 5,700	$ -	$ -	$ -	$ -	$ 5,700	$ -	$ -	$ 5,700		
Residential HEAT Loan	$ -	$ -	$ -	$ 300,000	$ -	$ 300,000	$ -	$ -	$ 300,000		
Residential Workforce Development	$ -	$ -	$ -	$ 89,000	$ -	$ 89,000	$ -	$ -	$ 89,000		
Residential R&D and Demonstration	$ -	$ -	$ 70,000	$ -	$ -	$ 70,000	$ -	$ -	$ 70,000		
Residential Education	$ -	$ 125,000	$ -	$ -	$ -	$ 125,000	$ -	$ -	$ 125,000		
Low-Income	**$ 195,933**	**$ 69,167**	**$ 2,243,046**	**$ 533,795**	**$ 111,202**	**$ 3,153,143**	**$ -**	**$ 525**	**$ 3,153,668**	**$ 3,822**	**$ 2.24**
4. Low-Income Whole House	**$ 140,710**	**$ 26,624**	**$ 2,243,046**	**$ 533,795**	**$ 108,232**	**$ 3,052,406**	**$ -**	**$ 525**	**$ 3,052,931**	**$ 3,700**	**$ 2.31**
Low-Income New Construction	$ 2,170	$ 1,241	$ 40,000	$ 7,970	$ 5,124	$ 56,505	$ -	$ -	$ 56,505	$ 2,260	$ 4.53
Low-Income Single Family Retrofit	$ 116,663	$ 22,954	$ 1,753,937	$ 505,956	$ 85,809	$ 2,485,319	$ -	$ -	$ 2,485,319	$ 6,213	$ 2.41
Low-Income Multi-Family Retrofit	$ 21,876	$ 2,429	$ 449,109	$ 19,869	$ 17,299	$ 510,582	$ -	$ 525	$ 511,107	$ 1,276	$ 1.58
5. Low-Income Hard-to-Measure	**$ 55,223**	**$ 42,543**	**$ -**	**$ -**	**$ 2,970**	**$ 100,737**	**$ -**	**$ -**	**$ 100,737**		
Low-Income Statewide Marketing	$ -	$ 20,364	$ -	$ -	$ -	$ 20,364	$ -	$ -	$ 20,364		
Low-Income DOER Assessment	$ 18,258	$ -	$ -	$ -	$ 2,970	$ 21,228	$ -	$ -	$ 21,228		
Low-Income Energy Affordability Network	$ 36,965	$ 22,179	$ -	$ -	$ -	$ 59,145	$ -	$ -	$ 59,145		
Commercial & Industrial	**$ 509,753**	**$ 112,907**	**$ 6,544,132**	**$ 1,118,690**	**$ 304,388**	**$ 8,589,870**	**$ -**	**$ 1,009,495**	**$ 9,599,366**	**$ 5,949**	**$ 3.97**
6. C&I New Construction	**$ 94,064**	**$ 10,445**	**$ 1,541,887**	**$ 265,905**	**$ 97,197**	**$ 2,009,497**	**$ -**	**$ 144,751**	**$ 2,154,247**	**$ 2,708**	**$ 6.18**
C&I New Construction	$ 94,064	$ 10,445	$ 1,541,887	$ 265,905	$ 97,197	$ 2,009,497	$ -	$ 144,751	$ 2,154,247	$ 2,708	$ 6.18
7. C&I Retrofit	**$ 360,352**	**$ 40,012**	**$ 5,002,245**	**$ 852,785**	**$ 197,601**	**$ 6,452,995**	**$ -**	**$ 864,745**	**$ 7,317,740**	**$ 9,192**	**$ 3.36**
C&I Retrofit	$ 168,169	$ 18,673	$ 1,801,274	$ 358,145	$ 97,417	$ 2,443,678	$ -	$ 383,909	$ 2,827,587	$ 27,769	$ 4.41
C&I Direct Install	$ 192,183	$ 21,339	$ 3,200,972	$ 494,640	$ 100,184	$ 4,009,318	$ -	$ 480,836	$ 4,490,153	$ 6,530	$ 2.71
8. C&I Hard-to-Measure	**$ 55,337**	**$ 62,450**	**$ -**	**$ -**	**$ 9,591**	**$ 127,378**	**$ -**	**$ -**	**$ 127,378**		
C&I Statewide Marketing	$ -	$ 62,450	$ -	$ -	$ -	$ 62,450	$ -	$ -	$ 62,450		
C&I DOER Assessment	$ 50,537	$ -	$ -	$ -	$ 9,591	$ 60,128	$ -	$ -	$ 60,128		
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
C&I Sponsorships & Subscriptions	$ 4,800	$ -	$ -	$ -	$ -	$ 4,800	$ -	$ -	$ 4,800		
Evaluated	**$ 1,581,486**	**$ 683,299**	**$ 29,848,734**	**$ 2,883,258**	**$ 1,760,361**	**$ 36,757,137**	**$ -**	**$ 7,787,869**	**$ 44,545,006**	**$ 405**	**$ 2.70**
Residential	**$ 746,673**	**$ 447,580**	**$ 15,474,311**	**$ 1,734,855**	**$ 739,457**	**$ 19,142,877**	**$ -**	**$ 5,979,750**	**$ 25,122,627**	**$ 219**	**$ 2.71**
1. Residential Whole House	**$ 507,742**	**$ 135,919**	**$ 13,450,513**	**$ 584,492**	**$ 490,850**	**$ 15,169,517**	**$ -**	**$ 3,528,781**	**$ 18,698,298**	**$ 3,213**	**$ 2.68**
Residential New Construction & Major Renovation	$ 26,011	$ 15,417	$ 245,037	$ 89,571	$ 12,675	$ 388,711	$ -	$ 178,417	$ 567,128	$ 2,247	$ 4.67
Residential Multi-Family Retrofit	$ 25,740	$ 4,883	$ 381,006	$ 70,618	$ 37,559	$ 519,807	$ -	$ -	$ 519,807	$ 1,173	$ 2.68
Residential Home Energy Services	$ 455,991	$ 109,280	$ 12,707,469	$ 335,353	$ 440,616	$ 14,048,709	$ -	$ 3,350,363	$ 17,399,073	$ 3,422	$ 2.66
Residential Behavior/Feedback Program	$ -	$ 6,340	$ 117,000	$ 88,950	$ -	$ 212,290	$ -	$ -	$ 212,290		
2. Residential Products	**$ 136,280**	**$ 112,353**	**$ 2,023,798**	**$ 340,831**	**$ 243,260**	**$ 2,856,523**	**$ -**	**$ 2,450,970**	**$ 5,307,492**	**$ 35**	**$ 3.90**
Residential Cooling & Heating Equipment	$ 38,021	$ 12,110	$ 886,463	$ 75,918	$ 58,065	$ 1,070,576	$ -	$ 578,490	$ 1,649,066	$ 582	$ 2.14
Residential Lighting	$ 73,983	$ 74,449	$ 944,744	$ 144,849	$ 160,696	$ 1,398,721	$ -	$ 1,751,665	$ 3,150,387	$ 18	$ 5.70
Residential Consumer Products	$ 24,275	$ 25,795	$ 192,592	$ 120,065	$ 24,499	$ 387,225	$ -	$ 120,815	$ 508,040	$ 128	$ 2.27
3. Residential Hard-to-Measure	**$ 102,651**	**$ 199,307**	**$ -**	**$ 809,532**	**$ 5,347**	**$ 1,116,837**	**$ -**	**$ -**	**$ 1,116,837**		
Residential Statewide Marketing	$ -	$ 99,688	$ -	$ -	$ -	$ 99,688	$ -	$ -	$ 99,688		
Residential DOER Assessment	$ 100,059	$ -	$ -	$ -	$ 5,347	$ 105,406	$ -	$ -	$ 105,406		
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Residential Sponsorship & Subscriptions	$ 2,592	$ -	$ -	$ -	$ -	$ 2,592	$ -	$ -	$ 2,592		
Residential HEAT Loan	$ -	$ -	$ -	$ 802,979	$ -	$ 802,979	$ -	$ -	$ 802,979		
Residential Workforce Development	$ -	$ -	$ -	$ 2,718	$ -	$ 2,718	$ -	$ -	$ 2,718		
Residential R&D and Demonstration	$ -	$ -	$ -	$ 3,835	$ -	$ 3,835	$ -	$ -	$ 3,835		
Residential Education	$ -	$ 99,619	$ -	$ -	$ -	$ 99,619	$ -	$ -	$ 99,619		
Low-Income	**$ 201,374**	**$ 65,622**	**$ 1,903,058**	**$ 435,500**	**$ 77,714**	**$ 2,683,268**	**$ -**	**$ -**	**$ 2,683,268**	**$ 2,111**	**$ 2.22**
4. Low-Income Whole House	**$ 167,930**	**$ 38,249**	**$ 1,903,058**	**$ 435,500**	**$ 76,321**	**$ 2,621,058**	**$ -**	**$ -**	**$ 2,621,058**	**$ 2,062**	**$ 2.27**
Low-Income New Construction	$ 2,589	$ 484	$ 10,221	$ 965	$ 2,328	$ 16,587	$ -	$ -	$ 16,587	$ 319	$ 7.30
Low-Income Single Family Retrofit	$ 139,232	$ 32,883	$ 1,656,495	$ 371,031	$ 55,986	$ 2,255,627	$ -	$ -	$ 2,255,627	$ 2,855	$ 2.38
Low-Income Multi-Family Retrofit	$ 26,108	$ 4,882	$ 236,342	$ 63,504	$ 18,007	$ 348,844	$ -	$ -	$ 348,844	$ 813	$ 1.33
5. Low-Income Hard-to-Measure	**$ 33,444**	**$ 27,373**	**$ -**	**$ -**	**$ 1,393**	**$ 62,210**	**$ -**	**$ -**	**$ 62,210**		
Low-Income Statewide Marketing	$ -	$ 17,980	$ -	$ -	$ -	$ 17,980	$ -	$ -	$ 17,980		
Low-Income DOER Assessment	$ 17,790	$ -	$ -	$ -	$ 1,393	$ 19,183	$ -	$ -	$ 19,183		
Low-Income Energy Affordability Network	$ 15,655	$ 9,393	$ -	$ -	$ -	$ 25,047	$ -	$ -	$ 25,047		
Commercial & Industrial	**$ 633,438**	**$ 170,097**	**$ 12,471,364**	**$ 712,902**	**$ 943,190**	**$ 14,930,992**	**$ -**	**$ 1,808,119**	**$ 16,739,111**	**$ 7,107**	**$ 2.78**
6. C&I New Construction	**$ 112,261**	**$ 21,195**	**$ 2,213,204**	**$ 261,648**	**$ 210,538**	**$ 2,818,845**	**$ -**	**$ 561,977**	**$ 3,380,822**	**$ 1,864**	**$ 6.14**
C&I New Construction	$ 112,261	$ 21,195	$ 2,213,204	$ 261,648	$ 210,538	$ 2,818,845	$ -	$ 561,977	$ 3,380,822	$ 1,864	$ 6.14
7. C&I Retrofit	**$ 430,062**	**$ 86,807**	**$ 10,258,160**	**$ 451,255**	**$ 728,159**	**$ 11,954,442**	**$ -**	**$ 1,246,142**	**$ 13,200,584**	**$ 20,296**	**$ 2.02**
C&I Retrofit	$ 200,702	$ 37,578	$ 6,170,253	$ 220,004	$ 348,265	$ 6,976,802	$ -	$ 784,103	$ 7,760,905	$ 59,125	$ 1.68
C&I Direct Install	$ 229,361	$ 49,228	$ 4,087,907	$ 231,251	$ 379,894	$ 4,977,640	$ -	$ 462,039	$ 5,439,679	$ 10,568	$ 2.50
8. C&I Hard-to-Measure	**$ 91,115**	**$ 62,096**	**$ -**	**$ -**	**$ 4,493**	**$ 157,704**	**$ -**	**$ -**	**$ 157,704**		
C&I Statewide Marketing	$ -	$ 62,096	$ -	$ -	$ -	$ 62,096	$ -	$ -	$ 62,096		
C&I DOER Assessment	$ 90,925	$ -	$ -	$ -	$ 4,493	$ 95,418	$ -	$ -	$ 95,418		
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
C&I Sponsorships & Subscriptions	$ 190	$ -	$ -	$ -	$ -	$ 190	$ -	$ -	$ 190		

Planned Budget v Actual Expenditures (nominal$): Plan-Year Analysis

Budget Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

Planned v Actual Variances: (Actual - Plan) / Plan	Sum of Program Planning and Administration	Sum of Marketing and Advertising	Sum of Participant Incentive	Sum of Sales, Technical Assistance & Training	Sum of Evaluation and Market Research	Sum of Total Program Costs	Sum of Performance Incentive	Sum of Participant Costs	Sum of Total Resource Costs	Sum of Cost per Participant	Sum of Resource Benefit per Dollar Spent
Total Annual Variance	**17%**	**-12%**	**53%**	**-17%**	**93%**	**41%**	**0%**	**115%**	**50%**	**28%**	**-17%**
Residential	**16%**	**-24%**	**45%**	**-4%**	**48%**	**34%**	**0%**	**128%**	**49%**	**22%**	**-11%**
1. Residential Whole House	**16%**	**-26%**	**54%**	**-36%**	**23%**	**42%**	**0%**	**130%**	**53%**	**164%**	**-13%**
Residential New Construction & Major Renovation	19%	2%	-29%	-28%	75%	-24%	0%	13%	-16%	-52%	244%
Residential Multi-Family Retrofit	19%	-70%	-27%	78%	-5%	-18%	0%	0%	-18%	11%	-46%
Residential Home Energy Services	16%	-29%	62%	-55%	25%	48%	0%	144%	60%	118%	-13%
Residential Behavior/Feedback Program	0%	0%	166%	0%	0%	382%	0%	0%	382%	0%	-100%
2. Residential Products	**19%**	**-30%**	**6%**	**-32%**	**181%**	**3%**	**0%**	**126%**	**38%**	**-12%**	**6%**
Residential Cooling & Heating Equipment	19%	-43%	47%	-17%	322%	41%	0%	9%	28%	34%	14%
Residential Lighting	19%	-32%	-6%	-47%	182%	-7%	0%	385%	69%	-28%	24%
Residential Consumer Products	19%	-13%	-36%	-12%	55%	-23%	0%	-39%	-27%	128%	-37%
3. Residential Hard-to-Measure	**8%**	**-19%**	**-100%**	**108%**	**-53%**	**37%**	**0%**	**0%**	**37%**	**0%**	**0%**
Residential Statewide Marketing	0%	-18%	0%	0%	0%	-18%	0%	0%	-18%	0%	0%
Residential DOER Assessment	12%	0%	0%	0%	-53%	5%	0%	0%	5%	0%	0%
Residential EEAC Consultants	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Residential Sponsorship & Subscriptions	-55%	0%	0%	0%	0%	-55%	0%	0%	-55%	0%	0%
Residential HEAT Loan	0%	0%	0%	168%	0%	168%	0%	0%	168%	0%	0%
Residential Workforce Development	0%	0%	0%	-97%	0%	-97%	0%	0%	-97%	0%	0%
Residential R&D and Demonstration	0%	0%	-100%	0%	0%	-95%	0%	0%	-95%	0%	0%
Residential Education	0%	-20%	0%	0%	0%	-20%	0%	0%	-20%	0%	0%
Low-Income	**3%**	**-5%**	**-15%**	**-18%**	**-30%**	**-15%**	**0%**	**-100%**	**-15%**	**-45%**	**-1%**
4. Low-Income Whole House	**19%**	**44%**	**-15%**	**-18%**	**-29%**	**-14%**	**0%**	**-100%**	**-14%**	**-44%**	**-2%**
Low-Income New Construction	19%	-61%	-74%	-88%	-55%	-71%	0%	0%	-71%	-86%	61%
Low-Income Single Family Retrofit	19%	43%	-6%	-27%	-35%	-9%	0%	0%	-9%	-54%	-1%
Low-Income Multi-Family Retrofit	19%	101%	-47%	220%	4%	-32%	0%	-100%	-32%	-36%	-16%
5. Low-Income Hard-to-Measure	**-39%**	**-36%**	**0%**	**0%**	**-53%**	**-38%**	**0%**	**0%**	**-38%**	**0%**	**0%**
Low-Income Statewide Marketing	0%	-12%	0%	0%	0%	-12%	0%	0%	-12%	0%	0%
Low-Income DOER Assessment	-3%	0%	0%	0%	-53%	-10%	0%	0%	-10%	0%	0%
Low-Income Energy Affordability Network	-58%	-58%	0%	0%	0%	-58%	0%	0%	-58%	0%	0%
Commercial & Industrial	**24%**	**51%**	**91%**	**-36%**	**210%**	**74%**	**0%**	**79%**	**74%**	**19%**	**-30%**
6. C&I New Construction	**19%**	**103%**	**44%**	**-2%**	**117%**	**40%**	**0%**	**288%**	**57%**	**-31%**	**-1%**
C&I New Construction	19%	103%	44%	-2%	117%	40%	0%	288%	57%	-31%	-1%
7. C&I Retrofit	**19%**	**117%**	**105%**	**-47%**	**269%**	**85%**	**0%**	**44%**	**80%**	**121%**	**-40%**
C&I Retrofit	19%	101%	243%	-39%	257%	186%	0%	104%	174%	113%	-62%
C&I Direct Install	19%	131%	28%	-53%	279%	24%	0%	-4%	21%	62%	-8%
8. C&I Hard-to-Measure	**65%**	**-1%**	**0%**	**0%**	**-53%**	**24%**	**0%**	**0%**	**24%**	**0%**	**0%**
C&I Statewide Marketing	0%	-1%	0%	0%	0%	-1%	0%	0%	-1%	0%	0%
C&I DOER Assessment	80%	0%	0%	0%	-53%	59%	0%	0%	59%	0%	0%
C&I EEAC Consultants	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
C&I Sponsorships & Subscriptions	-96%	0%	0%	0%	0%	-96%	0%	0%	-96%	0%	0%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Budget for the Three-Year Term (nominal$)

Budget Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Program Planning and Administration	Sum of Marketing and Advertising	Sum of Participant Incentive	Sum of Sales, Technical Assistance & Training	Sum of Evaluation and Market Research	Sum of Total Program Costs	Sum of Performance Incentive	Sum of Participant Costs	Sum of Total Resource Costs	Sum of Cost per Participant	Sum of Resource Benefit per Dollar Spent
2013											
Evaluated	**$ 1,171,896**	**$ 617,759**	**$ 20,596,113**	**$ 2,718,191**	**$ 534,974**	**$ 25,638,933**	**$ -**	**$ 4,591,171**	**$ 30,230,105**	**$ 459**	**2.93**
Residential	$ 550,968	$ 471,574	$ 13,267,425	$ 1,676,415	$ 250,259	$ 16,216,641	$ -	$ 2,525,280	$ 18,741,920	$ 308	2.56
1. Residential Whole House	**$ 346,943**	**$ 158,988**	**$ 11,553,853**	**$ 579,635**	**$ 173,128**	**$ 12,812,547**	**$ -**	**$ 2,070,781**	**$ 14,883,328**	**$ 2,852**	**2.55**
Residential New Construction & Major Renovation	$ 17,773	$ 12,964	$ 141,621	$ 69,096	$ 11,147	$ 252,603	$ -	$ 85,785	$ 338,388	$ 2,071	5.88
Residential Multi-Family Retrofit	$ 17,588	$ 5,883	$ 270,134	$ 32,929	$ 7,403	$ 333,936	$ -	$ -	$ 333,936	$ 917	1.60
Residential Home Energy Services	$ 311,582	$ 140,141	$ 11,142,098	$ 477,610	$ 154,578	$ 12,226,008	$ -	$ 1,984,996	$ 14,211,003	$ 3,051	2.51
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
2. Residential Products	**$ 93,121**	**$ 100,476**	**$ 1,711,191**	**$ 353,347**	**$ 76,734**	**$ 2,334,868**	**$ -**	**$ 454,499**	**$ 2,789,367**	**$ 48**	**3.76**
Residential Cooling & Heating Equipment	$ 25,980	$ 8,692	$ 880,536	$ 84,540	$ 12,660	$ 1,012,407	$ -	$ 454,499	$ 1,466,906	$ 571	2.24
Residential Lighting	$ 50,553	$ 72,840	$ 671,084	$ 158,730	$ 38,529	$ 991,735	$ -	$ -	$ 991,735	$ 23	5.63
Residential Consumer Products	$ 16,587	$ 18,945	$ 159,571	$ 110,078	$ 25,545	$ 330,725	$ -	$ -	$ 330,725	$ 121	2.75
3. Residential Hard-to-Measure	**$ 110,904**	**$ 212,110**	**$ 2,381**	**$ 743,433**	**$ 398**	**$ 1,069,225**	**$ -**	**$ -**	**$ 1,069,225**		
Residential Statewide Marketing	$ -	$ 101,157	$ -	$ -	$ -	$ 101,157	$ -	$ -	$ 101,157		
Residential DOER Assessment	$ 91,365	$ -	$ -	$ -	$ 398	$ 91,763	$ -	$ -	$ 91,763		
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Residential Sponsorship & Subscriptions	$ 19,539	$ -	$ -	$ -	$ -	$ 19,539	$ -	$ -	$ 19,539		
Residential HEAT Loan	$ -	$ -	$ -	$ 737,870	$ -	$ 737,870	$ -	$ -	$ 737,870		
Residential Workforce Development	$ -	$ -	$ -	$ 5,563	$ -	$ 5,563	$ -	$ -	$ 5,563		
Residential R&D and Demonstration	$ -	$ -	$ 2,381	$ -	$ -	$ 2,381	$ -	$ -	$ 2,381		
Residential Education	$ -	$ 110,953	$ -	$ -	$ -	$ 110,953	$ -	$ -	$ 110,953		
Low-Income	$ 150,549	$ 45,738	$ 2,072,942	$ 382,077	$ 61,921	$ 2,713,226	$ -	$ 59,915	$ 2,773,141	$ 1,579	2.44
4. Low-Income Whole House	**$ 114,748**	**$ 18,317**	**$ 2,072,942**	**$ 382,077**	**$ 61,817**	**$ 2,649,900**	**$ -**	**$ 59,915**	**$ 2,709,815**	**$ 1,542**	**2.50**
Low-Income New Construction	$ 1,769	$ 171	$ 45,060	$ 1,701	$ 1,314	$ 50,016	$ -	$ 59,915	$ 109,930	$ 181	13.46
Low-Income Single Family Retrofit	$ 95,138	$ 16,420	$ 1,657,958	$ 362,667	$ 56,405	$ 2,188,588	$ -	$ -	$ 2,188,588	$ 2,563	2.40
Low-Income Multi-Family Retrofit	$ 17,840	$ 1,726	$ 369,923	$ 17,709	$ 4,097	$ 411,296	$ -	$ -	$ 411,296	$ 699	1.74
5. Low-Income Hard-to-Measure	**$ 35,801**	**$ 27,421**	**$ -**	**$ -**	**$ 104**	**$ 63,326**	**$ -**	**$ -**	**$ 63,326**		
Low-Income Statewide Marketing	$ -	$ 17,992	$ -	$ -	$ -	$ 17,992	$ -	$ -	$ 17,992		
Low-Income DOER Assessment	$ 20,086	$ -	$ -	$ -	$ 104	$ 20,190	$ -	$ -	$ 20,190		
Low-Income Energy Affordability Network	$ 15,715	$ 9,429	$ -	$ -	$ -	$ 25,145	$ -	$ -	$ 25,145		
Commercial & Industrial	$ 470,379	$ 100,447	$ 5,255,746	$ 659,699	$ 222,795	$ 6,709,066	$ -	$ 2,005,977	$ 8,715,043	$ 4,715	4.02
6. C&I New Construction	**$ 76,708**	**$ 7,420**	**$ 1,640,204**	**$ 240,275**	**$ 75,491**	**$ 2,040,098**	**$ -**	**$ 736,693**	**$ 2,776,791**	**$ 2,161**	**6.17**
C&I New Construction	$ 76,708	$ 7,420	$ 1,640,204	$ 240,275	$ 75,491	$ 2,040,098	$ -	$ 736,693	$ 2,776,791	$ 2,161	6.17
7. C&I Retrofit	**$ 293,864**	**$ 28,792**	**$ 3,615,542**	**$ 419,424**	**$ 146,970**	**$ 4,504,593**	**$ -**	**$ 1,269,284**	**$ 5,773,877**	**$ 9,404**	**3.20**
C&I Retrofit	$ 137,141	$ 13,587	$ 883,975	$ 220,207	$ 102,299	$ 1,357,209	$ -	$ 839,271	$ 2,196,480	$ 16,756	3.93
C&I Direct Install	$ 156,724	$ 15,205	$ 2,731,567	$ 199,217	$ 44,671	$ 3,147,384	$ -	$ 430,013	$ 3,577,397	$ 7,908	2.89
8. C&I Hard-to-Measure	**$ 99,806**	**$ 64,235**	**$ -**	**$ -**	**$ 334**	**$ 164,375**	**$ -**	**$ -**	**$ 164,375**		
C&I Statewide Marketing	$ -	$ 64,235	$ -	$ -	$ -	$ 64,235	$ -	$ -	$ 64,235		
C&I DOER Assessment	$ 82,170	$ -	$ -	$ -	$ 334	$ 82,504	$ -	$ -	$ 82,504		
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
C&I Sponsorships & Subscriptions	$ 17,636	$ -	$ -	$ -	$ -	$ 17,636	$ -	$ -	$ 17,636		

Budget for the Three-Year Term (nominal$)

Budget Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Program Planning and Administration	Sum of Marketing and Advertising	Sum of Participant Incentive	Sum of Sales, Technical Assistance & Training	Sum of Evaluation and Market Research	Sum of Total Program Costs	Sum of Performance Incentive	Sum of Participant Costs	Sum of Total Resource Costs	Sum of Cost per Participant	Sum of Resource Benefit per Dollar Spent
2014											
Evaluated	**$ 1,581,486**	**$ 683,299**	**$ 29,848,734**	**$ 2,883,258**	**$ 1,760,361**	**$ 36,757,137**	**$ -**	**$ 7,787,869**	**$ 44,545,006**	**$ 405**	**2.70**
Residential	$ 746,673	$ 447,580	$ 15,474,311	$ 1,734,855	$ 739,457	$ 19,142,877	$ -	$ 5,979,750	$ 25,122,627	$ 219	2.71
1. Residential Whole House	**$ 507,742**	**$ 135,919**	**$ 13,450,513**	**$ 584,492**	**$ 490,850**	**$ 15,169,517**	**$ -**	**$ 3,528,781**	**$ 18,698,298**	**$ 3,213**	**2.68**
Residential New Construction & Major Renovation	$ 26,011	$ 15,417	$ 245,037	$ 89,571	$ 12,675	$ 388,711	$ -	$ 178,417	$ 567,128	$ 2,247	4.67
Residential Multi-Family Retrofit	$ 25,740	$ 4,883	$ 381,006	$ 70,618	$ 37,559	$ 519,807	$ -	$ -	$ 519,807	$ 1,173	2.68
Residential Home Energy Services	$ 455,991	$ 109,280	$ 12,707,469	$ 335,353	$ 440,616	$ 14,048,709	$ -	$ 3,350,363	$ 17,399,073	$ 3,422	2.66
Residential Behavior/Feedback Program	$ -	$ 6,340	$ 117,000	$ 88,950	$ -	$ 212,290	$ -	$ -	$ 212,290		-
2. Residential Products	**$ 136,280**	**$ 112,353**	**$ 2,023,798**	**$ 340,831**	**$ 243,260**	**$ 2,856,523**	**$ -**	**$ 2,450,970**	**$ 5,307,492**	**$ 35**	**3.90**
Residential Cooling & Heating Equipment	$ 38,021	$ 12,110	$ 886,463	$ 75,918	$ 58,065	$ 1,070,576	$ -	$ 578,490	$ 1,649,066	$ 582	2.14
Residential Lighting	$ 73,983	$ 74,449	$ 944,744	$ 144,849	$ 160,696	$ 1,398,721	$ -	$ 1,751,665	$ 3,150,387	$ 18	5.70
Residential Consumer Products	$ 24,275	$ 25,795	$ 192,592	$ 120,065	$ 24,499	$ 387,225	$ -	$ 120,815	$ 508,040	$ 128	2.27
3. Residential Hard-to-Measure	**$ 102,651**	**$ 199,307**	**$ -**	**$ 809,532**	**$ 5,347**	**$ 1,116,837**	**$ -**	**$ -**	**$ 1,116,837**		**-**
Residential Statewide Marketing	$ -	$ 99,688	$ -	$ -	$ -	$ 99,688	$ -	$ -	$ 99,688		-
Residential DOER Assessment	$ 100,059	$ -	$ -	$ -	$ 5,347	$ 105,406	$ -	$ -	$ 105,406		-
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Residential Sponsorship & Subscriptions	$ 2,592	$ -	$ -	$ -	$ -	$ 2,592	$ -	$ -	$ 2,592		-
Residential HEAT Loan	$ -	$ -	$ -	$ 802,979	$ -	$ 802,979	$ -	$ -	$ 802,979		-
Residential Workforce Development	$ -	$ -	$ -	$ 2,718	$ -	$ 2,718	$ -	$ -	$ 2,718		-
Residential R&D and Demonstration	$ -	$ -	$ -	$ 3,835	$ -	$ 3,835	$ -	$ -	$ 3,835		-
Residential Education	$ -	$ 99,619	$ -	$ -	$ -	$ 99,619	$ -	$ -	$ 99,619		-
Low-Income	$ 201,374	$ 65,622	$ 1,903,058	$ 435,500	$ 77,714	$ 2,683,268	$ -	$ -	$ 2,683,268	$ 2,111	2.22
4. Low-Income Whole House	**$ 167,930**	**$ 38,249**	**$ 1,903,058**	**$ 435,500**	**$ 76,321**	**$ 2,621,058**	**$ -**	**$ -**	**$ 2,621,058**	**$ 2,062**	**2.27**
Low-Income New Construction	$ 2,589	$ 484	$ 10,221	$ 965	$ 2,328	$ 16,587	$ -	$ -	$ 16,587	$ 319	7.30
Low-Income Single Family Retrofit	$ 139,232	$ 32,883	$ 1,656,495	$ 371,031	$ 55,986	$ 2,255,627	$ -	$ -	$ 2,255,627	$ 2,855	2.38
Low-Income Multi-Family Retrofit	$ 26,108	$ 4,882	$ 236,342	$ 63,504	$ 18,007	$ 348,844	$ -	$ -	$ 348,844	$ 813	1.33
5. Low-Income Hard-to-Measure	**$ 33,444**	**$ 27,373**	**$ -**	**$ -**	**$ 1,393**	**$ 62,210**	**$ -**	**$ -**	**$ 62,210**		**-**
Low-Income Statewide Marketing	$ -	$ 17,980	$ -	$ -	$ -	$ 17,980	$ -	$ -	$ 17,980		-
Low-Income DOER Assessment	$ 17,790	$ -	$ -	$ -	$ 1,393	$ 19,183	$ -	$ -	$ 19,183		-
Low-Income Energy Affordability Network	$ 15,655	$ 9,393	$ -	$ -	$ -	$ 25,047	$ -	$ -	$ 25,047		-
Commercial & Industrial	$ 633,438	$ 170,097	$ 12,471,364	$ 712,902	$ 943,190	$ 14,930,992	$ -	$ 1,808,119	$ 16,739,111	$ 7,107	2.78
6. C&I New Construction	**$ 112,261**	**$ 21,195**	**$ 2,213,204**	**$ 261,648**	**$ 210,538**	**$ 2,818,845**	**$ -**	**$ 561,977**	**$ 3,380,822**	**$ 1,864**	**6.14**
C&I New Construction	$ 112,261	$ 21,195	$ 2,213,204	$ 261,648	$ 210,538	$ 2,818,845	$ -	$ 561,977	$ 3,380,822	$ 1,864	6.14
7. C&I Retrofit	**$ 430,062**	**$ 86,807**	**$ 10,258,160**	**$ 451,255**	**$ 728,159**	**$ 11,954,442**	**$ -**	**$ 1,246,142**	**$ 13,200,584**	**$ 20,296**	**2.02**
C&I Retrofit	$ 200,702	$ 37,578	$ 6,170,253	$ 220,004	$ 348,265	$ 6,976,802	$ -	$ 784,103	$ 7,760,905	$ 59,125	1.68
C&I Direct Install	$ 229,361	$ 49,228	$ 4,087,907	$ 231,251	$ 379,894	$ 4,977,640	$ -	$ 462,039	$ 5,439,679	$ 10,568	2.50
8. C&I Hard-to-Measure	**$ 91,115**	**$ 62,096**	**$ -**	**$ -**	**$ 4,493**	**$ 157,704**	**$ -**	**$ -**	**$ 157,704**		**-**
C&I Statewide Marketing	$ -	$ 62,096	$ -	$ -	$ -	$ 62,096	$ -	$ -	$ 62,096		-
C&I DOER Assessment	$ 90,925	$ -	$ -	$ -	$ 4,493	$ 95,418	$ -	$ -	$ 95,418		-
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
C&I Sponsorships & Subscriptions	$ 190	$ -	$ -	$ -	$ -	$ 190	$ -	$ -	$ 190		-
2015											
Planned	**$ 1,418,740**	**$ 789,219**	**$ 20,908,140**	**$ 3,622,583**	**$ 974,185**	**$ 27,712,867**	**$ -**	**$ 4,056,105**	**$ 31,768,972**	**$ 329**	**3.18**
Residential	$ 673,804	$ 599,231	$ 11,693,879	$ 1,869,105	$ 537,413	$ 15,373,432	$ -	$ 3,058,650	$ 18,432,083	$ 188	2.99
1. Residential Whole House	**$ 458,484**	**$ 189,863**	**$ 9,490,251**	**$ 972,711**	**$ 437,249**	**$ 11,548,558**	**$ -**	**$ 1,700,934**	**$ 13,249,492**	**$ 1,126**	**3.06**
Residential New Construction & Major Renovation	$ 22,942	$ 15,423	$ 386,550	$ 117,784	$ 6,933	$ 549,631	$ -	$ 215,000	$ 764,631	$ 4,164	1.14
Residential Multi-Family Retrofit	$ 22,703	$ 16,384	$ 518,949	$ 40,568	$ 40,118	$ 638,721	$ -	$ -	$ 638,721	$ 1,065	5.01
Residential Home Energy Services	$ 412,839	$ 158,057	$ 8,518,752	$ 814,359	$ 390,198	$ 10,294,205	$ -	$ 1,485,934	$ 11,780,139	$ 1,577	3.06
Residential Behavior/Feedback Program	$ -	$ -	$ 66,000	$ -	$ -	$ 66,000	$ -	$ -	$ 66,000	$ 22	1.02
2. Residential Products	**$ 120,201**	**$ 162,183**	**$ 2,128,628**	**$ 507,394**	**$ 88,775**	**$ 3,007,181**	**$ -**	**$ 1,357,716**	**$ 4,364,897**	**$ 42**	**3.50**
Residential Cooling & Heating Equipment	$ 33,535	$ 22,383	$ 760,375	$ 92,381	$ 16,596	$ 925,270	$ -	$ 611,081	$ 1,536,351	$ 447	1.76
Residential Lighting	$ 65,254	$ 110,185	$ 1,067,303	$ 277,616	$ 57,081	$ 1,577,439	$ -	$ 555,985	$ 2,133,424	$ 26	4.50
Residential Consumer Products	$ 21,411	$ 29,615	$ 300,950	$ 137,397	$ 15,098	$ 504,471	$ -	$ 190,650	$ 695,121	$ 54	3.56
3. Residential Hard-to-Measure	**$ 95,119**	**$ 247,185**	**$ 75,000**	**$ 389,000**	**$ 11,389**	**$ 817,694**	**$ -**	**$ -**	**$ 817,694**		
Residential Statewide Marketing	$ -	$ 122,185	$ -	$ -	$ -	$ 122,185	$ -	$ -	$ 122,185		
Residential DOER Assessment	$ 89,134	$ -	$ -	$ -	$ 11,389	$ 100,523	$ -	$ -	$ 100,523		
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
Residential Sponsorship & Subscriptions	$ 5,985	$ -	$ -	$ -	$ -	$ 5,985	$ -	$ -	$ 5,985		
Residential HEAT Loan	$ -	$ -	$ -	$ 300,000	$ -	$ 300,000	$ -	$ -	$ 300,000		
Residential Workforce Development	$ -	$ -	$ -	$ 89,000	$ -	$ 89,000	$ -	$ -	$ 89,000		
Residential R&D and Demonstration	$ -	$ -	$ 75,000	$ -	$ -	$ 75,000	$ -	$ -	$ 75,000		
Residential Education	$ -	$ 125,000	$ -	$ -	$ -	$ 125,000	$ -	$ -	$ 125,000		
Low-Income	$ 211,022	$ 74,558	$ 2,762,496	$ 625,184	$ 133,885	$ 3,807,144	$ -	$ 588	$ 3,807,732	$ 4,116	2.36
4. Low-Income Whole House	**$ 148,117**	**$ 27,405**	**$ 2,762,496**	**$ 625,184**	**$ 130,915**	**$ 3,694,117**	**$ -**	**$ 588**	**$ 3,694,705**	**$ 3,994**	**2.43**
Low-Income New Construction	$ 2,284	$ 1,253	$ 40,000	$ 8,069	$ 4,292	$ 55,898	$ -	$ -	$ 55,898	$ 2,236	3.63
Low-Income Single Family Retrofit	$ 122,805	$ 23,602	$ 2,271,201	$ 596,253	$ 110,432	$ 3,124,293	$ -	$ -	$ 3,124,293	$ 6,249	2.56
Low-Income Multi-Family Retrofit	$ 23,028	$ 2,551	$ 451,295	$ 20,862	$ 16,191	$ 513,926	$ -	$ 588	$ 514,514	$ 1,285	1.50
5. Low-Income Hard-to-Measure	**$ 62,905**	**$ 47,152**	**$ -**	**$ -**	**$ 2,970**	**$ 113,027**	**$ -**	**$ -**	**$ 113,027**		
Low-Income Statewide Marketing	$ -	$ 20,364	$ -	$ -	$ -	$ 20,364	$ -	$ -	$ 20,364		
Low-Income DOER Assessment	$ 18,258	$ -	$ -	$ -	$ 2,970	$ 21,228	$ -	$ -	$ 21,228		
Low-Income Energy Affordability Network	$ 44,647	$ 26,788	$ -	$ -	$ -	$ 71,435	$ -	$ -	$ 71,435		
Commercial & Industrial	$ 533,914	$ 115,430	$ 6,451,765	$ 1,128,295	$ 302,887	$ 8,532,290	$ -	$ 996,866	$ 9,529,156	$ 6,242	3.91
6. C&I New Construction	**$ 99,016**	**$ 10,967**	**$ 1,449,520**	**$ 259,146**	**$ 93,810**	**$ 1,912,458**	**$ -**	**$ 132,121**	**$ 2,044,579**	**$ 2,876**	**6.14**
C&I New Construction	$ 99,016	$ 10,967	$ 1,449,520	$ 259,146	$ 93,810	$ 1,912,458	$ -	$ 132,121	$ 2,044,579	$ 2,876	6.14
7. C&I Retrofit	**$ 379,321**	**$ 42,013**	**$ 5,002,245**	**$ 869,149**	**$ 199,486**	**$ 6,492,214**	**$ -**	**$ 864,745**	**$ 7,356,959**	**$ 9,248**	**3.32**
C&I Retrofit	$ 177,022	$ 19,607	$ 1,801,274	$ 365,781	$ 98,020	$ 2,461,704	$ -	$ 383,909	$ 2,845,613	$ 27,974	4.38
C&I Direct Install	$ 202,300	$ 22,406	$ 3,200,972	$ 503,367	$ 101,466	$ 4,030,511	$ -	$ 480,836	$ 4,511,346	$ 6,564	2.68
8. C&I Hard-to-Measure	**$ 55,577**	**$ 62,450**	**$ -**	**$ -**	**$ 9,591**	**$ 127,618**	**$ -**	**$ -**	**$ 127,618**		
C&I Statewide Marketing	$ -	$ 62,450	$ -	$ -	$ -	$ 62,450	$ -	$ -	$ 62,450		
C&I DOER Assessment	$ 50,537	$ -	$ -	$ -	$ 9,591	$ 60,128	$ -	$ -	$ 60,128		
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
C&I Sponsorships & Subscriptions	$ 5,040	$ -	$ -	$ -	$ -	$ 5,040	$ -	$ -	$ 5,040		

Budget for the Three-Year Term (nominal$)

Budget Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Program Planning and Administration	Sum of Marketing and Advertising	Sum of Participant Incentive	Sum of Sales, Technical Assistance & Training	Sum of Evaluation and Market Research	Sum of Total Program Costs	Sum of Performance Incentive	Sum of Participant Costs	Sum of Total Resource Costs	Sum of Cost per Participant	Sum of Resource Benefit per Dollar Spent
Budget for the Three-Year Term (nominal$): Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan											
Total	**$ 4,172,122**	**$ 2,090,277**	**$ 71,352,987**	**$ 9,224,032**	**$ 3,269,520**	**$ 90,108,938**	**$ -**	**$ 16,435,145**	**$ 106,544,083**	**$ 390**	**2.91**
Residential	**$ 1,971,445**	**$ 1,518,385**	**$ 40,435,616**	**$ 5,280,374**	**$ 1,527,130**	**$ 50,732,950**	**$ -**	**$ 11,563,681**	**$ 62,296,631**	**$ 228**	**2.74**
1. Residential Whole House	**$ 1,313,170**	**$ 484,770**	**$ 34,494,617**	**$ 2,136,838**	**$ 1,101,227**	**$ 39,530,622**	**$ -**	**$ 7,300,495**	**$ 46,831,118**	**$ 2,030**	**2.75**
Residential New Construction & Major Renovation	$ 66,726	$ 43,804	$ 773,209	$ 276,451	$ 30,755	$ 1,190,945	$ -	$ 479,202	$ 1,670,147	$ 2,789	3.30
Residential Multi-Family Retrofit	$ 66,032	$ 27,149	$ 1,170,089	$ 144,114	$ 85,080	$ 1,492,465	$ -	$ -	$ 1,492,465	$ 1,061	3.43
Residential Home Energy Services	$ 1,180,413	$ 407,477	$ 32,368,319	$ 1,627,322	$ 985,392	$ 36,568,923	$ -	$ 6,821,293	$ 43,390,216	$ 2,498	2.72
Residential Behavior/Feedback Program	$ -	$ 6,340	$ 183,000	$ 88,950	$ -	$ 278,290	$ -	$ -	$ 278,290	$ 93	0.24
2. Residential Products	**$ 349,601**	**$ 375,012**	**$ 5,863,618**	**$ 1,201,572**	**$ 408,769**	**$ 8,198,571**	**$ -**	**$ 4,263,186**	**$ 12,461,757**	**$ 40**	**3.71**
Residential Cooling & Heating Equipment	$ 97,537	$ 43,184	$ 2,527,374	$ 252,838	$ 87,320	$ 3,008,253	$ -	$ 1,644,070	$ 4,652,324	$ 529	2.06
Residential Lighting	$ 189,791	$ 257,473	$ 2,683,131	$ 581,194	$ 256,306	$ 3,967,896	$ -	$ 2,307,650	$ 6,275,547	$ 22	5.21
Residential Consumer Products	$ 62,273	$ 74,354	$ 653,112	$ 367,539	$ 65,142	$ 1,222,422	$ -	$ 311,465	$ 1,533,887	$ 81	2.93
3. Residential Hard-to-Measure	**$ 308,674**	**$ 658,602**	**$ 77,381**	**$ 1,941,965**	**$ 17,134**	**$ 3,003,756**	**$ -**	**$ -**	**$ 3,003,756**	**$ -**	**-**
Residential Statewide Marketing	$ -	$ 323,031	$ -	$ -	$ -	$ 323,031	$ -	$ -	$ 323,031	$ -	-
Residential DOER Assessment	$ 280,558	$ -	$ -	$ -	$ 17,134	$ 297,692	$ -	$ -	$ 297,692	$ -	-
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Residential Sponsorship & Subscriptions	$ 28,116	$ -	$ -	$ -	$ -	$ 28,116	$ -	$ -	$ 28,116	$ -	-
Residential HEAT Loan	$ -	$ -	$ -	$ 1,840,849	$ -	$ 1,840,849	$ -	$ -	$ 1,840,849	$ -	-
Residential Workforce Development	$ -	$ -	$ -	$ 97,281	$ -	$ 97,281	$ -	$ -	$ 97,281	$ -	-
Residential R&D and Demonstration	$ -	$ -	$ 77,381	$ 3,835	$ -	$ 81,216	$ -	$ -	$ 81,216	$ -	-
Residential Education	$ -	$ 335,571	$ -	$ -	$ -	$ 335,571	$ -	$ -	$ 335,571	$ -	-
Low-Income	**$ 562,945**	**$ 185,917**	**$ 6,738,496**	**$ 1,442,761**	**$ 273,519**	**$ 9,203,639**	**$ -**	**$ 60,503**	**$ 9,264,142**	**$ 2,351**	**2.34**
4. Low-Income Whole House	**$ 430,795**	**$ 83,971**	**$ 6,738,496**	**$ 1,442,761**	**$ 269,053**	**$ 8,965,075**	**$ -**	**$ 60,503**	**$ 9,025,578**	**$ 2,291**	**2.41**
Low-Income New Construction	$ 6,643	$ 1,908	$ 95,281	$ 10,735	$ 7,934	$ 122,501	$ -	$ 59,915	$ 182,416	$ 347	8.14
Low-Income Single Family Retrofit	$ 357,175	$ 72,904	$ 5,585,655	$ 1,329,951	$ 222,823	$ 7,568,508	$ -	$ -	$ 7,568,508	$ 3,530	2.46
Low-Income Multi-Family Retrofit	$ 66,977	$ 9,158	$ 1,057,560	$ 102,075	$ 38,295	$ 1,274,066	$ -	$ 588	$ 1,274,654	$ 899	1.53
5. Low-Income Hard-to-Measure	**$ 132,150**	**$ 101,947**	**$ -**	**$ -**	**$ 4,466**	**$ 238,563**	**$ -**	**$ -**	**$ 238,563**	**$ -**	**-**
Low-Income Statewide Marketing	$ -	$ 56,337	$ -	$ -	$ -	$ 56,337	$ -	$ -	$ 56,337	$ -	-
Low-Income DOER Assessment	$ 56,134	$ -	$ -	$ -	$ 4,466	$ 60,600	$ -	$ -	$ 60,600	$ -	-
Low-Income Energy Affordability Network	$ 76,017	$ 45,610	$ -	$ -	$ -	$ 121,627	$ -	$ -	$ 121,627	$ -	-
Commercial & Industrial	**$ 1,637,731**	**$ 385,975**	**$ 24,178,875**	**$ 2,500,896**	**$ 1,468,871**	**$ 30,172,349**	**$ -**	**$ 4,810,962**	**$ 34,983,310**	**$ 6,169**	**3.38**
6. C&I New Construction	**$ 287,985**	**$ 39,582**	**$ 5,302,928**	**$ 761,068**	**$ 379,839**	**$ 6,771,401**	**$ -**	**$ 1,430,791**	**$ 8,202,192**	**$ 2,170**	**6.15**
C&I New Construction	$ 287,985	$ 39,582	$ 5,302,928	$ 761,068	$ 379,839	$ 6,771,401	$ -	$ 1,430,791	$ 8,202,192	$ 2,170	6.15
7. C&I Retrofit	**$ 1,103,248**	**$ 157,612**	**$ 18,875,947**	**$ 1,739,828**	**$ 1,074,614**	**$ 22,951,249**	**$ -**	**$ 3,380,171**	**$ 26,331,420**	**$ 12,967**	**2.62**
C&I Retrofit	$ 514,864	$ 70,771	$ 8,855,502	$ 805,993	$ 548,584	$ 10,795,715	$ -	$ 2,007,283	$ 12,802,998	$ 37,616	2.58
C&I Direct Install	$ 588,384	$ 86,840	$ 10,020,445	$ 933,835	$ 526,030	$ 12,155,535	$ -	$ 1,372,887	$ 13,528,422	$ 8,197	2.66
8. C&I Hard-to-Measure	**$ 246,499**	**$ 188,781**	**$ -**	**$ -**	**$ 14,418**	**$ 449,698**	**$ -**	**$ -**	**$ 449,698**	**$ -**	**-**
C&I Statewide Marketing	$ -	$ 188,781	$ -	$ -	$ -	$ 188,781	$ -	$ -	$ 188,781	$ -	-
C&I DOER Assessment	$ 223,633	$ -	$ -	$ -	$ 14,418	$ 238,051	$ -	$ -	$ 238,051	$ -	-
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
C&I Sponsorships & Subscriptions	$ 22,866	$ -	$ -	$ -	$ -	$ 22,866	$ -	$ -	$ 22,866	$ -	-

Significant Planned Budget v Actual Expenditures Variances (nominal$)

Budget Table 3

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Sum of Total Program Costs	Planned 2013	Planned 2014	Planned 2015	Planned Total	Preliminary 2013	Preliminary 2014	Preliminary 2015	Preliminary Total
Residential	**$ 12,990,648**	**$ 14,241,901**	**$ 15,373,432**	**$ 42,605,982**	**$ 16,216,641**	**$ 19,142,877**	**$ -**	**$ 35,359,518**
1. Residential Whole House	**$ 9,557,333**	**$ 10,661,327**	**$ 11,548,558**	**$ 31,767,218**	**$ 12,812,547**	**$ 15,169,517**	**$ -**	**$ 27,982,065**
Residential New Construction & Major Renovation	$ 509,826	$ 513,671	$ 549,631	$ 1,573,129	$ 252,603	$ 388,711	$ -	$ 641,314
Residential Multi-Family Retrofit	$ 376,451	$ 636,032	$ 638,721	$ 1,651,204	$ 333,936	$ 519,807	$ -	$ 853,743
Residential Home Energy Services	$ 8,649,056	$ 9,467,624	$ 10,294,205	$ 28,410,885	$ 12,226,008	$ 14,048,709	$ -	$ 26,274,717
Residential Behavior/Feedback Program	$ 22,000	$ 44,000	$ 66,000	$ 132,000	$ -	$ 212,290	$ -	$ 212,290
2. Residential Products	**$ 2,626,178**	**$ 2,768,165**	**$ 3,007,181**	**$ 8,401,524**	**$ 2,334,868**	**$ 2,856,523**	**$ -**	**$ 5,191,390**
Residential Cooling & Heating Equipment	$ 643,974	$ 760,079	$ 925,270	$ 2,329,323	$ 1,012,407	$ 1,070,576	$ -	$ 2,082,983
Residential Lighting	$ 1,498,678	$ 1,504,900	$ 1,577,439	$ 4,581,017	$ 991,735	$ 1,398,721	$ -	$ 2,390,457
Residential Consumer Products	$ 483,526	$ 503,186	$ 504,471	$ 1,491,183	$ 330,725	$ 387,225	$ -	$ 717,950
3. Residential Hard-to-Measure	**$ 807,137**	**$ 812,409**	**$ 817,694**	**$ 2,437,240**	**$ 1,069,225**	**$ 1,116,837**	**$ -**	**$ 2,186,063**
Residential Statewide Marketing	$ 122,185	$ 122,185	$ 122,185	$ 366,556	$ 101,157	$ 99,688	$ -	$ 200,846
Residential DOER Assessment	$ 100,523	$ 100,523	$ 100,523	$ 301,570	$ 91,763	$ 105,406	$ -	$ 197,169
Residential EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Residential Sponsorship & Subscriptions	$ 5,429	$ 5,700	$ 5,985	$ 17,114	$ 19,539	$ 2,592	$ -	$ 22,131
Residential HEAT Loan	$ 300,000	$ 300,000	$ 300,000	$ 900,000	$ 737,870	$ 802,979	$ -	$ 1,540,849
Residential Workforce Development	$ 89,000	$ 89,000	$ 89,000	$ 267,000	$ 5,563	$ 2,718	$ -	$ 8,281
Residential R&D and Demonstration	$ 65,000	$ 70,000	$ 75,000	$ 210,000	$ 2,381	$ 3,835	$ -	$ 6,216
Residential Education	$ 125,000	$ 125,000	$ 125,000	$ 375,000	$ 110,953	$ 99,619	$ -	$ 210,571
Low-Income	**$ 3,306,419**	**$ 3,153,143**	**$ 3,807,144**	**$ 10,266,706**	**$ 2,713,226**	**$ 2,683,268**	**$ -**	**$ 5,396,495**
4. Low-Income Whole House	**$ 3,202,701**	**$ 3,052,406**	**$ 3,694,117**	**$ 9,949,225**	**$ 2,649,900**	**$ 2,621,058**	**$ -**	**$ 5,270,958**
Low-Income New Construction	$ 50,087	$ 56,505	$ 55,898	$ 162,490	$ 50,016	$ 16,587	$ -	$ 66,603
Low-Income Single Family Retrofit	$ 2,646,865	$ 2,485,319	$ 3,124,293	$ 8,256,477	$ 2,188,588	$ 2,255,627	$ -	$ 4,444,215
Low-Income Multi-Family Retrofit	$ 505,750	$ 510,582	$ 513,926	$ 1,530,258	$ 411,296	$ 348,844	$ -	$ 760,140
5. Low-Income Hard-to-Measure	**$ 103,718**	**$ 100,737**	**$ 113,027**	**$ 317,482**	**$ 63,326**	**$ 62,210**	**$ -**	**$ 125,537**
Low-Income Statewide Marketing	$ 20,364	$ 20,364	$ 20,364	$ 61,093	$ 17,992	$ 17,980	$ -	$ 35,972
Low-Income DOER Assessment	$ 21,228	$ 21,228	$ 21,228	$ 63,683	$ 20,190	$ 19,183	$ -	$ 39,372
Low-Income Energy Affordability Network	$ 62,126	$ 59,145	$ 71,435	$ 192,706	$ 25,145	$ 25,047	$ -	$ 50,192
Commercial & Industrial	**$ 13,591,802**	**$ 8,589,870**	**$ 8,532,290**	**$ 30,713,963**	**$ 6,709,066**	**$ 14,930,992**	**$ -**	**$ 21,640,058**
6. C&I New Construction	**$ 2,225,948**	**$ 2,009,497**	**$ 1,912,458**	**$ 6,147,902**	**$ 2,040,098**	**$ 2,818,845**	**$ -**	**$ 4,858,943**
C&I New Construction	$ 2,225,948	$ 2,009,497	$ 1,912,458	$ 6,147,902	$ 2,040,098	$ 2,818,845	$ -	$ 4,858,943
7. C&I Retrofit	**$ 11,238,704**	**$ 6,452,995**	**$ 6,492,214**	**$ 24,183,914**	**$ 4,504,593**	**$ 11,954,442**	**$ -**	**$ 16,459,035**
C&I Retrofit	$ 7,206,668	$ 2,443,678	$ 2,461,704	$ 12,112,050	$ 1,357,209	$ 6,976,802	$ -	$ 8,334,011
C&I Direct Install	$ 4,032,036	$ 4,009,318	$ 4,030,511	$ 12,071,864	$ 3,147,384	$ 4,977,640	$ -	$ 8,125,024
8. C&I Hard-to-Measure	**$ 127,150**	**$ 127,378**	**$ 127,618**	**$ 382,147**	**$ 164,375**	**$ 157,704**	**$ -**	**$ 322,079**
C&I Statewide Marketing	$ 62,450	$ 62,450	$ 62,450	$ 187,351	$ 64,235	$ 62,096	$ -	$ 126,331
C&I DOER Assessment	$ 60,128	$ 60,128	$ 60,128	$ 180,385	$ 82,504	$ 95,418	$ -	$ 177,923
C&I EEAC Consultants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
C&I Sponsorships & Subscriptions	$ 4,571	$ 4,800	$ 5,040	$ 14,411	$ 17,636	$ 190	$ -	$ 17,826
Grand Total	**$ 29,888,870**	**$ 25,984,914**	**$ 27,712,867**	**$ 83,586,651**	**$ 25,638,933**	**$ 36,757,137**	**$ -**	**$ 62,396,070**

Planned v Actual Budget Variances	Planned Three-Year Goal Cumulative Achievement by Year 2013	2014	2015	Actual Plan-Year Three-Year Goal Cumulative Achievement 2013	2014	Difference in Plan-Year Three-Year Goal Cumulative Achievement
Residential	**30%**	**64%**	**100%**	**38%**	**83%**	**30%**
1. Residential Whole House	**30%**	**64%**	**100%**	**40%**	**88%**	**38%**
Residential New Construction & Major Renovation	32%	65%	100%	16%	41%	-37%
Residential Multi-Family Retrofit	23%	61%	100%	20%	52%	-16%
Residential Home Energy Services	30%	64%	100%	43%	92%	45%
Residential Behavior/Feedback Program	17%	50%	100%	0%	161%	222%
2. Residential Products	**31%**	**64%**	**100%**	**28%**	**62%**	**-4%**
Residential Cooling & Heating Equipment	28%	60%	100%	43%	89%	48%
Residential Lighting	33%	66%	100%	22%	52%	-20%
Residential Consumer Products	32%	66%	100%	22%	48%	-27%
3. Residential Hard-to-Measure	**33%**	**66%**	**100%**	**44%**	**90%**	**35%**
Residential Statewide Marketing	33%	67%	100%	28%	55%	-18%
Residential DOER Assessment	33%	67%	100%	30%	65%	-2%
Residential EEAC Consultants	0%	0%	0%	0%	0%	0%
Residential Sponsorship & Subscriptions	32%	65%	100%	114%	129%	99%
Residential HEAT Loan	33%	67%	100%	82%	171%	157%
Residential Workforce Development	33%	67%	100%	2%	3%	-95%
Residential R&D and Demonstration	31%	64%	100%	1%	3%	-95%
Residential Education	33%	67%	100%	30%	56%	-16%
Low-Income	**32%**	**63%**	**100%**	**26%**	**53%**	**-16%**
4. Low-Income Whole House	**32%**	**63%**	**100%**	**27%**	**53%**	**-16%**
Low-Income New Construction	31%	66%	100%	31%	41%	-38%
Low-Income Single Family Retrofit	32%	62%	100%	27%	54%	-13%
Low-Income Multi-Family Retrofit	33%	66%	100%	27%	50%	-25%
5. Low-Income Hard-to-Measure	**33%**	**64%**	**100%**	**20%**	**40%**	**-39%**
Low-Income Statewide Marketing	33%	67%	100%	29%	59%	-12%
Low-Income DOER Assessment	33%	67%	100%	32%	62%	-7%
Low-Income Energy Affordability Network	32%	63%	100%	13%	26%	-59%
Commercial & Industrial	**44%**	**72%**	**100%**	**22%**	**70%**	**-2%**
6. C&I New Construction	**36%**	**69%**	**100%**	**33%**	**79%**	**15%**
C&I New Construction	36%	69%	100%	33%	79%	15%
7. C&I Retrofit	**46%**	**73%**	**100%**	**19%**	**68%**	**-7%**
C&I Retrofit	59%	80%	100%	11%	69%	-14%
C&I Direct Install	33%	67%	100%	26%	67%	1%
8. C&I Hard-to-Measure	**33%**	**67%**	**100%**	**43%**	**84%**	**27%**
C&I Statewide Marketing	33%	67%	100%	34%	67%	1%
C&I DOER Assessment	33%	67%	100%	46%	99%	48%
C&I EEAC Consultants	0%	0%	0%	0%	0%	0%
C&I Sponsorships & Subscriptions	32%	65%	100%	122%	124%	90%
Grand Total	**36%**	**67%**	**100%**	**31%**	**75%**	**12%**

Plan-year core initiative significant variance explanations are required for: (1) variances between planned and actual core initiative budget of 15 percent or greater. See Appendix 1 for more information.

Variances are calculated by percent of three-year goal (i.e., variance calculated as the percentage difference between the percentage of the Three-Year Plan goals planned to be achieved through the Plan-Year Report year compared to the percentage of the Three-Year Plan goals actually achieved through the Plan-Year Report year).

Cost-Effectiveness (2013$): Plan-Year Analysis

Cost-Effectiveness Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

	Sum of Total Program Costs (2013$)	Sum of Performance Incentive (2013$)	Sum of Participant Costs (2013$)	Sum of Total Resource Costs (2013$)	Sum of Total Benefits	Sum of Total Net Benefits	Sum of Benefit Cost Ratio
Planned	**$ 25,282,073**	**$ -**	**$ 3,529,533**	**$ 28,811,606**	**$ 117,839,533**	**$ 89,027,927**	**4.09**
Residential	**$ 13,856,685**	**$ -**	**$ 2,546,832**	**$ 16,403,517**	**$ 70,074,160**	**$ 53,670,643**	**4.27**
1. Residential Whole House	**$ 10,372,959**	**$ -**	**$ 1,489,901**	**$ 11,862,860**	**$ 59,079,343**	**$ 47,216,483**	**4.98**
Residential New Construction & Major Renovation	$ 499,778	$ -	$ 153,532	$ 653,309	$ 965,410	$ 312,101	1.48
Residential Multi-Family Retrofit	$ 618,828	$ -	$ -	$ 618,828	$ 5,546,329	$ 4,927,501	8.96
Residential Home Energy Services	$ 9,211,543	$ -	$ 1,336,370	$ 10,547,913	$ 52,523,995	$ 41,976,083	4.98
Residential Behavior/Feedback Program	$ 42,810	$ -	$ -	$ 42,810	$ 43,608	$ 798	1.02
2. Residential Products	**$ 2,693,292**	**$ -**	**$ 1,056,930**	**$ 3,750,222**	**$ 10,994,817**	**$ 7,244,595**	**2.93**
Residential Cooling & Heating Equipment	$ 739,521	$ -	$ 514,141	$ 1,253,661	$ 1,715,737	$ 462,075	1.37
Residential Lighting	$ 1,464,195	$ -	$ 351,069	$ 1,815,265	$ 7,451,930	$ 5,636,666	4.11
Residential Consumer Products	$ 489,576	$ -	$ 191,720	$ 681,296	$ 1,827,150	$ 1,145,854	2.68
3. Residential Hard-to-Measure	**$ 790,435**	**$ -**	**$ -**	**$ 790,435**	**$ -**	**$ (790,435)**	**-**
Low-Income	**$ 3,067,857**	**$ -**	**$ 511**	**$ 3,068,367**	**$ 9,857,986**	**$ 6,789,619**	**3.21**
4. Low-Income Whole House	**$ 2,969,845**	**$ -**	**$ 511**	**$ 2,970,356**	**$ 9,857,986**	**$ 6,887,631**	**3.32**
Low-Income New Construction	$ 54,977	$ -	$ -	$ 54,977	$ 430,668	$ 375,691	7.83
Low-Income Single Family Retrofit	$ 2,418,096	$ -	$ -	$ 2,418,096	$ 7,846,061	$ 5,427,965	3.24
Low-Income Multi-Family Retrofit	$ 496,772	$ -	$ 511	$ 497,283	$ 1,581,257	$ 1,083,975	3.18
5. Low-Income Hard-to-Measure	**$ 98,012**	**$ -**	**$ -**	**$ 98,012**	**$ -**	**$ (98,012)**	**-**
Commercial & Industrial	**$ 8,357,531**	**$ -**	**$ 982,191**	**$ 9,339,721**	**$ 37,907,386**	**$ 28,567,665**	**4.06**
6. C&I New Construction	**$ 1,955,144**	**$ -**	**$ 140,835**	**$ 2,095,979**	**$ 12,418,626**	**$ 10,322,647**	**5.92**
C&I New Construction	$ 1,955,144	$ -	$ 140,835	$ 2,095,979	$ 12,418,626	$ 10,322,647	5.92
7. C&I Retrofit	**$ 6,278,454**	**$ -**	**$ 841,355**	**$ 7,119,809**	**$ 25,488,760**	**$ 18,368,951**	**3.58**
C&I Retrofit	$ 2,377,581	$ -	$ 373,525	$ 2,751,106	$ 12,558,371	$ 9,807,265	4.56
C&I Direct Install	$ 3,900,873	$ -	$ 467,830	$ 4,368,703	$ 12,930,389	$ 8,561,686	2.96
8. C&I Hard-to-Measure	**$ 123,933**	**$ -**	**$ -**	**$ 123,933**	**$ -**	**$ (123,933)**	**-**
Evaluated	**$ 35,762,928**	**$ -**	**$ 7,577,223**	**$ 43,340,150**	**$ 139,045,935**	**$ 95,705,785**	**3.21**
Residential	**$ 18,625,099**	**$ -**	**$ 5,818,010**	**$ 24,443,109**	**$ 79,495,680**	**$ 55,052,571**	**3.25**
1. Residential Whole House	**$ 14,759,211**	**$ -**	**$ 3,433,334**	**$ 18,192,545**	**$ 67,804,307**	**$ 49,611,762**	**3.73**
Residential New Construction & Major Renovation	$ 378,197	$ -	$ 173,591	$ 551,789	$ 2,041,658	$ 1,489,869	3.70
Residential Multi-Family Retrofit	$ 505,747	$ -	$ -	$ 505,747	$ 1,992,285	$ 1,486,538	3.94
Residential Home Energy Services	$ 13,668,719	$ -	$ 3,259,743	$ 16,928,462	$ 63,770,364	$ 46,841,903	3.77
Residential Behavior/Feedback Program	$ 206,548	$ -	$ -	$ 206,548	$ -	$ (206,548)	-
2. Residential Products	**$ 2,779,259**	**$ -**	**$ 2,384,676**	**$ 5,163,935**	**$ 11,691,373**	**$ 6,527,438**	**2.26**
Residential Cooling & Heating Equipment	$ 1,041,619	$ -	$ 562,843	$ 1,604,462	$ 2,430,676	$ 826,214	1.51
Residential Lighting	$ 1,360,889	$ -	$ 1,704,286	$ 3,065,175	$ 8,380,247	$ 5,315,072	2.73
Residential Consumer Products	$ 376,751	$ -	$ 117,547	$ 494,298	$ 880,450	$ 386,152	1.78
3. Residential Hard-to-Measure	**$ 1,086,629**	**$ -**	**$ -**	**$ 1,086,629**	**$ -**	**$ (1,086,629)**	**-**
Low-Income	**$ 2,610,691**	**$ -**	**$ -**	**$ 2,610,691**	**$ 8,525,932**	**$ 5,915,241**	**3.27**
4. Low-Income Whole House	**$ 2,550,163**	**$ -**	**$ -**	**$ 2,550,163**	**$ 8,525,932**	**$ 5,975,768**	**3.34**
Low-Income New Construction	$ 16,138	$ -	$ -	$ 16,138	$ 141,483	$ 125,344	8.77
Low-Income Single Family Retrofit	$ 2,194,617	$ -	$ -	$ 2,194,617	$ 7,828,048	$ 5,633,432	3.57
Low-Income Multi-Family Retrofit	$ 339,409	$ -	$ -	$ 339,409	$ 556,401	$ 216,992	1.64
5. Low-Income Hard-to-Measure	**$ 60,528**	**$ -**	**$ -**	**$ 60,528**	**$ -**	**$ (60,528)**	**-**
Commercial & Industrial	**$ 14,527,137**	**$ -**	**$ 1,759,213**	**$ 16,286,350**	**$ 51,024,323**	**$ 34,737,973**	**3.13**
6. C&I New Construction	**$ 2,742,601**	**$ -**	**$ 546,777**	**$ 3,289,378**	**$ 19,949,824**	**$ 16,660,447**	**6.06**
C&I New Construction	$ 2,742,601	$ -	$ 546,777	$ 3,289,378	$ 19,949,824	$ 16,660,447	6.06
7. C&I Retrofit	**$ 11,631,098**	**$ -**	**$ 1,212,436**	**$ 12,843,534**	**$ 31,074,499**	**$ 18,230,965**	**2.42**
C&I Retrofit	$ 6,788,093	$ -	$ 762,895	$ 7,550,988	$ 16,133,820	$ 8,582,833	2.14
C&I Direct Install	$ 4,843,005	$ -	$ 449,542	$ 5,292,546	$ 14,940,678	$ 9,648,132	2.82
8. C&I Hard-to-Measure	**$ 153,439**	**$ -**	**$ -**	**$ 153,439**	**$ -**	**$ (153,439)**	**-**

Planned v Evaluated Variances	Sum of Total Program Costs (2013$)	Sum of Performance Incentive (2013$)	Sum of Participant Costs (2013$)	Sum of Total Resource Costs (2013$)	Sum of Total Benefits	Sum of Total Net Benefits	Sum of Benefit Cost Ratio
Total Annual Variance	**41%**	**0%**	**115%**	**50%**	**18%**	**8%**	**-22%**
Residential	**34%**	**0%**	**128%**	**49%**	**13%**	**3%**	**-24%**
1. Residential Whole House	**42%**	**0%**	**130%**	**53%**	**15%**	**5%**	**-25%**
Residential New Construction & Major Renovation	-24%	0%	13%	-16%	111%	377%	150%
Residential Multi-Family Retrofit	-18%	0%	0%	-18%	-64%	-70%	-56%
Residential Home Energy Services	48%	0%	144%	60%	21%	12%	-24%
Residential Behavior/Feedback Program	382%	0%	0%	382%	-100%	-25974%	-100%
2. Residential Products	**3%**	**0%**	**126%**	**38%**	**6%**	**-10%**	**-23%**
Residential Cooling & Heating Equipment	41%	0%	9%	28%	42%	79%	11%
Residential Lighting	-7%	0%	385%	69%	12%	-6%	-33%
Residential Consumer Products	-23%	0%	-39%	-27%	-52%	-66%	-34%
3. Residential Hard-to-Measure	**37%**	**0%**	**0%**	**37%**	**0%**	**37%**	**0%**
Low-Income	**-15%**	**0%**	**-100%**	**-15%**	**-14%**	**-13%**	**2%**
4. Low-Income Whole House	**-14%**	**0%**	**-100%**	**-14%**	**-14%**	**-13%**	**1%**
Low-Income New Construction	-71%	0%	0%	-71%	-67%	-67%	12%
Low-Income Single Family Retrofit	-9%	0%	0%	-9%	0%	4%	10%
Low-Income Multi-Family Retrofit	-32%	0%	-100%	-32%	-65%	-80%	-48%
5. Low-Income Hard-to-Measure	**-38%**	**0%**	**0%**	**-38%**	**0%**	**-38%**	**0%**
Commercial & Industrial	**74%**	**0%**	**79%**	**74%**	**35%**	**22%**	**-23%**
6. C&I New Construction	**40%**	**0%**	**288%**	**57%**	**61%**	**61%**	**2%**
C&I New Construction	40%	0%	288%	57%	61%	61%	2%
7. C&I Retrofit	**85%**	**0%**	**44%**	**80%**	**22%**	**-1%**	**-32%**
C&I Retrofit	186%	0%	104%	174%	28%	-12%	-53%
C&I Direct Install	24%	0%	-4%	21%	16%	13%	-5%
8. C&I Hard-to-Measure	**24%**	**0%**	**0%**	**24%**	**0%**	**24%**	**0%**

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Cost-Effectiveness for the Three-Year Term (2013$)

Cost-Effectiveness Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

	Sum of Total Program Costs (2013$)	Sum of Performance Incentive (2013$)	Sum of Participant Costs (2013$)	Sum of Total Resource Costs (2013$)	Sum of Total Benefits	Sum of Total Net Benefits	Sum of Benefit Cost Ratio
2013							
Evaluated	**$ 25,638,933**	**$ -**	**$ 4,591,171**	**$ 30,230,105**	**$ 107,277,829**	**$ 77,047,724**	**3.55**
Residential	$ 16,216,641	$ -	$ 2,525,280	$ 18,741,920	$ 66,044,029	$ 47,302,109	3.52
1. Residential Whole House	**$ 12,812,547**	**$ -**	**$ 2,070,781**	**$ 14,883,328**	**$ 56,849,224**	**$ 41,965,897**	**3.82**
Residential New Construction & Major Renoval	$ 252,603	$ -	$ 85,785	$ 338,388	$ 1,625,546	$ 1,287,158	4.80
Residential Multi-Family Retrofit	$ 333,936	$ -	$ -	$ 333,936	$ 754,288	$ 420,351	2.26
Residential Home Energy Services	$ 12,226,008	$ -	$ 1,984,996	$ 14,211,003	$ 54,469,390	$ 40,258,387	3.83
Residential Behavior/Feedback Program	$ -	$ -	$ -	$ -	$ -	$ -	
2. Residential Products	**$ 2,334,868**	**$ -**	**$ 454,499**	**$ 2,789,367**	**$ 9,194,805**	**$ 6,405,438**	**3.30**
Residential Cooling & Heating Equipment	$ 1,012,407	$ -	$ 454,499	$ 1,466,906	$ 2,394,057	$ 927,151	1.63
Residential Lighting	$ 991,735	$ -	$ -	$ 991,735	$ 5,891,893	$ 4,900,157	5.94
Residential Consumer Products	$ 330,725	$ -	$ -	$ 330,725	$ 908,855	$ 578,130	2.75
3. Residential Hard-to-Measure	**$ 1,069,225**	**$ -**	**$ -**	**$ 1,069,225**	**$ -**	**$ (1,069,225)**	**-**
Low-Income	$ 2,713,226	$ -	$ 59,915	$ 2,773,141	$ 10,407,919	$ 7,634,778	3.75
4. Low-Income Whole House	**$ 2,649,900**	**$ -**	**$ 59,915**	**$ 2,709,815**	**$ 10,407,919**	**$ 7,698,104**	**3.84**
Low-Income New Construction	$ 50,016	$ -	$ 59,915	$ 109,930	$ 1,380,007	$ 1,270,077	12.55
Low-Income Single Family Retrofit	$ 2,188,588	$ -	$ -	$ 2,188,588	$ 7,852,944	$ 5,664,355	3.59
Low-Income Multi-Family Retrofit	$ 411,296	$ -	$ -	$ 411,296	$ 1,174,968	$ 763,672	2.86
5. Low-Income Hard-to-Measure	**$ 63,326**	**$ -**	**$ -**	**$ 63,326**	**$ -**	**$ (63,326)**	**-**
Commercial & Industrial	$ 6,709,066	$ -	$ 2,005,977	$ 8,715,043	$ 30,825,881	$ 22,110,838	3.54
6. C&I New Construction	**$ 2,040,098**	**$ -**	**$ 736,693**	**$ 2,776,791**	**$ 13,952,483**	**$ 11,175,692**	**5.02**
C&I New Construction	$ 2,040,098	$ -	$ 736,693	$ 2,776,791	$ 13,952,483	$ 11,175,692	5.02
7. C&I Retrofit	**$ 4,504,593**	**$ -**	**$ 1,269,284**	**$ 5,773,877**	**$ 16,873,398**	**$ 11,099,521**	**2.92**
C&I Retrofit	$ 1,357,209	$ -	$ 839,271	$ 2,196,480	$ 6,172,784	$ 3,976,304	2.81
C&I Direct Install	$ 3,147,384	$ -	$ 430,013	$ 3,577,397	$ 10,700,614	$ 7,123,217	2.99
8. C&I Hard-to-Measure	**$ 164,375**	**$ -**	**$ -**	**$ 164,375**	**$ -**	**$ (164,375)**	**-**
2014							
Evaluated	**$ 35,762,928**	**$ -**	**$ 7,577,223**	**$ 43,340,150**	**$ 139,045,935**	**$ 95,705,785**	**3.21**
Residential	$ 18,625,099	$ -	$ 5,818,010	$ 24,443,109	$ 79,495,680	$ 55,052,571	3.25
1. Residential Whole House	**$ 14,759,211**	**$ -**	**$ 3,433,334**	**$ 18,192,545**	**$ 67,804,307**	**$ 49,611,762**	**3.73**
Residential New Construction & Major Renoval	$ 378,197	$ -	$ 173,591	$ 551,789	$ 2,041,658	$ 1,489,869	3.70
Residential Multi-Family Retrofit	$ 505,747	$ -	$ -	$ 505,747	$ 1,992,285	$ 1,486,538	3.94
Residential Home Energy Services	$ 13,668,719	$ -	$ 3,259,743	$ 16,928,462	$ 63,770,364	$ 46,841,903	3.77
Residential Behavior/Feedback Program	$ 206,548	$ -	$ -	$ 206,548	$ -	$ (206,548)	-
2. Residential Products	**$ 2,779,259**	**$ -**	**$ 2,384,676**	**$ 5,163,935**	**$ 11,691,373**	**$ 6,527,438**	**2.26**
Residential Cooling & Heating Equipment	$ 1,041,619	$ -	$ 562,843	$ 1,604,462	$ 2,430,676	$ 826,214	1.51
Residential Lighting	$ 1,360,889	$ -	$ 1,704,286	$ 3,065,175	$ 8,380,247	$ 5,315,072	2.73
Residential Consumer Products	$ 376,751	$ -	$ 117,547	$ 494,298	$ 880,450	$ 386,152	1.78
3. Residential Hard-to-Measure	**$ 1,086,629**	**$ -**	**$ -**	**$ 1,086,629**	**$ -**	**$ (1,086,629)**	**-**
Low-Income	$ 2,610,691	$ -	$ -	$ 2,610,691	$ 8,525,932	$ 5,915,241	3.27
4. Low-Income Whole House	**$ 2,550,163**	**$ -**	**$ -**	**$ 2,550,163**	**$ 8,525,932**	**$ 5,975,768**	**3.34**
Low-Income New Construction	$ 16,138	$ -	$ -	$ 16,138	$ 141,483	$ 125,344	8.77
Low-Income Single Family Retrofit	$ 2,194,617	$ -	$ -	$ 2,194,617	$ 7,828,048	$ 5,633,432	3.57
Low-Income Multi-Family Retrofit	$ 339,409	$ -	$ -	$ 339,409	$ 556,401	$ 216,992	1.64
5. Low-Income Hard-to-Measure	**$ 60,528**	**$ -**	**$ -**	**$ 60,528**	**$ -**	**$ (60,528)**	**-**
Commercial & Industrial	$ 14,527,137	$ -	$ 1,759,213	$ 16,286,350	$ 51,024,323	$ 34,737,973	3.13
6. C&I New Construction	**$ 2,742,601**	**$ -**	**$ 546,777**	**$ 3,289,378**	**$ 19,949,824**	**$ 16,660,447**	**6.06**
C&I New Construction	$ 2,742,601	$ -	$ 546,777	$ 3,289,378	$ 19,949,824	$ 16,660,447	6.06
7. C&I Retrofit	**$ 11,631,098**	**$ -**	**$ 1,212,436**	**$ 12,843,534**	**$ 31,074,499**	**$ 18,230,965**	**2.42**
C&I Retrofit	$ 6,788,093	$ -	$ 762,895	$ 7,550,988	$ 16,133,820	$ 8,582,833	2.14
C&I Direct Install	$ 4,843,005	$ -	$ 449,542	$ 5,292,546	$ 14,940,678	$ 9,648,132	2.82
8. C&I Hard-to-Measure	**$ 153,439**	**$ -**	**$ -**	**$ 153,439**	**$ -**	**$ (153,439)**	**-**
2015							
Planned	**$ 26,233,983**	**$ -**	**$ 3,839,652**	**$ 30,073,636**	**$ 125,088,667**	**$ 95,015,031**	**4.16**
Residential	$ 14,553,036	$ -	$ 2,895,427	$ 17,448,464	$ 75,585,299	$ 58,136,836	4.33
1. Residential Whole House	**$ 10,932,275**	**$ -**	**$ 1,610,165**	**$ 12,542,439**	**$ 64,144,841**	**$ 51,602,402**	**5.11**
Residential New Construction & Major Renoval	$ 520,301	$ -	$ 203,527	$ 723,827	$ 942,705	$ 218,878	1.30
Residential Multi-Family Retrofit	$ 604,636	$ -	$ -	$ 604,636	$ 5,567,921	$ 4,963,284	9.21
Residential Home Energy Services	$ 9,744,860	$ -	$ 1,406,638	$ 11,151,498	$ 57,566,766	$ 46,415,268	5.16
Residential Behavior/Feedback Program	$ 62,478	$ -	$ -	$ 62,478	$ 67,450	$ 4,972	1.08
2. Residential Products	**$ 2,846,704**	**$ -**	**$ 1,285,263**	**$ 4,131,966**	**$ 11,440,458**	**$ 7,308,491**	**2.77**
Residential Cooling & Heating Equipment	$ 875,894	$ -	$ 578,471	$ 1,454,365	$ 1,987,924	$ 533,559	1.37
Residential Lighting	$ 1,493,260	$ -	$ 526,315	$ 2,019,575	$ 7,656,943	$ 5,637,368	3.79
Residential Consumer Products	$ 477,550	$ -	$ 180,476	$ 658,027	$ 1,795,591	$ 1,137,564	2.73
3. Residential Hard-to-Measure	**$ 774,058**	**$ -**	**$ -**	**$ 774,058**	**$ -**	**$ (774,058)**	**-**
Low-Income	$ 3,603,978	$ -	$ 557	$ 3,604,535	$ 12,360,221	$ 8,755,686	3.43
4. Low-Income Whole House	**$ 3,496,983**	**$ -**	**$ 557**	**$ 3,497,539**	**$ 12,360,221**	**$ 8,862,681**	**3.53**
Low-Income New Construction	$ 52,915	$ -	$ -	$ 52,915	$ 376,458	$ 323,543	7.11
Low-Income Single Family Retrofit	$ 2,957,567	$ -	$ -	$ 2,957,567	$ 10,469,329	$ 7,511,762	3.54
Low-Income Multi-Family Retrofit	$ 486,500	$ -	$ 557	$ 487,057	$ 1,514,434	$ 1,027,377	3.11
5. Low-Income Hard-to-Measure	**$ 106,995**	**$ -**	**$ -**	**$ 106,995**	**$ -**	**$ (106,995)**	**-**
Commercial & Industrial	$ 8,076,969	$ -	$ 943,669	$ 9,020,637	$ 37,143,147	$ 28,122,509	4.12
6. C&I New Construction	**$ 1,810,401**	**$ -**	**$ 125,070**	**$ 1,935,471**	**$ 11,750,445**	**$ 9,814,974**	**6.07**
C&I New Construction	$ 1,810,401	$ -	$ 125,070	$ 1,935,471	$ 11,750,445	$ 9,814,974	6.07
7. C&I Retrofit	**$ 6,145,760**	**$ -**	**$ 818,598**	**$ 6,964,358**	**$ 25,392,702**	**$ 18,428,343**	**3.65**
C&I Retrofit	$ 2,330,336	$ -	$ 363,422	$ 2,693,758	$ 12,551,862	$ 9,858,104	4.66
C&I Direct Install	$ 3,815,424	$ -	$ 455,176	$ 4,270,600	$ 12,840,840	$ 8,570,239	3.01
8. C&I Hard-to-Measure	**$ 120,808**	**$ -**	**$ -**	**$ 120,808**	**$ -**	**$ (120,808)**	**-**

Cost-Effectiveness for the Three-Year Term (2013$)

Cost-Effectiveness Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

Cost-Effectiveness for the Three-Year Term (2013$): Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	Sum of Total Program Costs (2013$)	Sum of Performance Incentive (2013$)	Sum of Participant Costs (2013$)	Sum of Total Resource Costs (2013$)	Sum of Total Benefits	Sum of Total Net Benefits	Sum of Benefit Cost Ratio
Total Cost-Effectiveness	**$ 87,635,844**	**$ -**	**$ 16,008,046**	**$ 103,643,890**	**$ 371,412,431**	**$ 267,768,540**	**3.58**
Residential	**$ 49,394,776**	**$ -**	**$ 11,238,717**	**$ 60,633,493**	**$ 221,125,009**	**$ 160,491,516**	**3.65**
1. Residential Whole House	**$ 38,504,033**	**$ -**	**$ 7,114,279**	**$ 45,618,312**	**$ 188,798,373**	**$ 143,180,061**	**4.14**
Residential New Construction & Major Renovation	$ 1,151,101	$ -	$ 462,903	$ 1,614,004	$ 4,609,909	$ 2,995,906	2.86
Residential Multi-Family Retrofit	$ 1,444,320	$ -	$ -	$ 1,444,320	$ 8,314,493	$ 6,870,174	5.76
Residential Home Energy Services	$ 35,639,587	$ -	$ 6,651,376	$ 42,290,963	$ 175,806,520	$ 133,515,557	4.16
Residential Behavior/Feedback Program	$ 269,026	$ -	$ -	$ 269,026	$ 67,450	$ (201,576)	0.25
2. Residential Products	**$ 7,960,831**	**$ -**	**$ 4,124,438**	**$ 12,085,269**	**$ 32,326,636**	**$ 20,241,367**	**2.67**
Residential Cooling & Heating Equipment	$ 2,929,920	$ -	$ 1,595,813	$ 4,525,733	$ 6,812,657	$ 2,286,924	1.51
Residential Lighting	$ 3,845,884	$ -	$ 2,230,601	$ 6,076,485	$ 21,929,083	$ 15,852,597	3.61
Residential Consumer Products	$ 1,185,027	$ -	$ 298,023	$ 1,483,050	$ 3,584,896	$ 2,101,846	2.42
3. Residential Hard-to-Measure	**$ 2,929,912**	**$ -**	**$ -**	**$ 2,929,912**	**$ -**		
Low-Income	**$ 8,927,895**	**$ -**	**$ 60,471**	**$ 8,988,367**	**$ 31,294,071**	**$ 22,305,704**	**3.48**
4. Low-Income Whole House	**$ 8,697,046**	**$ -**	**$ 60,471**	**$ 8,757,517**	**$ 31,294,071**	**$ 22,536,554**	**3.57**
Low-Income New Construction	$ 119,070	$ -	$ 59,915	$ 178,984	$ 1,897,948	$ 1,718,964	10.60
Low-Income Single Family Retrofit	$ 7,340,772	$ -	$ -	$ 7,340,772	$ 26,150,320	$ 18,809,549	3.56
Low-Income Multi-Family Retrofit	$ 1,237,205	$ -	$ 557	$ 1,237,762	$ 3,245,802	$ 2,008,040	2.62
5. Low-Income Hard-to-Measure	**$ 230,849**	**$ -**	**$ -**	**$ 230,849**	**$ -**		
Commercial & Industrial	**$ 29,313,172**	**$ -**	**$ 4,708,858**	**$ 34,022,031**	**$ 118,993,351**	**$ 84,971,320**	**3.50**
6. C&I New Construction	**$ 6,593,100**	**$ -**	**$ 1,408,540**	**$ 8,001,640**	**$ 45,652,753**	**$ 37,651,113**	**5.71**
C&I New Construction	$ 6,593,100	$ -	$ 1,408,540	$ 8,001,640	$ 45,652,753	$ 37,651,113	5.71
7. C&I Retrofit	**$ 22,281,451**	**$ -**	**$ 3,300,318**	**$ 25,581,769**	**$ 73,340,598**	**$ 47,758,829**	**2.87**
C&I Retrofit	$ 10,475,638	$ -	$ 1,965,588	$ 12,441,226	$ 34,858,466	$ 22,417,241	2.80
C&I Direct Install	$ 11,805,813	$ -	$ 1,334,731	$ 13,140,543	$ 38,482,132	$ 25,341,588	2.93
8. C&I Hard-to-Measure	**$ 438,622**	**$ -**	**$ -**	**$ 438,622**	**$ -**		

Residential Whole House Program Detail: Plan-Year Analysis (2013$)

Core Initiative Table 1

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014
Initiative	**Residential New Construction & Major Renovation**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	281	472	482	68%	71%	2%
Sum of Energy (Lifetime MWh)	3,508	8,350	8,370	138%	139%	0%
Sum of Total Benefits	$ 965,410	$ 2,024,946	$ 2,041,658	110%	111%	1%
Sum of Total Program Costs (2013$)	$ 499,778	$ 378,197	$ 378,197	-24%	-24%	0%
Sum of Total Resource Costs (2013$)	$ 653,309	$ 551,789	$ 551,789	-16%	-16%	0%
Sum of Benefit Cost Ratio	1.48	3.67	3.70	148%	150%	1%

Initiative	**Residential Multi-Family Retrofit**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	1,236	548	545	-56%	-56%	0%
Sum of Energy (Lifetime MWh)	21,111	7,376	7,335	-65%	-65%	-1%
Sum of Total Benefits	$ 5,546,329	$ 2,004,321	$ 1,992,285	-64%	-64%	-1%
Sum of Total Program Costs (2013$)	$ 618,828	$ 505,747	$ 505,747	-18%	-18%	0%
Sum of Total Resource Costs (2013$)	$ 618,828	$ 505,747	$ 505,747	-18%	-18%	0%
Sum of Benefit Cost Ratio	8.96	3.96	3.94	-56%	-56%	-1%

Initiative	**Residential Home Energy Services**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	3,764	5,152	6,181	37%	64%	20%
Sum of Energy (Lifetime MWh)	44,718	54,384	54,138	22%	21%	0%
Sum of Total Benefits	$ 52,523,995	$ 63,342,062	$ 63,770,364	21%	21%	1%
Sum of Total Program Costs (2013$)	$ 9,211,543	$ 13,668,719	$ 13,668,719	48%	48%	0%
Sum of Total Resource Costs (2013$)	$ 10,547,913	$ 16,928,462	$ 16,928,462	60%	60%	0%
Sum of Benefit Cost Ratio	4.98	3.74	3.77	-25%	-24%	1%

Initiative	**Residential Behavior/Feedback Program**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	444	-	-	-100%	-100%	0%
Sum of Energy (Lifetime MWh)	444	-	-	-100%	-100%	0%
Sum of Total Benefits	$ 43,608	$ -	$ -	-100%	-100%	0%
Sum of Total Program Costs (2013$)	$ 42,810	$ 206,548	$ 206,548	382%	382%	0%
Sum of Total Resource Costs (2013$)	$ 42,810	$ 206,548	$ 206,548	382%	382%	0%
Sum of Benefit Cost Ratio	1.02			-100%	-100%	0%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Residential Products Program Detail: Plan-Year Analysis (2013$)

Core Initiative Table 2

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014
Initiative	**Residential Cooling & Heating Equipment**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	834	1,108	1,158	33%	39%	4%
Sum of Energy (Lifetime MWh)	11,133	17,658	18,356	59%	65%	4%
Sum of Total Benefits	$ 1,715,737	$ 2,504,990	$ 2,430,676	46%	42%	-3%
Sum of Total Program Costs (2013$)	$ 739,521	$ 1,041,619	$ 1,041,619	41%	41%	0%
Sum of Total Resource Costs (2013$)	$ 1,253,661	$ 1,604,462	$ 1,604,462	28%	28%	0%
Sum of Benefit Cost Ratio	1.37	1.56	1.51	14%	11%	-3%

Initiative	**Residential Lighting**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	8,178	5,931	6,601	-27%	-19%	11%
Sum of Energy (Lifetime MWh)	55,977	59,541	59,814	6%	7%	0%
Sum of Total Benefits	$ 7,451,930	$ 7,670,295	$ 8,380,247	3%	12%	9%
Sum of Total Program Costs (2013$)	$ 1,464,195	$ 1,360,889	$ 1,360,889	-7%	-7%	0%
Sum of Total Resource Costs (2013$)	$ 1,815,265	$ 3,065,175	$ 3,065,175	69%	69%	0%
Sum of Benefit Cost Ratio	4.11	2.50	2.73	-39%	-33%	9%

Initiative	**Residential Consumer Products**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	1,722	813	669	-53%	-61%	-18%
Sum of Energy (Lifetime MWh)	14,216	6,581	5,870	-54%	-59%	-11%
Sum of Total Benefits	$ 1,827,150	$ 997,736	$ 880,450	-45%	-52%	-12%
Sum of Total Program Costs (2013$)	$ 489,576	$ 376,751	$ 376,751	-23%	-23%	0%
Sum of Total Resource Costs (2013$)	$ 681,296	$ 494,298	$ 494,298	-27%	-27%	0%
Sum of Benefit Cost Ratio	2.68	2.02	1.78	-25%	-34%	-12%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Low-Income Whole House Program Detail: Plan-Year Analysis (2013$)

Core Initiative Table 3

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014
Initiative	**Low-Income New Construction**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	25	25	26	2%	4%	2%
Sum of Energy (Lifetime MWh)	354	485	486	37%	37%	0%
Sum of Total Benefits	$ 430,668	$ 140,680	$ 141,483	-67%	-67%	1%
Sum of Total Program Costs (2013$)	$ 54,977	$ 16,138	$ 16,138	-71%	-71%	0%
Sum of Total Resource Costs (2013$)	$ 54,977	$ 16,138	$ 16,138	-71%	-71%	0%
Sum of Benefit Cost Ratio	7.83	8.72	8.77	11%	12%	1%

Initiative	**Low-Income Single Family Retrofit**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	1,012	1,270	1,544	25%	53%	22%
Sum of Energy (Lifetime MWh)	9,642	11,693	13,662	21%	42%	17%
Sum of Total Benefits	$ 7,846,061	$ 7,462,370	$ 7,828,048	-5%	0%	5%
Sum of Total Program Costs (2013$)	$ 2,418,096	$ 2,194,617	$ 2,194,617	-9%	-9%	0%
Sum of Total Resource Costs (2013$)	$ 2,418,096	$ 2,194,617	$ 2,194,617	-9%	-9%	0%
Sum of Benefit Cost Ratio	3.24	3.40	3.57	5%	10%	5%

Initiative	**Low-Income Multi-Family Retrofit**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	437	312	358	-29%	-18%	15%
Sum of Energy (Lifetime MWh)	2,307	3,112	3,546	35%	54%	14%
Sum of Total Benefits	$ 1,581,257	$ 477,160	$ 556,401	-70%	-65%	17%
Sum of Total Program Costs (2013$)	$ 496,772	$ 339,409	$ 339,409	-32%	-32%	0%
Sum of Total Resource Costs (2013$)	$ 497,283	$ 339,409	$ 339,409	-32%	-32%	0%
Sum of Benefit Cost Ratio	3.18	1.41	1.64	-56%	-48%	17%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

C&I Programs Detail: Plan-Year Analysis (2013$)

Core Initiative Table 4

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014
Initiative	**C&I New Construction**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	6,748	16,728	17,274	148%	156%	3%
Sum of Energy (Lifetime MWh)	77,419	175,060	140,239	126%	81%	-20%
Sum of Total Benefits	$ 12,418,626	$ 26,449,539	$ 19,949,824	113%	61%	-25%
Sum of Total Program Costs (2013$)	$ 1,955,144	$ 2,742,601	$ 2,742,601	40%	40%	0%
Sum of Total Resource Costs (2013$)	$ 2,095,979	$ 3,289,378	$ 3,289,378	57%	57%	0%
Sum of Benefit Cost Ratio	5.92	8.04	6.06	36%	2%	-25%

Initiative	**C&I Retrofit**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	6,154	9,242	9,274	50%	51%	0%
Sum of Energy (Lifetime MWh)	67,326	102,927	103,785	53%	54%	1%
Sum of Total Benefits	$ 12,558,371	$ 16,225,869	$ 16,133,820	29%	28%	-1%
Sum of Total Program Costs (2013$)	$ 2,377,581	$ 6,788,093	$ 6,788,093	186%	186%	0%
Sum of Total Resource Costs (2013$)	$ 2,751,106	$ 7,550,988	$ 7,550,988	174%	174%	0%
Sum of Benefit Cost Ratio	4.56	2.15	2.14	-53%	-53%	-1%

Initiative	**C&I Direct Install**

	Planned	Preliminary	Evaluated	Plan v Preliminary	Plan v Evaluated	Preliminary v Evaluated
Sum of Energy (annual MWh)	7,544	6,304	6,279	-16%	-17%	0%
Sum of Energy (Lifetime MWh)	75,770	79,023	78,699	4%	4%	0%
Sum of Total Benefits	$ 12,930,389	$ 14,932,161	$ 14,940,678	15%	16%	0%
Sum of Total Program Costs (2013$)	$ 3,900,873	$ 4,843,005	$ 4,843,005	24%	24%	0%
Sum of Total Resource Costs (2013$)	$ 4,368,703	$ 5,292,546	$ 5,292,546	21%	21%	0%
Sum of Benefit Cost Ratio	2.96	2.82	2.82	-5%	-5%	0%

The Plan-Year variances provided above are intended to indicate the Program Administrator's performance in the Plan-Year only. The variances used to determine significant variances are provided later in this report. The variances above and the significant variances use different calculations to determine variances on an annual basis and over the three-year term, respectively.

Residential Whole House Program Detail: Three-Year Analysis (2013$)

Core Initiative Table 5

Date of Filing		June 5, 2015
Distribution Company		Electric
Program Administrator		CLC
Initiative		**Residential New Construction & Major Renovation**
2013		
Evaluated		
Sum of Energy (annual MWh)		337
Sum of Energy (Lifetime MWh)		4,378
Sum of Total Benefits	$	1,625,546
Sum of Total Program Costs (2013$)		252,603
Sum of Total Resource Costs (2013$)		338,388
Sum of Benefit Cost Ratio		4.80
2014		
Evaluated		
Sum of Energy (annual MWh)		482
Sum of Energy (Lifetime MWh)		8,370
Sum of Total Benefits	$	2,041,658
Sum of Total Program Costs (2013$)		378,197
Sum of Total Resource Costs (2013$)		551,789
Sum of Benefit Cost Ratio		3.70
2015		
Planned		
Sum of Energy (annual MWh)		231
Sum of Energy (Lifetime MWh)		3,069
Sum of Total Benefits	$	942,705
Sum of Total Program Costs (2013$)	$	520,301
Sum of Total Resource Costs (2013$)	$	723,827
Sum of Benefit Cost Ratio		1.30
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan		**Residential New Construction & Major Renovation**
Sum of Energy (annual MWh)		1,050
Sum of Energy (Lifetime MWh)		15,817
Sum of Total Benefits	$	4,609,909
Sum of Total Program Costs (2013$)	$	1,151,101
Sum of Total Resource Costs (2013$)	$	1,614,004
Sum of Benefit Cost Ratio		2.86

Date of Filing		June 5, 2015
Distribution Company		Electric
Program Administrator		CLC
Initiative		**Residential Multi-Family Retrofit**
2013		
Evaluated		
Sum of Energy (annual MWh)		284
Sum of Energy (Lifetime MWh)		4,718
Sum of Total Benefits	$	754,288
Sum of Total Program Costs (2013$)		333,936
Sum of Total Resource Costs (2013$)		333,936
Sum of Benefit Cost Ratio		2.26
2014		
Evaluated		
Sum of Energy (annual MWh)		545
Sum of Energy (Lifetime MWh)		7,335
Sum of Total Benefits	$	1,992,285
Sum of Total Program Costs (2013$)		505,747
Sum of Total Resource Costs (2013$)		505,747
Sum of Benefit Cost Ratio		3.94
2015		
Planned		
Sum of Energy (annual MWh)		1,250
Sum of Energy (Lifetime MWh)		21,197
Sum of Total Benefits	$	5,567,921
Sum of Total Program Costs (2013$)	$	604,636
Sum of Total Resource Costs (2013$)	$	604,636
Sum of Benefit Cost Ratio		9.21
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan		**Residential Multi-Family Retrofit**
Sum of Energy (annual MWh)		2,079
Sum of Energy (Lifetime MWh)		33,250
Sum of Total Benefits	$	8,314,493
Sum of Total Program Costs (2013$)	$	1,444,320
Sum of Total Resource Costs (2013$)	$	1,444,320
Sum of Benefit Cost Ratio		5.76

Residential Whole House Program Detail: Three-Year Analysis (2013$)

Core Initiative Table 5

Date of Filing		June 5, 2015
Distribution Company		Electric
Program Administrator		CLC
Initiative		**Residential Home Energy Services**
2013		
Evaluated		
Sum of Energy (annual MWh)		5,271
Sum of Energy (Lifetime MWh)		43,300
Sum of Total Benefits	$	54,469,390
Sum of Total Program Costs (2013$)		12,226,008
Sum of Total Resource Costs (2013$)		14,211,003
Sum of Benefit Cost Ratio		3.83
2014		
Evaluated		
Sum of Energy (annual MWh)		6,181
Sum of Energy (Lifetime MWh)		54,138
Sum of Total Benefits	$	63,770,364
Sum of Total Program Costs (2013$)		13,668,719
Sum of Total Resource Costs (2013$)		16,928,462
Sum of Benefit Cost Ratio		3.77
2015		
Planned		
Sum of Energy (annual MWh)		3,757
Sum of Energy (Lifetime MWh)		47,326
Sum of Total Benefits	$	57,566,766
Sum of Total Program Costs (2013$)	$	9,744,860
Sum of Total Resource Costs (2013$)	$	11,151,498
Sum of Benefit Cost Ratio		5.16
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan		**Residential Home Energy Services**
Sum of Energy (annual MWh)		15,208
Sum of Energy (Lifetime MWh)		144,763
Sum of Total Benefits	$	175,806,520
Sum of Total Program Costs (2013$)	$	35,639,587
Sum of Total Resource Costs (2013$)	$	42,290,963
Sum of Benefit Cost Ratio		4.16

Date of Filing		June 5, 2015
Distribution Company		Electric
Program Administrator		CLC
Initiative		**Residential Behavior/Feedback Program**
2013		
Evaluated		
Sum of Energy (annual MWh)		-
Sum of Energy (Lifetime MWh)		-
Sum of Total Benefits	$	-
Sum of Total Program Costs (2013$)		-
Sum of Total Resource Costs (2013$)		-
Sum of Benefit Cost Ratio		
2014		
Evaluated		
Sum of Energy (annual MWh)		-
Sum of Energy (Lifetime MWh)		-
Sum of Total Benefits	$	-
Sum of Total Program Costs (2013$)		206,548
Sum of Total Resource Costs (2013$)		206,548
Sum of Benefit Cost Ratio		-
2015		
Planned		
Sum of Energy (annual MWh)		699
Sum of Energy (Lifetime MWh)		699
Sum of Total Benefits	$	67,450
Sum of Total Program Costs (2013$)	$	62,478
Sum of Total Resource Costs (2013$)	$	62,478
Sum of Benefit Cost Ratio		1.08
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan		**Residential Behavior/Feedback Program**
Sum of Energy (annual MWh)		699
Sum of Energy (Lifetime MWh)		699
Sum of Total Benefits	$	67,450
Sum of Total Program Costs (2013$)	$	269,026
Sum of Total Resource Costs (2013$)	$	269,026
Sum of Benefit Cost Ratio		0.25

Residential Products Program Detail: Three-Year Analysis (2013$)

Core Initiative Table 6

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Residential Cooling & Heating Equipment**	
2013		
Evaluated		
Sum of Energy (annual MWh)		1,091
Sum of Energy (Lifetime MWh)		16,811
Sum of Total Benefits	$	2,394,057
Sum of Total Program Costs (2013$)		1,012,407
Sum of Total Resource Costs (2013$)		1,466,906
Sum of Benefit Cost Ratio		1.63
2014		
Evaluated		
Sum of Energy (annual MWh)		1,158
Sum of Energy (Lifetime MWh)		18,356
Sum of Total Benefits	$	2,430,676
Sum of Total Program Costs (2013$)		1,041,619
Sum of Total Resource Costs (2013$)		1,604,462
Sum of Benefit Cost Ratio		1.51
2015		
Planned		
Sum of Energy (annual MWh)		942
Sum of Energy (Lifetime MWh)		12,326
Sum of Total Benefits	$	1,987,924
Sum of Total Program Costs (2013$)	$	875,894
Sum of Total Resource Costs (2013$)	$	1,454,365
Sum of Benefit Cost Ratio		1.37
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Residential Cooling & Heating Equipment**	
Sum of Energy (annual MWh)		3,191
Sum of Energy (Lifetime MWh)		47,493
Sum of Total Benefits	$	6,812,657
Sum of Total Program Costs (2013$)	$	2,929,920
Sum of Total Resource Costs (2013$)	$	4,525,733
Sum of Benefit Cost Ratio		1.51

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Residential Lighting**	
2013		
Evaluated		
Sum of Energy (annual MWh)		5,349
Sum of Energy (Lifetime MWh)		40,099
Sum of Total Benefits	$	5,891,893
Sum of Total Program Costs (2013$)		991,735
Sum of Total Resource Costs (2013$)		991,735
Sum of Benefit Cost Ratio		5.94
2014		
Evaluated		
Sum of Energy (annual MWh)		6,601
Sum of Energy (Lifetime MWh)		59,814
Sum of Total Benefits	$	8,380,247
Sum of Total Program Costs (2013$)		1,360,889
Sum of Total Resource Costs (2013$)		3,065,175
Sum of Benefit Cost Ratio		2.73
2015		
Planned		
Sum of Energy (annual MWh)		8,113
Sum of Energy (Lifetime MWh)		57,629
Sum of Total Benefits	$	7,656,943
Sum of Total Program Costs (2013$)	$	1,493,260
Sum of Total Resource Costs (2013$)	$	2,019,575
Sum of Benefit Cost Ratio		3.79
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Residential Lighting**	
Sum of Energy (annual MWh)		20,063
Sum of Energy (Lifetime MWh)		157,542
Sum of Total Benefits	$	21,929,083
Sum of Total Program Costs (2013$)	$	3,845,884
Sum of Total Resource Costs (2013$)	$	6,076,485
Sum of Benefit Cost Ratio		3.61

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Residential Consumer Products**	
2013		
Evaluated		
Sum of Energy (annual MWh)		827
Sum of Energy (Lifetime MWh)		6,584
Sum of Total Benefits	$	908,855
Sum of Total Program Costs (2013$)		330,725
Sum of Total Resource Costs (2013$)		330,725
Sum of Benefit Cost Ratio		2.75
2014		
Evaluated		
Sum of Energy (annual MWh)		669
Sum of Energy (Lifetime MWh)		5,870
Sum of Total Benefits	$	880,450
Sum of Total Program Costs (2013$)		376,751
Sum of Total Resource Costs (2013$)		494,298
Sum of Benefit Cost Ratio		1.78
2015		
Planned		
Sum of Energy (annual MWh)		1,705
Sum of Energy (Lifetime MWh)		13,980
Sum of Total Benefits	$	1,795,591
Sum of Total Program Costs (2013$)	$	477,550
Sum of Total Resource Costs (2013$)	$	658,027
Sum of Benefit Cost Ratio		2.73
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Residential Consumer Products**	
Sum of Energy (annual MWh)		3,200
Sum of Energy (Lifetime MWh)		26,435
Sum of Total Benefits	$	3,584,896
Sum of Total Program Costs (2013$)	$	1,185,027
Sum of Total Resource Costs (2013$)	$	1,483,050
Sum of Benefit Cost Ratio		2.42

Low-Income Whole House Program Detail: Three-Year Analysis (2013$)

Core Initiative Table 7

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Low-Income New Construction**	
2013		
Evaluated		
Sum of Energy (annual MWh)		110
Sum of Energy (Lifetime MWh)		1,527
Sum of Total Benefits	$	1,380,007
Sum of Total Program Costs (2013$)		50,016
Sum of Total Resource Costs (2013$)		109,930
Sum of Benefit Cost Ratio		12.55
2014		
Evaluated		
Sum of Energy (annual MWh)		26
Sum of Energy (Lifetime MWh)		486
Sum of Total Benefits	$	141,483
Sum of Total Program Costs (2013$)		16,138
Sum of Total Resource Costs (2013$)		16,138
Sum of Benefit Cost Ratio		8.77
2015		
Planned		
Sum of Energy (annual MWh)		21
Sum of Energy (Lifetime MWh)		292
Sum of Total Benefits	$	376,458
Sum of Total Program Costs (2013$)	$	52,915
Sum of Total Resource Costs (2013$)	$	52,915
Sum of Benefit Cost Ratio		7.11
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Low-Income New Construction**	
Sum of Energy (annual MWh)		157
Sum of Energy (Lifetime MWh)		2,305
Sum of Total Benefits	$	1,897,948
Sum of Total Program Costs (2013$)	$	119,070
Sum of Total Resource Costs (2013$)	$	178,984
Sum of Benefit Cost Ratio		10.60

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Low-Income Single Family Retrofit**	
2013		
Evaluated		
Sum of Energy (annual MWh)		1,349
Sum of Energy (Lifetime MWh)		12,065
Sum of Total Benefits	$	7,852,944
Sum of Total Program Costs (2013$)		2,188,588
Sum of Total Resource Costs (2013$)		2,188,588
Sum of Benefit Cost Ratio		3.59
2014		
Evaluated		
Sum of Energy (annual MWh)		1,544
Sum of Energy (Lifetime MWh)		13,662
Sum of Total Benefits	$	7,828,048
Sum of Total Program Costs (2013$)		2,194,617
Sum of Total Resource Costs (2013$)		2,194,617
Sum of Benefit Cost Ratio		3.57
2015		
Planned		
Sum of Energy (annual MWh)		1,171
Sum of Energy (Lifetime MWh)		11,615
Sum of Total Benefits	$	10,469,329
Sum of Total Program Costs (2013$)	$	2,957,567
Sum of Total Resource Costs (2013$)	$	2,957,567
Sum of Benefit Cost Ratio		3.54
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Low-Income Single Family Retrofit**	
Sum of Energy (annual MWh)		4,063
Sum of Energy (Lifetime MWh)		37,342
Sum of Total Benefits	$	26,150,320
Sum of Total Program Costs (2013$)	$	7,340,772
Sum of Total Resource Costs (2013$)	$	7,340,772
Sum of Benefit Cost Ratio		3.56

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**Low-Income Multi-Family Retrofit**	
2013		
Evaluated		
Sum of Energy (annual MWh)		369
Sum of Energy (Lifetime MWh)		3,645
Sum of Total Benefits	$	1,174,968
Sum of Total Program Costs (2013$)		411,296
Sum of Total Resource Costs (2013$)		411,296
Sum of Benefit Cost Ratio		2.86
2014		
Evaluated		
Sum of Energy (annual MWh)		358
Sum of Energy (Lifetime MWh)		3,546
Sum of Total Benefits	$	556,401
Sum of Total Program Costs (2013$)		339,409
Sum of Total Resource Costs (2013$)		339,409
Sum of Benefit Cost Ratio		1.64
2015		
Planned		
Sum of Energy (annual MWh)		455
Sum of Energy (Lifetime MWh)		2,423
Sum of Total Benefits	$	1,514,434
Sum of Total Program Costs (2013$)	$	486,500
Sum of Total Resource Costs (2013$)	$	487,057
Sum of Benefit Cost Ratio		3.11
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Low-Income Multi-Family Retrofit**	
Sum of Energy (annual MWh)		1,181
Sum of Energy (Lifetime MWh)		9,613
Sum of Total Benefits	$	3,245,802
Sum of Total Program Costs (2013$)	$	1,237,205
Sum of Total Resource Costs (2013$)	$	1,237,762
Sum of Benefit Cost Ratio		2.62

C&I New Construction and C&I Retrofit Programs Detail: Three-Year Analysis (2013$)

Core Initiative Table 8

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**C&I New Construction**	
2013		
Evaluated		
Sum of Energy (annual MWh)		7,182
Sum of Energy (Lifetime MWh)		77,739
Sum of Total Benefits	$	13,952,483
Sum of Total Program Costs (2013$)		2,040,098
Sum of Total Resource Costs (2013$)		2,776,791
Sum of Benefit Cost Ratio		5.02
2014		
Evaluated		
Sum of Energy (annual MWh)		17,274
Sum of Energy (Lifetime MWh)		140,239
Sum of Total Benefits	$	19,949,824
Sum of Total Program Costs (2013$)		2,742,601
Sum of Total Resource Costs (2013$)		3,289,378
Sum of Benefit Cost Ratio		6.06
2015		
Planned		
Sum of Energy (annual MWh)		6,235
Sum of Energy (Lifetime MWh)		72,284
Sum of Total Benefits	$	11,750,445
Sum of Total Program Costs (2013$)	$	1,810,401
Sum of Total Resource Costs (2013$)	$	1,935,471
Sum of Benefit Cost Ratio		6.07
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**C&I New Construction**	
Sum of Energy (annual MWh)		30,691
Sum of Energy (Lifetime MWh)		290,262
Sum of Total Benefits	$	45,652,753
Sum of Total Program Costs (2013$)	$	6,593,100
Sum of Total Resource Costs (2013$)	$	8,001,640
Sum of Benefit Cost Ratio		5.71

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**C&I Retrofit**	
2013		
Evaluated		
Sum of Energy (annual MWh)		2,140
Sum of Energy (Lifetime MWh)		28,267
Sum of Total Benefits	$	6,172,784
Sum of Total Program Costs (2013$)		1,357,209
Sum of Total Resource Costs (2013$)		2,196,480
Sum of Benefit Cost Ratio		2.81
2014		
Evaluated		
Sum of Energy (annual MWh)		9,274
Sum of Energy (Lifetime MWh)		103,785
Sum of Total Benefits	$	16,133,820
Sum of Total Program Costs (2013$)		6,788,093
Sum of Total Resource Costs (2013$)		7,550,988
Sum of Benefit Cost Ratio		2.14
2015		
Planned		
Sum of Energy (annual MWh)		6,154
Sum of Energy (Lifetime MWh)		67,240
Sum of Total Benefits	$	12,551,862
Sum of Total Program Costs (2013$)	$	2,330,336
Sum of Total Resource Costs (2013$)	$	2,693,758
Sum of Benefit Cost Ratio		4.66
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**C&I Retrofit**	
Sum of Energy (annual MWh)		17,569
Sum of Energy (Lifetime MWh)		199,292
Sum of Total Benefits	$	34,858,466
Sum of Total Program Costs (2013$)	$	10,475,638
Sum of Total Resource Costs (2013$)	$	12,441,226
Sum of Benefit Cost Ratio		2.80

Date of Filing	June 5, 2015	
Distribution Company	Electric	
Program Administrator	CLC	
Initiative	**C&I Direct Install**	
2013		
Evaluated		
Sum of Energy (annual MWh)		4,317
Sum of Energy (Lifetime MWh)		53,988
Sum of Total Benefits	$	10,700,614
Sum of Total Program Costs (2013$)		3,147,384
Sum of Total Resource Costs (2013$)		3,577,397
Sum of Benefit Cost Ratio		2.99
2014		
Evaluated		
Sum of Energy (annual MWh)		6,279
Sum of Energy (Lifetime MWh)		78,699
Sum of Total Benefits	$	14,940,678
Sum of Total Program Costs (2013$)		4,843,005
Sum of Total Resource Costs (2013$)		5,292,546
Sum of Benefit Cost Ratio		2.82
2015		
Planned		
Sum of Energy (annual MWh)		7,544
Sum of Energy (Lifetime MWh)		75,185
Sum of Total Benefits	$	12,840,840
Sum of Total Program Costs (2013$)	$	3,815,424
Sum of Total Resource Costs (2013$)	$	4,270,600
Sum of Benefit Cost Ratio		3.01
Three-Year Total		
Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**C&I Direct Install**	
Sum of Energy (annual MWh)		18,140
Sum of Energy (Lifetime MWh)		207,872
Sum of Total Benefits	$	38,482,132
Sum of Total Program Costs (2013$)	$	11,805,813
Sum of Total Resource Costs (2013$)	$	13,140,543
Sum of Benefit Cost Ratio		2.93

Greenhouse Gas Emission Reductions: Plan-Year Analysis

GHG Table 1

GHG reductions are provided for information purposes only. They are not included in the TRC test.

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC
Year	2014

				Annual Emissions Reductions (Short Tons)		
	Sum of Energy (Annual MWh)	**Sum of Annual Avoided Natural Gas, Therms**	**Sum of Annual Oil (MMBTU)**	**NO_X**	**SO_2**	**CO_2**
Planned	**38,379**	**89,501**	**39,939**	**7.4**	**6.6**	**18,809**
Residential	16,458	137,391	29,876	3.2	2.8	9,674
Low-Income	1,474	16	8,365	0.3	0.3	1,254
Commercial & Industrial	20,447	(47,907)	1,698	4.0	3.5	7,882
Evaluated	**50,389**	**214,559**	**31,716**	**9.8**	**8.7**	**23,591**
Residential	15,635	308,771	37,169	3.0	2.7	10,942
Low-Income	1,928	4	5,883	0.4	0.3	1,231
Commercial & Industrial	32,827	(94,217)	(11,336)	6.4	5.6	11,418

				Annual Emissions Reductions (Short Tons)		
Planned v Evaluated: (Eval - Plan) / Plan	**Sum of Energy (Annual MWh)**	**Sum of Annual Avoided Natural Gas, Therms**	**Sum of Annual Oil (MMBTU)**	**NO_X**	**SO_2**	**CO_2**
2013-2015 Total	**31%**	**140%**	**-21%**	**31%**	**31%**	**25%**
Residential	-5%	125%	24%	-5%	-5%	13%
Low-Income	31%	-75%	-30%	31%	31%	-2%
Commercial & Industrial	61%	97%	-767%	61%	61%	45%

Please note that the PAs are working with DEP to try to determine the best method for properly and precisely capturing the full impact of energy efficiency measures on GHG emissions. As part of this process, the PAs have included this additional table on Emissions Reductions, based on continuing discussions with the DEP. These reductions are calculated using factors proposed by DEP, which are based on annual gas, oil, and electric savings. The PAs look forward to discussing these proposed factors with DEP and are committed to ensuring that the full impact of energy efficiency measures on GHG emissions are captured.

Greenhouse Gas Emission Reductions for the Three-Year Term

GHG Table 2

GHG reductions are provided for information purposes only. They are not included in the TRC test.

Date of Filing	June 5, 2015
Distribution Company	Electric
Program Administrator	CLC

				Annual Emissions Reductions (Short Tons)		
	Sum of Energy (Annual MWh)	**Sum of Annual Avoided Natural Gas, Therms**	**Sum of Annual Oil (MMBTU)**	**NO_X**	**SO_2**	**CO_2**
2013						
Evaluated	**28,625**	**300,043**	**45,211**	**5.6**	**4.9**	**16,638**
Residential	13,159	260,473	36,140	2.6	2.3	9,605
Low-Income	1,828	11,471	5,897	0.4	0.3	1,260
Commercial & Industrial	13,639	28,100	3,175	2.6	2.3	5,773
2014						
Evaluated	**50,389**	**214,559**	**31,716**	**9.8**	**8.7**	**23,591**
Residential	15,635	308,771	37,169	3.0	2.7	10,942
Low-Income	1,928	4	5,883	0.4	0.3	1,231
Commercial & Industrial	32,827	(94,217)	(11,336)	6.4	5.6	11,418
2015						
Planned	**38,276**	**96,075**	**45,335**	**7.4**	**6.6**	**19,243**
Residential	16,696	142,088	32,738	3.2	2.9	10,026
Low-Income	1,647	20	10,898	0.3	0.3	1,526
Commercial & Industrial	19,934	(46,033)	1,698	3.9	3.4	7,691

				Annual Emissions Reductions (Short Tons)		
Greenhouse Gas Emission Reductions for the Three-Year Term: Year 1 Evaluated + Year 2 Evaluated + Year 3 Plan	**Sum of Energy (Annual MWh)**	**Sum of Annual Avoided Natural Gas, Therms**	**Sum of Annual Oil (MMBTU)**	**NO_X**	**SO_2**	**CO_2**
2013-2015 Total	**117,291**	**610,677**	**122,262**	**23**	**20**	**59,472**
Residential	45,490	711,332	106,047	9	8	30,572
Low-Income	5,402	11,495	22,678	1	1	4,017
Commercial & Industrial	66,399	(112,150)	(6,462)	13	11	24,882

Please note that the PAs are working with DEP to try to determine the best method for properly and precisely capturing the full impact of energy efficiency measures on GHG emissions. As part of this process, the PAs have included this additional table on Emissions Reductions, based on continuing discussions with the DEP. These reductions are calculated using factors proposed by DEP, which are based on annual gas, oil, and electric savings. The PAs look forward to discussing these proposed factors with DEP and are committed to ensuring that the full impact of energy efficiency measures on GHG emissions are captured.

APPENDIX 1
SIGNIFICANT CORE INITIATIVE VARIANCES & COST-EFFECTIVENESS

I. Residential Programs

Residential Whole House

For the Residential Whole House program, the 2014 actual benefit-cost ratio is 3.73, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 4.14.

On April 2, 2015, the Cape Light Compact filed a 2015 Mid-Term Modification ("MTM") to its 2013-2015 Three-Year Plan with the Department. This modification impacted the Compact's Residential Whole House program, as highlighted in the following initiative significant variance explanations. Please refer to D.P.U. 15-38 for more information on the Compact's 2015 MTM.[4]

1. Residential New Construction & Major Renovation

a. Significant Variances

For this initiative across both 2013 and 2014, the actual expenditures were significantly lower than the planned budget. While the initiative was underspent, the three-year goals for both savings and benefits have already been met in the first two years alone.

In 2013, more electrically heated units participated in the initiative, which led to more heating and hot water savings per unit than originally planned. This trend has continued in 2014. As a result, the Compact exceeded the savings and benefits goals at lower-than-expected expenditures. The Cape Light Compact has a history of significant variances between planned and actual costs, savings, and benefits for its Residential New Construction initiative. This is due to the relatively small number of participants and the difficulty in predicting participant decisions in this initiative. There is a wide variation in savings and benefits achieved by home, and the choices made by participants impact the initiative greatly.

The Compact does not plan to make any changes in this initiative's design or implementation. The Compact has already achieved its 2013-2015 three-year savings and benefits goals at a lower cost of saved energy in 2013 and 2014.

b. Program Cost-Effectiveness

For the Residential New Construction & Major Renovation initiative, the 2014 actual benefit-cost ratio is 3.70, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.86.

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[4] The Compact's Residential Hard-to-Measure, C&I New Construction, and C&I Hard-to-Measure programs were also impacted by the 2015 MTM.

2. Residential Multi-Family

a. Significant Variances

For this initiative across both 2013 and 2014, the actual lifetime savings, total benefits, and spending were significantly lower than the planned lifetime savings, total benefits, and budget. The primary reason for the variances is that there were fewer opportunities for weatherization-related measures than planned, because fewer electrically-heated facilities participated as compared to the plan. The Compact planned that over 50% of served facilities would be electrically heated, but only approximately 20% of facilities were electrically heated. Relative to non-weatherization measures, weatherization measures typically provide greater savings and benefits, along with a higher customer incentive. In addition, actual participation across both years has been below planned participation, which contributed to the decreases in spending, savings, and benefits.

In response to the above variances, during plan year 2015, the Compact plans to recruit more units needing weatherization-related measures through increased vendor and staff outreach. The Compact does not believe these variances will affect its ability to achieve its savings, benefits, and budget goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Residential Multi-Family initiative, the 2014 actual benefit-cost ratio is 3.94, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 5.76.

3. Residential Home Energy Services

a. Significant Variances

For this initiative across both 2013 and 2014, the actual expenditures were significantly higher than the planned budget. The Compact spent approximately 45% more than planned on this initiative due to the enhanced incentives for Efficient Neighborhoods +®.[5] In reviewing the methodology for available census block groups for this initiative, it was determined that the Cape Light Compact's census blocks did not enable the Compact to identify and target customers in the desired income categories of 61-100% of state median income. As a result, the Compact's Governing Board chose to allow all towns to participate, but required income verification. The Compact experienced more participation than was originally expected as a result of allowing all towns to participate.

The Compact does not plan to make any changes to the initiative's design or implementation. The Efficient Neighborhoods +® effort for the Cape Light Compact spanned two years, and, as such,

[5] More information on the Efficient Neighborhoods +® is available in the Statewide Three-Year Electric and Gas Energy Efficiency Plan at 171 of 274.

this effort ended in August 2014. In the Compact's 2015 MTM, the three-year budget for this initiative increased by approximately $14 million. The Compact does not believe these variances will affect its ability to achieve its savings and/or benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Residential Home Energy Services initiative, the 2014 actual benefit-cost ratio is 3.77, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 4.16.

4. <u>Residential Behavior/Feedback</u>

a. Significant Variances

For this initiative across both 2013 and 2014, savings and benefits were significantly lower than planned, while costs were significantly higher than planned. In 2013, there were no expenditures, savings, or benefits because the Cape Light Compact issued its request for proposals in 2013 with an official launch to customers towards the end of the third quarter in 2014. Given the timing of the initiative launch, the Compact is not claiming benefits or savings for 2014 as the initiative is still under evaluation.

With regard to the budget variance, the Compact planned the 2013-2015 budget based on knowledge of other behavioral initiatives. The design of the behavioral initiative that the Compact ultimately decided to implement differed from the behavioral initiatives on which the planned budget was based. Once the vendor was chosen and customers elected to join the initiative, the Compact found that the costs were higher than expected.

In response to the above variances, the Compact plans to implement the initiative in 2015 to achieve the planned savings. In the Compact's 2015 MTM, the three-year budget for this initiative increased by approximately $200,000. The Compact does not believe these variances will affect its ability to achieve its savings and/or benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

In 2014, the Residential Behavior/Feedback initiative incurred costs but did not provide savings or benefits. Therefore there is no benefit-cost ratio to report for 2014. While the three-year benefit-cost ratio of 0.25 (including 2014 actual costs and 2015 planned costs and benefits) appears not cost-effective, the Compact expects this initiative will have savings in 2015. This initiative is still in its early stages of implementation, so the Compact cannot guarantee that it will be cost-effective in 2015. Regardless, the Compact expects the Whole House Program will remain cost-effective in each year and over the three-year term.

Residential Products

For the Residential Products program, the 2014 actual benefit-cost ratio is 2.26, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.67.

1. Residential Cooling & Heating Equipment

a. Significant Variances

For this initiative across both 2013 and 2014, the actual expenditures were significantly higher than the planned budget. This initiative was successful in both years, partially due to an increase in the popularity of mini-split heat pumps and central air conditioning measures. Additionally, the initiative's participation increased due to trade ally partnerships and general marketing by those trade allies to attract more customers to install measures, and additional grants that were made available by the Massachusetts Clean Energy Center.

The Compact does not plan to make any change to the initiative's design or implementation in response to the above variance, as the initiative is overachieving relative to plan. As a result, these variances will not affect its ability to achieve its savings and/or benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Residential Cooling & Heating Equipment initiative, the 2014 actual benefit-cost ratio is 1.51, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 1.51.

2. Residential Lighting

a. Significant Variances

For this initiative across both 2013 and 2014, benefits and expenditures were lower than planned. In 2014, ENERGY STAR changed some of its specifications for lighting measures, which impacted the initiative's ability to achieve its goals. Specifically, many lighting measures previously on the ENERGY STAR list were delisted, and newly certified lighting measures were slow to be added to the list. As a result, fewer lighting measures were available to be offered through the initiative during the 2014 program year, which resulted in fewer benefits. The specialty CFL bulb category was greatly impacted by the recertification. Further, while more LED bulbs were installed than planned, the quantity of LED bulbs installed was not enough to offset the decrease in the CFL bulbs installed.

The Compact does not plan to make any changes in this initiative's design or implementation. The Compact does not believe these variances will affect its ability to achieve its benefits and/or savings goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Residential Lighting initiative, the 2014 actual benefit-cost ratio is 2.73, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 3.61.

3. Residential Consumer Products

a. Significant Variances

For this initiative across both 2013 and 2014, the savings, benefits, and expenditures were significantly lower than planned. In 2014, ENERGY STAR changed some of its specifications for products and appliances, which impacted the initiative's ability to achieve its goals. Specifically, many products previously on the ENERGY STAR list were delisted, and newly certified products were slow to be added to the list. As a result, fewer measures were available to be offered through the initiative during the 2014 program year, which resulted in fewer savings and benefits. This was especially true for refrigerators. For some of the appliance measures, availability of TopTen USA or ENERGY STAR® Most Efficient models was very limited in the market, which impacted results. In addition, the Compact saw less participation in the refrigerator/freezer recycling effort, which contributed towards the reduction in expenditures, savings, and benefits.

The Compact does not plan to make any changes in this initiative's design or implementation. The Compact does not believe these variances will affect its ability to achieve its benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Residential Consumer Products initiative, the 2014 actual benefit-cost ratio is 1.78, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.42.

II. Low-Income Programs

Despite lower-than-expected spending in the low-income sector for 2013 and 2014 (the 2013 actual low-income expenditures were 18% lower than the 2013 planned low-income budget, and the 2014 actual low-income expenditures were 15% lower than the 2014 planned low-income budget), the Compact continues to spend a significant amount of its budget on low-income customers. The Compact's low-income budget for the full three-year term is expected to be 10.2% of the three-year total budget, including actual expenditures for 2013 and 2014, and the budget planned for 2015. Therefore, the Compact continues to meet the statutory requirement that spending on low-income programs represent at least 10% of the total amount expended on electric energy efficiency programs.

Low-Income Whole House

For the Low-Income Whole House program, the 2014 actual benefit-cost ratio is 3.34, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 3.57.

1. Low-Income New Construction

a. Significant Variances

For this initiative across both 2013 and 2014, the expenditures were significantly less than the planned budget. While the initiative was underspent, the three-year goals for savings and benefits have already been met in the first two years alone.

In 2013, this initiative significantly exceeded its projected savings and benefits while spending its budget as planned. This was due in part to the cost of saved energy decreasing relative to planned for heating and cooling measures. In 2014, this initiative continued to achieve greater savings at a lower cost than planned.

The primary reason for the increase in savings and decrease in costs is because the Compact had few low-income new construction projects that heated with electric, oil, or propane. The majority of the Compact's achieved savings came from lighting measures installed in units that were heated with natural gas. The customer incentives are higher for heating measures than they are for lighting measures, which explains the significant variances.

The Compact does not plan to make any changes in this initiative's design or implementation. The Compact has already achieved its 2013-2015 three-year savings and benefits goals at a lower cost of saved energy in 2013 and 2014.

b. Program Cost-Effectiveness

For the Low-Income New Construction initiative, the 2014 actual benefit-cost ratio is 8.77, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 10.60.

2. <u>Low-Income Single Family Retrofit</u>

a. Significant Variances

For this initiative across both 2013 and 2014, the total benefits were significantly lower than the planned benefits. Note that savings have been greater than planned across the two years. Efforts were made to address all eligible customers in this initiative, which yielded a greater number of audits completed, as well as more lighting and refrigerator installations than originally planned. While more customers were served, fewer weatherization-related and heating system measures were installed than anticipated. Weatherization and heating systems typically provide greater benefits (especially non-electric impacts including oil benefits) but at a higher cost than non-weatherization measures. Therefore, the decrease in weatherization work and heating systems more than offset the increase in audits, lighting, and refrigerator measures, which led to lower benefits than planned. While 2014 saw an increase in weatherization work and heating systems relative to 2013, that amount was still less than was planned for 2014 and was not enough to offset the 2013 decrease in weatherization work and heating systems relative to plan.

The Compact does not plan to make any changes to this initiative in response to the above variances, as the cost of saved energy was lower than planned and the Compact realized greater savings for the budget it spent. The Compact does not believe these variances will affect its ability to achieve its savings and/or benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Low-Income Single Family Retrofit initiative, the 2014 actual benefit-cost ratio is 3.57, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 3.56.

3. <u>Low-Income Multi-Family Retrofit</u>

a. Significant Variances

For this initiative across both 2013 and 2014, the actual expenditures and total benefits were significantly lower than the planned budget and total benefits. Note that savings increased in both years relative to plan. In 2014, fewer weatherization-related measures were installed than planned and these measures typically provide greater benefits.

When the Cape Light Compact planned its 2013-2015 Multi-Family initiative, it anticipated expansion of the initiative for units heated by deliverable fuels. The Department of Energy Resources ("DOER") is currently updating its Residential Conservation Services ("RCS")

program regulations (225 CMR 4.00), and proposed updates include, among other things, providing more comprehensive services to Massachusetts residents regardless of the fuel being used to heat a building. Unfortunately, those regulations have not yet been finalized, and as a result the Compact has not been able to expand this initiative to units heated by deliverable fuels as originally planned.[6] The Compact was unable to serve as many oil and propane customers as planned, and as a result did not achieve the benefits target.

While the Compact does not control the timetables for these projects, the vendor is making efforts to keep the pipeline full for 2015. The Compact does not plan to make any changes to this initiative in response to the above variances, as the cost of saved energy was lower than planned and the Compact realized greater savings for the budget it spent. The Compact does not believe these variances will affect its ability to achieve its savings and/or benefits goals by the end of the three-year term.

b. Program Cost-Effectiveness

For the Low-Income Multi-Family Retrofit initiative, the 2014 actual benefit-cost ratio is 1.64, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.62.

[6] Note that the Home Energy Services, Residential Multi-Family, and Low-Income Multi-Family initiatives are regulated by 225 CMR 4.00. For more information on the DOER's RCS regulations and ongoing proceeding, visit http://www.mass.gov/eea/energy-utilities-clean-tech/energy-efficiency/policies-regs-for-ee/residential-conservation-services-rcs.html.

III. Commercial Programs

C&I New Construction

a. Significant Variances

For this initiative in 2014, the evaluated total resource benefits were significantly lower than the preliminary total resource benefits. In 2014 and 2015, the Massachusetts Program Administrators completed evaluation studies for the upstream lighting component of the C&I New Construction initiative.[7] The results of these evaluations decreased the measure life for certain upstream lighting measures based on a change to the average annual operating hours, and increased realization rates for all lighting measures in the initiative. In particular, the Compact provided a significant amount of LED A-line measures, for which the measure lives decreased from 10 to 6. Both of these changes increased the gas and oil heating penalties, which resulted in a 25% decrease to resource benefits.

b. Program Cost-Effectiveness

For the C&I New Construction program, the 2014 actual benefit-cost ratio is 6.06, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 5.71.

C&I Retrofit Program

For the C&I Retrofit program, the 2014 actual benefit-cost ratio is 2.42, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.87.

1. C&I Retrofit Initiative

a. Significant Variances

For this initiative, the significant savings and benefits achieved in 2014 were more than enough for the Compact to exceed its annual initiative goal for the year, but not enough to fully close the gap created in 2013 for lifetime savings and benefits. The initiative finished out the 2014 year with a cumulative savings variance of -22% and a cumulative benefits variance of -28%.

Similar to 2013,[8] lighting measures not associated with the streetlight project had less activity in 2014 than expected, and became the primary driver of the variance in savings and benefits for the C&I Retrofit initiative in 2014 as compared to plan. Since this trend has continued from 2013, it

[7] The 2014 study was filed in the 2013 Plan Year Report, Appendix 4D, Study 13-6. The 2015 study is being filed with 2014 Plan Year Report, Appendix 4D, Study 14-26.

[8] Please refer to the Compact's 2013 Plan-Year Report for more information on 2013 significant variances.

is more likely that the decrease in lighting opportunities in this initiative is linked to the apparent success of the upstream lighting component of the C&I New Construction program in the same timeframe.[9] These measures represented 20% of lifetime savings and 20% of total benefits through 2014, and 9% of actual incentive expenditures.

Refrigeration measures also had lower-than-anticipated program activity and delivered lower lifetime savings and total benefits, representing just 1% of actual incentive expenditures, 4% of lifetime savings, and 3% of total benefits.

On the other hand, the LED streetlight project experienced increases in expenditures, lifetime savings, and total benefits as compared to plan, which partially offset the variances from other lighting and refrigeration measures. This effort also experienced a lower cost of saved energy than planned, which further offset these variances. The streetlight project was the largest component of this initiative, representing 78% of actual incentive expenditures, 31% of lifetime savings, and 26% of total benefits cumulatively, for the first two years.[10]

Also, the HVAC, motors and drives, envelope, and processing end uses within the C&I Retrofit initiative continued to experience increases in lifetime savings and total benefits in 2014 relative to planned values, as they had previously in 2013. HVAC and motors and drives were largest among these, contributing 27% and 16% to lifetime savings, respectively, and 23% and 25% to total benefits, respectively for 2013-2014.

On April 2, 2015, the Cape Light Compact filed a 2015 Mid-Term Modification ("MTM") to its 2013-2015 Three-Year Plan with the Department. However, this filing did not include adjustments for this initiative, in part because the Compact saw sufficient large government projects still in the queue to not warrant an MTM for this program.[11] In addition, another $800k of streetlight work was carried over into 2015 for the last phase of that project, with the associated savings. Lastly,

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[9] The upstream lighting component of the C&I New Construction program exceeded its savings and benefits goals at lower cost than expected. Any link between this success and a decrease in downstream lighting implementation is difficult to prove. However, in 2014, after more LED lamp models had been added to upstream lighting, upstream distributors undertook major sales campaigns for LEDs across the Cape and Vineyard territory, yielding a tripling of lifetime savings and benefits for the upstream lighting initiative in 2014. This kind of activity could have increased the applicability of the upstream buying option for those participants who might have otherwise gone through traditional downstream channels to upgrade their lighting by participating in the C&I Retrofit initiative.

[10] Early in 2013, during the testing phase of this project, it was decided to delay full implementation until 2014. This allowed additional time for towns to collect and process feedback from their citizenry and for more towns to sign on as participants. It also caused a large swing in reporting from 2013 plans to 2014 actuals. The final phase of the streetlight project rolled over into the first part of 2015, so the savings reflected in this report will be added to in next year's figures.

[11] Please refer to D.P.U. 15-38 for more information on the Compact's 2015 MTM.

as a precursor to its 2016-2018 program delivery strategies, the Compact's test of a segment approach for grocery in 2015 is expected to contribute savings in both small and large retrofit, while the beginning work for an account management MOU approach for its largest customers may also contribute to 2015 savings for this initiative.

b. Program Cost-Effectiveness

For the C&I Retrofit initiative, the 2014 actual benefit-cost ratio is 2.14, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.80.

2. C&I Direct Install

a. Significant Variances

There are no significant variances to report for this program.

b. Program Cost-Effectiveness

For the Small C&I Direct Install initiative, the 2014 actual benefit-cost ratio is 2.82, while the benefit-cost ratio for the three-year term after accounting for actual results from 2013 and 2014 is 2.93.

APPENDIX 2
BENEFIT-COST RATIO SCREENING TOOL

Please see the Microsoft Excel workbook accompanying this report for the benefit-cost ratio screening tool.

APPENDIX 3
STATEWIDE TECHNICAL REFERENCE MANUAL
2014 REPORT VERSION

Please see Statewide Appendix 3, filed under separate cover.

APPENDIX 4
STATEWIDE EVALUATION STUDIES SUMMARY

A. Table of Evaluation Studies

STUDY NAME	STUDY LOCATION AND NUMBER	FUEL
Residential Program Studies		
Massachusetts Spring 2014 Survey Results: FINAL Report	App. 4D, Study 14-1	Electric
Residential Lighting Shelf Survey and Pricing Analysis	App. 4D, Study 14-2	Electric
Baseline Sensitivity Analysis Spreadsheet, 2014	App. 4D, Study 14-3	Electric/Gas
Market Lift Assessment FINAL Report	App. 4D, Study 14-4	Electric
Results of the Massachusetts On-site Lighting Inventory 2014	App. 4D, Study 14-5	Electric
Supplier and Retailer Perspectives on the Massachusetts Residential Lighting Market Final Report	App. 4D, Study 14-6	Electric
Saturation Comparison of Massachusetts, California, and New York: Final Report	App. 4D, Study 14-7	Electric
Ductless Mini-Split Heat Pump Customer Survey Results	App. 4D, Study 14-8	Electric
MassSave Multifamily Program Process Evaluation Report	App. 4D, Study 14-9	Electric/Gas
High Efficiency Heating Equipment Impact Evaluation	App. 4D, Study 14-10	Gas
Furnace Baseline	App. 4D, Study 14-11	Gas
Commercial & Industrial Program Studies		
Variable Speed Drive Loadshape Project	App. 4D, Study 14-12	Electric
Massachusetts Existing Buildings Market Characterization: Commercial and Industrial Customer Telephone Survey Final Report	App. 4D, Study 14-13	Electric/Gas
Retrofit Lighting Controls Measures Summary of Findings FINAL REPORT	App. 4D, Study 14-14	Electric
Whole Systems Energy Efficiency Programs - Literature Review	App. 4D, Study 14-15	Electric/Gas
Final Report of Massachusetts LED Market Effects: Baseline Characterization	App. 4D, Study 14-16	Electric
2012 C&I Customer Profile Final Report	App. 4D, Study 14-17	Electric/Gas
Learning from Successful Projects Final Report	App. 4D, Study 14-18	Electric/Gas
How PA Differences Affect Outcomes Phase 2 Final Report	App. 4D, Study 14-19	Electric/Gas
Massachusetts Commercial Real Estate Survey Analysis - Final Report	App. 4D, Study 14-20	Electric/Gas
Small Business Program Process Evaluation Final Report	App. 4D, Study 14-21	Electric/Gas
Massachusetts Boiler Market Characterization Study	App. 4D, Study 14-22	Gas
Impact Evaluation of Massachusetts Prescriptive Gas Pre-Rinse Spray Valve Measure	App. 4D, Study 14-23	Gas
T12 Phaseout Market Research	App. 4D, Study 14-24	Electric
2013 Commercial & Industrial Customer Profile Report	App. 4D, Study 14-25	Electric/Gas
Massachusetts Commercial and Industrial Upstream Lighting Program: "In Storage" Lamps Follow-Up Study	App. 4D, Study 14-26	Electric
Special & Cross Sector Studies		
2013 Commercial and Industrial Electric Programs Free-ridership and Spillover Study	App. 4D, Study 14-27	Electric
Stage 1 Results and Stage 2 Detailed Research Plan - Commercial and Industrial New Construction Non-Energy Impacts Study	App. 4D, Study 14-28	Electric/Gas
Top-down Modeling Methods Study - Final Report	App. 4D, Study 14-29	Electric/Gas
Code Compliance Results for Single-Family Non-Program Homes in Massachusetts	App. 4D, Study 14-30	Electric/Gas
Massachusetts Cross Cutting Evaluation Home Energy Report Decay Analysis	App. 4D, Study 14-31	Electric/Gas
Efficient Neighborhoods + Initiative Evaluation Report	App. 4D, Study 14-32	Electric/Gas
Massachusetts Cross-Cutting Behavioral Program Evaluation Opower Results	App. 4D, Study 14-33	Electric/Gas
Methods for Measuring Market Effects of Massachusetts Energy Efficiency Programs	App. 4D, Study 14-34	Electric/Gas
Recommended Methods for Assessing Market Effects of HVAC Programs	App. 4D, Study 14-35	Electric/Gas
Recommended Methods for Assessing Market Effects of C&I Lighting and Controls Programs	App. 4D, Study 14-36	Electric
Recommended Methods for Assessing Market Effects of Non-residential New Construction Programs	App. 4D, Study 14-37	Electric/Gas
Cross-Cutting Code Compliance Support Initiative Evaluation Reports	App. 4D, Study 14-38	Electric/Gas

B. Summary of Study Results with the Most Significant Effects

The Massachusetts Program Administrators completed 38 evaluation studies for the 2014 Energy Efficiency Plan-Year Report. The studies that produced the most significant results in 2014 were the:

- High Efficiency Heating Equipment Impact Evaluation
- Massachusetts LED Market Effects: Baseline Characterization
- 2013 Commercial and Industrial Customer Profile Reports
- Top Down Modeling Methods Study
- Saturation Comparison of Massachusetts, California, and New York

<u>High Efficiency Heating Equipment Impact Evaluation</u>

In 2014 the gas PAs in Massachusetts conducted an impact evaluation of the High Efficiency Heating Equipment ("HEHE") program. This evaluation sought to assess home heating (and boiler hot water) consumption and annual heating loads for all types of installations, the efficiency of baseline space heating equipment, and the efficiency of new space heating equipment promoted through the program. In order to obtain the data necessary, the field portion of the study consisted of two components: (1) spot measurement of baseline and new equipment and (2) long-term metering of post-retrofit high efficiency equipment. Spot measurement of baseline and new equipment provided efficiency estimates to reduce the uncertainty around new, early retirement and standard baseline furnace and boiler performance. Long-term metering through the majority of the 2013 – 2014 heating season was conducted to refine estimates of annual heating load for furnaces and boilers. Logging of operating parameters was particularly important for condensing boilers where efficiency is dependent on return water temperature. This evaluation provides revised savings estimates for high-efficiency furnace and boiler replacements as well as several program implications and conclusions. Key findings suggest: (1) there are differences in annual heating loads between equipment types, though previous deemed savings used the same annual heating load for both furnaces and boilers; (2) it is important to consider standby and cycling losses in addition to combustion efficiency when evaluating gravity-drafted equipment such as standard and early retirement boilers and furnaces; (3) high-efficiency boilers are not being installed properly to maximize potential savings, identifying proper installation of boiler reset controls as an important factor to improve potential savings of high efficiency boilers; and (4) gas furnaces and boilers included in the study that were considered "early retirement" equipment have not declined in performance when considering actual instead of rated performance. This study had a significant downward impact on the evaluated savings of the gas Residential Products program. This study is discussed in more detail in Appendix 4D, Study 14-10.

Massachusetts LED Market Effects: Baseline Characterization

The LED Market Effects Baseline Characterization Study is the first phase of a two-phase study to determine the market effects resulting from LED lighting programs offered by the PAs in Massachusetts. The goal of this phase was to develop a baseline of current conditions of the market for LED products in Massachusetts and a selected comparison area in support of a future analysis of market effects resulting from PA-sponsored programs in Massachusetts. This study relied on a variety of primary data collection and analysis efforts conducted in Massachusetts and comparison areas. One key set of measurements resulting from this effort was market share and saturation of LEDs at the time this study was conducted. In the case of residential products, the difference in LED adoption rates between Massachusetts and the comparison area was sufficiently small, meaning the Massachusetts PAs have an excellent baseline for future research of LED market effects. For the non-residential markets the findings suggest that the Massachusetts markets are much more advanced than the comparison area as measured by vendor-reported sales and customer reported installation of screw-in LED lamps, downlight fixtures, and outdoor fixtures. There was no impact to savings from this study. This study is discussed in more detail in Appendix 4D, Study 14-16.

2013 Commercial and Industrial Customer Profile Reports

The C&I Customer Profile is an annual publication that analyzes the PAs' billing and tracking data in order to identify notable trends and research questions that will help to inform and improve the Massachusetts Commercial and Industrial ("C&I") energy efficiency programs. This study seeks to identify where C&I energy efficiency savings and participation are occurring, and what segments remain to be served. The study builds on the analyses of prior Customer Profile studies to identify new trends in the data and to verify patterns over time.

Results of the 2013 study suggest that there are several industry sectors where both the account participation and consumption-weighted participation ratios are lower than those of other successful industry sectors. For example, gas PA participation continues to increase, but at a faster rate than population savings achieved. Additionally, the study found large multi-year participants make up a sizable proportion of electric PA savings. Similar to prior studies, the data confirms that smaller PAs continue to have greater volatility in participation and overall savings than larger PAs. This is partially explained because larger PAs have higher consumption-weighted market penetration rates, particularly for gas, than the smaller PAs. Another notable finding is that there does not appear to be an overall difference in gas participation for towns served by the same gas and electric PA versus towns served by different gas and electric PAs, indicating success in gas and electric coordination; however, there are sizable variations within the different electric and gas PA combinations.

Low load factor customers continued to have the highest participant savings achieved, but at reduced levels from the previous two years. New analysis showed that load factor is not a strong determinant of participation, indicating customers are being served evenly. For smaller PAs, there is a shift in savings contribution relative to consumption when compared to the larger PAs. Evaluators also identified opportunities to go beyond the findings of this report and explore the

underlying drivers of these shifts. This study built on the previous analysis conducted in the 2011 C&I Customer Profile study, and involved the collection, organization and analysis of energy efficiency program participant data and billed usage data for all Massachusetts C&I electric and gas customers served by the PAs. The principal goals of the Enhanced C&I Customer Profile project are to: update the previous customer profile characterization report and associated database to incorporate the 2012 participant and billing data; evaluate previously unanalyzed time-series, geographic, and measure interaction trends within the participant and billing database; and explore the feasibility of constructing a statewide customer-level (across fuels and PAs) database of program participant, usage data and third-party data trends. There was no impact to savings from this study. This Study is discussed in more detail in Appendix 4D, Study 14-25.

Top-Down Modeling Methods Study

The Top-Down Modeling Methods Study is a multi-year initiative designed to assess the utility of top-down modeling as a viable technique for evaluating energy efficiency programs in Massachusetts. Currently in Massachusetts, the PAs have only estimated net-to-gross ratios from the bottom up. This effort was an attempt to correlate the results of the bottom up analysis with the system-wide impact of energy efficiency on utility energy consumption. This document presents a summary of the year-one investigation into possible top-down methods for net impact evaluations, as a supplement to techniques currently used. The goal of this type of modeling is to isolate the effect of program activity from other natural changes and policy variables. This year-one top-down research provided a number of key recommendations for conducting the next phase of pilot studies in Massachusetts. The preliminary results demonstrated a significant decrease in energy consumption when comparing the PA service territory with Massachusetts municipal territory energy consumption. The encouraging results of this preliminary finding led to recommendations as follows: (1) continue refinement of the PA-Muni model to investigate the stability of models and possible changes to model specification; (2) continue to collect data through the C&I database to extend the available data series to include five years of consumption and program tracking data; (3) continue to refine the existing models to further explore approaches to weather normalization, industry segmentation, and inclusion of other key explanatory variables such as technology trends; and (4) incorporate multiple lag periods of the program and consumption variables. There was no impact to savings from this study. This Study is discussed in more detail in Appendix 4D, Study 14-29.

Saturation Comparison of Massachusetts, California, and New York

For the past few years the Massachusetts lighting program has seen an increase in the number of efficient bulbs sold in the marketplace, but the saturation of bulbs in sockets has remained relatively flat. The purpose of this research was to compare the saturation estimates for Massachusetts, California, and New York, with an eye toward the circumstances and strategies that may have been most responsible for boosting efficient bulb saturation by 8 percent in California from 2009 to 2012 – a time period during which Massachusetts and New York saw a saturation plateau. During the time period under investigation (2009 to 2012), Massachusetts, California, and New York started at different points, with Massachusetts exhibiting higher saturation at the outset (26%) than either California (22%) or New York (21%). As such, the initial

saturation gains California experienced between 2009 and 2012 only brought California up to a level Massachusetts had already achieved. One major discovery was that the methodologies and saturation comparisons between California, New York, and Massachusetts revealed only one substantial difference in how saturation was estimated: California evaluations did not include empty sockets in the saturation calculation, while Massachusetts did. When re-calculating the California saturation numbers to include empty sockets, the same saturation gains were observed. Therefore, it was determined that the differences between the states were actual differences and did not result from differences in methods, and continued with further research into why saturation rates diverged. An additional discovery also emerged through the course of research - California ended its support for the upstream lighting program in 2012. The result of ending support for the lighting was that the California market share of efficiency lighting declined significantly as a result in California, while Massachusetts's market share remained even. The data suggest that the Massachusetts PAs proceed with caution as they consider when to reduce their support of efficient lighting. There was no direct impact on savings from this study. This study is discussed in more detail in Appendix 4D, Study 14-7.

C. Evaluation Study Summaries

Study 14-1: Massachusetts Spring 2014 Survey Results: FINAL Report

Type of Study: Market Assessment
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 1/15/2015

Study Objective and Summary of Results:

The purpose of this study was to continue the long-term tracking of key market indicators for compact fluorescent lamps ("CFLs"), light emitting diodes ("LEDs"), and halogens (particularly those meant to replace incandescent bulbs) as well as the impacts of the Energy Independence and Security Act of 2007 ("EISA") on the Massachusetts residential lighting market. A survey of 940 Massachusetts households was conducted to investigate the following topics: awareness of and familiarity with CFLs, LEDs, and halogens; awareness of and reported reactions to EISA; self-reported use of CFLs and LEDs as well as satisfaction with these bulbs; familiarity with lighting terminology; recent light bulb purchases; stockpiling of incandescent bulbs; recollection of program signage or displays in lighting aisles when purchasing bulbs; and household demographics. In addition, abbreviated telephone only surveys with randomly selected households in Kansas and Georgia were conducted to serve as comparison areas to Massachusetts. All three surveys were also used to recruit respondents for an on-site saturation study, summarized in a separate report.

The study provides the following key findings:

- Satisfaction with LEDs was higher than that of CFLs; particularly among users of both CFLs and LEDs. In addition, although a majority of CFL users remains satisfied with CFLs, satisfaction with CFLs continues the downward trend observed since 2011.

- The proportion of households reporting familiarity with screw-in LEDs has increased. While it is quite likely that PA efforts to raise awareness about LEDs and incentives has played an important role in increased LED adoption, future studies would be needed to confirm attribution.

- This survey differed from previous residential customer lighting surveys by offering some respondents the opportunity to answer via a web-based instrument and by sending some respondents a pre-paid $5 incentive. Two critical outcomes from these changes were identified. First, the pre-paid $5 incentive *doubled* the response rate. Second, households that completed the survey via the web differ from those that completed the survey by phone in terms of demographics (web respondents are more likely to own homes, have higher education, and, among those that reported their income, to have higher incomes) and their level of awareness, use, and satisfaction with energy-efficient lighting. Web respondents were able to view pictures of CFLs, LEDs, and halogen bulbs, which likely affected their responses, but these visual cues alone cannot account for all the differences observed.

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Future surveys should explore the reasons behind satisfaction with—and preferences for—LEDs versus CFLs among those who use both types of bulbs to understand why CFL satisfaction continues to decline. This analysis may also inform potential future trends in LED satisfaction, particularly if the results point to driving factors related to LED timing and rate of adoption.

- **Recommendation 3a:** To increase survey response rate, future replications of this survey should also send a pre-paid incentive with the advance letter alerting possible respondents to the study.

- **Recommendation 3b:** To explore more fully the reasons why web respondents differ from phone respondents, the next iteration of this survey should again offer a web/phone response option along with a phone-only response option. The offering of a web-based response platform may be more conducive to current social norms. If the length of the survey allows, the evaluators should also add questions to help characterize web and phone respondents by their technology, lighting, and environmental opinions. Finally, if the programming of the survey allows, the strongest study design would show pictures of various bulb types to only a portion of the web respondents to assess the extent to which these visual cues affect response.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not directly applied to 2014 results. However, many of these indicators will help inform future revisions of program savings estimates as well as a broader assessment of the market as EISA implementation moves forward.

Overview of Study Method:

A mixed-mode (web and phone) survey of 940 households was conducted, drawing the sample from a list of approximately 3,000 customers provided by the PAs. Potential respondents received an advance letter, and one-half of them also received a pre-paid $5 incentive (as part of an experiment to gauge effects on response rates). The final sample size of 940 households was slightly less than the study's original goal of 950 respondents. The overall response rate was 20%;

for households receiving the incentive 29%, and for households with no incentive 14%. The sampling error was just under 3% for the entire sample.

In order to establish a baseline for the Massachusetts Consumer Survey, the evaluation team also conducted an abbreviated telephone-only version of the survey to households in Georgia (n=526) and Kansas (n=556) to learn about their general lighting awareness and use. Likely due to the use of random digit dialing, lack of advance letters and incentives, and no personal connection to the PAs, response rates were relatively low at about 8% in the two comparison areas (compared to 20% in Massachusetts).

Comparable to previous years, the data was weighted by education and home ownership status in all three states so that the reported results would better reflect the characteristics of all households in the state.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-1.

Study 14-2: Residential Lighting Shelf Survey and Pricing Analysis

Type of Study: Market Assessment
Evaluation Conducted by: The Cadmus Group
Date Evaluation Conducted: 6/2/2014

Study Objective and Summary of Results:

The purpose of this study was to continue the long-term tracking of retail lighting pricing and stocking practices for CFLs, incandescent bulbs, LEDs, and halogens (particularly those meant to replace incandescent bulbs as well specific EISA affected products). Metrics tracked included: CFL and LED prices, shelf area, number of bulb packages, and shelf location relative to competing lighting products by major distribution channel throughout the state. The evaluation team also compared advertised retailer discounts with PA incentives for those bulbs identified in both the shelf inventory and the program tracking database.

The study provides the following key findings:

- Participant stores continue to provide a wider variety, more inventory, and better prices of CFLs and LEDs (including discounts) than former-participant stores. Participant stores also offered more packages with multiple CFLs than former-participant stores.

- The proportion of shelf space devoted to CFLs among participant stores has increased from 33% of all bulb shelf space in 2010 to 68% in 2012 and 62% in 2013.

- CFL inventory appears to be losing ground when compared to 2012, for both participant and former-participant stores (although the differences are not statistically significant). The program incented fewer bare spirals than in the past—completely eliminating incentives at a few retailers in part due to the market lift effort. Of the increased inventory shares observed for non-CFLs (incandescent bulbs, LEDs, and halogens), only the increased share of LED packages in participant stores is statistically significant.

- For participant stores, inventory shares of 75W and 100W incandescent packages have dropped from 8% in 2012 to 3% in 2013. Inventory shares of 60W incandescent packages stayed relatively constant as EISA efficiency standards do not affect these bulbs until January 2014.

- Former-participant stores appear to have replaced CFL inventory primarily with incandescent bulbs. While the former-participant shares of 75W and 100W incandescent packages have dropped (11% to 2%), 60W shares have increased slightly (13% to 17%) with the remainder of the difference primarily being specialty bulbs.

- Even though the EISA phase-out date had started for both 100W and 75W incandescent bulbs, they are widely available, with 57% of participating stores still stocking 100W incandescents and 63% stocking 75W incandescents. The rates for former-participant stores are lower, with 47% stocking 100W incandescents and 37% stocking 75W

incandescents. The generally high presence of incandescent bulbs could indicate that retailers stockpiled incandescent bulbs manufactured before the implementation of EISA or that they are still importing incandescents, which could be possible since Congress has not funded EISA enforcement. Likewise, the fact that participant stores tend to be among the most common places to buy bulbs, it is not surprising that they sell the still-popular incandescent if they have existing inventory or can gain access to them.

- Average CFL prices for A-line bulbs in participant stores are almost double those of corresponding halogen bulbs. The average A-line CFL final price per bulb for consumers (discounted and non-discounted) across all wattages is $4.24, as compared to $2.41 for halogens. Bare spiral CFLs average $2.08 compared to $1.00 for incandescent bulbs in participant stores.

- The majority of LEDs offered in participant stores are discounted through the program. The average price of A-line LEDs in participant stores is $13.21 compared to $20.82 in former participant stores, a difference of $7.61.

- Overall, average discounted prices are less than non-discounted prices; however, the average PA incentive is larger than that difference, suggesting that the full PA discount may not be passed through to consumers. This finding is consistent with findings from previous years; however without knowing the actual prices of individual bulbs before and after the discount, this conclusion is based solely on the comparison of discounted and non-discounted bulb prices. Program staff continuously work with retailers to review and appropriately adjust pricing.

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:
This study was not applied to 2014 results. However, it informs future program planning by providing the PAs a better understanding of the status of energy efficiency bulbs in the retail market.

Overview of Study Method:
Lockheed Martin provided the evaluation team with the shelf-survey data from a random sample of 100 stores drawn from among 1,864 participant stores in the state. Lockheed Martin also provided data for 430 former-participant stores.

The evaluation team stratified the sample of participant stores as well as the former-participant stores by the following retail channels:

- Discount
- Drug and grocery (combined for former participants due to the small population),
- Mass merchandise and membership (combined for former participants due to the small population),
- Large home improvement, and
- Small hardware.

The results for former-participant stores are weighted to reflect the overall mix.

At each store, the evaluation team's surveyors collected information about the product characteristics and the prices of individual packages of bulbs on the shelves. Each observation in our data represents a unique type of bulb package sold at a store. Thus, when counting identical CFL bulb models sold in different package groupings (for example, a one-bulb pack and a two-bulb pack), each pack was counted as a separate observation.

In addition to making note of a bulb's special features (such as dimmability, three-way, or an ENERGY STAR designation), the evaluation team collected the following information about each package:

- Bulb type (CFL, LED, incandescent, specialty, etc.)
- Bulb style (A-line, bare-spiral, etc.)
- Wattage
- Lumens
- Number of bulbs in the package
- Number of packs on shelf

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-2.

Study 14-3: Baseline Sensitivity Analysis Spreadsheet, 2014

Type of Study: Impact Evaluation
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 3/12/2015

Study Objective and Summary of Results:

The objective of this evaluation was to develop a market adoption model to simulate the changing baseline for the lighting program based on recent market assessment work conducted by the evaluation team.

The study updates the 2014 values based on the following lighting standards and studies:

- EISA
- NMR Saturation Stagnation and NTG estimation from Point of Sale Modeling, (2015)
- Lighting Market Assessment On-site Saturation, (2015)
- Lighting Market Assessment Shelf Survey and Pricing Analysis, (2014)
- Lighting Market Assessment Consumer Survey Findings Memo, (2015)

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)
- Residential Multi-Family Retrofit (Electric Only)
- Residential Home Energy Services (Electric Only)
- Residential New Construction (Electric & Gas)
- Low-Income New Construction (Electric Only)
- Low-Income Single Family Retrofit (Electric Only)
- Low-Income Multi-Family Retrofit (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

The evaluation yielded revised gross savings estimates for those residential lighting impacted by EISA. The results represent an increase from planning values due to an increased amount of inefficient lighting in the baseline.

Overview of Study Method:

The evaluation team constructed a prediction of what the lighting market would look like in the absence of any further program intervention based on evaluation market assessments. It is hypothesized that inefficient incandescents and halogens will remain the baseline until well after EISA has outlawed them (long sell through period) and that CFL sales will gradually increase and LED sales will increase slowly.

Application of Results: Retroactively

A copy of the complete study can be found in Appendix 4D, Study 14-3.

Study 14-4: Market Lift Assessment FINAL Report

Type of Study: Impact Evaluation
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 9/16/2014

Study Objective and Summary of Results:

The purpose of the evaluation was to review the results of the Massachusetts ("MA") Market Lift Initiative, a new program approach in MA geared toward increasing sales of CFLs by rewarding participating retailers for increasing sales over a pre-established baseline (or pre-lift period). The study focused on assessing the program's strengths and weaknesses, major challenges and successes, and viability as a model for efficient products moving forward.

The MA Market Lift initiative ran for six months, from September of 2013 through February of 2014. Massachusetts worked with one retail store chain and an associated CFL manufacturer to implement the program. The implementation contractor computed the Market Lift achieved and the associated incentive payments every two months, utilizing a tiered incentive structure that paid increasing incentives for higher levels of achieved Market Lift on promoted CFL sales.

The study provides the following key findings:

- After correcting for an inadvertent error in the implementer's calculation of the baseline condition, the net lift achieved for MA stores for both 13W and 23W CFLs over the entire lift period was 9,145 bulbs (9.8%) and the net sales change over gross sales change was 28.3%.

- Under an alternative study design to account for the effects of seasonality on purchasing, the net lift decreased from 9.8% to 3.2%.

- The evaluation team believes a NTG ratio of 100% is an appropriate estimate because all of the CFLs sold through the Market Lift initiative were sales above what was already occurring through the program via existing markdown incentives.

- The manufacturers and retailers interviewed generally expressed disapproval toward the Market Lift approach (because of its complexity, cost, data collection requirements, and risk), which casts doubt on its future viability.

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

The evaluation team provided the following recommendations and considerations should the PAs elect to continue pursuing Market Lift as a program strategy:

- **Recommendation 1:** In negotiations with retail partners, stress the continuation of previous incentives to help alleviate their concerns about the additional risk involved with market lift design.

- **Recommendation 2:** Take into account the capabilities of manufacturers and retailers in collecting and providing the necessary data

- **Recommendation 3:** The evaluation team recommends more in-store events and potential in-store field events to boost sales of CFLs.

Explain Whether or Not the PA Decided to Adopt Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study determined the use of NTG value of 100% is appropriate, so no adjustments to the measure level savings were required. Other recommendations will be used to inform the design and evaluation of a Market Lift program should the PAs elect to pursue and implement one.

Overview of Study Method:

The study assessed the sales achieved in the retail partner's stores in MA (the treatment group) and in two other states (a neighboring state and a Southern state as comparison areas). The calculation of Market Lift was defined as the MA change in sales in the lift period over the pre-lift period minus the comparison-area lift over the same period:

$$(MA\ Lift - Prelift) - \frac{(Comp1\ Lift - Prelift) + (Comp2\ Lift - Prelift)}{2}$$

Comparison-area lift was calculated as the average percentage lift in the two comparison areas.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-4.

Study 14-5: Results of the Massachusetts On-site Lighting Inventory 2014

Type of Study: Market Assessment
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 3/12/2015

Study Objective and Summary of Results:

The objective of the study was to track various lighting market indicators—many of which have been measured in Massachusetts for over a decade—and to explore the data for possible impacts associated with EISA. EISA phased out the manufacturer and import of most general service 40W to 100W incandescent bulbs between 2012 and 2014. The on-site study was particularly interested in estimating the proportion of sockets filled with CFLs and LED (socket saturation) and to understand what types of bulbs customers use to replace those that have burned out or been removed from sockets.

To accomplish this, the study collected and analyzed data from over four hundred residential lighting on-site inventories collected in Massachusetts (n=261), Georgia (n=78), and Kansas (n=67) in 2014. Georgia and Kansas were chosen as comparison areas for this study because of the absence of long-standing residential lighting programs but access to prior saturation estimates in both states.

The study provides the following key findings:

- After hovering between 26% and 28% from 2009 to 2013, CFL saturation rates increased to 33% in 2014. Overall, between 2009 and 2014, a 7% increase in CFL saturation in Massachusetts was observed, with the majority of the increase in the last year. This is significantly higher growth than that observed in Georgia over the same period (3%), but slightly lower than the increase observed in Kansas (8%).

- While still a small portion of sockets (3%), LED saturation in Massachusetts has been increasing steadily by about 1% per year for the past three years.

- Between 2013 and 2014, CFL and LED saturation in low-income Massachusetts households in Massachusetts increased from 27% to 39%, and from below 1% to 3%, respectively.

- Direct-install programs in Massachusetts have contributed—but do not fully explain—the increased CFL and LED saturation rates.

- In Massachusetts, the percentage of households using at least one CFL (i.e., penetration) held steady at 96% since 2012, while LED penetration has more than tripled since 2012, increasing from 7% in 2012 to 23% in 2014. In contrast, penetration rates in Georgia were only 82% for CFLs and 10% for LEDs; Kansas rates were 88% for CFLs and 18% for LEDs.

- Based on the results of the Massachusetts panel visits, households were nearly three times as likely to choose a CFL instead of an incandescent to replace an incandescent bulb. Among replaced bulbs, the proportion of incandescent bulbs decreased dramatically from 68% to 23% between the 2013 and 2014 visits. At the same time, the proportion of CFLs increased from 25% to 58%.

- More than four out of ten (42%) CFLs purchased by Massachusetts households in the year preceding the 2014 study were specialty CFLs—compared to about three out of ten (29%) reported in 2013. In contrast, the proportions of specialty CFL purchases among households in Georgia (25%) and Kansas (14%) were significantly lower; although Kansas households had fewer specialty sockets in their homes.

- More than one-half of Massachusetts households were storing at least one CFL at the time of the 2014 on-site visits—significantly more compared to both Georgia (36%) and Kansas (34%). In Massachusetts, the average number of CFLs in storage increased from 2.1 in 2013 to 3.9 in 2014. Comparison-area households were found to be storing significantly fewer CFLs (1.7 in Georgia, 0.9 in Kansas).

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1: Continue pursuit of panel study, adding in 2014 saturation study participants.** The panel study results helped to answer questions regarding drivers of saturation changes and bulb replacement behavior that have been valuable in assessing the ever-changing residential lighting market. Repeating this study and expanding on the panel size will reveal whether the results observed this year represent a pattern of behavior or whether they were limited to a particular group at a specific time.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not directly applied to 2014 results. However, many of these indicators will help inform future revisions of program savings estimates as well as a broader assessment of the market as EISA implementation moves forward.

Overview of Study Method:

The evaluation team collected data through 406 on-site lighting inventories conducted with homes located in Massachusetts (261), Georgia (78), and Kansas (67). The evaluation team conducted the

visits between May and August of 2014. The 261 Massachusetts households represent 150 visited for the first time in 2014 and 111 that had previously taken part in the 2013 saturation study.

The evaluation team identified new households for inclusion in the on-site lighting inventories through the Lighting Consumer Surveys performed between March and August of 2014. Panelists represent the subset of 2013 participants able and willing to let us visit their homes again in 2014. Upon careful examination of the demographic and lighting-related characteristics of the panel and new visit data, the evaluation team determined that households from both groups were similar enough to justify merging the two data sets.

The evaluation team weighted the on-site data to reflect the population proportions for home ownership (tenure) and education in Massachusetts based on the American Community Survey 5-Year Estimates. The guiding principles behind the schemes are:

- To maintain comparability with previous schemes dating back to 2008; this is very important for tracking changes in saturation, use, purchase, and storage behavior

- To reflect the population of Massachusetts, including by weighing the data for Kansas and Georgia to the demographic characteristics of Massachusetts

- To make certain that the panel data are treated properly—i.e., that the panel data correctly represent the population and what the evaluation team wants to compare over time

Comparable to previous years, the evaluation team weighted the data by education and home ownership status in all three states so that the reported results would better reflect the characteristics of all households in the state.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-5.

Study 14-6: Supplier and Retailer Perspectives on the Massachusetts Residential Lighting Market Final Report

Type of Study: Market Assessment
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/19/2015

Study Objective and Summary of Results:

The purpose of this study was to gain insights from lighting market actors on the nature of the current and future lighting market, both in Massachusetts and across the nation. The evaluators interviewed market actors who participate in the Massachusetts ENERGY STAR lighting program, including lighting manufacturers, buyers of lighting products for large retail chains, and managers of stores which sell lighting products.

These interviews covered a number of key topics including the impacts of the EISA on the Massachusetts residential lighting market, the current nature and future direction of the LED market, the lighting market for "hard-to-reach" customers, market actor satisfaction with the Massachusetts program and recommendations for program improvements. The interviews also posed questions for developing net-to-gross estimates for the program, which are covered in a separate report. The evaluation team completed these interviews during the May – July 2014 period. In some cases the report compared the 2014 interview responses to the responses of Massachusetts lighting market actors from past evaluations.

The study provides the following key findings:

- *Findings related to the impacts of the EISA legislation*
  - *Awareness of the EISA legislation:* Over three-quarters (76%) of Massachusetts store managers and all lighting manufacturers and high-level retail buyers reported being aware of EISA. Store manager awareness of the EISA legislation increased since 2012 (67% awareness).
  - *Lighting manufacturers reported EISA has contributed to increased sales of LED and halogen bulbs and, to a lesser extent, CFL lighting products.* All lighting manufacturers interviewed reported the EISA legislation impacted sales of LED bulbs, and a large majority (82%) reported increased halogen sales due to EISA, compared with only 36% reporting that EISA led to greater CFL sales.
  - *Market actors disagreed about EISA impacts on sales of halogen bulbs.* Although, 82% of the manufacturers and 50% of the retail buyers said halogen bulb sales increased due to EISA, only 15% of store managers said their halogen bulbs sales increased since 2012. The responses may differ due to manufacturers and retail buyers commenting on halogen sales trends nationally and regionally, while store managers offer a Massachusetts-specific perspective. Some market actors claimed the Massachusetts program's support of

discounts for standard CFLs helped to keep consumers from switching to less expensive and less energy-efficient, EISA-compliant halogen bulbs. Some recent point-of-sale data from California supports supplier claims that removing program discounts for basic CFLs can lead to CFLs losing market share to the less efficient halogen bulbs, although other possible supporting data remain unavailable or inconclusive.

- *Most Massachusetts store managers and high-level retail buyers reported not altering their stocking practices due to the EISA phase-out.* Less than one-half (45%) of store managers and only one-fifth of retail buyers reported changing their stocking practices due to EISA.
- *Across all retail channels, 61% of store managers said they observed changes in consumers' purchasing behaviors in response to new EISA regulations.* Hardware and home improvement store managers most commonly reported these changes in behaviors.

- *Findings related to the LED market*
  - *The lighting market actors expected LED prices to drop, partly due to the future impact of EISA legislation*. A greater percentage of lighting manufacturers and high-level retail buyers thought LED prices would decrease (100% and 75%, respectively) compared to CFLs (29% and 50%) and EISA-compliant halogens (43% and 33%).
  - *The Massachusetts ENERGY STAR program impacted LED sales in the state.* While most lighting manufacturers reported selling LEDs before participating in the Massachusetts ENERGY STAR program, only half of high-level retail buyers reported selling LEDs before the program. About half (53%) of Massachusetts store managers reported selling LED bulbs before 2013.
  - *Lighting market actors most commonly cited high costs as a reason for not selling LED bulbs.* This was also the most-cited barrier when these market actors were surveyed in 2012.
  - *Respondents deemed LED lighting sales in Massachusetts to be healthy.* Most store managers (61%) reported sales to be "excellent" or "good" over the past year, with very few managers (6%) indicating poor LED sales during this time. This represents an improvement from the 2013 survey of store managers (n= 137) when 53 percent reported LED sales to be "excellent" or "good" over and 11 percent characterized their sales as "poor."
  - *Respondents selling LED bulbs mostly commonly cited high costs as the factor preventing greater LED lighting sales.* This was the only barrier reported by all three lighting market actor groups surveyed (e.g., store managers, lighting manufacturers, and high-level retail buyers).
  - *Respondents expected LED bulb prices to decrease over the next year, but not LED fixtures.* The majority of market actors surveyed anticipated LED bulb prices would

decrease in 2015. In contrast, only 31% of store managers thought LED fixture prices would decrease at the same time.

- *The store managers offered a mixed assessment of the program, in terms of promoting LED sales.* Over one-half (51%) of store managers provided a rating of 7 or higher, on a scale from 0 to 10, indicating the program effectively promoted LED bulbs. However, almost one-third (32%) of managers rated the Massachusetts ENERGY STAR program's effectiveness as a 4, 5, or 6, indicating they did not strongly believe in the program's effectiveness in promoting LED bulb sales. Only a few store managers (11%) provided a rating below 4. This mixed assessment of the program is likely an effect of their more positive view of the program LED incentive levels combined with their more negative assessment of the program's promotional and customer education efforts.
- *Lighting market actors provided mixed feedback on the program's impact on promoting LED lighting.* While nearly three-fourths (71%) of lighting manufacturers reported the program affected their decisions to sell LED lighting products, only 37% of Massachusetts store managers and one-half of high-level retail buyers said the program affected their promotion of LED products. This difference could result from participating manufacturers' greater awareness of the full influence of substantial LED program discounts on manufacturers' decisions whether or not to offer these bulbs through certain retail channels. In addition, only about half of the store managers were satisfied with the program's promotional efforts. An analysis of their verbatim responses indicated that they believed that the program should provide more education to help consumers better understand the benefits of LEDs.
- *A large majority of the store managers considered program discounts for LED bulbs sufficient.* A large majority (79%) of store managers found the average incentive adequate for selling at least some types of LED bulbs, with 63% reporting the incentive adequate for selling all types of LED bulbs. Very few store managers (8%) found the average bulb incentive level insufficient to sell any types of LED bulbs.
- *Respondents most frequently cited providing larger rebates and customer education for increasing LED bulb sales.* Increased incentives and better customer education were the only suggestions all three lighting market actor groups provided.

- *Findings related to the hard-to-reach market*
  - *The large majority of lighting market actors agreed with the program's definition of HTR lighting markets.*
  - *Most lighting market actors thought discount stores and small grocery stores served as effective retail channels to reach HTR customers.*
- *Findings related to program satisfaction*

- Seventy-nine percent of store managers were satisfied with the availability of program-discounted bulbs.
- All lighting manufacturers and high-level buyers expressed satisfaction with program managers, contractors, and other staff involved in delivering the program.
- At least 80% of lighting manufacturers, retail buyers, and store managers were satisfied with the program as a whole.
- The large majority (85%) of store managers and all lighting manufacturers and high-level retail buyers reported they anticipated taking part in the program moving forward.

Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

This study was not directly applied to 2014 results. However, many of these indicators will help inform future revisions of program savings estimates as well as a broader assessment of the market as EISA implementation moves forward.

Overview of Study Method:

Two primary research efforts were conducted from May to July 2014:

1. *In-depth interviews conducted with 17 participating manufacturers and five high-level retail buyers.* Respondents' companies supplied or purchased lighting products that received upstream incentives from the Massachusetts ENERGY STAR Lighting Program in 2013. DNV GL staff conducted the interviews.
2. *A CATI survey completed with 224 store managers participating in the Massachusetts program.* Tetra Tech fielded these surveys, with DNV GL analyzing the survey data. Retail channels within the store manager sample frame included the following:
    - *Discount stores* typically selling products at prices lower than traditional retail outlets.
    - *Drug stores* selling over-the-counter medications (and possibly selling paper products, beverages, and a selection of grocery items).

- *Grocery stores* typically selling perishable and non-perishable food items and stocking a small selection of household goods.
- *Large Home Improvement stores*—a class of hardware stores typically occupying warehouse-style spaces; many have dedicated outdoor garden centers.
- *The Lighting and Electronics* channel groups lighting retailers with electronics retailers. The former typically stock light fixtures, ceiling fans, and replacement lamps, while the latter sell home electronics and appliances.
- *Mass Merchandise stores* typical stock a large assortment of goods (including clothing and housewares and sometimes food products and medications) at competitive prices.
- *Membership Clubs* - typically warehouse-style stores stocking a wide variety of grocery and household items in bulk resulting in lower per unit prices. Consumers usually pay an annual membership fee to access these lower prices.
- *Small Hardware* stores selling a variety of home repair, maintenance, and improvement products.

For the 2014 store manager survey, a sample design similar to that used in past years was used; this allowed comparability across years. The sample frame was stratified by retail channel. Three criteria determined the targeted number of completed surveys for each channel:

1. The percentage of total bulb sales that channel represents;
1. The number of unique store locations in the sample frame for that channel; and
2. Whether that retail channel served HTR customers (these stores were oversampled due to their particular interest to the Energy Efficiency Advisory Council ("EEAC") and PAs).

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-6.

Study 14-7: Saturation Comparison of Massachusetts, California, and New York: Final Report

Type of Study: Impact Evaluation
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 3/31/2015

Study Objective and Summary of Results:

The purpose of this study was to compare the saturation estimates for MA, CA, and NY, with an eye toward the circumstances and strategies most responsible for boosting efficient bulb saturation by 8% in CA from 2009 to 2012 – a time period during which MA and NY saw a saturation plateau. The evaluation team interviewed individuals involved in the design, implementation, and evaluation of the CA lighting program, reviewed the evaluation and saturation calculation methodologies from CA and NY to examine any differences from MA, and analyzed purchase data across the three states to check for any differences that could have led to the divergent saturation trajectories.

The study provides the following key findings:

- Earlier implementation of EISA in CA appears to have had an important impact on the move toward CFLs in that state, which was reflected in the saturation gains CA experienced relative to MA from 2009 to 2012. In addition, the CA program's move away from big box stores and toward grocery, drug, dollar, and club channels also likely promoted saturation increases, as this program shift made efficient bulbs available to customers who may not have otherwise been touched by the program. CFL-to-CFL replacement rates in MA, which had higher CFL saturation than CA in 2009, also likely played a role in the saturation stagnation over that period. When taking confidence intervals into account, the actual saturation rates in 2012 between the two states were comparable.

- Another key finding is that the sales data revealed CFL market share decreased in CA from 25% in 2012 to 19% in 2013, while halogen sales increased from 4% to 15% over that same period (which coincided with CA dropping incentives for standard CFLs). This suggests that cutting CFL incentives to coincide with the EISA restrictions on 60W and 40W bulbs may not have had the desired effect. Instead, dropping incentives may increase inefficient bulb sales.

Core Initiatives to which the Results of the Study Apply:

- Residential Lighting (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

This study was not directly applied to 2014 results. However, it informs future program planning by providing information related to the possible effects of upcoming EISA implementation and any changes in CFL incentives on efficient bulb saturation in MA.

Overview of Study Method:

The study utilized in-depth interviews, historical research on saturation estimates, and exploratory analyses of sales data.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-7.

Study 14-8: Ductless Mini-Split Heat Pump Customer Survey Results

Type of Study: Impact Evaluation
Evaluation Conducted by: Navigant Consulting
Date Evaluation Conducted: 8/22/2014

Study Objective and Summary of Results:

The purpose of the ductless mini-split heat pump ("DMSHP") Customer Survey study was to develop a preliminary understanding of the DMSHP measure within the Mass Save program. Through the customer survey effort, a web survey was conducted with participants in the program to better understand motivations for participating and how the DMSHP equipment is being used. The final survey effort included responses from 430 participants. The survey effort was also used to recruit for an on-site metering study, which is still on-going.

The study provides the following key findings:

- DMSHPs are being installed to replace or supplement existing, functioning equipment. DMSHPs are not being installed in new construction or major renovation projects. Roughly two-thirds of the individuals surveyed are installing DMSHPs for reasons related more to improving comfort, while the remaining one-third are generally looking to save money on their energy bills.

- DMSHPs are primarily being used for both heating and cooling. When they are used for only one function, the majority of DMSHPs are being used for cooling only.

- Participants are installing DMSHPs to replace existing cooling systems or add functionality. DMSHPs appear to be providing satisfactory cooling at all times.

- Participants are installing DMSHPs to supplement, rather than replace existing heating systems. The DMSHP units on their own do not meet the heating needs, especially at extremely cold temperatures, most likely because of their sizing for cooling rather than heating or because the participants had not intended to install cold climate units to replace their existing heating systems. .

- Installations of single and multiple outdoor compressor units are generally distributed as expected. Single outdoor compressors are installed in situations with lower total capacity levels, whereas multiple outdoor compressors are installed in situations with higher total system capacity levels.

- Contractors are primarily responsible for informing customers of the Mass Save program; the benefits of DMSHPs in general and cold climate DMSHPs specifically; and are ultimately responsible for most system design choices.

Core Initiatives to which the Results of the Study Apply:

- Residential Cooling and Heating Equipment (electric) (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation. Nevertheless, the study makes the following program considerations, which will be revisited in greater detail at the completion of the metering study.

- **Consideration 1:** Individual contractors should be considered the primary avenue for reaching participants. Contractor education about cold climate units or higher efficiency units could have a dramatic effect on the savings claimed by this program. Specifically, contractor education about cold climate units could help reach the 62% of participants who currently are not having a conversation with their contractor about cold climate versus standard units.

- **Consideration 2:** Another goal of the survey was to work towards establishing a better understanding of the program baseline, from which program savings are based. The current program assumes a standard heat pump as the baseline for all participants. However, the survey results suggest that while this assumption might be applicable to most participants, an existing equipment baseline for at least a portion of the operation may be more applicable for a significant portion of participants. After reviewing the survey results more closely, the evaluation team determined that further analysis of the baseline was needed to come to a final conclusion.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

The DMSHP Customer Survey marks an interim deliverable in the Cool Smart evaluation. This study was not meant to and therefore did not affect program savings. The PAs will likely adjust program savings at the conclusion of the metering portion of this project.

Overview of Study Method:

The evaluation team conducted a web-based survey with a final sample size of 430 participants drawn from a list of 3,289 participants provided by the PAs. The email invitation was sent to 1,628 participants to reach our target goal of 400 completed surveys. The email invitation included a link to the survey and an indication that participants would receive a $10 incentive for their participation. Of the 1,628 email invitations sent, 26% were bounced-back. Of the remaining 74% of email invitations (1,205), the response rate was 36% (430 participants).

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-8.

Study 14-9: Mass Save® Multifamily Program Process Evaluation Report

Type of Study: Process Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/17/2015

Study Objective and Summary of Results:

The purpose of this study was to:

- Assess and monitor the program's evolution as an integrated offering since the last round of program evaluation was conducted.
- Examine barriers to participation, the effectiveness of program operations, and customer experience.
- Review PA and vendor tracking data to assess whether these data would sufficiently support a planned future impact evaluation.

The study provides the following key findings:

- Nearly all customer groups rated a single point of contact as the highest among all potential program enhancements presented.
- The current PA tracking databases do not allow for a holistic view of multifamily properties across PAs, fuels, and programs. In addition, not all C&I tracking databases include a flag or other method for identifying multifamily properties.
- There is evidence that the energy assessment process does not consistently identify and record all potential energy efficiency opportunities at a given multifamily facility.

Core Initiatives to which the Results of the Study Apply:

- Residential Multi-Family Retrofit (Electric & Gas)
- C&I Retrofit (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1: Create a Single Point of Contact.** The PAs and EEAC should consider creating a single point of contact for each project to ensure a customer deals with one entity throughout the project cycle, regardless of the sector (residential and/or commercial) and fuels (gas and/or electric) present at the project site. This could be achieved by using an outside vendor or a network of vendors.
- **Recommendation 2: Improve Program Tracking Systems.** The PAs should consider the following two steps to address the data issues:

  - Create a unique premise ID for multifamily properties that is implemented across all PAs, fuels and programs.
  - Consider splitting out tracking and planning for C&I multifamily from the rest of the C&I portfolio, similar to the process currently implemented for multifamily residential activity.

- **Recommendation 3: Ensure a Consistent Energy Assessment Process.** A consistent assessment process is key to ensuring that there are no lost opportunities and that any forgone opportunities are recorded for future follow-up with the customer. Improvement of the process can be achieved through the training of auditors in completing a comprehensive job including a review of all the systems in common areas and major systems within unit areas. Program auditors should also be trained to involve technical engineers when required to offer an advanced engineering perspective for more customized measures.
- **Recommendation 4: Feasibility of Future Impact Evaluation.** Considering all aspects of the data reviewed in this study, a billing analysis is believed to be a feasible approach to determining savings among participating accounts. This approach can be expected to provide electric and gas overall and PA level results, although it is noted that for the smaller PAs such as Berkshire, Unitil and CLC, the impact results are not likely to be reliable due to the small populations that appear to be available for the analysis. It is also noted that while this approach can provide a realization rate against the savings predicted at the program and PA level, it will not provide realization rates at the measure level.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing recommendations for improving the effectiveness of the Mass Save® Multifamily program and evaluating its savings in the future.

Overview of Study Method:

In support of the project's research goals, the evaluation team undertook the research activities summarized below, which include conducting in-depth interviews, focus groups, and surveys of representatives from the PAs; implementation vendors and contractors; property managers, owners, and tenants; assessing possible objectives, approaches, and tracking data for conducting an impact analysis in the future, and conducting site visits to assess foregone opportunities.

Summary of Multifamily Process Evaluation Research Tasks

Evaluation Task	Details
In-Depth Interviews: PAs, Implementation Vendors, Multifamily Market Integrator representative, Condo Association Representatives (n=24)	Addressed Multifamily and C&I program integration, program and integration barriers and mitigation strategies, program data issues, and the characteristics of the condominium market.
Focus Groups: Property Managers, Owners and Tenants (n=37)	Explored barriers to program participation and energy-efficiency implementation and gathered feedback on alternative program designs. This task fulfilled requirement in the Three-Year Plan.
External Best Practices Study including In-Depth Interviews with program administrators and Multifamily Program experts (n=8)	Explored whether Multifamily Program designs or best practices outside of Massachusetts have successfully encouraged deeper energy savings or higher participation rates for multifamily buildings.
Surveys with Property Managers/Owners (n=103)	Allowed evaluators to detect statistically significant differences in survey response rates, based on variables such as company size, property size, geographic location, and PA service territory.
In-Depth Interviews with Property Managers/Owners and Commercial & Industrial ("C&I") Contractors (n=40)	Allow the evaluators to explore issues (such as reactions to various program designs and barriers to energy efficiency) in greater depth than the telephone surveys, while avoiding some self-selection effects from the focus groups.
Impact Assessment Methodology	Explore and assess possible impact evaluation objectives and approaches.
Review of Tracking Systems and Integrating Data	Determined ability of Multifamily Program tracking systems to support an impact study.
Assessment of Foregone Opportunities including site visits (n=20)	To develop understanding of the rates and causes of non-installation for identified measures and the impacts from some participants not receiving comprehensive audits.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-9.

Study 14-10: High Efficiency Heating Equipment Impact Evaluation

Type of Study: Impact Evaluation
Evaluation Conducted by: Navigant Consulting
Date Evaluation Conducted: 3/18/2015

Study Objective and Summary of Results:

The objective of this evaluation was to determine gross energy savings for gas furnaces and boilers installed through the High Efficiency Heating Equipment ("HEHE") program, and refine the estimates of baseline efficiency and heating consumption. The evaluation sought to answer the following researchable questions:

- How much energy is being saved for the average installation of efficient space heating equipment through the Massachusetts HEHE program?
- How does the *in situ* efficiency of standard efficiency furnaces and boilers that are installed outside of the program compare to their rated efficiency?
- How does the *in situ* efficiency of existing equipment that is retired early compare to its rated efficiency?
- How are condensing boilers being installed and controlled, as it relates to their potential savings?[12]

The study provides the following key findings:

- Average annual heating loads[13] for HEHE-installed furnaces and combination boilers were 26 percent and 19 percent lower than the standard boilers, respectively.
- It is important to consider standby and cycling losses in addition to combustion efficiency when evaluating gravity-drafted equipment such as standard and early retirement boilers and furnaces.
- High-efficiency boilers are not being installed to maximize potential savings.

[12] The high efficiency of condensing boilers relies on a low boiler return water temperature, which means that differences in installation practices that affect return water temperature have a large effect on savings.

[13] The term "load" is used throughout this study to characterize heat delivered to the home by the furnace or boiler over the course of the year—i.e., the thermal "load" on the heating system. This is calculated as the actual consumption divided by the actual efficiency.

- Many older gas furnaces and boilers considered "early retirement" equipment have AFUEs of at least 75 percent, even when considering actual instead of rated performance.

- Evaluation research suggests that as many as 80 percent of new combination systems are replacing boilers with indirect water heaters.

Core Initiatives to which the Results of the Study Apply:

- Residential Heating and Water Heating (gas) (Gas Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Use evaluation heating loads for HEHE-installed furnaces and boilers in calculating deemed savings. Previous deemed savings had used the same annual heating loads.

- **Recommendation 2:** Adjust baseline equipment efficiency assumptions to account for standby and cycling losses using evaluation determined adjustment factors.

- **Recommendation 3:** Consider and research ways to improve boiler operating efficiency through quality installation and contractor and homeowner education.

- **Recommendation 4:** Use the revised early retirement baselines applied in this study and consider additional early retirement baseline research for units less than thirty years old if early retirement participation increases.

- **Recommendation 5:** Consider conducting additional baseline research and/or requiring information on the application indicating the equipment that is being replaced by combination systems.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

The evaluation yielded revised gross savings estimates for residential natural gas furnaces and boilers, including combination boilers.

Overview of Study Method:

The evaluation team sought to assess home heating (and boiler hot water) consumption and annual heating loads for all types of installations, the efficiency of baseline space heating equipment, and the efficiency of new space heating equipment promoted through the program. With this in mind, the evaluation team designed the field portion of the study with two main components:

1. **Spot measurement of baseline and new equipment *in situ* efficiency**. This task provided efficiency estimates to reduce the uncertainty around new, early retirement, and standard baseline furnace and boiler performance, including oil units. Additionally, spot measurements of baseline equipment provided an opportunity to better estimate fuel switching savings.[14]

2. **Long-term metering of post-retrofit high efficiency equipment** (majority of 2013-2014 heating season). This task refined estimates of annual heating load for furnaces and boilers. Logging of operating parameters was particularly important for condensing boilers where efficiency is dependent on return water temperature. The evaluation team minimized costs and uncertainty by conducting a preliminary billing data disaggregation. The metering sites were selected from within the billing data disaggregation population in a nested sampling design.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-10.

[14] For new high-efficiency boilers, long term metering data also informed efficiency estimates as efficiency varies with return water temperature on all condensing boilers. Oil measurements are relevant only for characterizing the baseline for fuel conversions (e.g., from oil to gas); this evaluation did not calculate any oil savings.

Study 14-11: Furnace Baseline

Type of Study: Market Assessment
Evaluation Conducted by: The Cadmus Group
Date Evaluation Conducted: 12/5/2014

Study Objective and Summary of Results:
The goal of this study was to present relevant available data in one document to facilitate discussions between the Program Administrators ("PA") and EEAC consultants' regarding determination of the appropriate baseline annual fuel utilization efficiency ("AFUE) rating for estimating energy savings associated with natural gas furnaces installed through the HEHE Program.

The residential evaluation team completed an initial inventory of the existing available resources to inform the inputs for both code and market-based baselines identified above. These resources include an industry database, previously completed evaluation efforts and program data. The study provides a brief summary of each resource, as well as a description of the resource's relative strengths and weaknesses (with regard to its ability to inform the PA and EEAC's baseline discussion). In addition, the evaluation team researched 19 different jurisdictions to assess what baselines they used for furnace AFUE and found that seven use 78%, nine use 80%, and three do not specify a baseline.

Initiatives to which the Results of the Study Apply:

- Residential Heating and Water Heating (gas) (Gas Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

However, the study informed future program planning by compiling and evaluating the information available about the baseline efficiencies of gas furnaces. Based on this information, the baseline efficiency has been adjusted for 2014 and beyond.

How the Study Affected Program Results:

The PAs and the EEAC made a decision to change the baseline from 80 AFUE to 85 AFUE for gas furnaces, resulting in a reduction in savings for these measures starting in 2014.

Overview of Study Method:
The study was a meta-analysis and summarization of secondary data sources that could inform a decision regarding the appropriate baseline for gas furnaces. Table 1 lists the identified resources and indicates which specific methodological input(s) the resource can help inform.

Table 1. Resource and Methodological Input Mapping

		Market Size		Efficiency Distribution		
Resource	**Program Tracking Data**	**Before Program**	**After Program**	**Before Program**	**After Program**	**Net-To-Gross**
HEHE Tracking Data	✔					
Point-of-Sales (POS) Data			✔		✔	
AHRI Data*						
2012 HEHE NTG Study	✔	✔	✔	✔	✔	✔
2014 HEHE Impact Evaluation	✔					✔
Benchmarking Research**						

*Offers insight into the available mix of inefficient and efficient HVAC units
**Offers insight into how other justifications report savings and apply baselines

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-11.

Study 14-12: Variable Speed Drive Loadshape Project

Type of Study: Impact Evaluation
Evaluation Conducted by: The Cadmus Group
Date Evaluation Conducted: 8/15/2014

Study Objective and Summary of Results:

The purpose of this study, which was commissioned by Northeast Energy Efficiency Partnerships ("NEEP"), was to assess the annual, peak, and hourly demand impacts from Variable Speed Drive ("VSD") installations. The study focuses on VSD retrofit projects on heating, ventilation, and air conditioning ("HVAC") equipment in existing commercial buildings.

The study provides the following key findings:

- This study produced a VSD savings loadshape tool
- This study produced VSD demand savings estimates during ISO-NE peak periods for examined drives
- VSDs frequently operate at constant speed
- Operators may select constant speed operation over variable speed operation
- VSD performance often does not track outside temperatures
- Most pre-retrofit equipment operates at constant power

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric Only)
- C&I Retrofit (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Continue to promote the installation of VSDs on existing equipment

- **Recommendation 2:** PAs should integrate VSD control and commissioning requirements into program implementation activities. PAs should require specifications of the intended control strategy in their application forms, and post inspection should include verification of commissioned VSD control sequences.

- **Recommendation 3:** To support evaluation efforts, the PAs should add pre-retrofit data collection requirements to program application forms. At a minimum, the PAs should require customers to specify the type, working conditions, and operating schedule of their pre-retrofit baseline equipment.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

The VSD Loadshape study affects the estimated summer and winter demand savings for the following drive types: Chilled Water Pumps, Hot Water Circulation Pumps, Return Fans, Supply Fans, and Water Source Heat Pump ("WSHP") Circulating Loop. Whether demand savings increase or decrease depends on the season, drive type, and building type. Summer demand savings increases for all drive types except for Hot Water Circulating pumps and WSHP circulating loop drives in Elementary/High Schools. However, winter demand savings increases only for the Return and Supply fans and WSHP circulating loop drive types in some building types.

Overview of Study Method:

The study results rely on extensive on-site data collection and metering at more than 400 VSD installations across eight states, and thorough engineering and statistical analysis for the population of prescriptive VSD retrofit projects installed in 2010 and 2011.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-12.

Study 14-13: Massachusetts Existing Buildings Market Characterization: Commercial and Industrial Customer Telephone Survey Final Report

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 10/3/2014

Study Objective and Summary of Results:

The market characterization effort was initiated to obtain a deeper understanding of the existing C&I building market in Massachusetts and to help the PAs continue to shape and expand their portfolio of electric and gas energy efficiency programs.
The main objectives were to:

1. Develop a data set in order to accurately divide the general population into building and customer segments.

2. Examine the level of energy efficiency activity and/or awareness of energy efficiency opportunities among existing customers.

3. Determine the role of energy management as a distinct function in cost containment.

4. Identify sources of information, the purchasing decision making process, and barriers to increased adoption of energy efficient technologies.

5. Support data needs and recruitment efforts for current and related evaluation studies.

The study involved conducting a telephone survey, which collected responses from 943 customers in Massachusetts and resulted in an extensive collection of information across building types and sizes. The survey data was analyzed by building characteristics (e.g. building type, use, etc.), customer characteristics (e.g. owner / tenant, energy management practices, numbers of employees, etc.) and types of equipment.

The study provides the following key findings:

- Businesses are generally unwilling to assume debt, whether self-sought or program financed, to complete energy efficiency projects.

- The economy has recovered from the recent recession, and major renovations have increased dramatically in select industries, particularly for Boston and other high density urban areas.

- Smaller customers were less likely than larger customers to be aware of incentives and PA programs in general, and less likely to have received financial incentives.

- Surprisingly, respondents are unfamiliar with the type of linear fluorescent lighting used in their businesses (58% as weighted by kWh) and may indicate more broadly customers' general unfamiliarity with various types of lighting equipment.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The study provides the following key considerations and recommendations:

- **Key Consideration 1:** While the PAs' energy efficiency programs have had a long tenure in Massachusetts, there remain opportunities for the PAs to focus their marketing efforts to increase awareness and participation across their customer base. Continued engagement with both participating and non-participating customers is critical to increase the percentage of customer participation in program services for energy related improvements. Implementers should continue to explore opportunities to engage customers in order to expand their existing program awareness and knowledge of project benefits. It may be helpful to share case studies developed under the Mid-Size Customer Needs Assessment study, published in 2013, with customers to draw attention to benefits experienced by similar businesses.

- **Key Consideration 2:** PAs should continue to make financing available for interested customers as one of the tools to increase program participation, but understand that program-sourced financing continues to have limited market acceptance and therefore should not be a primary program focus.

- **Key Consideration 3:** Increasing the awareness of energy costs among tenants and the payback thresholds may make them more willing to enter into 'green' leases. The PAs could play a role and should continue to explore opportunities to develop and promote 'green' leases as well as energy use benchmarking that incorporates energy efficiency as part of evaluating and comparing building leases.

- **Key Consideration 4:** PAs should aggressively pursue opportunities to take full advantage of the increasing trend in major renovations taking place in select industries.

- **Key Consideration 5:** PAs should further strengthen their relationships with and more actively target and promote energy efficient technologies to the smaller customer group.

- **Key Consideration 6:** Continue to pursue and conduct follow-up with program participants at key intervals (e.g. 6 months, 1 year or 2 years) to generate interest in additional projects, paying particular attention to those sectors with the highest percentage of program participation (e.g. healthcare, education, food stores, lodging and retail stores).

- **Key Consideration 7:** PAs should continue to offer financing options but uptake is expected to be limited, as indicated previously. This is expected even though relatively high rates of customers cite the lack of funds (43%) as a reason for why no improvements

had been made recently, given their reluctance to seek or accept financing for energy efficiency projects.

- **Key Consideration 8:** Opportunities may exist for energy efficiency through more efficient cooling strategies, particularly in larger buildings that use window air conditioning units.

- **Key Consideration 9:** It is important to continue and expand basic education, as needed, about types of lighting equipment. More specifically, PAs should ensure that their customers understand the types of lighting equipment installed in their facility and the distinctions between more energy efficient linear fluorescents and less efficient types.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by providing several key considerations and recommendations for improving the PAs' energy efficiency programs within the C&I sector.

Overview of Study Method:

The C&I Customer Telephone Survey was administered by a CATI system. DNV GL utilized the electricity customer database created for the Customer Profile Study to select the sample for the C&I Customer Survey. This database was created using 2011 electricity customer billing data provided by each of the PAs.

The state-wide sample was stratified according to the building types and then by demand size (kW) and designed to meet the needs of both the Existing Buildings Market Characterization and the Mid-sized Customer Needs Assessment Study. The sample design includes twelve industry categories, including "other" and "unclassified", and six demand categories, for a total of seventy-two primary strata.

The sample weights were derived using a procedure designed to incorporate a larger number of significant response tendency predictors in the adjustment process in order to minimize non-response bias. In order to achieve appropriate population estimates from the respondents, a non-response adjusted weight was created for each of the 943 businesses in order to account for the eligible non-respondents.

The survey instrument was designed to first verify that the premise is a commercial facility and the appropriate contact person, and then gather general information on the facility that could be quickly and reliably collected over the phone.

Key building information collected included:

- Building characteristics, operations, and uses
- Ownership status, e.g. owner, tenant, property manager
- Primary heating fuel
- Building equipment (lighting, EMS, heating and cooling, hot water, on-site generation, and other equipment)
- Presence of recent energy related improvements
- Presence of recent renovations
- Changes or additions to square footage
- General practices related to energy consumption
- Respondent Characteristics (e.g. job title, number of facilities overseen, number of employees, owner/tenant structure, etc.)
- Customer Attitudes Toward Energy Use (e.g. recent improvements, purchasing and decision making practices)

At the conclusion of the telephone survey, respondents were asked if they would be willing to participate in the next phase of the study, the customer on-site assessments. The on-site assessments will be used to verify and collect more specific information about the building equipment, operations, maintenance and purchasing practices.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-13.

Study 14-14: Retrofit Lighting Controls Measures Summary of Findings FINAL REPORT

Type of Study: Market Assessment
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 10/27/2014

Study Objective and Summary of Results:

The purpose of this research was to provide recommendations for improving the lighting controls measure options through the PAs' Large C&I retrofit program, including which market segments and technologies to target, and to determine how lighting controls measures should be evaluated.

The research addressed retrofit lighting controls installed under all PA C&I programs including Large C&I and Small Business, both Prescriptive and Custom. The focus was on Large C&I, while data for the Small Business programs was also reviewed for comparison. Measures addressed include occupancy, daylight dimming, photo sensor, advanced/network, and wireless controls.

The study provides the following key findings:

- Analysis of available tracking data reveals an approximately 50% decline in lighting controls savings in the Large C&I retrofit program from 2010 to 2011, and an increase of approximately 8% from 2011 to 2012. However, in 2013, Large C&I lighting controls savings decreased to their lowest levels since 2010.

- At this time, there is no clear answer whether this declining trend reflects a market shift, a slowdown in the large C&I sector, changes in program planning, or other factors.

- The findings of the literature review suggest that current market saturation for lighting controls is low but has more potential; and substantial interest is growing in the market for wireless and integrated controls.

- To estimate lighting control savings more accurately, an alternative algorithm was developed based on a "% saved" factor instead of "delta hours."

Core Initiatives to which the Results of the Study Apply:

- C&I Retrofit (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The evaluation team recommends that the PAs focus on the following high potential technologies: advanced lighting controls, wireless controls, LED with controls, and daylight dimming.

- **Recommendation 2:** The evaluation team recommends that the PAs focus on the following high potential sectors: Offices, Small Business (<300 kW).

- **Recommendation 3:** The evaluation team recommends adjusting the lighting controls savings algorithm to include "% saved" rather than the currently used "delta hours" value. DNV GL recommends using the weighted average values from an LBNL[15] study of 24% saved for occupancy sensors and 28% saved for daylight dimming.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

The PAs have adopted Recommendation 3 for estimating lighting savings in 2015 and beyond.

How the Study Affected Program Results:

Changing the lighting controls savings algorithm to use a "% saved" factor should increase the accuracy of savings.

Overview of Study Method:

To achieve the study objectives, DNV GL utilized reviews of national, regional, and statewide studies and literature, PA tracking data, as well as interviews with PA program staff and various market actors. These research activities were conducted through the following tasks.

Task 1: Savings Estimation Literature Review

Task 2: Market Assessment Literature Review

Task 3: Tracking Data Review

Task 4: Review of Previous MA-LCIEC Studies

Task 5: Program Staff Interviews

Task 6: Lighting Vendor / Distributor Interviews

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-14.

[15] Erik Page & Associates, Inc. *A Meta-Analysis of Energy Savings from Lighting Controls in Commercial Buildings*. Prepared for the Ernest Orlando Lawrence Berkeley National Laboratory. September, 2011.

Study 14-15: Whole Systems Energy Efficiency Programs - Literature Review

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 4/1/2014

Study Objective and Summary of Results:

The primary objective of this scoping study was to provide an understanding of the market barriers to a whole system approach from the perspective of customers, contractors and the design communities. For this study, the evaluation team conducted a literature review of whole system programs and initiatives offered by other utilities and states. The review focused on identifying the key program design features that were successful (or unsuccessful) in promoting system optimization and greater energy savings.

The evaluation team identified a number of design and implementation features that directly influence the success of a whole system based program including:

- Target larger customer market segments;
- Offer program incentives to both owners and the design community and tie the incentives to project milestones;
- Offer incentives for both measures and services;
- Create marketing materials that convey the benefits of a whole system approach;
- Leverage existing relationships between customers/account representatives and customers/design community to promote the program; and
- Require post-inspection verification.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)

Evaluation Recommendations:

In addition to identifying the success factors of a whole system approach, the evaluation team identified a number of next steps for further research into understanding how to capture additional energy and demand savings through whole system programs, including:

- Conduct interviews/brainstorming session with MA PAs

- Conduct interviews with program managers and market actors involved in successful programs in other states
- Conduct interviews with the architects and engineers ("A&E") community
- Conduct focus groups with new construction building owners

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by characterizing successful whole system programs and providing recommendations for further research.

Overview of Study Method:

The evaluation team included a program in the analysis if it met the following definition, taken from "Whole System Design: An Integrated Approach to Sustainable Engineering":

> *Contrary to a prescriptive approach to energy efficiency, which encourages optimizing single components or sets of components within a system,* ***a whole system approach*** *is a process through which interconnections between sub-systems and systems are actively considered, and solutions are sought that address multiple problems via one and the same solution.*[16]

The evaluation team focused on programs that encourage A&E and building owners to either optimize whole building systems prior to construction, or to re-optimize whole systems at some point following construction. Programs were identified where the primary incentives were structured to reward overall building energy savings, as opposed to simply rebates for the installation of new equipment without considering the complete system.

The evaluation team also examined Retro-Commissioning ("RCx") programs. RCx programs apply a building commissioning process to existing buildings, seeking to improve how building equipment and systems function together. While RCx programs do not necessarily require the installation of new equipment or the re-engineering of systems, they do require optimizing existing systems and the interaction between those systems. As such, these programs fall under the umbrella of the definition of 'whole system approach'.

[16] Stasinopoulos, P., Smith, M. H., Hargroves, K., & Desha, C. (2009). *Whole System Design: An Intergrated Approach to Sustainable Engineering*. London: Earthscan.

In addition to energy efficiency programs, state and city regulations that promote a whole systems approach to energy efficiency were researched. These regulations indicate potential practices that may be useful in the administration of whole system energy efficiency programs.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-15.

Study 14-16: Final Report of Massachusetts LED Market Effects: Baseline Characterization

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/1/2015

Study Objective and Summary of Results:

This baseline characterization is the first phase of a two-phase study to determine the market effects resulting from LED lighting programs offered by the Massachusetts PAs. The goal of this study was to develop a baseline of the current conditions of the market for LED products in Massachusetts and a selected comparison area to be used for future analysis of market effects resulting from PA-sponsored programs in Massachusetts. The principal objectives were to determine:

- Market share of LED lighting products in key applications and market segments.
- Availability of LED lighting products from distributors, installation contractors, and retailers, especially for products that can serve as direct replacements for established technologies.
- Price of LED lighting products versus competing technologies.
- Vendors' perceptions of changes in product availability, features, pricing, and performance.
- Customer awareness and knowledge of LED lighting products.
- Customer perceptions of barriers and motivations to adoption including: price/performance versus competing technologies.

The second phase of this study, planned for the 2016-2017 period, will assess the pace of LED market development in the Massachusetts market versus the selected comparison area. The exact timing of this effort will be determined by events such as the current and future pace of the LED market and activity in the comparison area. This effort includes collecting similar data in Massachusetts and the comparison area and examining the differences in their change in market indicators over time to characterize and quantify program market effects. Experience with similar types of cross-sectional studies shows that market acceptance indicators of program versus non-program participants are the most different during the relatively early stages of a program.
The study provides the following key findings:

- Initial cost was the main barrier to adoption mentioned by consumers and market actors across the supply chain. While PA-programs have influenced the adoption of screw-in bulbs in the non-residential sector, significant opportunities remain in other commercial applications and in the residential sector.
- Consumers are still unfamiliar with LED technologies and concerned about the quality and performance of these products, particularly given their experience with early CFLs.

Program managers noted that as the number of lighting options increases, consumers often opt for the least cost option as they do not truly understand what they are buying.

- Given the relatively recent introduction of LED technologies for general lighting applications, commercial customers appear to be very well-informed on their general price and performance characteristics. Residential customers are aware of the technology, although not as knowledgeable concerning performance characteristics. As noted above, customers and market actors report that lack of familiarity with LED technologies is a barrier to increased adoption. Technology assessments forecast that first costs of LED technologies will remain significantly higher than those of competing fluorescent and incandescent technologies over the next 10 years.

- LED technologies allow for greater controllability than fluorescents. A meta-analysis of lighting control installations in 2011 found that energy savings from controls range between 24% and 38% of baseline lighting consumption.

Core Initiatives to which the Results of the Study Apply:

- Residential Home Energy Services (Electric Only)
- Residential Lighting (Electric Only)
- C&I New Construction (Electric Only)
- C&I Retrofit (Electric Only)
- C&I Direct Install (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1: Maintain incentives for LED lamps and fixtures**. PAs should continue to incentivize LEDs to reduce the first cost barrier and increase the saturation of LEDs across the Massachusetts market. Program managers should continue to monitor the decrease in LED prices to ensure incentives are at the optimal level.

- **Recommendation 2: Continue to support the development of product standards and testing programs**. Given the number of manufacturers entering the LED market each year and consumer unfamiliarity and concerns with LED quality and performance, the need for quality standards and consumer education is even more important.

- **Recommendation 3: Promote programs that educate consumers on LED products and applications.** DNV GL recommends that PAs continue to support educational efforts to assist consumers in selecting the LED product that best meets their needs.

- **Recommendation 4: Promote lighting controls through programs as a way to increase lighting savings.** Tying controls and LEDs together will increase the savings potential of each measure and the associated cost-effectiveness.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a preliminary baseline characterization of the current conditions of the market for LED products with which to assess market effects.

Overview of Study Method:

This study relied on a variety of primary data collection and analysis efforts conducted in Massachusetts and the comparison area (Georgia, Arizona, Kansas, Nebraska). At the time this study was conducted, multiple data collection efforts were underway in Massachusetts and in the comparison area. To reduce respondent burden and study costs, this study was conducted in coordination with other Massachusetts studies, and many data collection instruments were based on questions previously asked in the comparison area as part of the California Public Utilities Commission ("CPUC") LED Market Effects Study.

Given the international scope and structure of the LED market, it was necessary to capture information from a wide range of actors to characterize market conditions. Information from interviews with manufacturers and national R&D program managers, along with technical and market literature and product databases set the scene for the detailed regional profiles. Then primary data collection was conducted using surveys and in-depth interviews with residential and commercial customers, distributors, designers, installation contractors, and retailers to support the creation of quantitative market indicators that characterize the extent of market development in the different regions.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-16.

Study 14-17: 2012 C&I Customer Profile Final Report

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 9/23/2014

Study Objective and Summary of Results:

The principal goals of the Enhanced C&I Customer Profile project were to:

- Update the previous customer profile characterization report and associated database to incorporate the 2012 participant and billing data.
- Evaluate previously unanalyzed time-series, geographic, and measure interaction trends within the participant and billing database.

The study provides the following key findings:

End Use Sectors:

- Lighting projects comprise the majority of electric projects (69%) and savings (51%).
- Relative to the proportion of projects, HVAC measures continue to play a major role in savings for both Electric (21%) and Gas PAs (57%).
- For Gas PAs, the number of hot water measures increased substantially from 2011 (24% to 68%) due largely to the volume of spray valves installed in 2012.

Business Type:

- For electric PAs the industrial business type remains a critical area of energy savings, accounting for 22% of the savings despite accounting for only around 11% of the tracking population.[17]
- Office and retail business types both continue to have high proportions of the participant population and on the strength of those high proportions also have comparatively high proportion of savings.
- For Gas PAs the industrial business type represented 5% of participant population but 28% of savings on the strength of 3 large projects.
- The Food Service business type saw a large increase in participation on the strength of a spray valve offering, which is reflected in the hot water end use.

[17] Or 8% of the billing population and 10% of the statewide consumption.

Custom vs. Prescriptive Savings:

- Consistent with 2011 findings, the majority of 2012 savings came from Custom projects (53% of electric and 80% of gas). The importance of custom projects supports a continuation of impact evaluation work to ensure that methods used to calculate savings are effectively quantifying the benefits, particularly regarding specific measures, such as steam traps, that may experience a shift from custom towards a more prescriptive offering as they achieve market penetration.

- The impact of large custom projects year over year can have notable impacts on end use and building type savings ratios. DNV GL recommends that in future customer profiles the scope is expanded to include a more detailed analysis of the scale, impact, and demographic composition that outlying data points have on the overall findings.

Account Size:

- Midsized accounts may continue to represent an underserved market. The participation is in line with the smaller account bins, but they do not exhibit the same high average savings ratio as those smaller accounts.

Geographic Trends:

- Regional variations exist for participation and savings. There is a wealth of geographic information that the PAs have captured which illustrate potentially important variations in regional efficiency and may be useful for identifying priority targets for PA offerings; this information represents an opportunity area for greater depth of evaluating the PA data and should be leveraged for future studies.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1: Investigate the geographic data at more detailed granularity**. Additional analysis into geographic clusters may be useful in identifying similar C&I markets across the state that have not experienced the same depth of efficiency savings as well as yield insights into market saturation levels and the drivers behind these differences.

- **Recommendation 2: Investigate customer segmentation though utilization of multiple attribute filters**. The categorical analysis presented in this report confirms many of the high level trends first identified in the 2011 customer profile, as well as identifies opportunities for deeper analysis. Further investigation into the data by applying multiple segmentation filters (e.g. building type, consumption size, and end use) may provide

greater insight into untapped opportunities for energy efficiency that are currently masked by the high level analysis.

- **Recommendation 3: Investigate in greater depth why load factor appears correlated with savings**. For the second year in a row, low load factor accounts had the highest average percent savings. The level of granularity used to evaluate load factor is relatively coarse, and a more detailed investigation of how load factor and average savings are correlated may provide valuable insight into how PAs can target offerings to a large customer segment by population.

- **Recommendation 4: Investigate methods to improve PA specific match rates using PA supplied ID data**. The ability to reliably and robustly link the PA tracking and billing data is a critical element of the customer profile report, and an important input into many other studies. The assumption inherent in scoping the 2011 and 2012 data is that account and other unique ID links are consistently formatted both within PA and year over year, and that minimal manipulations would be needed to link the data. However, this has proven more difficult than anticipated, and given the establishment and analysis of time series datasets, undertaking a deeper analysis of the data will be necessary to improve its value. Through the QA/QC process DNV GL believes that match rates can be further improved with PA specific explorations into how to effectively link data, and this standardization may be useful in improving the ability to link a customer between separate gas and electric service providers.

- **Recommendation 5: Further investigate multi-end use and multi-year participants and trends.** The 2012 customer profile confirmed the presence and impact of participants that undertook multiple end use projects and participants that participated over multiple years. Additional analysis guided by these summary level participant findings, for example evaluating drivers behind why certain segments have higher savings from multiple end use projects – may yield a greater understanding of end use trends, scale of effort, and – should national account flags become available – corporate adoption rates.

- **Recommendation 6: Further investigate the retail business participation between gas and electric.** The 2012 customer profile indicated that businesses classified as retail had higher participation for electric PAs relative to gas PAs. Additional analysis into potential drivers of this – for example, do most retail sites focus on measures that are not applicable to gas (e.g. lighting), and what specific measures are being undertaken at retail locations that have a gas provider, will help to evaluate if there is an opportunity to increase participation at retail locations or if this business type constitutes a harder to serve sector for gas PAs.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a characterization of C&I customers by their end uses, business types and sizes, and project types. It also provides recommendations for conducting more detailed, robust analyses to more precisely identify potential target areas for program improvement.

Overview of Study Method:

- Acquired PA tracking and billing data
- Compiled, standardized, validated, and organized the data
- Analyzed and summarized the consumption and savings data by customer sector, fuel, and PA

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-17.

Study 14-18: Learning from Successful Projects Final Report

Type of Study: Process Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/24/2014

Study Objective and Summary of Results:

This report explores the characteristics, practices, and features that successful Massachusetts C&I energy efficiency projects have in common, so that they can be applied towards the development of other projects. This study also explores the differences and similarities in how customers define and experience success.

Successful C&I energy efficiency projects are too diverse and complex to be defined by any known metric. A set of multiple metrics was therefore used to identify and characterize successful projects. The study provides the following key findings:

- Both PAs and customers interviewed noted that the use of trade allies to engage customers was key to project success. This holds true both for the smaller customer segments, given their large numbers of customers, and for the large and medium sized customers through the use of project expeditors

- Both PAs and customers interviewed noted that training was a key contributor to project success.

- The PAs noted that it is important to educate customers about the totality of what they are getting from the programs. One Massachusetts program, the Bright Opportunities Program, provides upstream incentives to distributors to buy-down the cost of energy efficient LEDs and linear fluorescents; and these incentives in turn get passed down to the retail and customer level. Many customers, however, don't know they are getting a discount for these lighting technologies.

- The PAs suggested that more could be done to help customers build the internal expertise needed to implement projects.

- Both PAs and customers noted that non-energy benefits ("NEBs), as well as a perception of "being green," are factors that influence project success. Oftentimes, the NEBs and "green" aspects of a given project go unnoticed as stakeholders focus solely on the dollars saved.

- PAs indicated the importance of "measure twice and cut once," which refers to the practice of making sure the project is technically sound and appropriate at the outset.

- As expected, both customers and PAs view projects that are completed on time and with little difficulty as successful.

- Having a signed memorandum of understanding ("MOU") was cited as a criterion for success during PA interviews.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

Leverage trade ally customer relationships to increase customer engagement and communication. The PAs can continue to leverage trade allies to increase the likelihood of achieving any number of the success factors related to customer engagement and communication.

Increase emphasis of vendor training. By increasing the emphasis on the use of training vendors and other technical staff, the PAs will encourage and support more frequent installation of energy saving measures. Also, increased trade ally training, support and competency are important because of their strong direct relationships with customers.

Promote and leverage incentives. Program implementers can educate customers about all the incentives that are being provided and offered to increase the depth and breadth of their energy efficiency projects. When customers realize they are being offered additional discounting, they are more likely to feel more successful, decide to act, and install more measures and/or projects.

Explore ways for customers to build internal expertise. This may take the form of a shared energy manager position to serve a group of multiple small- and mid-sized customers.

Emphasize the Value of NEBs and "Being Green". By marketing the NEBs and other intangibles associated with specific projects or specific project types, the PAs will increase the potential for project success. Such marketing can take the form of case studies, which both PAs and customers noted as training and education tactics that lead to project success.

Ensure the Accuracy of Technical Review and Assistance. By ensuring that the aspects of a project are technically sound and appropriate, the PAs will ensure that the project is set up for success at the outset. Even though a project that grossly overestimates project savings could still save a significant amount of energy, a customer may not view it as a success given its high expectations

Leverage the results of EM&V site reports. For PAs not doing so already, the results of individual EM&V site evaluations may be used as a mechanism for quality assurance, accuracy and project specific feedback. For example the PAs could follow up with a project receiving a particularly low (or high) realization rate to determine if there were any issues with the project that went unaddressed. It should be noted, however, that the EM&V work is driven by a random sample of projects and this type of exercise would not replace and program existing QA/QC efforts.

Focus on Eliminating Project Delays and Intrusions. While the PAs can only exert so much control over the participation process, it is worth assessing participation at regular intervals to determine if there are any improvements that can be made. PAs could explore what causes project delays and develop tracking mechanisms and processes to monitor and continually improve services to ensure customer schedules and expectations are met and preferably exceeded.

Small PAs should adopt a simpler form of the MOUs used successfully by larger PAs. Having a signed MOU was one of the metrics used to identify customers with successful projects, and it was cited as a criterion for success during PA interviews. The PA Differences project found that the smaller PAs have very few large customers that can implement large projects, which are historically a key to achieving savings goals. To increase the critical savings stream from these large customers, DNV GL recommends that smaller PAs consider adopting a process similar to the formalized MOU that focuses on planning for energy efficiency over time.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by providing recommendations to increase the likelihood of achieving success for the PAs' C&I projects.

Overview of Study Method:

In order to investigate successful projects, it was essential to first identify the key factors that influence project success. DNV GL began by conducting in-depth interviews with six PAs and an EEAC consultant to identify characteristics of successful C&I efficiency projects in Massachusetts.

Informed by this qualitative assessment, the evaluation team reviewed the customer billing and program tracking data to develop quantitative metrics for potentially defining and evaluating potentially successful customer projects. Working collaboratively with the PAs and EEAC, the evaluation team identified four potential metrics that draw on both qualitative and quantitative criteria:

1. **PA-identified.** This metric categorized a project as successful if a PA identified that project as being exceptionally successful during the in-depth PA interviews.

2. **MOU-signing.** This metric flagged projects as potentially successful if they were undertaken by customers that signed MOUs with PAs in 2012 and 2013.

3. **Three-year repeat participants.** This metric flagged projects as potentially successful if they were undertaken by customers with repeat participation in energy efficiency programs in 2011, 2012, and 2013.

4. **Combination metric indicated.** This metric evaluated projects based on a combination of depth of savings (amount of lifetime energy savings in relation to customer size) and breadth of savings (measure type diversity).

Significant collaborative iterations with the PAs and EEAC consultants occurred before establishing these metrics by which success could potentially be measured.

Once the four metrics were defined, the evaluation team used them to identify a diverse group of potentially successful projects from the C&I program tracking and billing data as well as a comparison group of projects that did not possess any of the four metrics of success. It is important to note that among C&I projects there cannot be one single metric of success. Instead, each of these metrics was chosen as it points to a different type of success. Using all four metrics to identify the potentially successful projects allows us to speak to a diverse cross-section of potentially successful projects and increases the odds of identifying specific factors that affect project success.

DNV GL interviewed a sample of C&I customers from the successful and comparison groups in order to learn more about their perspectives on factors contributing to project success. The interview findings were compared with the PA/EEAC interviews and analyzed to provide insight into the factors that contribute to project success and to inform our recommendations on how the PAs might replicate these factors in order to increase the prevalence of successful projects.

Application of Results: *Prospectively*

A copy of the complete study can be found in Appendix 4D, Study 14-18.

Study 14-19: How PA Differences Affect Outcomes, Phase 2 Final Report

Type of Study: Process Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/18/2015

Study Objective and Summary of Results:

The objectives of this study were to:

- Verify and document the reasons for the differences in C&I energy efficiency program outcomes between PAs
- Identify potential opportunities to achieve greater savings and/or cost effectiveness
- Assist the PAs and EEAC in understanding the achievement of customer equity across the state
- Identify potential opportunities for increasing the consistency of program delivery statewide, particularly for customers served by multiple PAs.

Using 2011-2013 PA billing and tracking data, and U.S. Census and Massachusetts state tax assessor data, DNV GL performed a series of analyses to identify key factors leading to differences in C&I program outcomes. The study provides the following key findings:

- Under current practices, the PAs primarily rely on projects with large C&I customers to achieve savings goals. The large PAs (National Grid and Eversource (formerly NSTAR)) have the advantage of having a greater availability of large customers and have done a better job coaxing savings out of those large customers.
    - Under the current practices of relying on large projects, Eversource's territory is more conducive to efficiency programs than National Grid. Eversource has larger large customers and less consumption tied up in the smallest (<50 kW demand) C&I customers than National Grid. National Grid's also has much more electric consumption tied up in manufacturing than NSTAR.
- For electric, there were two main factors that accounted for differences in performance metrics within size categories:
    - Large outlier projects
    - Savings from non-lighting end uses, especially HVAC. Eversource usually did better than other PAs at achieving savings from HVAC.
- For gas, there were two main factors that accounted for differences in performance metrics within size categories:
    - Large outlier projects. There were fewer gas projects overall, so outliers had a stronger effect for gas than electric

  - Spray valves. National Grid's 2012 spray valve effort is clearly visible in many of the metrics. Spray valve savings are wide and shallow: they drive up participation rates, but drive down savings ratios (savings/participant consumption).

- As project size decreases, the cost per energy unit increases.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Small PAs should consider how to increase technical expertise relevant to their largest customers and strike long-term efficiency deals with their largest customers, perhaps in the form of MOUs.

- **Recommendation 2:** Whenever possible, comparisons between PAs should be based on multiple years of data and focus on medium- or long-term trends.

- **Recommendation 3:** Large and small PAs should attempt to get greater savings from the small and mid-sized customers.

- **Recommendation 4:** Expand use of subcontractors to increase PA reach to smaller customers.

- **Recommendation 5:** Use targeted initiatives to achieve savings from specific measure types such as National Grid's spray valve initiative in 2012.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing recommendations to improve the effectiveness of C&I energy efficiency programs across all the PAs.

Overview of Study Method:

DNV GL conducted the evaluation in two phases, with an option to conduct a third phase to investigate additional topics of interest to the stakeholders.

In Phase 1, DNV GL investigated the data available to determine which analyses could be conducted during Phase 2. Specifically, DNV GL completed the following evaluation activities:

- Reviewed 2011 and 2012 billing and program tracking data provided by the PAs
- Reviewed third-party data sources
- Made initial computations and conducted feasibility tests on metrics derived from the 2012 PA data
- Reviewed in-depth interviews already completed by DNV GL for past C&I projects
- Reviewed results and methods used for other related projects conducted recently by DNV GL in Massachusetts, including the Mid-Size Customer Needs Assessment and the 2012 C&I Customer Profile (Project 31)
- Generated an interim findings report and Phase 2 scope of work

In Phase 2, DNV GL conducted a more detailed analysis of the available data to answer nine researchable questions identified in Phase 1 which included examining the:

- Observed cross-PA differences in savings rate (total savings divided by total sales), participation rate (total participating accounts divided by total billed accounts), and savings per participant
- Effect of customer size on the performance metric differences
- Effect of savings ratio (participant savings divided by participant consumption) on the performance metric differences
- Effects of building type, and of building type by size combinations, on savings
- Effects of end uses, and of end uses by size combinations, on savings
- Effects of building type by end use and size combinations on savings
- PA process-related differences to determine effects of differences in PA marketing and sales strategies within the relevant industries.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-19.

Study 14-20: Massachusetts Commercial Real Estate Survey Analysis – Final Report

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/18/2015

Study Objective and Summary of Results:

The primary objective of the study was to provide a comprehensive understanding of the complex relationships between building owners, property managers, and tenants, and to identify specific program offerings and points in the property sale and leasing processes that offer opportunities to capture energy efficiency savings through analysis of data collected by the 2014 Massachusetts Existing Buildings Market Characterization C&I Customer Telephone Survey (C&I Customer Survey).

The report presents findings on the differences between commercial real estate ("CRE") and non-commercial real estate businesses; physical building characteristics; equipment characteristics; ownership and tenant structure and business practices.

The C&I Customer Survey queried 943 customers, of which 324 were identified as CRE, 528 were identified as non-CRE, and 91 did not provide sufficient information to determine whether they were CRE or non-CRE.

- Overall, DNV-GL found that CRE respondents had less demand for electricity and used less gas compared to the non-CRE respondents.
- Among the 324 CRE customers, offices and "other" business types had the greatest proportion of consumption (27% and 19%, respectively).
- Among the 528 non-CRE customers, "other" and manufacturing business types had the greatest proportion of consumption (37% and 19%, respectively).

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Increase outreach to building managers and owners.** Additional efforts to deepen and maintain relationships with building managers and owners can provide an avenue to promote energy efficiency programs in the commercial real estate market.

- **Leverage the role of account managers.** The PAs should consider leveraging the role of their account managers. Account managers can continue to play a critical role in working with commercial real estate businesses as they can more readily communicate energy efficiency program information and assist customers in navigating through the participation process.

- **Target marketing to commercial real estate businesses based on building vintage.** The PAs should consider target marketing to commercial real estate businesses based on building vintage. The analysis showed that 65% of buildings built before 1990 have not undergone a renovation within the past five years and therefore may offer opportunities for energy savings.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by characterizing the commercial real estate marketplace and providing recommendations for improving the effectiveness of the PAs' energy efficiency programs in this sector.

Overview of Study Method:

Identifying opportunities for energy efficiency programs in the commercial real estate market requires an understanding of the relationships between three key stakeholder groups: property owners, building managers, and tenants. The analysis in this study focused on comparing and contrasting findings between commercial real estate and non- commercial real estate respondents, and among commercial real estate respondents in the three stakeholder groups.

The study analyzed data from the C&I Customer Survey, which collected information from 943 C&I customers (716 commercial, 148 industrial, and 79 other customers) across 11 building types. The sample design for this survey was developed to ensure statistically rigorous results that would help identify differences across building types and demand size categories. The survey sample was stratified according to the building types, and then by demand size (kW) category, using 2011 billing data provided by the PAs.

DNV GL's analysis of the commercial real estate market focused on four key research areas covered by the C&I Customer Survey:

1. Physical building characteristics: location, age, size, and fuel use of their buildings.

2. Equipment characteristics: technologies associated with major operating costs for buildings, and whether those technologies were energy efficient.

3. Ownership and tenant structure: lease durations, lease structures, and how survey respondents engaged with their utility.

4. Business practices: the importance of energy costs to respondents, and their energy efficiency behaviors in the context of their energy use.

DNV GL analyzed responses to specific questions from the C&I Customer Survey that were relevant to these research areas, and identified statistically significant differences between commercial real estate and non-commercial real estate markets (or between different groups of commercial real estate respondents) where appropriate. To further characterize commercial real estate businesses, DNV GL analyzed supporting descriptive statistics in order to identify additional data trends; while these results may not be statistically significant, they are summarized in our analysis to highlight potentially valuable insights.

In order to provide a more accurate understanding of the implications of the analysis, DNV GL expanded the survey responses to the total C&I population using sample weights based upon kWh usage. The estimates of totals, means, ratios, and percentages presented in this report reflect this weighting process.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-20.

Study 14-21: Small Business Program Process Evaluation Final Report

Type of Study: Process Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/23/2015

Study Objective and Summary of Results:

The objectives of this study were to:

- Describe the operations of the Direct Install program (formerly known as the Small Business ("SB") Services retrofit program), which provides efficiency services and incentives to small C&I customers. Our evaluation focuses on topics that are relevant to comprehensiveness and on any program changes since the previous process evaluation.

- Provide recommendations for how to increase program savings through wider participation and greater comprehensiveness.

- Provide recommendations for how to maintain or increase cost effectiveness, keeping in mind that increasing program savings (while still passing the cost effectiveness test) is a higher priority than increasing cost effectiveness.

- Whenever possible, document the intended achievements of the program's elements and assess the extent to which they were met.

The study provides the following key findings:

Program Processes:

- The overall program design has been relatively successful for achieving electric savings with some room for improvement, but has been relatively unsuccessful for achieving gas savings.

- While most program processes are similar, turnkey implementation by SB vendors creates a risk of non-standardized customer experiences.

- Data transfer processes between vendors and PAs vary.

- The PA 2013 SB tracking databases contain inconsistent distinctions between custom or prescriptive measure types or measure types installed through the SB program or the other initiatives (New Construction or Large Retrofit).

- In the tracking data (2013) provided to DNV GL, there were cases where multiple PAs tracked the same measures, but apparently reconciled them for their annual reports.

Recent Program Changes:

- DNV GL found that the PAs have achieved some of the program improvement steps outlined in their 2013-2015 Three-Year Plan.

- By 2011, the PAs had achieved most of the steps towards statewide gas and electric integration that was called for in the 2010-2012 Plan. Since then, DNV GL found little evidence of additional progress towards statewide integration.

Comprehensiveness:

- DNV GL found inconsistent documentation related to what measures the program covers.

- Vendors tended to inspect systems that have the specific measures listed on the RFP measure lists (e.g. lighting, spray valves) and not inspect other systems (e.g. non-lighting, heating).

- The gas PAs expressed a need for better identification of larger gas opportunities such as boilers, furnaces, insulation, and water heating.

- DNV GL observed few SB vendors using the comprehensiveness checklist during the assessment process, although they reported using it during the application process.

- Vendors have a strong influence on customer decisions, and increasing the comprehensiveness of the assessments and recommendations would likely increase overall program comprehensiveness.

Savings and Cost Effectiveness:

- The SB program generated substantial savings from lighting measures (89% of electric savings), but not much from other measures.

- There is room to improve both the depth of savings and participation rates.

- Major findings from the 2013 SB tracking data mining task include the following:

    - Electric PAs achieved an average participation rate of about 1.4% of eligible accounts.
    - DNV GL estimates that approximately 24% of SB participants installed gas measures; at least 84% installed electric measures.
    - The average electric SB participant saved about 17% of their electrical load, with the majority of the savings from lighting measures (89%).
    - The average gas SB participant saved about 5% of their gas load, with the majority of savings from hot water measures (85%), particularly spray valves and faucet aerators.

- In 2013, there was minimal funneling of SB participants to other programs.

- In 2013, the SB program generated a modest amount of gas savings for the SB eligible customers (5%); however, this customer class achieved substantial gas savings from the other programs.

Other:

- DNV GL's interviews with nonparticipating contractors indicated that about one-third of them would be interested in participating in the program, if given more opportunity.

Core Initiatives to which the Results of the Study Apply:

- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

Contracting Process:

- Find ways to build achievement of non-lighting and gas savings into the contracting process.
- Make the contract process more consistent across PAs and eliminate duplication of effort.

Measure List, Checklist, and Assessment Process:

- Strengthen the comprehensiveness checklist and implement a common electronic tool or app for all vendors.
- Clearly define and document the measures covered by the program.
- Require vendors to report and promptly share the specifications of major heating and water-heating systems for all assessments with the relevant gas PA.
- Consider sending in two assessors at once; one focused on lighting (similar to current practice) and one focused on gas-related measures.
- Consider providing SB vendors with additional training to increase their knowledge of non-lighting and gas-saving measures.

Data Handling:

- Tracking databases should be clearer and more consistent within and across PAs. Databases should include: clear indication of which (sub-)program measures were incented through (e.g.: SB/Direct Install, Large Retrofit, New Construction), clear indication of whether a measure was custom or prescriptive, the SB vendor associated with the measure or an explicit indication of none, and which customers received assessments, even if they did not install any measures.

- PAs should automate their electronic data entry.
- PAs should have the capability to obtain and log the assessment details from their SB vendors into a data tracking system. This would help PAs identify additional potential savings from SB participants, especially from those that do not install all recommended measures.
- Formalize the process to reconcile cross-PA measure tracking if one is not already in place.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by providing recommendations to increase small business program savings through wider participation and greater comprehensiveness, and to maintain or increase program cost effectiveness.

Overview of Study Method:

DNV GL completed eight major research activities during this evaluation. The following table provides a summary of these activities and the major program elements they addressed.

Program Elements Addressed by Evaluation Activities

		Program Elements Covered			
	Evaluation Activity	Design	Administration	Delivery	Outcomes
1	PA Staff In-Depth Interviews (n=5)	✓	✓	✓	✓
2	Vendor In-Depth Interviews (n=9)	✓	✓	✓	✓
3	Vendor Ride Alongs (n=14)			✓	
4	Participating Customer Surveys (n=100)			✓	✓
5	Nonparticipating Customer Surveys (n=100)			✓	✓
6	Nonparticipating Contractor Surveys (n=13)				✓
7	Documentation Review	✓	✓		
8	Data Mining				✓

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-21.

Study 14-22: Massachusetts Boiler Market Characterization Study

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 7/7/2014

Study Objective and Summary of Results:

The primary objective of this study was to provide an in-depth understanding of the current baseline in the gas boiler market, historical trends regarding equipment efficiencies and size, and assess the remaining savings potential.

The study provides the following key findings:

- In 2012, a total of 1,500 - 3,000 gas-only boilers in the 90 - 2,000 MBH size range were sold in the Massachusetts small commercial market.
- The state-wide small commercial boiler inventory is approximately 121,040 units with 28% of the inventory installed "side-by-side" with one or more boilers at the same site.
- The availability of natural gas distribution infrastructure limits the sales of high efficiency boilers which are growing at a faster rate (5 - 9% annual sales growth) than standard and mid-efficiency boiler types.
- The 675 boilers that were installed through the prescriptive program in 2012 represent a participation rate of 28 - 75% of the high and low estimates of the total number of condensing boilers sold state-wide.
- Manufacturers respond favorably about the prescriptive boiler program, support continuation, and do not suggest there is a need for significant changes.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Gas Only)
- C&I Retrofit (Gas Only)
- C&I Direct Install (Gas Only)

Evaluation Recommendations:

This study recommends five next steps to better understand the evolving boiler market in Massachusetts, more closely define program participation rates, calculate market lift, and justify boiler incentive continuation:

- Seek voluntary non-confidential feedback from boiler manufacturers who expressed an interest.
- Conduct comparative research on boiler programs in the Northeast region.

- Initiate "boiler product line mapping" by creating a simple matrix where 90 - 2,000 MBH boiler units provided by various manufacturers are identified.

- Provide an overview of DOE's current NPRM for Commercial Boiler Standards (U.S. Department of Energy Notice of Proposed Rulemaking), which may mandate federal efficiency requirements for pre-packaged commercial boilers.

- Conduct a "Massachusetts Boiler Roundtable" (a small-group forum discussion) with a select Massachusetts market-savvy boiler panel that can more effectively provide information on the evolving complex boiler market.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by providing an initial characterization of the existing gas boiler market and recommendations for further research. The further research is underway in an additional evaluation study.

Overview of Study Method:

Task 1: Market Outreach and Sales Data Collection: DNV GL used a two prong approach to obtain sales data from manufacturers that leverages the PAs' existing relationships with distributors and DNV GL's industry contacts. The first approach involved contacting the senior manager at the key manufacturers active in Massachusetts and the Northeast. The second approach involved conducting in-depth interviews with manufacturer sales representatives and distributors to gain their commitment to provide overall sales data either directly or anonymously to a trade organization.

Task 2: Analysis of Massachusetts C&I Billing Data: The DNV GL team compiled and processed extensive customer billing records. For the 2011 CHP Impact Evaluation study, the DNV GL team had already used the billing data to size the heating load in the commercial sector. The DNV GL team revisited that data and algorithm and re-analyzed it to create a set of results to characterize the MA boiler market.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-22.

Study 14-23: Impact Evaluation of Massachusetts Prescriptive Gas Pre-Rinse Spray Valve Measure

Type of Study: Impact Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 11/21/2014

Study Objective and Summary of Results:

A significant percentage of prescriptive gas program savings has been achieved from the Pre-Rinse Spray Valve ("PRSV") change-out program, which the PAs have been implementing aggressively. The objectives of this study were to provide updated values and assumptions for calculating the energy savings associated with the PRSV measure, and recommendations to further increase savings and aid future program planning.

The study provides the following key findings:

- The combined results of all pre-post site level monitoring, data analysis, and on-site PRSV user surveys lead to a better understanding of PRSVs and the current program. Overall, the PRSV valve program that is implemented by direct installation contractors is successfully delivering substantial energy and water savings in Massachusetts.

- Prescriptive Program Deemed Savings Value Adjustment**:** We find an average calculated annual savings of 114 Therms (per PRSV).

- Non Energy Impact Adjustment, Water and Wastewater Savings**:** The evaluation measured water savings at the site level using in-line water meters for old and new spray valves (pre-post monitoring). The average annual calculated water savings of 39 total site monitored spray valves is 6,410 gallons per spray valve change-out. The same value of 6,410 gallons is identified as the annual wastewater savings.

- Spray Valve Measure Lifetime Adjustment: Three factors each contribute to the spray valve measure lifetime increase from five to eight years. First, eight years is the average valve lifetime of 36 survey responses where retired spray valve lifetime was known for certain. Second, forensic inspection of the spray valves taken out of service confirmed that many old valves were in service for a long period and none of the old valves appeared to conflict with the survey responses. Lastly, the newer higher efficiency low-flow spray valves such as those that are currently installed as the default program valve in Massachusetts are less prone to clogging, have more robust design mechanisms, and are expected to have longer service lives than the older vintage valves that are currently being replaced under the program.

Core Initiatives to which the Results of the Study Apply:

- C&I Retrofit (Gas Only)
- C&I Direct Install (Gas Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

Recommendations to Increase Savings: Results showed that a percentage of change-outs (approximately 20%) resulted in small energy savings because of either low spray valve use at a site or old valves already having low flow rates. However, solutions to address these "small-savers" in the program population do not seem practical at this time, as explained below:

- There is no practical method for accurately identifying low use sites. Adopting a free change-out program would quickly become very complex and un-manageable if eligibility rules were changed to target certain commercial businesses. Site level monitoring proved that spray valve use and savings are site-specific even within the same facility, business, or building type.

- No practical method exists to stop a current practice of easily modifying older spray valves to increase their flow rate. The existing program implementation practice of changing all valves to the high efficiency "tamper-proof" model appears to be prudent program administration.

Recommendation for additional spray valve research to aid future program planning: The Massachusetts program implementation of the spray valve program utilizing direct installation contractors has resulted in the change-out of two to three thousand spray valves per year with substantial gas savings. However, given that the total state-wide inventory of spray valves and its future savings potential are finite, DNV GL developed the following key questions for future research:

1. *Identify the Statewide PRSV inventory, how many PRSV's are there?*
2. *How many program change-outs have occurred from historic program data?*
3. *How many more can be done?*
4. *What PRSV gas savings exists for each PA?*

Currently there are synergies achieved by common program implementation occurring between multiple PAs. Further investigation of the state-wide inventory of spray valves and historic program data analysis will provide meaningful planning details for the remaining overall gas savings potential and will lead to the development of feasible future strategies for this measure. The assessment can also provide greater details specific to each PA.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

For each PRSV, the natural gas annual savings decreased from 126 therms to 114 therms, the measure lifetime increased from 5 to 8 years and the water and sewer water savings decreased from 23,617 gallons to 6,410 gallons.

Overview of Study Method:

This evaluation focuses on the prescriptive gas PRSV measure. The Massachusetts PAs utilize direct installation contractors for the majority of this measure's implementation. The contractors physically replace the old valve with a "program approved" new low-flow PRSV at the customer's place of business.

Pre-post site monitoring of 2014 spray valve installations was conducted to assess the effects of the spray valve change- outs. A sample of sites where new valves were installed was drawn and contacted. The usage patterns of both the newly installed valves and the old valves (upon their temporary re-installation) were measured. Monitoring involved the use of time-of-use loggers installed at the spray valve assembly to measure direct flow, temperature, and pressure along with spot tests performed during each of three site visits.

A survey of operators/owners during the onsite visits was administered to elicit their perspectives on the use of PRSVs.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-23.

Study 14-24: T12 Phaseout Market Research

Type of Study: Market Assessment
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 10/31/2014

Study Objective and Summary of Results:

The Energy Policy Act ("EPACT") of 2005 mandated that, starting in July 2012, all linear fluorescents manufactured or imported for sale in the U.S. must meet more stringent efficiency standards. The expectation was that these new efficiency standards would force most T12 linear fluorescent lamps off the market. Yet there was some anecdotal evidence in late 2013 that Massachusetts retailers were still selling T12 lamps. Therefore, the purpose of this study was to gain a deeper understanding of how these T12s are still being sold as well as the nature and size of this post-EPACT T12 market.

The study provides the following key findings:

- *T12 phaseout awareness:* Of the lighting market actors that were interviewed, 70% of the Massachusetts lighting distributors, 76% of the Massachusetts lighting retailers, 100% of the Massachusetts retail lighting buyers, and 100% of the lighting manufacturers selling into the Massachusetts market claimed awareness of the T12 phaseout.

- *Continuing production of T12 lamps:* Three of the lighting manufacturers that were interviewed, including some of the largest manufacturers, reported to be still manufacturing T12 lamps. All three indicated that they were able to comply with the EPACT legislation by increasing the Color Rendering Index ('CRI") of their lower-efficiency lamps, which are exempt at CRI levels of 87 or greater. Of the three Massachusetts lighting distributors that were interviewed who reported selling T12 maps that they knew to be EPACT-compliant, two of the three said that their lamps were able to qualify due to the CRI exemption.

- *The nature of the current T12 market:* The Massachusetts market actors were asked to make generalizations about the types of customers who were purchasing these T12 lamps. Some manufacturers made distinctions between the four-foot T12 market, which they view mostly for the residential market, and the eight-foot T12 market, which they viewed for the C&I market, especially for ceiling lighting in retail and industrial buildings. The lighting manufacturers mentioned a wider range of T12 purchasers including not only residential customers but also commercial building maintenance staff, small business customers, municipal customers, retailers and some industrial customers who use eight-foot fluorescents for ceiling lighting, small niche commercial markets/applications, customers in southeastern states which do not have strong energy efficiency rebate programs, and late adopters. The retailers who reported selling T12 lamps identified residential customers as their primary customers for these lamps.

- *The size of the current T12 market:* The market actors characterized the current Massachusetts C&I T12 market – which is primarily served by lighting distributors -- as very small. The Massachusetts lighting distributors estimated that T12 lamps accounted for five percent and six percent of their MA linear fluorescent sales in 2014 and 2013, respectively. Only one of the manufacturers who reported still selling T12 lamps was willing to estimate what percentage of their current sales of linear fluorescents in Massachusetts were T12 lamps. This manufacturer – a major supplier – estimated that currently only two percent of their Massachusetts linear fluorescent sales were T12 lamps, compared to 15 percent of their current national sales.

In the residential market, however, the study did find evidence of a larger market for T12s lamps. Sixty-eight percent of the managers of Massachusetts home improvement and hardware stores that were surveyed in July 2014 reported still selling T12 lamps. Of these retailers who reported still selling T12 lamps, 61 percent said that their T12 customers were mostly residential and 90 percent said that their T12 customers were mostly low-volume purchasers. The lighting market actors explained that the residential T12 lighting market was still viable because it was less expensive for residential customers to replace lamps in their existing T12 fixtures than pay an electrician to replace these fixtures.

However, there was also evidence that this retail T12 market was declining in size. The Massachusetts home improvement and hardware store managers estimated that T12 lamps accounted for 32 percent of their 2014 linear fluorescent sales, compared to an average estimated sales share of 69 percent in the pre-legislation period (2010).

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric Only)
- C&I Retrofit (Electric Only)
- C&I Direct Install (Electric Only)
- Residential Lighting (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.
Because this was a market characterization study it did not contain any explicit recommendations. One of the study findings was that it would be difficult for Massachusetts to design a cost-effective program to encourage the elimination of T12 fixtures in homes. As noted previously, the residential T12 market remains active because it is less expensive for residential customers to replace lamps in their existing T12 fixtures than to pay an electrician to replace these fixtures. Even if a program was designed to pay electricians to retrofit residential T12 fixtures, one lighting market actor said it would likely not be cost effective because these fixtures have low ballast factors and therefore very small energy savings upon replacement. Finally the manufacturers who are still producing or selling these T12 lamps also indicated that they had no intentions to stop doing so as long as consumers are still buying them.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by providing information about the post-EPACT T12 market and potential changes in the baseline for linear fluorescent lamps.

Overview of Study Method:

The primary sources of information for the T12 phaseout market study were in-depth interviews and telephone surveys with lighting market actors. These included:

- In-depth interviews with 17 lighting manufacturers and five retail buyers (purchasers of lighting products for large Massachusetts retail chains) who participated in the Massachusetts Energy Star residential lighting program. These interviews were completed in May and June of 2014;

- In-depth interviews with 10 Massachusetts lighting distributors. These interviews were completed in April 2014; and

- Computer-Aided Telephone Interview surveys with 54 managers of hardware and home improvement stores which participated in the Massachusetts Energy Star residential lighting program. These surveys were completed in July 2014.

The study also conducted a literature review which collected information on T12 awareness and prevalence from across the country with special emphasis on information from Massachusetts and California. Key information sources included the Massachusetts Existing Buildings Market Characterization Project (Project 21); C&I customer survey and data from recent research sponsored by the CPUC, including data from their California Commercial Market Share Tracking and California Commercial Saturation studies.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-24.

Study 14-25: 2013 Commercial & Industrial Customer Profile Report

Type of Study: Market Characterization
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/27/2015

Study Objective and Summary of Results:

The principal goals of the 2013 C&I Customer Profile project were to:

- Investigate repeat customer participation from 2011 to 2013, with a focus on the scale of savings in each year, the contribution to overall savings, and the types of end uses.

- Investigate the multi-measure projects undertaken in 2013 to understand which end uses are implemented, and the scale and proportional savings contributions of the specific categories of measures within the end uses.[18]

- Investigate the impact of outlier projects in efficiency savings.

- Investigate the correlation between load factor and savings that was noted in 2011 and 2012.

- Build upon the geographic information system analysis in the 2012 report

The primary findings from the 2013 C&I Customer Profile project were:

- There are several industry sectors where both the account participation and consumption-weighted participation ratios are low, namely the Transportation, Warehousing, and Other Services sectors for electric. The Other Services sector is particularly noteworthy given its combination of smaller size and diversity of business types that could present barriers to participation.

- Gas PA participation continues to increase, but at a faster rate than population savings achieved. In particular, an increase in spray valve and programmable thermostat measures has driven up gas PA participation rates over the past few years; however, savings as a percent of population consumption has not increased at the same pace due to the smaller-saving nature of these measures. These customers may represent opportunities for greater engagement and savings, particularly if they are pleased with the program offerings and want to undertake the larger, more complex projects. In addition, customers consuming 8,000 to 40,000 therms in the Accommodation and Food Services industry sector displayed a higher median energy use intensity ("EUI") than any other consumption bin for that sector, and Accommodation and Food Services customers have been a key target market for the gas spray valve offerings. It is possible that, while participation is increasing in this

[18] When the level of detail can support this degree of analysis.

sector, there may be additional opportunities for savings that can be leveraged given the higher median EUI.

- Large multi-year participants make up a sizable proportion of electric PA savings, with three-year participants having achieved nearly a fifth of the total electric savings for 2011 to 2013. This suggests that engagement of multi-year customers is an important tool for meeting efficiency goals. However, this could present challenges for smaller PAs, since smaller populations are susceptible to greater year-over-year participation variability, and because smaller overall populations make PAs more susceptible to customer issues (e.g., financial troubles) that are outside of the PA's control.

- Smaller PAs continue to have greater volatility in population savings achieved relative to participating accounts. While the smaller PAs are increasing their account participation proportions, the savings derived from participating accounts are relatively small.

- Larger PAs have higher consumption-weighted market penetration rates, particularly for gas, than the smaller PAs. The two largest gas PAs have already engaged nearly a quarter of their consumption at some point in the last three years. In contrast, the smaller gas PAs have engaged closer to 15% of their consumption, on average.

- There does not appear to be an overall difference in gas participation for towns with the same gas and electric PA versus different gas and electric PAs; however there are sizable variations within the different electric and gas PA combinations. Despite an overall improvement in participation, the savings ratios continue to favor towns served by the two largest PAs, and it is possible that the savings for the other combinations are not reaching the depth that they might otherwise reach with continued coordination on cross-selling of gas measures and identification of custom opportunities.

- Low load-factor customers continued to have the highest participant savings achieved, but at reduced levels from the previous two years. In addition, it appears that a small number of outsized accounts can have a very substantial impact on the participant load-factor ratio.

- For smaller PAs, there is a shift in savings contribution relative to consumption when compared to the larger PAs. All of the electric PAs achieve about the same ratio of proportional savings contribution to consumption contribution for their largest 10% of accounts by consumption. However, several PAs (most notably Cape Light Compact) appear to be getting a higher ratio of savings contributions relative to consumption contribution from accounts in their 90th and 80th consumption percentiles. This may be an indication of increased depth of savings for the next tranche of customers by consumption, and could offer important insights into effective approaches for engaging mid-size customers to achieve higher savings in future years. A second finding is that the smallest 10% of customers by account consumption across all PAs and fuels, except Eversource gas, had no participation in C&I efficiency programs. These accounts are very small, even in aggregate, and may not represent a substantial opportunity for large savings. However, if there are similarities in the types of energy use for these accounts—for example, in

electric if these accounts mostly have parking lot lights—then there may be specific prescriptive offerings that can be targeted to consumers (e.g., bi-level lighting controls).

Core Initiatives to which the Results of the Study Apply:

- C&I Direct Install (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I New Construction (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Given the increasing interest in the Customer Profile study, refine and prioritize the metrics used to expedite analyses and increase the actionable insights generated.** Among other benefits, this would provide the opportunity to assess the best approach to incorporating metrics developed through other studies—such as the PA Differences and Mid-Size Customer Needs Assessment studies—to ensure that those projects continue to deliver maximum value.

- **Examine how to best continue engaging small and mid-size gas customers that may have undertaken an electric PA installed gas measure.** For example, DNV GL recommends exploring whether participants view the gas spray valves as "all they would do" or "the start of something bigger." This may help smaller PAs in particular refine their approaches to ensure that small and mid-size customers continue to represent cost effective savings opportunities—rather than higher-cost converts to bring back into the efficiency space. Engaging smaller customers will become increasingly important as larger customers exhaust their savings appetite.

- **Further explore ways to engage sectors where account proportion and consumption-weighted participation are low in order to identify avenues for new offerings.** DNV GL recommends further study to identify sub groupings of smaller customers within these sectors—particularly the Other Services sector—in order to inform the development of new programmatic offerings. These customers may be too small to merit the assignment of an account manager, but may benefit from a somewhat standard operating nature (e.g., a car wash, or a flashing light at the top of a cell phone tower) or a sector-specific strategy that would allow a "templatized" type offering to generate savings through bulk of measures—similar to what gas spray valves have accomplished in the Accommodation and Food Service sector.

- **Continue to integrate third party data by leveraging geographic data captured in the PA billing systems.** There is potential to further expand and integrate the use of tax parcel data to help PAs target customer subsets. Consider continued refinement of how the Massachusetts PAs can leverage the geographic element of their data for actionable findings. One element of feedback received in response to the 2013 Customer Profile draft

was: How can the maps be made more actionable? A strong first step towards developing more predictive and actionable geographic outputs would be to identify: 1) priority questions such as "where is participation lagging," and 2) the predictor variables that the implementation teams suspect most influence the priority questions (e.g., energy use, building vintage, square footage, etc.).

- **Expand linking electric and gas accounts to effectively evaluate dual-PA served customers to get a complete accounting of their true energy intensity for each fuel.**

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

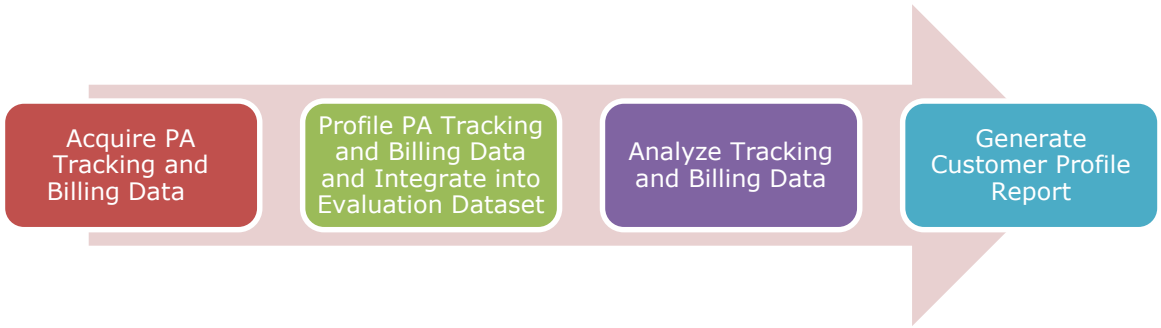
The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a characterization of C&I customers by their end uses, business types and sizes, and project types. It also provides recommendations for conducting more detailed, robust analyses to more precisely identify potential target areas and examining how best to engage particular sectors.

Overview of Study Method:

The following flow chart presents the steps undertaken by the evaluation team when conducting this study.



Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-25.

Study 14-26: Massachusetts Commercial and Industrial Upstream Lighting Program: "In Storage" Lamps Follow-Up Study

Type of Study: Impact Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 4/8/2015

Study Objective and Summary of Results:

This evaluation is a follow-up study of a Year 1 impact evaluation of the Upstream Lighting program, which at that time had identified a large number of bulbs that were in storage. The research objectives of this Year 3 impact evaluation were to:

- Calculate Year 3 installation rates to incorporate the in-storage bulbs identified in the Year 1 evaluation that were later installed;
- Calculate the savings from bulbs moved from storage to sockets, incorporating observed installation rates and any changes in baseline wattages noted by evaluators;
- Provide a summary of storage lamps to understand the circumstances around the phased approach to lighting installations, and what it might mean for program operations and savings claims; and
- Provide recommendations on how the PAs' savings estimates may be revised based on the findings of this study.

The study provides the following key findings:

- For LED lamps, the Year 3 kWh and Connected kW realization rates were 103.4% and 112.0%, respectively. The individual components of the realization rates include Quantity Adjustment (84.6%), Delta Watts Adjustment (133.2%), Hours of Use Adjustment (87.0%, or 3,901 hours), and kWh HVAC Interactive Effect (106.5%).
- For fluorescent lamps, the Year 3 kWh and Connected kW realization rates were 92.4% and 85.3%, respectively. The individual components of the realization rates include Quantity Adjustment (85.3%), Delta Watts Adjustment (100%), Hours of Use Adjustment (101% or 3,410 hours), and kWh HVAC Interactive Effect (107.4%).
- Based on the Year 1 and Year 3 study results, which included a sample of sites from the very early stages of the Bright Opportunities Program, as well as the monthly QA/QC reports, the program has potentially matured in the three years since the impact evaluation sample was drawn. There could be reason to believe that the continued growth of the program, and the controls that have been put in place to help limit the stockpiling issue, may have contributed to improved installation rates.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric Only)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The evaluation team recommends that the PAs use the results of the Year 3 analysis to replace the results of the Year 1 analysis for LED and fluorescent lamps. The PAs may instead decide to use all of the individual components of the realization rates.

- **Recommendation 2:** The PAs and EEAC may consider conducting a follow-up impact evaluation to assess the effectiveness of their ongoing efforts to improve the installation rate.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs plan to adopt some of the recommendations.

The PAs have adopted Recommendation 1 to estimate savings for LED and fluorescent lamps. The PAs are considering Recommendation 2 for adoption at this time.

How the Study Affected Program Results:

The installation rates for both LED and Fluorescent lamps increases from Year 1 to Year 3, which increases their associated savings.

Overview of Study Method:

To meet the objectives of this study, DNV GL conducted the following tasks:

1. Examined the Year 1 impact evaluation data, and identified 31 sites that were found to have in-storage bulbs.
2. Reached out to the customers with whom DNV-GL engineers met during the Year 1 impact evaluation in order to recruit sites for re-visits. Twenty-three of the 31 sites were recruited, revisited, and had comprehensive data collected for participation in this study.
3. Calculated savings associated with bulbs moved from storage to sockets, and Year 3 installation rates.
4. Developed a report describing the objectives, approach, and findings. Results were aggregated at the statewide level for LED and fluorescent lighting technologies.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-26.

Study 14-27: 2013 Commercial and Industrial Electric Programs Free-ridership and Spillover Study

Type of Study: Impact Evaluation
Evaluation Conducted by: Tetra Tech
Date Evaluation Conducted: 2/17/2015

Study Objective and Summary of Results:

The purpose of this study was to quantify the net impacts of the 2013 C&I electric energy efficiency programs by estimating free-ridership, participant "like" spillover, and non-participant "like" spillover. A secondary objective of the study was to assess how free-ridership varies between Green Communities and non-Green Communities.

The study provides the following key findings:

- The study produced free-ridership, participant spillover, and non-participant spillover rates for each PA by end use.
- Overall, the statewide net-to-gross ratios ("NTGRs") were relatively stable among 2013 and 2010 participants. However, NTGRs varied dramatically by end use both between the two evaluation years and among the PAs for a given evaluation year. Two factors driving this variability that were able to be observed were: 1) the categorization of measures into end uses varied between PAs and over time, and 2) some end uses and PAs had a small number of participants that make the estimates more sensitive.
- End uses such as Process, Motors & Drives, and Lighting were the most stable across the two evaluation years with NTGRs above 90 percent.
- The overall statewide NTGRs for municipal buildings are comparable between Green Communities and non-Green Communities.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric Only)
- C&I Retrofit (Electric Only)
- C&I Direct Install (Electric Only)

Evaluation Recommendations:

No formal recommendations were made in this evaluation.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

N/A (e.g., no formal recommendations were made in this evaluation)

How the Study Affected Program Results:

This study will not immediately affect savings because net-to-gross studies are applied prospectively pursuant to D.P.U. 11-120. This study was not applied to 2014 results, and will be applied in the 2016-2018 three-year plan.

Overview of Study Method:

The study follows the standardized methodology developed in 2010 and 2011 for the Massachusetts PAs for situations where end-users are able to report on program impacts via self-report methods. [19]

To accomplish the study objectives, telephone surveys were conducted with 2013 program participants in each of the PA's C&I electric programs and with design professionals and equipment vendors involved in these 2013 installations.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-27.

[19] "Cross-Cutting C&I Free-Ridership and Spillover Methodology Study Final Report," prepared for the Massachusetts Program Administrators by Tetra Tech, KEMA, and NMR, May 20, 2011.

Study 14-28: Stage 1 Results and Stage 2 Detailed Research Plan – Commercial and Industrial New Construction Non-Energy Impacts Study

Type of Study: Impact Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/20/2015

Study Objective and Summary of Results:

This study had two components: 1) a C&I NEI marketing component, and 2) Stage 1 research and recommendations on how best to estimate NEIs in the C&I New Construction ("NC") area, particularly those related to equipment administration, operation, and maintenance.

1) The first component was to mine existing C&I NEI research to develop an industry level analysis for the PA sales and marketing personnel to demonstrate the value proposition of energy efficiency programs beyond energy savings. The objectives of this data mining exercise was to: 1) identify statistically significant NEI categories and sub-categories by industry and energy type (electric, gas), 2) identify non-significant NEIs that are logically sound for any specific industry, 3) review and summarize qualitative descriptions of NEI categories (i.e., O&M) and subcategories (internal labor, parts and supplies), and 4) develop a power point presentation highlighting the prominent NEI themes by industry.

The NEI Marketing Analysis presented information from the 2012 C&I Retrofit NEI study, detailing the specific cost reductions and revenue increases resulting from energy efficiency measures reported by firms in different industries. The analysis identified industries with statistically significant NEI estimates. It then explored the qualitative and quantitative survey results for commonly reported sources of cost and revenue changes resulting from energy efficient measures.

The marketing study provided a PowerPoint presentation designed to assist the PAs' sales and marketing staff in communicating the value proposition of installing energy efficient measures within different industries. The PowerPoint presents both quantitative and qualitative findings that illustrate the how specific cost and revenue changes result from energy efficient measures implemented across 11 industries.

2) The second component presents the methods and results of Stage 1 of the NEI study of C&I NC measures. The study was designed to assess the most effective means for obtaining and eliciting the information necessary for computing NEIs associated with NC measures, such as in-depth interviews or self-reports from participants and/or other market actors, engineering reviews, and Delphi panels. It also outlines a preliminary work plan for Stage 2 of the study, through which the evaluation team will estimate NEIs for NC measures.

A major consideration when estimating NEIs for NC measures is distinguishing between NEIs that result from the measure being *new* versus being *energy efficient*, since some types of new equipment would be installed—regardless of participation in an energy efficiency program—when building a new facility, undergoing a major retrofit, or replacing failed equipment. Therefore, only

NEIs associated with moving from a standard piece of new equipment to an energy efficient piece of equipment are relevant.

However, interview respondents often have difficulty self-reporting NEIs associated with NC measures, because they do not have a reference point to compare the operating costs and/or sales between new energy efficient equipment and hypothetical baseline equipment that is "new but not energy efficient." Our work plan for this study established a two-stage research effort to address this concern.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I Direct Install (Electric & Gas)

Evaluation Recommendations:

Stage 1 of the NEI study of C&I NC measures study provides the following recommendations:

- The analysis of NEIs associated with NC measures should focus on true new construction only.
- Self-reports by end users would not provide an effective means for estimating NEIs associated with most NC measures.
- Self-reports by engineering firms will provide valuable insights to estimating NEIs across the range of projects for which they perform engineering services.
- An engineering-based approach is warranted to estimate NEIs.
- As an option, various individuals may be able to serve on a Delphi panel to provide valuable information regarding NEI estimates, and to ensure their soundness.
- A limited survey effort may be suitable for select measures.
    - Natural replacement
    - Industrial process measures

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

DNV GL is following the Stage 1 recommendations and has initiated Stage 2 of the NEI study of C&I NC measures with the following objectives:

- Review NC measures installed during 2013 to define these measures in terms of (1) types of new construction, and (2) measure category/end use

- Assess the effectiveness and most appropriate means of establishing baseline conditions for NEI computations and eliciting self-reported responses through in-depth interviews ("IDIs") from various marker actors

- Determine whether NEIs from new construction measures are best estimated from self-reports from participants and/or other market actors, engineering review, Delphi panel, or other techniques

- Recommend an approach for the Stage 2 analysis.

At this time, DNV GL is continuing its efforts to reconcile and match the available program tracking data to external data sources (Dodge) in order to identify true new construction projects. A sample of representative projects will then be drawn for IDIs and NEI analysis using an engineering-based approach. At this time, use of a Delphi panel or surveys is not anticipated.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by developing a Stage 2 work plan for conducting a study of NEIs for NC measures. The PAs can use the approach outlined in the report to estimate NEIs and evaluate the overall cost/benefits of their C&I NC programs.

Overview of Study Method:

1) The marketing NEI study relied on re-analysis of the survey data from the 2012 C&I Retrofit NEI study. In addition, through the 2012 MA Special and Cross-Cutting NEI Study, which constitutes the largest NEI survey effort undertaken to date, the evaluation team successfully captured NEI data from over 500 program participants and 788 prescriptive and custom electric and gas measures. Our approach to estimating NEIs involved segmenting the impacts into mutually exclusive NEI categories that reflect separate cost and revenue (business impacts) resulting from the installed measures. In addition, rather than rely on the stated NEI estimates alone, respondents were probed for a deeper understanding of the specific cost and revenue items impacted.

2) Stage 1 of the NEI study of C&I NC measures study consisted of the following five tasks:

1. Data mining – DNV GL analyzed the 2013 program tracking data and the 2012 C&I Retrofit NEI study results to support the remaining tasks in the Stage 1 research.

2. Sample development – Information from the data mining task was used to identify and draw samples of interviewees from the following groups:

    1. PA staff who market the NC programs
    2. Design firms (engineers and architects)
    3. Manufacturers and suppliers of energy efficient technologies
    4. Energy managers and operations groups of large institutional participants (e.g., large customers with multiple facilities such as college campuses, government offices, or manufacturing facilities).

3. Development of in-depth interview guides – Separate in-depth interview guides were developed for each of the four groups mentioned in task 2 to determine appropriate means of establishing baseline conditions.
4. In-depth interviews – Interviews with various market actors were conducted to determine the most effective means of obtaining NEI information for NC measures.
5. Reporting – The report summarizing Stage 1 research and presenting a detailed work plan for Stage 2 research was drafted.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-28.

Study 14-29: Top-down Modeling Methods Study – Final Report

Type of Study: Impact Evaluation
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 3/31/2015

Study Objective and Summary of Results:

This study was part of a multi-year initiative designed to assess the utility of top-down modeling as a viable technique for evaluating energy efficiency programs in Massachusetts. The year 1 investigation explored the possible methods for employing top-down modeling as a supplementary technique for evaluating net impacts associated with energy efficiency programs. This research included an extensive methods review, presented separately in May 2014[20] as well as presented in the final report, and two top-down modeling pilot studies: the PA-muni pilot study, and the PA-data pilot study.

The year-1 analysis provides the following key findings:

- The methods review potion of the study provided an analytical framework for reviewing top-down modeling approaches and provided a detailed review of the existing literature on top-down modeling.

- The two pilot studies had differing strengths and weaknesses in terms of addressing the desirable properties of top-down models and modeling concerns identified in the existing literature. Most notably, the PA-muni pilot study employed a relatively long time-series, 15-years, which allowed the model to examine the possible cumulative effect of programmatic activity on consumption over time through use of various lagged program expenditure terms. On the other hand, the PA-data model had a much more limited time series, 3-years, and consequently was not able to account for the cumulative impact of programmatic activity. Unlike the PA-data study, the PA-muni study was therefore able to address a number of other influential factors related to the time-series, such as the impact of building codes, technology trends, and time-specific fixed effects.

- Both modeling approaches rely on differences in program activity across geographies in addition to time to isolate the effect of program activity on consumption. The PA-muni model contrasted consumption in the PA territories, which have relatively high levels of programmatic activity, to consumption in municipal utility territories, which have relatively low levels of programmatic activity. This contrast provides a stronger basis for measuring net impacts. In effect, the low-program muni-territories represented a comparison area that was used to remove naturally occurring energy savings from gross impacts. Because the PA-data model relies exclusively on data within the PAs' territories, the PA-data model has a weaker program signal in their contrasts across time and units.

[20] DNV GL, *Abbreviated Review of Methods for the Draft Top-down Modeling Methods Study*. May 2014.

However, the PA-data model has the advantage of more detailed data that can help in controlling for non-program factors and supporting the isolation of program attributable impacts from naturally occurring savings.

- The PA-muni pilot study provided statistically significant savings estimates for a variety of models of both residential and C&I net impacts. By employing a relatively long time-series, 15-years, to examine the possible cumulative effect of programmatic activity on consumption over time, the model results indicated that the use of lagged program expenditure terms were, in fact, instrumental in developing a model that was statistically significant, as a key finding of the literature review suggests. Many of the models showed positive programmatic impacts. However, models resulted in wide confidence intervals around savings estimates demonstrating the need for further investigation into model specification to improve precision.

- The PA-data pilot study was limited to three years of data, and as a result was not able to produce statistically significant results; however, this technique allows for exploration of the following factors related to policy and implementation staff. Because the PA-data models were developed from more detailed account- level billing and tracking data, separate models can be developed to examine the impact of differing program offerings, or the relative contribution of various customer segments (i.e. large commercial, small commercial, and industrial customers) to savings. This information is important for policy, planning, and implementation as it allows for the development and implementation of targeted program offerings. The PA-data approach provides this level of flexibility in modeling, while the PA-muni approach does not. Both studies face differing, but substantial data limitations.

Core Initiatives to which the Results of the Study Apply:

- All Initiatives (Electric Only)
  Cross-Cutting C&I

Evaluation Recommendations:

- Continue refinement of the PA-muni model to investigate the stability of models and possible changes to model specification that may reduce confidence intervals.

- Investigate the possibility of a national or multi-state model that builds on the lessons learned from the PA-muni model, but using non-program states as a comparison area.

- For the PA-data model, continue to collect data through the C&I and residential databases to extend the available data series to include five years of consumption and program tracking data, then continue collecting the necessary data going forward for future analysis. Continue to refine the existing models to incorporate multiple lag periods of the program and consumption variables.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

At the PAs' request, DNV GL is currently exploring areas for conducting additional research and investigation of the stability and sensitivity of the PA-muni model results.

How the Study Affected Program Results:

This study was not applied to the 2014 results. However, it informs future program planning by showing that top-down models may provide a supplemental tool for assessing the overall level of savings estimated through bottom up methods, provided they can be sufficiently refined.

The range in estimates from the PA-muni model varies too substantially to determine whether the overall realization rate is greater or less than 1.

Overview of Study Method:

For the PA-muni pilot study, the evaluation team specified a fixed-effects panel regression model. This type of regression model allows each individual to act as its own control. The unique effects of the stable, but unmeasured characteristics of each utility are their "fixed effects" from which this method takes its name. These fixed effects are held constant in the model. The fixed-effects nature of the model means the model does not need to include unchanging characteristics. Including fixed effects in the model controls the amount of variance (noise) that the model must address to explain electricity consumption. This approach also provides for a much closer fit to the data than other types of regression models.

For the PA-data pilot study, the evaluation team developed and estimated a set of statewide macro-economic time series, cross sectional consumption models for the C&I sector. These models were used to explore whether a sufficient signal between changes to aggregate consumption per unit (e.g., gross domestic product or population) over time (i.e., delta consumption) could be detected, for a geographic region (e.g., county or towns), as a function of delta changes in programmatic activity and economic conditions. Because this modeling approach used PA billing data for the dependent variable and was restricted to PA territories, the model results compared consumption for regions with higher and lower program activity levels within PA territories. The advantage of this approach is that the use of PA data provided detailed information regarding program activity level and the ability to aggregate by whatever dimensions are of interest, such as PA territory, cities, or towns. The disadvantage to this approach is that it lacked a "no-program" situation; thus, spillover and/or program self-selection effects may influence the results.

Application of Results: Retroactively and Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-29.

Study 14-30: Code Compliance Results for Single-Family Non-Program Homes in Massachusetts

Type of Study: Process Evaluation
Type of Study: Impact Evaluation
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 9/2/2014

Study Objective and Summary of Results:

The objective of the this evaluation is to summarize the code compliance rates for single-family non-program homes built at the end of the 2006 International Energy Conservation Code ("IECC") cycle and the beginning of the 2009 IECC cycle. PAs can later apply these compliance rates in future studies as a basis for comparing and assessing the influence of PA activity on compliance through implementation of the Code Compliance Support Initiative ("CCSI").

This evaluation, completed on September 2, 2014, provides the following key findings:

- Homes built at the end of the 2006 IECC cycle show significantly higher overall compliance scores (76%) than homes built at the beginning of the 2009 IECC cycle (63%).

- The same is true for specific compliance paths: homes built at the end of the 2006 IECC cycle have significantly higher compliance levels than homes built at the beginning of the 2009 IECC cycle under both the prescriptive path (61% vs. 50%, respectively) and the UA[21] trade-off approach (80% vs. 66%, respectively).

- However, the 2009 IECC sample homes are actually slightly more efficient than the 2006 IECC sample homes, even though the 2009 IECC homes display lower compliance with the applicable energy code.

- The Pacific Northwest National Laboratory ("PNNL") checklist used to determine code compliance does not adequately account for energy efficiency in its code compliance estimates.

Core Initiatives to which the Results of the Study Apply:

- Residential New Construction (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Future statewide compliance estimates will need to account for stretch code homes. Stretch code homes were just beginning to be built at the time of the

[21] U-factor*area.

2009 IECC inspections and thus represented a very small portion of the overall population. As a result, they were excluded from this analysis.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs plan to adopt the recommendations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing recommendations for improving the evaluation of the CCSI program.

Overview of Study Method:

The code compliance rate calculation used checklists developed by the PNNL to develop compliance scores, calculated as the total points for items marked compliant divided by the total points for items marked either compliant or not compliant, for single-family non-program homes built at the end of the 2006 IECC cycle and the beginning of the 2009 IECC cycle.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-30.

Study 14-31: Massachusetts Cross Cutting Evaluation: Home Energy Report Decay Analysis

Type of Study: Impact Evaluation
Evaluation Conducted by: Opinion Dynamics
Date Evaluation Conducted: 9/9/2014

Study Objective and Summary of Results:

The purpose of this study was to determine the effect of reduced treatment[22] on National Grid Home Energy Report ("HER") program savings - measured as the difference in program savings between participants for whom treatment is reduced and those who continued to receive standard treatment.

The study provides the following key findings:

- A reduction in treatment led to a decline in observed savings for both electric and gas cohorts. This finding is consistent with existing studies, but this study also finds that the magnitude of the savings reduction likely depends on the reduced-treatment design, fuel type, and the frequency and duration of program intervention before the reduction in treatment.

- The electric and gas cohorts responded differently to the reduction in treatment. Compared to the electric cohort, reduced treatment customers in the gas cohort seem to show a much sharper reduction (i.e., more immediate and precipitous) in savings in response to the reduction in reports they experienced. Due to numerous complicating factors, it is not possible to say with certainty whether the decline in savings is due to the fuel in question or the other factors listed below.

- The frequency and duration of time for which participants receive HER reports prior to experiencing a reduction in treatment may affect savings persistence. Receiving fewer reports over a shorter time period before the reduction in treatment, as experienced by the gas cohort, may not provide sufficient time for customers to habituate behaviors or install equipment.

- Report fuel type may have an impact on savings persistence. Not only do electric and gas customers have different actions that they can take in the home, but there are also differences in the costs of each fuel, making it possible that HER feedback on one fuel is more valuable than HER feedback on another.

[22] The reduced treatment experiment refers to a reduction in paper reports after the electric and gas programs had been in the field for certain length of time. As part of the reduced treatment experiment, about 40% of customers in both treatment and control households within two cohorts—one electric and one gas—were randomly assigned to "reduced treatment," and received paper reports at a lower frequency than did customers in a "continued treatment" group.

Core Initiatives to which the Results of the Study Apply:

- Residential Behavior/Feedback (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Given the limitations of this study (e.g., the electric and gas cohorts experienced differing incremental levels of treatment reduction), the evaluation team recommends that the PAs undertake further research to help inform the design of treatment reduction strategies. Opinion Dynamics recommends that future experiments plan the timing of treatment reductions to further test the potential impact of the following factors:
    - Treatment duration prior to the experiment: Within the same fuel, or even within a larger cohort, how does decay change when the first reduction occurs after one, two, or three years?
    - Seasonality of reduction: How does a treatment gap in the winter compare with one in the summer? Is there a way to optimize winter gaps to achieve greater persistence?
    - Duration of the reduction: How does persistence vary with the length of the treatment reduction period?
    - Fuel-specific differences: Test similar reductions with participants at the same "program maturity" level between electric and gas.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

If further research is done in this area, the recommendations will be adopted.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a better understanding of how long-term savings would be affected if the PAs choose to reduce treatment to existing customers.

Overview of Study Method:

The evaluation team conducted a data request and review of all Opower program data, conducted interviews with contractors to understand the reduced treatment experiment, and conducted a regression analysis of monthly billing data (ranging between one year prior to the start of the program (2008-2009) and March 2014) to examine the effect of reduced treatment. The regression models estimate treatment effects for both treatment groups (continued and reduced) compared to each cohort's control group in three distinct treatment periods, which were developed to correspond with changes in report frequency and reduction.

Average daily consumption for each group (continued, reduced, and the counterfactual) was estimated for each post-treatment period. Then, average daily savings for each treatment group (relative to the counterfactual) was calculated for each program period. Finally, percent savings for the continued and reduced groups in each period was calculated as modeled average daily savings divided by modeled average daily consumption for the counterfactual condition (i.e., consumption in that period, assuming average baseline consumption of the treatment group, but also assuming no program treatment in the period). After calculating percent savings for each group (continued, reduced) for each treatment period, the differences in percent savings between continued and reduced groups in each time period were examined and adjustments to account for any pre-existing differences in savings between the continued and reduced groups in the pre-reduction treatment period were made.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-31.

Study 14-32: Efficient Neighborhoods+® Initiative Evaluation Report

Type of Study: Pilot Evaluation
Evaluation Conducted by: Opinion Dynamics
Date Evaluation Conducted: 9/15/2014

Study Objective and Summary of Results:

The purpose of this study was to determine if the Efficient Neighborhoods+® ("EN+®") initiative resulted in increased participation and energy savings. In addition, the evaluation sought to provide PAs with insights about the successful components of the initiative and recommendations on possible improvements.

The study provides the following key findings:

- EN+ increased the number of energy assessments, completed projects, and energy savings above and beyond what would have happened under the standard HES program.

- The initiative proved successful at meeting its goal of increasing participation among low to moderate income customers without having higher income residents participate at a disproportionate rate. The initiative, however, was less successful in increasing the participation of rental properties. EN+ Core participants are predominantly homeowners residing in single-family homes.

- Despite the enhanced incentives offered by the initiative, project costs remain the biggest barrier to making energy efficiency improvements. Other barriers include a lack of customer interest and a perceived lack of need for improvements despite recommendations.

Core Initiatives to which the Results of the Study Apply:

- Residential Home Energy Services (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The survey results showed that participants were more likely to learn of the initiative through door-to-door outreach, phone calls, and family and friends than from non-participants. Since learning about the initiative from a trusted source also appears to be effective, the PAs could encourage participants to tell their neighbors about the initiative or provide additional incentives for referrals. Participants were also more likely than non-participants to have learned about the initiative through multiple sources. The PAs should consider conducting a high volume marketing campaign that uses multiple tactics.

- **Recommendation 2:** The PAs should consider using messaging that ties the assessment and improvements to current customer needs. One such way is aligning initiative

messaging with seasonal needs (e.g., messaging about increased comfort due to energy efficiency during the winter months), which some PAs already do.

- **Recommendation 3:** A barrier apparent from the survey results is the belief among many assessment participants that the recommended improvements were unnecessary. Additional research could suggest alternative information or messaging that might help convince customers that the recommendations are worth doing.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are considering all recommendations for adoption at this time. The PAs have not formally adopted or rejected any recommendations that require changes to program design and operations.

As the PAs develop future programs to serve renters and moderate income customers, the recommendations from this evaluation will be taken into consideration.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing recommendations to improve the EN+ initiative program. The EN+ initiative proved successful at lifting participation in the HES program in target communities among low to moderate income customers. However, the enhanced marketing and incentives are more costly than the standard HES program and it may not be practical to expand the program statewide. The evaluation team is conducting additional research to determine the incremental costs of the initiative.

Overview of Study Method:

A difference-in-difference analysis was conducted to determine the lift in participation and energy savings that was due to the initiative. For each success indicator (e.g., initiated contacts, completed audits, etc.), the percent change between the past activity (pre-period) and EN+ activity (treatment period) was calculated. The percent change was calculated separately for the EN+ targeted communities and the comparison communities. The difference between the percent change observed in the EN+ community and the comparison community was then calculated.

Surveys with program participants and non-participants in treatment and comparison communities were also conducted to assess program processes and barriers to participation.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-32.

Study 14-33: Massachusetts Cross-Cutting Behavioral Program Evaluation Opower Results

Type of Study: Impact Evaluation
Evaluation Conducted by: Navigant Consulting
Evaluation Conducted by: Illume Advising
Date Evaluation Conducted: 3/9/2015

Study Objective and Summary of Results:

The purpose of this study was to estimate gas and electric savings during the 2014 calendar year from the Opower Home Energy Report ("HER") programs at National Grid, and Eversource Energy (formally NSTAR Electric, NSTAR Gas, and Western Massachusetts Electric Company ("WMECo")).

The study provides the following key findings:

- Total net electric savings from the Massachusetts HER programs are 127,854,643 kWh. Total net gas savings are 643,157 MMBtu.

Core Initiatives to which the Results of the Study Apply:

- Residential Behavior/Feedback (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The evaluation team recommends that the PAs adopt the following savings estimate ratios[23] in future years when third-party impact evaluations are not completed.
    - National Grid Electric: 95%
    - National Grid Gas: 98%
    - NSTAR Electric: 104%
    - NSTAR Gas: 98%
    - WMECo 104%

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs plan to adopt the recommendations.

[23] The saving estimate ratio is the calculated by dividing the modeled savings estimated by the evaluation team by the savings estimated by Opower.

How the Study Affected Program Results:

Savings estimate ratios for National Grid electric and gas both decreased from 2010, while those for NSTAR electric and gas increased. WMECo was not included in the previous evaluation, so no prior savings estimate ratios exists for comparison.

Overview of Study Method:

The study method included three components: (1) impact evaluation, (2) channeling analysis, and (3) savings estimate ratio.

1. Impact Evaluation

The evaluation team used the following Post-Program Regression model to estimate savings:

$$ADC_{kt} = \sum_J \beta_{1j} Month_{jt} + \sum_J \beta_{2j} Month_{jt} \cdot ADClag_{kt} + \beta_3 Participant_k + \varepsilon_{kt} \ ,$$

where,

ADC_{kt}	= The average daily consumption in kWh or therms for customer *k* during billing cycle *t*. This is the dependent variable in the model;
$Month_{jt}$	= A binary variable taking a value of 1 when *j*=*t* and 0 otherwise;[24]
$ADClag_{kt}$	= Customer *k*'s energy use in the same calendar month of the pre-program year as the calendar month of month *t*;
$Participant_k$	= A binary variable indicating whether customer *k* is in the participant group (taking a value of 1) or in the control group (taking a value of 0);
ε_{kt}	= The cluster-robust error term for customer *k* during billing cycle *t*. Cluster-robust errors account for heteroscedasticity and autocorrelation at the customer level.[25]

In this model, β_3 is the estimate of average daily energy savings due to the program. Program savings are the product of the average daily savings estimate and the total number of participant-days in the analysis.

[24] If there are *T* post-program months, there are *T* monthly dummy variables in the model, with the dummy variable $Month_{tt}$ the only one to take a value of 1 at time t. These are, in other words, monthly fixed effects.

[25] Ordinary Least Squares (OLS) regression models assume that the data are homoscedastic and not autocorrelated. If either of these assumptions is violated, the resulting standard errors of the parameter estimates are incorrect (usually underestimated). A random variable is heteroscedastic when the variance is not constant. A random variable is autocorrelated when the error term in one period is correlated with the error terms in at least some of the previous periods.

2. Channeling Analysis

For this evaluation, it was not possible to do a data-based channeling analysis to document the participant lift or savings adjustment due to the timing of the collection of the program tracking data which is typically not available until several months after year-end. Complete and reconciled program tracking for 2014 will not be available until later in 2015. In the meantime, the evaluation team applied a channeled savings adjustment based on historical data as reported in the last behavioral evaluation report.[26]

Using historical values, however, can introduce uncertainty into the estimates. This analysis attempts to minimize the uncertainty by using the most general estimate possible. The evaluation team estimated channel savings impacts by taking a weighted average by fuel type of channel impacts for all National Grid and NSTAR cohorts for all program years reported in the 2013 evaluation report. The calculations used each program year's cohort participants as weights.

3. Savings Estimate Ratio

The evaluation team calculated a savings estimate ratio for each of the HER program cohorts to examine the differences in savings as measured by the program implementer and the savings verified by this evaluation. In addition, the evaluation team calculated an aggregate savings estimate ratio for each PA and fuel-type as follows:

$$RR_{uf} = \frac{\sum_{c=1}^{C} \text{Evaluation Team Estimated Savings}_{ucf}}{\sum_{c=1}^{C} \text{OPOWER Reported Savings}_{ucf}}$$

Where,
RR_{uf} = The aggregate savings estimate ratio for PA u and fuel-type f summed over cohorts c.

The evaluation team recommends a savings estimate ratio by PA and fuel type to be used in future years to adjust implementer-reported savings when third-party impact evaluations do not take place. In particular, the evaluation team recommends that National Grid and NSTAR adopt the aggregate savings estimate ratio as calculated in this evaluation. For WMECo, the evaluation team recommends applying the NSTAR Electric aggregate savings estimate ratio for use in future years, given that the calculated savings estimate ratio for WMECo is based on only a partial year of program implementation. In particular, the calculated savings estimate ratio for WMECo may over-estimate actual savings due to first year ramping typical of HER programs.

Application of Results: Retroactively and Prospectively

[26] Opinion Dynamics Corporation, Navigant Consulting, and Evergreen Economics (2013). Massachusetts Cross-Cutting Behavioral Program Evaluation Integrated Report. Refer to section 3.1.1 for the channeling analysis methodology.

A copy of the complete study can be found in Appendix 4D, Study 14-33.

Study 14-34: Methods for Measuring Market Effects of Massachusetts Energy Efficiency Programs

Type of Study: Market Assessment
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 11/14/2014

Study Objective and Summary of Results:

This study examined the literature on market effects measurement for energy efficiency programs. The objectives of this study were to:

- Describe the key concepts important to understanding and measuring market effects and associated savings
- Help the PAs identify when they should consider measuring market effects by describing the conditions likely to produce substantial market effects
- Identify conditions allowing measurement of savings from market effects
- Delineate and describe the range of methods available to measure market effects and provide guidance for selecting among them when planning for evaluation
- Identify priority markets and programs for market effects evaluation efforts and develop their market models and program logic models.

The study was delivered via two workshops with PAs, two memos, and a final report in November 2014. The report provides the following key findings relating to the program conditions that are more likely to result in substantial market effects:

- When the savings per transaction are small, but the transactions are numerous, or when there are significant market failures for the product or service.
- When the program strategies in use are likely to result in market changes (e.g., the programs target markets rather than program participants).
- A significant proportion of market actors have been touched by the program.
- The product or service that the program addresses offers significant non-energy benefits.

Other key findings from the study include:

- Theory-based evaluation is an important planning tool for market effects measurement and a qualitative method by which to determine if market effects have resulted from program efforts. Theory-based evaluation techniques are useful both for assessing savings from past market effects from established programs (retrospective evaluation), and for laying the

groundwork for future assessment and documentation of market effects (prospective evaluation).

- Theory-based evaluation should serve as the framework on which all market effects evaluations are based regardless of the specific analytical method that is used to establish quantitative attribution of market effects for a particular program.

- Theory-based evaluation requires advance planning and involves a number of key activities including:

    - Identify the markets that the program targets
    - Characterize the market to get an accurate understanding of the market as well as the market actors
    - Develop a market model
    - Tell a story (the program theory)
    - Develop a logic model
    - Establish indicators tied to expected market effects outcomes (along with the indicators, identify their data source and timing of data collection)
    - Identify baselines.

- There are four general methods for estimating net savings stemming from market effects:

    - Supply-side market actor self-reported counterfactual analysis (self-report surveys/interviews with upstream market actors about free ridership and spillover)
    - Cross-sectional analysis by identifying one or more comparison groups where sales will be tracked along with the program area
    - Forecasting or retrocasting the non-intervention baseline which involves developing a statistical model to estimate how the market would behave over time without the intervention of the program
    - Structured expert judgment which involves identifying a team of experts who review information on the market (e.g., Delphi panels).

Another key outcome from the study was the identification of the following six priority markets and associated programs for market effects evaluation efforts:

1. Commercial cooling & heat pumps & related controls (Upstream C&I HVAC Incentives Program)
2. Residential Central Air Conditioning ("CAC") (Residential CAC Portion of the Cool Smart Program)
3. Residential gas heating & quality installation (High-Efficiency Heating and Water Heating Equipment Program)
4. Mini-split heat pumps (Ductless Mini-Split Portion of the Cool Smart Program)
5. Non-residential new construction market (multiple related programs)
6. C&I lighting and controls market (multiple related programs).

Core Initiatives to which the Results of the Study Apply:

- All Initiatives (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The market effects cross-cutting team should identify specific methods and data needed for measuring market effects in the high-priority program-market intersections identified through this work.

- **Recommendation 2:** Market effects work should use the established evaluation approaches identified in this document.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs plan to adopt the recommendations.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a framework and approach for evaluating market effects.

Overview of Study Method:

The scope of this work entailed:

- Reviewing existing methods for assessing market effects and recommending specific methods for estimating market effects

- Reviewing program documents and conducting interviews with program staff.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-34.

Study 14-35: Recommended Methods for Assessing Market Effects of HVAC Programs

Type of Study: Market Assessment
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 11/25/2014

Study Objective and Summary of Results:

The objective of this study was to outline the appropriate methods for evaluating the effects of commercial upstream HVAC initiatives and residential HVAC initiatives on the markets for unitary HVAC equipment and controls and residential central air conditioning, gas heating, and ductless mini-split heat pumps. These methods include those used to establish qualitative evidence of the programs' effects on markets and to quantify the effects and net savings.

This study was conducted in stages. The main report, which was developed in spring and early summer 2014, proposed that the PAs develop certain market effects data sources and recommended approaches for quantifying the effects of their programs on HVAC markets and assessing the net savings from these market effects. In the summer and fall of 2014, the evaluation team conducted additional research to assess the prospects for the proposed data sources. The main findings of the research were as follows:

- Residential HVAC and C&I Upstream HVAC program-market intersections are priorities for immediate market effects work and offer good opportunities for conducting market effects research. These markets have significant market information available, although they do require additional market and measure-level data collection. Residential HVAC targets are: central air-conditioners, gas heating and mini-split heat pumps. The C&I Upstream HVAC targets are unitary HVAC equipment and controls.

- The study recommended specific approaches for estimating the market effects for these program-market intersections. These include:

    - A theory-based evaluation, which is a qualitative approach that identifies how program activities are expected to lead to market effects and measuring the associated indicators periodically.
    - Quantifying market effects and the associate net energy savings using two different methodological approaches: cross-sectional analysis and supply-side market actor counterfactual self-reporting.

Core Initiatives to which the Results of the Study Apply:

- Residential Cooling and Heating Equipment (electric) (Electric Only)
- Residential Heating and Water Heating (gas) (Gas Only)
- Other (specify below) (Electric & Gas)

'Other' includes Upstream C&I HVAC Initiatives (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** Market effects studies should proceed for Residential HVAC and C&I Upstream HVAC program-market intersections.

- **Recommendation 2:** PAs should consider establishing a panel of HVAC manufacturers from which to collect market share and other data, as appropriate, for manufacturer-controlled sales channels. The panel would supplement residential Heating, Air-conditioning & Refrigeration Distributors International ("HARDI") data (Recommendation 3) and provide some data for commercial equipment other than rooftop units ("RTUs"). PA program staff could play an active role in helping to design, recruit and retain market actors for this or any other HVAC market actor panel the PAs may want to establish. PA program planning staff and PA and contractor evaluation staff should also provide input to design in addition to market effects. Involving these diverse groups of staff increases the likelihood that manufacturers will participate, that future program plans will leverage market effects or utilize market effects research findings, that data collected through market actor panels will be useful to program design and marketing, and that the data will meet a broader range of evaluation needs beyond just market effects. Additionally, including a diverse group of program and evaluation staff will help ensure that long term relationships are established and well maintained between PAs and manufacturers.

- **Recommendation 3:** Residential HVAC market effects research can proceed with HARDI data, supplemented by market actor panel and interview data as available and appropriate (Recommendation 2). HARDI data acquisition will need to be renegotiated to ensure that the data to be purchased align with market effects research needs.

- **Recommendation 4:** PAs should build on the C&I Upstream HVAC Program's existing distributor data collection activities in order to obtain market share data for commercial RTUs. RTU market effects research can proceed with these data as well as additional data that may be collected by market actor panels and interviews. PAs may also wish to explore the viability of obtaining other kinds of market data through a panel of C&I distributors, most likely building on the Upstream HVAC program's existing relationships with distributors. Any data collection involving HVAC distributors would need to be carefully planned to complement, not duplicate or conflict with, market share or other market data to be obtained through HARDI or manufacturers, and not jeopardize the PAs' ability to obtain HARDI data.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs are assessing the feasibility of adopting Recommendation 1 by determining whether or not it is possible to obtain the data necessary to conduct market effects studies. The subsequent recommendations are all related to obtaining data to quantify market effects.

The PAs are adopting Recommendation 2, and have begun to plan the development of HVAC manufacturer panel(s) through which to collect market data about both C&I and residential HVAC equipment. In addition, the PAs have begun to plan the coordination of HVAC data collection efforts from market actors across multiple studies.

The PAs are arranging for the renegotiation and purchase of HARDI data for residential HVAC equipment (Recommendation 3).

The PAs are considering Recommendation 4 for adoption at this time and have taken steps to assess the feasibility of obtaining additional data.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a framework and approach for evaluating market effects in the Residential HVAC and C&I Upstream HVAC markets.

Overview of Study Method:

The scope of this work entailed reviewing existing methods for assessing market effects, reviewing previous studies and data sources, interviewing D&R and program staff, and recommending specific approaches for estimating market effects.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-35.

Study 14-36: Recommended Methods for Assessing Market Effects of C&I Lighting and Controls Programs

Type of Study: Market Assessment
Evaluation Conducted by: DNV GL
Date Evaluation Conducted: 2/26/2015

Study Objective and Summary of Results:

The October 30, 2014 memo *"Cross-Cutting Market Effects Study, Task 5 Final Deliverable: Recommendations for Priority Market/Program Intersections for Remaining Market Effects Methods Work"* identified C&I Lighting and Controls as priority markets for conducting market effects research. The purpose of this study was to:

1) Identify sub-segments of the C&I lighting and controls market that are suitable for prospective or retrospective market effects studies
2) Outline the recommended methods for conducting market effects studies of each of the identified markets.

DNV GL reviewed 2011-13 C&I lighting and controls upstream and downstream program tracking records to assess which, if any, elements of the prescriptive and custom lighting programs was sufficiently large to affect the technology selection decisions and related behaviors of vendors and/or customers outside the program. Based on this review and experience with other lighting-oriented market effects assessments, DNV GL identified two potential studies:

- A retrospective assessment of the market effects of programs that support high-efficiency linear fluorescent technology, with a primary focus on low-wattage T8 lamps. Low-wattage T8 lamps accounted for a large share of all lighting measures supported in the program tracking records (44% of units rebated, 22% of participants, and 29% of tracked ex-ante savings)[27]. A cross-sectional approach with a comparison area with surveys/interviews with a panel of distributors and contractors is the recommended approach.[28]

- A baseline (prospective) study of the commercial market for lighting controls if the PAs are considering significant redesign of programs and measures to support this technology. C&I Lighting Controls was initially thought to be a priority, but with reduced program activity it may not be a good candidate for immediate market effects research. This market warrants monitoring for changes.

[27] While LEDs and high-bay lighting also received high levels of support from C&I programs, the PAs have already conducted a market effects study on high bay lighting and are currently completing a baseline study for market effects for LED programs.

[28] The C&I evaluation contractor will be responsible for completed a detailed work plan of the approach.

Core Initiatives to which the Results of the Study Apply:

- C&I Retrofit (Electric & Gas)
- C&I New Construction (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** C&I Lighting market effects research can proceed with a study of the market effects of programs that promote high-performance T8 lamps and ballasts, including quantification of net savings attributable to those programs.

- **Recommendation 2:** The PAs should assess the potential value of developing a baseline study on lighting controls. C&I Lighting Controls should be monitored for any significant uptick in activity, which would suggest value to a market effects study. However, no market effects study is warranted at this time.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

The PAs have adopted the recommendations in principle and are currently planning a second phase of this study that incorporates the recommendations made above.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a framework and approach for evaluating market effects in the C&I lighting and controls markets.

Overview of Study Method:

DNV GL reviewed 2011-13 C&I lighting and controls upstream and downstream program tracking records to assess which, if any, elements of the prescriptive and custom lighting programs was sufficiently large to affect the technology selection decisions and related behaviors of vendors and/or customers outside the program.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-36.

Study 14-37: Recommended Methods for Assessing Market Effects of Non-residential New Construction Programs

Type of Study: Market Assessment
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 2/26/2015

Study Objective and Summary of Results:

The October 30, 2014 memo *"Cross-Cutting Market Effects Study, Task 5 Final Deliverable: Recommendations for Priority Market/Program Intersections for Remaining Market Effects Methods Work"* identified non-residential new construction as a good candidate for market effects evaluation. Using guidance provided in the document *"Methods for Measuring Market Effects of Massachusetts Energy Efficiency Programs (11/14/2014)"*, the purpose of this study was to:

1) Outline appropriate methods for evaluating the effect of the PAs' programs on non-residential new construction (true new construction only, which includes gut rehab). These methods include those to establish qualitative evidence of the programs' effects on markets and to quantify the effects, which incorporate spillover, as well as estimate net savings.
2) Identify overlapping estimates of net savings in the non-residential new construction market as measured by other studies, and find ways to eliminate double counting.

The study identified two primary methodological components recommended for a market effects study of non-residential new construction[29]:

- Theory-based evaluation to provide a credible qualitative case for a quantitative estimate of market effects. The study updated the Market and Logic Models for the non-residential new construction market. Using the expected outcomes of the program logic model, the cross-cutting evaluation team recommended evaluation activities that the C&I evaluation team carry out (and the recommended timing of those activities in the 2015-2018 time frame) to measure indicators of market effects and to leverage current and future evaluation efforts.

- For the non-residential new construction market, the study identified that the method best used for quantifying market effects is to use the structured expert judgment method, or Delphi panel approach. The Delphi panel would review baseline data, program activity, and market data to develop estimates of building practices that would have happened in the absence of the program, and the counterfactual would be modeled starting with the baseline data. The difference between modeled energy use with the baseline and with the counterfactual would be the estimate of net energy savings.

- Because of other program and initiatives (i.e., C&I New Construction Program, the C&I Retrofit Program, the Upstream Subprograms/Initiatives focusing on HVAC and lighting,

[29] The actual market effects work plan and study will be developed by the C&I evaluation team.

and the Code Compliance Support Initiative), the study presents the recommended methods for identifying and eliminating overlapping estimates of net savings in the non-residential new construction market.

Core Initiatives to which the Results of the Study Apply:

- Other (specify below) (Electric & Gas)
- C&I Retrofit (Electric & Gas)
- C&I New Construction (Electric & Gas)

"Other" includes the Code Compliance Support Initiative and the Upstream Subprograms/Initiatives (HVAC and lighting)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

- **Recommendation 1:** The PAs should consider conducting prospective work involving the tracking of indicators that would support theory-based evaluation.

- **Recommendation 2:** The PAs should consider using the net-to-gross estimates from the electric and gas net-to-gross ("NTG") studies for the 2016-18 prospective estimate that is required for planning purposes. The NTG estimates from these studies are based on self-reporting by program participants and address only free ridership and some form of spillover, not including market effects.

- **Recommendation 3:** PAs should gather C&I "True" New Construction data through 2017, and aim to complete a retrospective market effects evaluation by early 2018, and at the same time develop a prospective NTG estimate for the 2019-2021 period. Coordination with Codes & Standards evaluation research is essential in this market space, and any resulting savings should be split between the C&I New Construction Program and Codes & Standards, with above-code or above-prevailing practice savings attributed to the former and savings from getting buildings closer to code or prevailing practice attributed to the latter.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

Recommendation 1 is currently under consideration.

In terms of Recommendation 2, PAs will be using the most recent NTG results in their 2016-2018 planning.

In regards to Recommendation 3, gathering "True" New Construction data through 2017 is under consideration as is completing a market effects evaluation. The PAs are currently in the process of conducting NTG evaluations for the 2016-2018 planning period. In regards to Codes, the research and analysis is being conducted such that there will be no overlap between claimed savings for Codes & Standards initiatives and regular PA program activity.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing a framework and approach for evaluating market effects in the C&I new construction market.

Overview of Study Method:

The study employed interviews with PA program staff to construct the theory-based evaluation, with a review by program and evaluation staff. The scope of this work entailed recommending specific approaches for estimating market effects in the non-residential new construction market. The C&I evaluation team will be responsible for developing a work plan for this market effects study.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-37.

Study 14-38: Cross-Cutting Code Compliance Support Initiative Evaluation Reports

Type of Study: Process Evaluation
Type of Study: Impact Evaluation
Evaluation Conducted by: NMR Group
Date Evaluation Conducted: 3/27/2015

Study Objective and Summary of Results:

The studies summarized here include: (1) development of the evaluation work plan for the Code Compliance Support Initiative ("CCSI"), and (2) memos providing findings from the immediate surveys completed by training and Circuit Rider activity participants.

(1) The objective of the CCSI evaluation work plan is to develop and implement methodologies for evaluating the different components of the CCSI, identify and track key indicators of CCSI impacts, and ensure that the information necessary to fairly assess the CCSI effects will be available.

(2) The objective of the immediate survey response memos is to provide the PAs with periodic feedback from the trainings and Circuit Rider activities so that the effectiveness of these efforts and any need for modifications may be assessed. In addition, it includes a high level, long range look at potential activities for the future.

The immediate survey response memos were provided on October 31, December 29, 2014, and March 13, 2015 for the residential trainings; December 30, 2014 for the commercial trainings; and January 29, 2014 for the Circuit Rider activities. The immediate survey response memos provide the following key findings:

- Most CCSI training participants rated the information provided as extremely or very useful and expect to use this information within the next six months.

- However, more than one-half of CCSI training participants work in cities and towns that had adopted the stretch code, based on the 2009 IECC code. Since the stretch code is roughly equivalent to the 2012 IECC code (the stretch code is performance based while the 2012 IECC code also has prescriptive options), these municipalities have continued to permit buildings under the stretch code rather than adopt the code based on the 2012 IECC. The stretch code has been gradually adopted by municipalities, so its requirements are relatively new for some of the training attendees. The high proportion of all attendees considering the trainings very useful and applicable may indicate that the trainings are providing useful information for immediate applications in areas that have adopted the stretch code.

- Most of those who called for information under the Circuit Rider component rated the information provided as extremely useful and said they would use it immediately.

Core Initiatives to which the Results of the Study Apply:

- C&I New Construction (Electric & Gas)
- Residential New Construction (Electric & Gas)

Evaluation Recommendations:

The following recommendations were made by the evaluators conducting this study.

Based on the immediate survey responses following the trainings and Circuit Rider activities:

- **Recommendation 1:** Provide handouts of the slides used in the trainings to the attendees.

- **Recommendation 2:** Continue to monitor response times to Circuit Rider calls and work to improve them; response times will become more important as more calls come in concerning current projects.

- **Recommendation 3:** Encourage the use of telephone calls rather than email to submit Circuit Rider questions and receive responses whenever possible.

Explain Whether or Not the PAs Decided to Adopt the Recommendations from the Study:

Recommendations 1 and 3 are currently under consideration. Recommendation 2 has been adopted.

How the Study Affected Program Results:

This study was not applied to 2014 results. However, it informs future program planning by providing recommendations for improving the implementation and evaluation of the CCSI program.

Overview of Study Method:

The immediate training survey response memos analyzed responses to paper surveys completed by training attendees at the end of each session, feedback provided during the training through an Audience Response System, and information gathered during the registration process.

The immediate Circuit Rider survey response memo analyzed responses to telephone surveys of individuals who had contacted the Mass Save® Energy Code Technical Support Initiative. The surveys were conducted from a few days to a few weeks after the issues prompting the contact were resolved.

Application of Results: Prospectively

A copy of the complete study can be found in Appendix 4D, Study 14-38.

D. Evaluation Studies

Please see Statewide Appendix 4D, filed under separate cover.

APPENDIX 5
PERFORMANCE INCENTIVES

The purpose of this section is to provide detailed supporting documentation on performance incentives that each Program Administrator proposes to collect. Since the Cape Light Compact does not collect any performance incentives, this section is not applicable to the Cape Light Compact.

APPENDIX 6
CAPE LIGHT COMPACT TOWN ACTIVITY REPORTS

The following are the 2014 Town Activity Reports for the Cape Light Compact.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: All
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	14,774	8,020.49	3	29,702	10,220.82	52	0.00	0.0%
Low-Income Single-Family	0	0.00	0	1,090,643	1,972,516.02	789	1,794,609.83	109.9%
Low-Income Multi-Family	6,208	3,265.91	5	316,040	289,505.53	267	0.00	0.0%
LI Subtotal	20,982	11,286.40	8	1,436,385	2,272,242.37	1,108	1,794,609.83	
LI % of Total	0.4%	0.9%	1.1%	2.7%	7.3%	7.5%	11.9%	
Residential New Construction	45,716	17,241.80	14	552,041	245,762.98	172	0.00	0.0%
Residential Multi-Family Retrofit	155,631	84,127.86	101	647,572	415,404.99	442	0.00	0.0%
Res Home Energy	397,639	623,757.31	552	6,522,236	13,512,068.60	7,315	9,586,332.56	141.0%
Energy Star HVAC	0	0.00	0	1,214,857	880,855.00	1,838	0.00	0.0%
Energy Star Lighting	32,472	6,264.00	1	10,502,871	935,595.89	252	0.00	0.0%
Energy Star Appliance	1,501	380.00	1	1,069,020	193,581.23	3,007	0.00	0.0%
Res Subtotal	632,959	731,770.97	669	20,508,597	16,183,268.69	13,026	9,586,332.56	
Res % of Total	10.7%	56.4%	93.8%	38.3%	52.0%	87.9%	63.6%	
C&I New Construction	88,614	20,097.00	2	977,557	412,821.60	40	0.00	0.0%
C&I Govt New Construction	0	0.00	0	99,234	157,983.25	25	0.00	0.0%
C&I Large Retrofit	4,122,937	401,361.95	13	5,553,805	678,349.37	63	0.00	0.0%
C&I Govt Large	0	0.00	0	4,276,822	5,607,612.71	51	0.00	0.0%
C&I Small Retrofit	31,842	8,283.35	1	4,462,672	2,307,869.61	394	2,466,236.51	93.6%
C&I Govt Small	0	0.00	0	1,758,367	1,715,427.56	75	1,214,713.48	141.2%
C&I Products & Services	991,086	125,790.00	20	14,474,148	1,772,106.63	44	0.00	0.0%
C&I Subtotal	5,234,479	555,532.30	36	31,602,605	12,652,170.73	692	3,680,949.99	
C&I % of Total	88.9%	42.8%	5.0%	59.0%	40.7%	4.7%	24.4%	
Report Total	5,888,420	1,298,589.67	713	53,547,588	31,107,681.79	14,826	15,061,892.38	
Budget Comparison					19,507,881.79		15,061,892.38	129.5%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Aquinnah
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	1,717	847.84	1	961.23	88.2%
Low-Income Multi-Family	0	0.00	0	0	0.00	0	0.00	0.0%
LI Subtotal	0	0.00	0	1,717	847.84	1	961.23	
LI % of Total	0.0%	0.0%	0.0%	11.2%	7.6%	2.8%	11.9%	
Residential New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	0	0.00	0	3,718	5,004.29	8	5,134.62	97.5%
Energy Star HVAC	0	0.00	0	4,142	2,725.00	10	0.00	0.0%
Energy Star Lighting	0	0.00	0	168	35.90	1	0.00	0.0%
Energy Star Appliance	0	0.00	0	1,597	559.92	12	0.00	0.0%
Res Subtotal	0	0.00	0	10,226	8,433.11	32	5,134.62	
Res % of Total	0.0%	0.0%	0.0%	66.6%	75.8%	88.9%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	0	129.60	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	3,400	1,538.60	1	1,320.96	116.5%
C&I Govt Small	0	0.00	0	0	180.00	1	650.62	27.7%
C&I Products & Services	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Subtotal	0	0.00	0	3,400	1,848.20	3	1,971.58	
C&I % of Total	0.0%	0.0%	0.0%	22.2%	16.6%	8.3%	24.4%	
Report Total	0	0.00	0	15,343	11,129.15	36	8,067.43	
Budget Comparison					7,570.73		8,067.43	93.8%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Barnstable
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	211,692	326,286.72	162	414,710.57	78.7%
Low-Income Multi-Family	1,709	944.67	2	46,215	34,000.04	26	0.00	0.0%
LI Subtotal	1,709	944.67	2	257,906	360,286.76	188	414,710.57	
LI % of Total	0.2%	0.5%	2.0%	2.0%	6.6%	7.7%	11.9%	
Residential New Construction	10,941	3,243.05	3	19,294	5,815.70	6	0.00	0.0%
Residential Multi-Family Retrofit	771	405.00	1	116,033	61,640.58	43	0.00	0.0%
Res Home Energy	63,883	106,238.17	93	974,794	2,334,987.49	1,226	2,215,274.53	105.4%
Energy Star HVAC	0	0.00	0	155,530	142,815.00	303	0.00	0.0%
Energy Star Lighting	0	0.00	0	4,440,807	391,906.73	37	0.00	0.0%
Energy Star Appliance	0	0.00	0	391,197	67,454.32	526	0.00	0.0%
Res Subtotal	75,595	109,886.22	97	6,097,655	3,004,619.82	2,141	2,215,274.53	
Res % of Total	6.7%	60.2%	95.1%	47.1%	54.8%	87.3%	63.6%	
C&I New Construction	0	0.00	0	173,884	57,913.45	13	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	1,313.00	3	0.00	0.0%
C&I Large Retrofit	852,998	46,550.00	2	1,460,308	134,594.09	17	0.00	0.0%
C&I Govt Large	0	0.00	0	648,057	753,237.91	5	0.00	0.0%
C&I Small Retrofit	0	0.00	0	911,015	510,402.96	62	569,914.60	89.6%
C&I Govt Small	0	0.00	0	336,852	300,246.92	18	280,704.21	107.0%
C&I Products & Services	196,025	25,053.00	1	3,057,495	361,676.50	5	0.00	0.0%
C&I Subtotal	1,049,023	71,603.00	3	6,587,611	2,119,384.83	123	850,618.81	
C&I % of Total	93.1%	39.2%	2.9%	50.9%	38.6%	5.0%	24.4%	
Report Total	1,126,328	182,433.89	102	12,943,172	5,484,291.41	2,452	3,480,603.91	
Budget Comparison					3,471,924.09		3,480,603.91	99.8%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Bourne
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	110,425	207,409.24	71	144,554.12	143.5%
Low-Income Multi-Family	0	0.00	0	867	492.13	1	0.00	0.0%
LI Subtotal	0	0.00	0	111,292	207,901.37	72	144,554.12	
LI % of Total	0.0%	0.0%	0.0%	3.8%	8.8%	7.6%	11.9%	
Residential New Construction	0	0.00	0	0	420.00	1	0.00	0.0%
Residential Multi-Family Retrofit	7,043	6,579.08	5	67,115	27,220.98	31	0.00	0.0%
Res Home Energy	12,262	19,490.14	22	361,075	687,247.20	456	772,170.00	89.0%
Energy Star HVAC	0	0.00	0	49,804	35,495.00	90	0.00	0.0%
Energy Star Lighting	0	0.00	0	282,877	25,046.08	16	0.00	0.0%
Energy Star Appliance	0	0.00	0	72,691	11,683.12	238	0.00	0.0%
Res Subtotal	19,305	26,069.22	27	833,562	787,112.38	832	772,170.00	
Res % of Total	23.8%	75.7%	96.4%	28.8%	33.3%	87.5%	63.6%	
C&I New Construction	0	0.00	0	61,569	23,874.95	2	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	13,468.75	4	0.00	0.0%
C&I Large Retrofit	0	0.00	0	107,293	52,196.25	5	0.00	0.0%
C&I Govt Large	0	0.00	0	305,572	516,876.20	6	0.00	0.0%
C&I Small Retrofit	0	0.00	0	282,058	160,495.69	24	198,653.01	80.8%
C&I Govt Small	0	0.00	0	616,812	522,174.01	3	97,844.02	533.7%
C&I Products & Services	61,778	8,380.00	1	578,966	77,206.75	3	0.00	0.0%
C&I Subtotal	61,778	8,380.00	1	1,952,269	1,366,292.60	47	296,497.03	
C&I % of Total	76.2%	24.3%	3.6%	67.4%	57.9%	4.9%	24.4%	
Report Total	81,083	34,449.22	28	2,897,122	2,361,306.35	951	1,213,221.15	
Budget Comparison					1,577,326.14		1,213,221.15	130.0%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Brewster
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	51,924	80,338.84	32	46,244.17	173.7%
Low-Income Multi-Family	0	0.00	0	65,052	54,654.53	93	0.00	0.0%
LI Subtotal	0	0.00	0	116,976	134,993.37	125	46,244.17	
LI % of Total	0.0%	0.0%	0.0%	9.3%	11.8%	16.9%	11.9%	
Residential New Construction	0	0.00	0	19,248	8,370.19	1	0.00	0.0%
Residential Multi-Family Retrofit	1,285	675.00	1	15,074	11,325.78	7	0.00	0.0%
Res Home Energy	18,501	24,388.87	27	299,549	584,441.38	317	247,024.14	236.6%
Energy Star HVAC	0	0.00	0	67,289	48,775.00	113	0.00	0.0%
Energy Star Lighting	32,472	6,264.00	1	127,029	13,244.74	8	0.00	0.0%
Energy Star Appliance	1,501	380.00	1	36,777	7,969.92	150	0.00	0.0%
Res Subtotal	53,759	31,707.87	30	564,965	674,127.01	596	247,024.14	
Res % of Total	43.4%	78.9%	96.8%	44.8%	58.9%	80.5%	63.6%	
C&I New Construction	0	0.00	0	0	1,584.00	1	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	6,289.75	2	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	609.50	2	0.00	0.0%
C&I Govt Large	0	0.00	0	23,190	41,402.75	2	0.00	0.0%
C&I Small Retrofit	0	0.00	0	215,241	148,352.07	6	63,550.89	233.4%
C&I Govt Small	0	0.00	0	113,180	110,734.22	5	31,301.18	353.8%
C&I Products & Services	70,056	8,470.00	1	228,134	27,030.00	1	0.00	0.0%
C&I Subtotal	70,056	8,470.00	1	579,745	336,002.29	19	94,852.07	
C&I % of Total	56.6%	21.1%	3.2%	46.0%	29.3%	2.6%	24.4%	
Report Total	123,815	40,177.87	31	1,261,686	1,145,122.67	740	388,120.38	
Budget Comparison					923,866.51		388,120.38	238.0%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Cape Cod
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	14,929	1,780.33	48	0.00	0.0%
Low-Income Single-Family	0	0.00	0	1,041,555	1,879,882.38	753	1,647,868.34	114.1%
Low-Income Multi-Family	6,208	3,265.91	5	251,033	186,527.23	200	0.00	0.0%
LI Subtotal	6,208	3,265.91	5	1,307,516	2,068,189.94	1,001	1,647,868.34	
LI % of Total	0.1%	0.3%	0.7%	2.6%	7.2%	7.2%	11.9%	
Residential New Construction	35,293	13,064.78	12	370,748	140,586.41	141	0.00	0.0%
Residential Multi-Family Retrofit	155,631	84,127.86	101	644,834	370,984.39	415	0.00	0.0%
Res Home Energy	354,939	598,492.26	517	5,967,083	12,497,497.68	6,851	8,802,478.24	142.0%
Energy Star HVAC	0	0.00	0	1,111,297	838,030.00	1,776	0.00	0.0%
Energy Star Lighting	32,472	6,264.00	1	9,987,515	864,790.75	224	0.00	0.0%
Energy Star Appliance	1,501	380.00	1	1,053,578	190,324.53	2,936	0.00	0.0%
Res Subtotal	579,836	702,328.90	632	19,135,055	14,902,213.76	12,343	8,802,478.24	
Res % of Total	10.1%	56.1%	94.6%	38.6%	51.7%	88.5%	63.6%	
C&I New Construction	88,614	20,097.00	2	977,557	412,821.60	40	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	57,157.00	20	0.00	0.0%
C&I Large Retrofit	4,122,937	401,361.95	13	5,531,555	664,703.87	58	0.00	0.0%
C&I Govt Large	0	0.00	0	3,167,635	5,289,548.26	42	0.00	0.0%
C&I Small Retrofit	31,842	8,283.35	1	4,030,986	2,121,109.72	338	2,264,577.51	93.7%
C&I Govt Small	0	0.00	0	1,636,341	1,615,389.12	65	1,115,388.90	144.8%
C&I Products & Services	923,130	115,550.00	15	13,763,216	1,674,229.63	38	0.00	0.0%
C&I Subtotal	5,166,523	545,292.30	31	29,107,290	11,834,959.20	601	3,379,966.41	
C&I % of Total	89.8%	43.6%	4.6%	58.7%	41.1%	4.3%	24.4%	
Report Total	5,752,566	1,250,887.11	668	49,549,861	28,805,362.90	13,945	13,830,312.99	
Budget Comparison					18,113,878.90		13,830,312.99	131.0%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Chatham
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	14,324	27,137.45	12	67,845.13	40.0%
Low-Income Multi-Family	0	0.00	0	1,135	617.68	1	0.00	0.0%
LI Subtotal	0	0.00	0	15,459	27,755.13	13	67,845.13	
LI % of Total	0.0%	0.0%	0.0%	1.3%	2.9%	2.6%	11.9%	
Residential New Construction	0	0.00	0	4,398	713.43	1	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	912	421.51	2	0.00	0.0%
Res Home Energy	11,588	9,360.57	14	231,137	525,788.45	231	362,410.82	145.1%
Energy Star HVAC	0	0.00	0	50,745	34,600.00	94	0.00	0.0%
Energy Star Lighting	0	0.00	0	26,113	4,079.60	5	0.00	0.0%
Energy Star Appliance	0	0.00	0	27,254	6,384.92	132	0.00	0.0%
Res Subtotal	11,588	9,360.57	14	340,559	571,987.91	465	362,410.82	
Res % of Total	23.6%	64.2%	93.3%	29.2%	60.3%	91.5%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	1,336.00	1	0.00	0.0%
C&I Large Retrofit	0	0.00	0	32,252	3,518.00	1	0.00	0.0%
C&I Govt Large	0	0.00	0	144,784	210,267.25	2	0.00	0.0%
C&I Small Retrofit	0	0.00	0	176,633	77,528.76	22	93,235.95	83.2%
C&I Govt Small	0	0.00	0	2,293	2,725.00	1	45,922.18	5.9%
C&I Products & Services	37,589	5,220.00	1	455,190	53,135.83	3	0.00	0.0%
C&I Subtotal	37,589	5,220.00	1	811,152	348,510.84	30	139,158.13	
C&I % of Total	76.4%	35.8%	6.7%	69.5%	36.8%	5.9%	24.4%	
Report Total	49,177	14,580.57	15	1,167,170	948,253.88	508	569,414.08	
Budget Comparison					633,179.66		569,414.08	111.2%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Chilmark
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	0	0.00	0	5,591.36	0.0%
Low-Income Multi-Family	0	0.00	0	0	0.00	0	0.00	0.0%
LI Subtotal	0	0.00	0	0	0.00	0	5,591.36	
LI % of Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.9%	
Residential New Construction	0	0.00	0	10,908	7,000.00	1	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	98	835.00	1	29,354	65,318.18	34	29,867.56	218.7%
Energy Star HVAC	0	0.00	0	9,402	4,800.00	12	0.00	0.0%
Energy Star Lighting	0	0.00	0	669	34.95	2	0.00	0.0%
Energy Star Appliance	0	0.00	0	2,523	694.32	16	0.00	0.0%
Res Subtotal	98	835.00	1	53,458	77,955.45	66	29,867.56	
Res % of Total	3.4%	71.7%	50.0%	71.0%	84.6%	95.7%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	7,834	7,721.85	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	0	0.00	0	7,683.91	0.0%
C&I Govt Small	0	0.00	0	378	4,631.50	1	3,784.61	122.4%
C&I Products & Services	2,809	330.00	1	13,622	1,806.00	1	0.00	0.0%
C&I Subtotal	2,809	330.00	1	21,834	14,159.35	3	11,468.52	
C&I % of Total	96.6%	28.3%	50.0%	29.0%	15.4%	4.3%	24.4%	
Report Total	2,907	1,165.00	2	75,291	92,114.80	69	46,927.44	
Budget Comparison					69,949.68		46,927.44	149.1%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Dennis
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	70,977	94,355.78	56	107,317.58	87.9%
Low-Income Multi-Family	0	0.00	0	2,677	1,407.80	3	0.00	0.0%
LI Subtotal	0	0.00	0	73,654	95,763.58	59	107,317.58	
LI % of Total	0.0%	0.0%	0.0%	1.8%	3.7%	4.9%	11.9%	
Residential New Construction	0	0.00	0	2,891	305.12	2	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	12,689	6,405.83	28	0.00	0.0%
Res Home Energy	27,328	42,384.34	34	580,404	1,101,715.26	609	573,262.24	192.2%
Energy Star HVAC	0	0.00	0	83,386	78,750.00	176	0.00	0.0%
Energy Star Lighting	0	0.00	0	935,913	98,637.05	14	0.00	0.0%
Energy Star Appliance	0	0.00	0	73,690	14,164.96	280	0.00	0.0%
Res Subtotal	27,328	42,384.34	34	1,688,973	1,299,978.22	1,109	573,262.24	
Res % of Total	5.3%	55.8%	94.4%	41.8%	49.7%	91.4%	63.6%	
C&I New Construction	0	0.00	0	147,457	74,762.50	1	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	3,213.00	1	0.00	0.0%
C&I Large Retrofit	460,656	30,729.78	1	460,656	34,358.24	4	0.00	0.0%
C&I Govt Large	0	0.00	0	415,268	777,375.88	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	166,125	104,486.43	25	147,480.83	70.8%
C&I Govt Small	0	0.00	0	138,929	119,234.13	8	72,639.81	164.1%
C&I Products & Services	26,726	2,875.00	1	953,731	107,733.00	5	0.00	0.0%
C&I Subtotal	487,382	33,604.78	2	2,282,166	1,221,163.18	45	220,120.64	
C&I % of Total	94.7%	44.2%	5.6%	56.4%	46.7%	3.7%	24.4%	
Report Total	514,710	75,989.12	36	4,044,792	2,616,904.98	1,213	900,700.46	
Budget Comparison					1,419,791.60		900,700.46	157.6%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Eastham
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	27,658	78,883.52	21	22,200.40	355.3%
Low-Income Multi-Family	0	0.00	0	0	397.93	1	0.00	0.0%
LI Subtotal	0	0.00	0	27,658	79,281.45	22	22,200.40	
LI % of Total	0.0%	0.0%	0.0%	3.0%	10.8%	4.3%	11.9%	
Residential New Construction	0	0.00	0	2,660	2,145.00	2	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	25,017	35,179.58	30	298,244	507,143.02	255	118,588.68	427.6%
Energy Star HVAC	0	0.00	0	63,810	42,450.00	94	0.00	0.0%
Energy Star Lighting	0	0.00	0	105,568	19,978.17	10	0.00	0.0%
Energy Star Appliance	0	0.00	0	25,705	5,378.88	115	0.00	0.0%
Res Subtotal	25,017	35,179.58	30	496,589	577,203.07	477	118,588.68	
Res % of Total	81.2%	97.5%	96.8%	54.7%	78.4%	94.3%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	19,736.75	1	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	0	1,137.60	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	15,986	7,457.54	4	30,508.82	24.4%
C&I Govt Small	0	0.00	0	0	0.00	0	15,026.73	0.0%
C&I Products & Services	5,787	900.00	1	367,895	51,775.00	1	0.00	0.0%
C&I Subtotal	5,787	900.00	1	383,881	80,106.89	7	45,535.55	
C&I % of Total	18.8%	2.5%	3.2%	42.3%	10.9%	1.4%	24.4%	
Report Total	30,804	36,079.58	31	908,128	736,591.41	506	186,324.63	
Budget Comparison					593,484.08		186,324.63	318.5%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Edgartown
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	12,434	27,602.86	9	49,805.76	55.4%
Low-Income Multi-Family	0	0.00	0	49,714	22,398.80	59	0.00	0.0%
LI Subtotal	0	0.00	0	62,147	50,001.66	68	49,805.76	
LI % of Total	0.0%	0.0%	0.0%	6.8%	8.7%	25.0%	11.9%	
Residential New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	11,677	5,811.61	6	174,837	293,031.29	121	266,049.23	110.1%
Energy Star HVAC	0	0.00	0	43,362	17,600.00	30	0.00	0.0%
Energy Star Lighting	0	0.00	0	73,834	3,922.80	8	0.00	0.0%
Energy Star Appliance	0	0.00	0	4,970	1,430.00	31	0.00	0.0%
Res Subtotal	11,677	5,811.61	6	297,603	316,092.09	191	266,049.23	
Res % of Total	32.9%	61.2%	85.7%	32.4%	54.9%	70.2%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	2,879.75	1	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	460.00	1	0.00	0.0%
C&I Govt Large	0	0.00	0	120,070	100,418.50	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	90,854	27,206.43	7	68,445.40	39.7%
C&I Govt Small	0	0.00	0	60,868	42,383.54	2	33,711.91	125.7%
C&I Products & Services	23,819	3,690.00	1	287,412	36,313.00	1	0.00	0.0%
C&I Subtotal	23,819	3,690.00	1	559,204	209,661.22	13	102,157.31	
C&I % of Total	67.1%	38.8%	14.3%	60.9%	36.4%	4.8%	24.4%	
Report Total	35,495	9,501.61	7	918,954	575,754.97	272	418,012.30	
Budget Comparison					390,224.12		418,012.30	93.4%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Falmouth
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	137,192	293,299.55	101	217,694.04	134.7%
Low-Income Multi-Family	0	0.00	0	73,895	57,088.06	22	0.00	0.0%
LI Subtotal	0	0.00	0	211,088	350,387.61	123	217,694.04	
LI % of Total	0.0%	0.0%	0.0%	2.6%	8.2%	6.4%	11.9%	
Residential New Construction	5,839	1,672.06	1	56,571	18,907.75	11	0.00	0.0%
Residential Multi-Family Retrofit	19,426	9,749.67	1	98,386	52,282.49	76	0.00	0.0%
Res Home Energy	64,691	97,680.98	87	803,768	1,639,655.45	952	1,162,864.18	141.0%
Energy Star HVAC	0	0.00	0	173,554	114,870.00	242	0.00	0.0%
Energy Star Lighting	0	0.00	0	1,402,238	98,003.51	36	0.00	0.0%
Energy Star Appliance	0	0.00	0	115,444	20,179.20	395	0.00	0.0%
Res Subtotal	89,956	109,102.71	89	2,649,961	1,943,898.40	1,712	1,162,864.18	
Res % of Total	8.7%	38.3%	92.7%	33.2%	45.7%	89.7%	63.6%	
C&I New Construction	88,614	20,097.00	2	464,175	159,889.75	14	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	2,919.50	2	0.00	0.0%
C&I Large Retrofit	749,918	136,351.65	3	1,140,622	207,547.34	9	0.00	0.0%
C&I Govt Large	0	0.00	0	448,328	989,501.63	5	0.00	0.0%
C&I Small Retrofit	31,842	8,283.35	1	513,623	246,071.59	34	299,165.30	82.3%
C&I Govt Small	0	0.00	0	30,426	29,837.10	3	147,350.07	20.2%
C&I Products & Services	72,294	10,835.00	1	2,528,374	318,962.40	6	0.00	0.0%
C&I Subtotal	942,668	175,567.00	7	5,125,547	1,954,729.31	73	446,515.37	
C&I % of Total	91.3%	61.7%	7.3%	64.2%	46.0%	3.8%	24.4%	
Report Total	1,032,625	284,669.71	96	7,986,596	4,249,015.32	1,908	1,827,073.59	
Budget Comparison					2,208,863.69		1,827,073.59	120.9%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Harwich
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	57,338	110,356.54	41	66,168.83	166.8%
Low-Income Multi-Family	0	0.00	0	1,417	1,374.85	1	0.00	0.0%
LI Subtotal	0	0.00	0	58,755	111,731.39	42	66,168.83	
LI % of Total	0.0%	0.0%	0.0%	4.0%	6.6%	4.8%	11.9%	
Residential New Construction	0	0.00	0	0	210.00	1	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	25,467	19,416.89	11	0.00	0.0%
Res Home Energy	7,895	54,031.82	28	375,489	884,600.55	460	353,456.43	250.3%
Energy Star HVAC	0	0.00	0	85,642	61,795.00	133	0.00	0.0%
Energy Star Lighting	0	0.00	0	116,372	7,485.45	15	0.00	0.0%
Energy Star Appliance	0	0.00	0	52,467	9,456.36	199	0.00	0.0%
Res Subtotal	7,895	54,031.82	28	655,437	982,964.25	819	353,456.43	
Res % of Total	15.7%	89.9%	96.6%	44.2%	58.1%	93.1%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	2,843.25	2	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	1,950.00	1	0.00	0.0%
C&I Govt Large	0	0.00	0	249,320	453,406.66	5	0.00	0.0%
C&I Small Retrofit	0	0.00	0	232,340	87,283.63	9	90,932.29	96.0%
C&I Govt Small	0	0.00	0	0	0.00	0	44,787.54	0.0%
C&I Products & Services	42,323	6,040.00	1	285,616	52,698.75	2	0.00	0.0%
C&I Subtotal	42,323	6,040.00	1	767,276	598,182.29	19	135,719.83	
C&I % of Total	84.3%	10.1%	3.4%	51.8%	35.3%	2.2%	24.4%	
Report Total	50,218	60,071.82	29	1,481,468	1,692,877.93	880	555,345.09	
Budget Comparison					1,082,240.72		555,345.09	194.9%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Martha's Vineyard
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	14,774	8,020.49	3	14,774	8,440.49	4	0.00	0.0%
Low-Income Single-Family	0	0.00	0	49,088	92,633.64	36	146,741.49	63.1%
Low-Income Multi-Family	0	0.00	0	65,008	102,978.30	67	0.00	0.0%
LI Subtotal	14,774	8,020.49	3	128,869	204,052.43	107	146,741.49	
LI % of Total	10.9%	16.8%	6.7%	3.2%	8.8%	11.8%	11.9%	
Residential New Construction	10,423	4,177.02	2	181,293	105,176.57	31	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	3,339	44,528.60	28	0.00	0.0%
Res Home Energy	42,700	25,265.05	35	558,626	1,017,201.67	469	783,854.32	129.8%
Energy Star HVAC	0	0.00	0	107,637	45,375.00	71	0.00	0.0%
Energy Star Lighting	0	0.00	0	515,356	70,805.14	28	0.00	0.0%
Energy Star Appliance	0	0.00	0	16,727	3,721.70	81	0.00	0.0%
Res Subtotal	53,123	29,442.07	37	1,382,978	1,286,808.68	708	783,854.32	
Res % of Total	39.1%	61.7%	82.2%	34.5%	55.8%	78.1%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	99,234	100,826.25	5	0.00	0.0%
C&I Large Retrofit	0	0.00	0	22,250	13,645.50	5	0.00	0.0%
C&I Govt Large	0	0.00	0	1,109,187	318,064.45	9	0.00	0.0%
C&I Small Retrofit	0	0.00	0	431,686	186,759.89	56	201,659.00	92.6%
C&I Govt Small	0	0.00	0	122,026	100,038.44	10	99,324.58	100.7%
C&I Products & Services	67,956	10,240.00	5	710,933	97,877.00	6	0.00	0.0%
C&I Subtotal	67,956	10,240.00	5	2,495,316	817,211.53	91	300,983.58	
C&I % of Total	50.0%	21.5%	11.1%	62.3%	35.4%	10.0%	24.4%	
Report Total	135,853	47,702.56	45	4,007,162	2,308,072.64	906	1,231,579.39	
Budget Comparison					1,396,633.64		1,231,579.39	113.4%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Mashpee
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	3,101	856.48	10	0.00	0.0%
Low-Income Single-Family	0	0.00	0	68,309	124,151.22	49	81,941.42	151.5%
Low-Income Multi-Family	1,682	860.48	1	41,793	25,321.48	42	0.00	0.0%
LI Subtotal	1,682	860.48	1	113,203	150,329.18	101	81,941.42	
LI % of Total	0.3%	1.5%	1.1%	4.2%	9.1%	10.1%	11.9%	
Residential New Construction	11,095	3,069.96	4	172,573	39,827.28	43	0.00	0.0%
Residential Multi-Family Retrofit	72,100	20,297.19	74	118,491	52,851.69	121	0.00	0.0%
Res Home Energy	12,220	8,041.93	13	348,665	481,852.80	367	437,709.45	110.1%
Energy Star HVAC	0	0.00	0	63,499	45,570.00	102	0.00	0.0%
Energy Star Lighting	0	0.00	0	160,361	11,659.80	18	0.00	0.0%
Energy Star Appliance	0	0.00	0	56,823	11,233.63	216	0.00	0.0%
Res Subtotal	95,414	31,409.08	91	920,412	642,995.20	867	437,709.45	
Res % of Total	19.3%	53.5%	96.8%	33.8%	39.1%	87.0%	63.6%	
C&I New Construction	0	0.00	0	95,040	74,125.00	2	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	4,951.50	1	0.00	0.0%
C&I Large Retrofit	389,604	25,250.00	1	428,051	33,532.04	2	0.00	0.0%
C&I Govt Large	0	0.00	0	122,393	167,956.30	2	0.00	0.0%
C&I Small Retrofit	0	0.00	0	353,742	201,756.30	17	112,607.72	179.2%
C&I Govt Small	0	0.00	0	148,897	299,384.91	3	55,463.50	539.8%
C&I Products & Services	7,961	1,150.00	1	539,436	70,703.40	2	0.00	0.0%
C&I Subtotal	397,565	26,400.00	2	1,687,559	852,409.45	29	168,071.22	
C&I % of Total	80.4%	45.0%	2.1%	62.0%	51.8%	2.9%	24.4%	
Report Total	494,662	58,669.56	94	2,721,174	1,645,733.83	997	687,722.09	
Budget Comparison					1,107,145.23		687,722.09	161.0%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Oak Bluffs
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	22,284	40,614.28	17	32,846.35	123.6%
Low-Income Multi-Family	0	0.00	0	55	49,685.76	1	0.00	0.0%
LI Subtotal	0	0.00	0	22,339	90,300.04	18	32,846.35	
LI % of Total	0.0%	0.0%	0.0%	1.2%	12.2%	6.6%	11.9%	
Residential New Construction	0	0.00	0	53,621	22,985.00	4	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	2,956	5,615.66	6	0.00	0.0%
Res Home Energy	11,172	7,364.74	12	166,867	243,599.28	134	175,456.56	138.8%
Energy Star HVAC	0	0.00	0	33,548	15,550.00	29	0.00	0.0%
Energy Star Lighting	0	0.00	0	75,054	4,248.60	1	0.00	0.0%
Energy Star Appliance	0	0.00	0	6,132	1,400.00	29	0.00	0.0%
Res Subtotal	11,172	7,364.74	12	338,178	293,398.54	203	175,456.56	
Res % of Total	37.7%	72.9%	92.3%	18.6%	39.7%	74.1%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	8,128.75	1	0.00	0.0%
C&I Govt Large	0	0.00	0	981,283	203,011.25	5	0.00	0.0%
C&I Small Retrofit	0	0.00	0	270,966	107,527.56	40	45,138.99	238.2%
C&I Govt Small	0	0.00	0	0	5,475.00	5	22,232.64	24.6%
C&I Products & Services	18,487	2,735.00	1	204,447	30,710.00	2	0.00	0.0%
C&I Subtotal	18,487	2,735.00	1	1,456,696	354,852.56	53	67,371.63	
C&I % of Total	62.3%	27.1%	7.7%	80.2%	48.0%	19.3%	24.4%	
Report Total	29,659	10,099.74	13	1,817,214	738,551.14	274	275,674.54	
Budget Comparison					397,216.12		275,674.54	144.1%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Orleans
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	28,058	76,378.67	17	85,380.81	89.5%
Low-Income Multi-Family	0	0.00	0	7,920	6,305.74	4	0.00	0.0%
LI Subtotal	0	0.00	0	35,978	82,684.41	21	85,380.81	
LI % of Total	0.0%	0.0%	0.0%	1.8%	7.9%	4.2%	11.9%	
Residential New Construction	0	0.00	0	39,503	13,371.62	6	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	31,039	16,175.39	25	0.00	0.0%
Res Home Energy	9,470	38,309.49	24	239,233	536,168.22	227	456,081.77	117.6%
Energy Star HVAC	0	0.00	0	71,021	47,350.00	89	0.00	0.0%
Energy Star Lighting	0	0.00	0	365,587	33,912.61	12	0.00	0.0%
Energy Star Appliance	0	0.00	0	24,010	4,562.00	89	0.00	0.0%
Res Subtotal	9,470	38,309.49	24	770,393	651,539.84	448	456,081.77	
Res % of Total	2.4%	54.0%	92.3%	38.6%	61.9%	90.0%	63.6%	
C&I New Construction	0	0.00	0	4,314	2,208.20	1	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	367,683	30,475.28	1	399,513	36,964.03	4	0.00	0.0%
C&I Govt Large	0	0.00	0	77,517	106,470.32	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	262,331	116,182.79	21	117,334.29	99.0%
C&I Govt Small	0	0.00	0	0	0.00	0	57,791.52	0.0%
C&I Products & Services	15,571	2,210.00	1	444,161	57,216.00	2	0.00	0.0%
C&I Subtotal	383,254	32,685.28	2	1,187,837	319,041.34	29	175,125.81	
C&I % of Total	97.6%	46.0%	7.7%	59.6%	30.3%	5.8%	24.4%	
Report Total	392,725	70,994.77	26	1,994,207	1,053,265.59	498	716,588.39	
Budget Comparison					728,729.68		716,588.39	101.7%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Provincetown
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	16,408	26,059.01	12	68,169.28	38.2%
Low-Income Multi-Family	0	0.00	0	6,166	2,827.16	3	0.00	0.0%
LI Subtotal	0	0.00	0	22,575	28,886.17	15	68,169.28	
LI % of Total	0.0%	0.0%	0.0%	1.3%	3.7%	4.4%	11.9%	
Residential New Construction	5,206	2,545.99	1	13,729	27,837.92	50	0.00	0.0%
Residential Multi-Family Retrofit	0	550.00	1	3,443	5,633.33	8	0.00	0.0%
Res Home Energy	5,574	10,784.52	9	50,322	148,261.85	108	364,142.31	40.7%
Energy Star HVAC	0	0.00	0	23,571	12,300.00	32	0.00	0.0%
Energy Star Lighting	0	0.00	0	159,443	21,433.65	4	0.00	0.0%
Energy Star Appliance	0	0.00	0	16,080	3,819.84	51	0.00	0.0%
Res Subtotal	10,781	13,880.51	11	266,588	219,286.59	253	364,142.31	
Res % of Total	14.1%	61.0%	91.7%	15.7%	28.0%	74.2%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	306.00	1	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	143,097	161,605.50	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	478,836	209,584.69	65	93,681.40	223.7%
C&I Govt Small	0	0.00	0	74,281	76,066.20	5	46,141.58	164.9%
C&I Products & Services	65,898	8,872.00	1	713,490	86,743.00	1	0.00	0.0%
C&I Subtotal	65,898	8,872.00	1	1,409,704	534,305.39	73	139,822.98	
C&I % of Total	85.9%	39.0%	8.3%	83.0%	68.3%	21.4%	24.4%	
Report Total	76,679	22,752.51	12	1,698,866	782,478.15	341	572,134.57	
Budget Comparison					459,971.75		572,134.57	80.4%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Sandwich
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	74,578	177,719.22	56	87,359.12	203.4%
Low-Income Multi-Family	2,817	1,460.76	2	2,817	1,460.76	2	0.00	0.0%
LI Subtotal	2,817	1,460.76	2	77,395	179,179.98	58	87,359.12	
LI % of Total	0.3%	1.0%	3.8%	2.0%	10.1%	5.7%	11.9%	
Residential New Construction	0	0.00	0	2,546	604.44	1	0.00	0.0%
Residential Multi-Family Retrofit	2,808	2,621.62	2	8,151	8,430.13	12	0.00	0.0%
Res Home Energy	26,338	46,786.38	44	506,399	1,028,069.04	576	466,649.37	220.3%
Energy Star HVAC	0	0.00	0	89,336	66,315.00	119	0.00	0.0%
Energy Star Lighting	0	0.00	0	1,324,810	65,589.51	20	0.00	0.0%
Energy Star Appliance	0	0.00	0	64,940	11,215.24	208	0.00	0.0%
Res Subtotal	29,146	49,408.00	46	1,996,182	1,180,223.36	936	466,649.37	
Res % of Total	3.1%	32.4%	88.5%	50.8%	66.5%	91.7%	63.6%	
C&I New Construction	0	0.00	0	25,502	16,486.00	3	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	779.50	2	0.00	0.0%
C&I Large Retrofit	873,024	97,605.34	3	926,096	105,084.09	5	0.00	0.0%
C&I Govt Large	0	0.00	0	80,416	101,208.05	3	0.00	0.0%
C&I Small Retrofit	0	0.00	0	72,884	41,860.06	12	120,052.97	34.9%
C&I Govt Small	0	0.00	0	85,600	72,358.15	1	59,130.57	122.4%
C&I Products & Services	32,576	4,180.00	1	662,788	78,891.00	1	0.00	0.0%
C&I Subtotal	905,600	101,785.34	4	1,853,286	416,666.85	27	179,183.54	
C&I % of Total	96.6%	66.7%	7.7%	47.2%	23.5%	2.6%	24.4%	
Report Total	937,562	152,654.10	52	3,926,863	1,776,070.19	1,021	733,192.03	
Budget Comparison					1,320,006.47		733,192.03	180.0%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Tisbury
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	6,787	15,204.61	5	46,750.78	32.5%
Low-Income Multi-Family	0	0.00	0	15,239	30,893.74	7	0.00	0.0%
LI Subtotal	0	0.00	0	22,025	46,098.35	12	46,750.78	
LI % of Total	0.0%	0.0%	0.0%	3.1%	8.4%	5.1%	11.9%	
Residential New Construction	0	210.00	1	40,554	25,340.30	16	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	984	39,020.94	23	0.00	0.0%
Res Home Energy	14,746	9,377.70	13	122,321	279,882.22	122	249,730.34	112.1%
Energy Star HVAC	0	0.00	0	22,969	10,100.00	19	0.00	0.0%
Energy Star Lighting	0	0.00	0	218,955	40,967.89	11	0.00	0.0%
Energy Star Appliance	0	0.00	0	3,978	795.00	20	0.00	0.0%
Res Subtotal	14,746	9,587.70	14	409,761	396,106.35	211	249,730.34	
Res % of Total	48.6%	80.2%	93.3%	58.2%	72.1%	89.8%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	22,250	5,056.75	3	0.00	0.0%
C&I Govt Large	0	0.00	0	0	6,783.25	1	0.00	0.0%
C&I Small Retrofit	0	0.00	0	34,356	25,676.78	6	64,247.10	40.0%
C&I Govt Small	0	0.00	0	60,780	47,368.40	1	31,644.10	149.7%
C&I Products & Services	15,608	2,360.00	1	155,332	22,002.00	1	0.00	0.0%
C&I Subtotal	15,608	2,360.00	1	272,718	106,887.18	12	95,891.20	
C&I % of Total	51.4%	19.8%	6.7%	38.7%	19.5%	5.1%	24.4%	
Report Total	30,354	11,947.70	15	704,504	549,091.88	235	392,372.32	
Budget Comparison					368,132.01		392,372.32	93.8%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Truro
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	16,956	19,390.62	13	14,176.58	136.8%
Low-Income Multi-Family	0	0.00	0	0	0.00	0	0.00	0.0%
LI Subtotal	0	0.00	0	16,956	19,390.62	13	14,176.58	
LI % of Total	0.0%	0.0%	0.0%	1.7%	5.2%	6.0%	11.9%	
Residential New Construction	2,212	2,533.72	3	19,826	16,479.83	13	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	4,873	7,106.52	11	87,760	178,560.14	102	75,727.57	235.8%
Energy Star HVAC	0	0.00	0	36,496	19,375.00	38	0.00	0.0%
Energy Star Lighting	0	0.00	0	0	0.00	0	0.00	0.0%
Energy Star Appliance	0	0.00	0	11,775	1,855.00	39	0.00	0.0%
Res Subtotal	7,085	9,640.24	14	156,458	216,377.97	193	75,727.57	
Res % of Total	97.4%	99.7%	93.3%	16.1%	57.8%	89.4%	63.6%	
C&I New Construction	0	0.00	0	0	193.75	1	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	11,786	17,079.50	2	0.00	0.0%
C&I Small Retrofit	0	0.00	0	50,929	26,803.03	4	19,482.12	137.6%
C&I Govt Small	0	0.00	0	21,564	23,148.68	2	9,595.67	241.2%
C&I Products & Services	186	30.00	1	711,626	71,490.00	1	0.00	0.0%
C&I Subtotal	186	30.00	1	795,905	138,714.96	10	29,077.79	
C&I % of Total	2.6%	0.3%	6.7%	82.1%	37.0%	4.6%	24.4%	
Report Total	7,271	9,670.24	15	969,319	374,483.55	216	118,981.94	
Budget Comparison					247,902.47		118,981.94	208.4%

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Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Wellfleet
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
Low-Income Single-Family	0	0.00	0	29,642	59,987.65	17	21,754.40	275.7%
Low-Income Multi-Family	0	0.00	0	0	0.00	0	0.00	0.0%
LI Subtotal	0	0.00	0	29,642	59,987.65	17	21,754.40	
LI % of Total	0.0%	0.0%	0.0%	3.4%	9.5%	4.7%	11.9%	
Residential New Construction	0	0.00	0	3,422	2,629.88	1	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	22,260	23,534.90	17	230,116	354,958.10	203	116,206.28	305.5%
Energy Star HVAC	0	0.00	0	50,939	28,875.00	57	0.00	0.0%
Energy Star Lighting	0	0.00	0	89,764	5,813.90	6	0.00	0.0%
Energy Star Appliance	0	0.00	0	12,649	2,920.00	55	0.00	0.0%
Res Subtotal	22,260	23,534.90	17	387,491	395,304.88	323	116,206.28	
Res % of Total	89.9%	98.3%	94.4%	44.2%	62.6%	89.5%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	111,297	101,689.46	3	0.00	0.0%
C&I Small Retrofit	0	0.00	0	30,812	30,972.41	10	29,895.91	103.6%
C&I Govt Small	0	0.00	0	0	9,000.00	7	14,724.85	61.1%
C&I Products & Services	2,514	405.00	1	316,894	34,069.00	1	0.00	0.0%
C&I Subtotal	2,514	405.00	1	459,003	175,730.87	21	44,620.76	
C&I % of Total	10.1%	1.7%	5.6%	52.4%	27.8%	5.8%	24.4%	
Report Total	24,774	23,939.90	18	876,135	631,023.40	361	182,581.44	
Budget Comparison					454,918.16		182,581.44	249.2%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: West Tisbury
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	14,774	8,020.49	3	14,774	8,440.49	4	0.00	0.0%
Low-Income Single-Family	0	0.00	0	5,866	8,364.05	4	10,786.01	77.5%
Low-Income Multi-Family	0	0.00	0	0	0.00	0	0.00	0.0%
LI Subtotal	14,774	8,020.49	3	20,640	16,804.54	8	10,786.01	
LI % of Total	39.5%	53.5%	37.5%	3.9%	4.5%	5.5%	11.9%	
Residential New Construction	10,423	3,967.02	1	76,209	49,851.27	10	0.00	0.0%
Residential Multi-Family Retrofit	0	0.00	0	601	108.00	1	0.00	0.0%
Res Home Energy	5,007	1,876.00	3	78,891	143,520.16	75	57,616.01	249.1%
Energy Star HVAC	0	0.00	0	14,599	7,350.00	16	0.00	0.0%
Energy Star Lighting	0	0.00	0	146,677	21,595.00	5	0.00	0.0%
Energy Star Appliance	0	0.00	0	3,952	1,167.46	23	0.00	0.0%
Res Subtotal	15,430	5,843.02	4	320,929	223,591.89	130	57,616.01	
Res % of Total	41.2%	39.0%	50.0%	61.4%	60.4%	89.7%	63.6%	
C&I New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt New Construction	0	0.00	0	99,234	97,946.50	4	0.00	0.0%
C&I Large Retrofit	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Govt Large	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Small Retrofit	0	0.00	0	32,110	24,810.52	2	14,822.64	167.4%
C&I Govt Small	0	0.00	0	0	0.00	0	7,300.70	0.0%
C&I Products & Services	7,234	1,125.00	1	50,120	7,046.00	1	0.00	0.0%
C&I Subtotal	7,234	1,125.00	1	181,464	129,803.02	7	22,123.34	
C&I % of Total	19.3%	7.5%	12.5%	34.7%	35.1%	4.8%	24.4%	
Report Total	37,437	14,988.51	8	523,033	370,199.45	145	90,525.36	
Budget Comparison					176,694.73		90,525.36	195.2%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

Energy Efficiency Program Activity by Town

http://www.capelightcompact.org/TownReports.htm

Town Name: Yarmouth
Program Period: 2014
Current Dates: 12/01/14 - 12/31/14
Cumulative Dates: 01/01/14 - 12/31/14

	Current Period			Cumulative for Reporting Period				
Program	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Annual kWh Savings	Actual Expenditures	Unique Customer Accounts	Budget	Actual % of Budget
Low-Income New Construction	0	0.00	0	11,828	923.85	38	0.00	0.0%
Low-Income Single-Family	0	0.00	0	126,075	178,128.35	93	202,351.89	88.0%
Low-Income Multi-Family	0	0.00	0	1,080	579.07	1	0.00	0.0%
LI Subtotal	0	0.00	0	138,982	179,631.27	132	202,351.89	
LI % of Total	0.0%	0.0%	0.0%	2.9%	5.3%	7.8%	11.9%	
Residential New Construction	0	0.00	0	14,087	2,948.25	2	0.00	0.0%
Residential Multi-Family Retrofit	52,198	43,250.30	16	154,645	110,367.79	62	0.00	0.0%
Res Home Energy	43,039	75,174.05	64	628,743	1,540,879.23	832	1,080,910.47	142.6%
Energy Star HVAC	0	0.00	0	103,754	94,395.00	220	0.00	0.0%
Energy Star Lighting	0	0.00	0	450,635	67,999.95	23	0.00	0.0%
Energy Star Appliance	0	0.00	0	90,065	18,557.14	383	0.00	0.0%
Res Subtotal	95,237	118,424.35	80	1,441,929	1,835,147.36	1,522	1,080,910.47	
Res % of Total	11.8%	64.4%	96.4%	30.0%	54.2%	89.4%	63.6%	
C&I New Construction	0	0.00	0	5,616	1,784.00	2	0.00	0.0%
C&I Govt New Construction	0	0.00	0	0	0.00	0	0.00	0.0%
C&I Large Retrofit	429,054	34,399.90	2	576,764	54,350.29	8	0.00	0.0%
C&I Govt Large	0	0.00	0	386,610	890,333.25	3	0.00	0.0%
C&I Small Retrofit	0	0.00	0	268,431	151,871.77	23	278,081.41	54.6%
C&I Govt Small	0	0.00	0	67,507	50,479.80	9	136,965.47	36.9%
C&I Products & Services	285,844	30,930.00	1	1,919,420	224,899.00	4	0.00	0.0%
C&I Subtotal	714,898	65,329.90	3	3,224,349	1,373,718.11	49	415,046.88	
C&I % of Total	88.2%	35.6%	3.6%	67.1%	40.5%	2.9%	24.4%	
Report Total	810,135	183,754.25	83	4,805,260	3,388,496.74	1,703	1,698,309.24	
Budget Comparison					1,921,359.15		1,698,309.24	113.1%

*Costs only include Customer Incentives, Sales, Technical Assistance and Training. **All information presented is preliminary and subject to change. ***Not all program budgets are allocated by town.

APPENDIX 7
CAPE LIGHT COMPACT ENERGY EDUCATION OUTREACH ACTIVITIES

The Compact continues its solid commitment to energy education outreach to its community, and continues to be a regional and nationally recognized leader in the design and implementation of its energy education programs. As a unique energy efficiency administrator and municipal aggregator, the Compact strives to support the community in efforts to encourage the development of deeper and broader knowledge of energy efficiency technology and practices, moving towards an energy-literate society.

Toward this goal, the Compact's Energy Education Program continues its outreach through its innovative program. Highlights of 2014 include:

- Energy education-based presentations, field trips, and all-school Energy Carnivals; students learn the basic lessons of energy efficiency, energy forms, and energy sources in a first-hand, fun, and engaging way. Well over 6,000 students and teachers were reached.

- A STEM and state science standards-based graduate level course for teachers to introduce and reinforce energy education concepts for the classroom.

- NEED Teacher Workshops in partnership with the statewide Energy Education Working Group and in-service training for school systems reaching teachers in our service territory.

- Sponsorship for 3 teachers to attend summer training held by the National Energy Education Development Project ("NEED") and KidWind.

- Sponsorship for students and their teacher to attend the NEED Youth Awards Program in Washington D.C.

- Sponsorship for a three-week summer Energy Camp for students in the Falmouth public schools.

For the 11th year in a row, we were proud to have our schools recognized by the National Energy Education Development Project and the Massachusetts State Department of Energy Resources for their outstanding work in energy education outreach to their communities:

- <u>Elementary Level</u>: State School of the Year and National Elementary Level Finalist: Eastham Elementary, Eastham. *Selected Activities: Hosted energy carnivals led by students for students for 480 4th and 5th grade students in other communities, and launched a recycling program.*

- <u>Junior Level</u>: State Junior Level School of the Year and National Junior Level Finalist: Harwich Middle School, Harwich. *Selected Activities: Students meet weekly to discuss how to raise awareness and teach valuable lessons about energy, including ways to reduce*

energy consumption and held a community clean-up. Students also took charge of a recycling program and presented two day-long Energy Carnivals for the students in Harwich and Chatham Elementary Schools.

- State Junior Level Finalist: Forestdale School, Sandwich. *Selected activities: Students held an Energy Carnival for younger students. Sixth and eighth graders formed Solar Power Awareness Kids of Sandwich (SPARKS) and the Solar Power Intelligence Team (SPIT), researched solar energy and made a presentation to the Board of Selectmen in support of a solar installation at the High School, which is moving forward. Created bulletin boards for the school lobby to educate students about renewable energy, smart energy choices, and sustainability.*

- State Senior Level Special Mention: Nicholas Blackmon, Sandwich High School, for his project, "Alternative Energy Automobiles." *Selected Activities: Researched and presented information on the use of hydrogen fuel cells to power automobiles*.

- State Senior Level Rookie of the Year: Martha's Vineyard High School. *Selected Activities: Ten Martha's Vineyard Regional High School students commuted over to the Tisbury Elementary School to help teach third graders about engineering. These students took time out of their busy schedules to pre-plan each activity every week and help students build and refine devices. Activities taught lessons about potential energy, positives and negatives of electrons in the transfer of energy, and energy and circuitry.*

Cape and Vineyard schools have been well represented among honorees at the state and national level. Cape Light Compact schools have received these great honors every year since 2004.

Our greatest successes continue with the "kids as teachers" model, where students are trained and conduct studies to present information on energy efficiency, renewable energy, and related topics to younger students and community members. As evidenced in requested programs from year to year, schools have moved towards adopting energy education into their yearly schedule of classroom activities, and thus continue to reach more individuals.

The Compact continues to use updated and innovative materials from local and national energy education-based resources such as the NEED Project, a 501(c)3 non-profit organization. Using a model for science-based facts and local science, technology, engineering, and math ("STEM") initiatives, the Compact designs and uses curriculum materials to align with the Massachusetts state standards for science and technology, allowing teachers to introduce lesson plans discussing energy efficiency, innovation, and conservation.

2014 CLC Education Program

Dates	Program	Town	Adults	Children	Notes
6-Jan	Training	Brewster	2	25	Eddy School training for Energy Carnivals
10-Jan	Planning Meeting	Falmouth	1		Planning for winter energy club @ Morse Pond
15-Jan	Planning Meeting	Brewster	4		CCMNH Planning for Fall Teacher's workshop series
16-Jan	STEM Teacher's Course	Regional	15		Grad Level Class Held in Harbor View Room
17-Jan	Teacher In-Service	Regional	268		STEM models for teaching energy education held @ 4 C's
22-Jan	Energy Club	Falmouth	1	25	Brooke and Christine
22-Jan	Energy Club	Harwich	3	53	Sally
1/8,1/15	Energy Club	Harwich	3	54	Sally
23-Jan	STEM Teacher's Course	Regional	15		Grad Level Class Held in Harbor View Room
27-Jan	Training	MV	2	10	Science of Energy training with HS students
28-Jan	Planning Meeting	MV	2		Superint. Office Planning meeting for MV schools
29-Jan	Energy Club	Falmouth	2	20	Morse Pond
29-Jan	Energy Club	Harwich	3	53	Sally
30-Jan	STEM Teacher's Course	Regional	13		Grad Level Class Held in Harbor View Room
31-Jan	Planning Meeting	Sandwich	1	4	help with planning ET projects about energy
4-Feb	Planning Meeting	Sandwich	1	1	help with planning ET projects about energy
6-Feb	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
12-Feb	Energy Club	Harwich	2	50	Sally
12-Feb	Energy Club	Falmouth	2	15	Morse Pond
1/7,1/14	Energy Club	Sandwich	2	12	Forestdale SPARKS and Mrs. P's 5th Grade class
1/28,2/4	Energy Club	Sandwich	2	12+ 21	Forestdale SPARKS and Mrs. P's 5th Grade class
2/11,2/25	Energy Club	Sandwich	2	12+21	Forestdale SPARKS and Mrs. P's 5th Grade class
13-Feb	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
2/5,2/12	Energy Club	Falmouth	1	16	Morse Pond
24-Feb	Planning Meeting	Regional	1	12	Nauset HS
26-Feb	Energy Club	Falmouth	1	14	Morse Pond
27-Feb	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
4-Mar	Energy Club	Sandwich	2	12+21	Forestdale SPARKS and Mrs. P's 5th Grade class
5-Mar	Energy Club	Falmouth	1	12	Morse Pond
6-Mar	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
7-Mar	In-class program	Falmouth	5	53	Teaticket Elementary Science of Energy Series
11-Mar	Energy Club	Sandwich	2	12+21	Forestdale SPARKS and Mrs. P's 5th Grade class
12-Mar	Energy Club	Falmouth	1	12	Morse Pond
13-Mar	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
14-Mar	STEM Meeting	Regional	26		organized by 4 C's (Bob Cody)
15-Mar	Wellness Fair	Sandwich	~200	~200	community event at Wing School
18-Mar	Energy Club	Sandwich	2	12+21	Forestdale SPARKS and Mrs. P's 5th Grade class
20-Mar	Energy Engineering Challenge	Regional	10	60	for Cape and MV HS students held at MBL
20-Mar	STEM Teacher's Course	Regional	12		Grad Level Class Held in Harbor View Room
22-Mar	Science on the Street	Regional	300+	350+	at CCMNH
25-Mar	Energy Club	Sandwich	2	12+21	Forestdale SPARKS and Mrs. P's 5th Grade class
29-Mar	teacher workshop	Regional	12		held at CCMNH on Climate Change
29-Mar	Boy Scout STEM event	Regional	100+	200+	held at 4 C's (Ed and Andy)
3/5,12,19	Energy Club	Harwich	4	54	Sally
3/14 3/21	In-class program	Falmouth	5	53	Teaticket Elementary Science of Energy Series
28-Mar	In-class program	Falmouth	5	53	Teaticket Elementary Science of Energy Series
4/4 4/11	In-class program	Falmouth	5	53	Teaticket Elementary Science of Energy Series
1-Apr	Energy Carnival	Barnstabl	12	350	Eddy School presents to Centerville Elementary
4-Apr	Energy Carnival	Sandwich	20	450	SPARKS and Mrs. P's class presents to Riverview and Forestdale
6-Apr	presentation	Regional	15		NSTA - Boston
7-Apr	presentation	Regional	12		CZM class at 4 C's
8-Apr	Energy Carnival	Harwich	15	350	Harwich Cares Energy Club at Harwich Elementary
8-Apr	Energy Club	Sandwich	2	12	SPARKS
9-Apr	Energy Club	Harwich	4	48	Sally
10-Apr	Energy Carnival	D/Y	16	320	Eastham Elementary to Wixon
11-Apr	Energy Carnival	D/Y	16	322	Eastham Elementary to Wixon
10-Apr	Energy Carnival	Barnstabl	8	240	Eddy school presents to BWB
15-Apr	Energy Carnival	Chatham	6	150	Harwich Cares at Chatham Elementary
15-Apr	Energy Carnival	Brewster	12	235	Eddy presents to Eddy
23-Apr	County Day	Regional			Brooke and Ed
29-Apr	Energy Carnival	Sandwich	8	120	Presented by Sandwich HS Physics class to Wing

2014 CLC Education Program

Dates	Program	Town	Adults	Children	Notes
1-May	Energy Day	Harwich	28	750+	All school day-long event including Energy Carnival
1-May	Science Expo	Barnstabl	12	250+	Held at the Hyannis Recreation Building
2-May	Science Expo	Barnstabl			Held at the Hyannis Recreation Building
10-May	MA Youth Sustainability Sum	Regional	100	250+	Hosted at MIT, Cambridge
15-May	Training	Falmouth	3	15	trained students from Dr. Werner's group
20-May	Energy Carnival	Falmouth	8	150+	hosted by Dr. Werner's science kids at Morse Pond
20-May	Training	MV	2	14	from MV HS and MV charter school for E.Carnival
21-May	Energy Carnival	MV	20	300	for all Island schools - held at OB School
21-May	Energy Carnival	Falmouth	5	75	hosted by Dr. Werner's science kids
27-May	workshop	Regional	9	2	hosted by NEED for Cape Cod Schools
7-Jun	Solar Car Race	MV	37	200+	held at Edgartown Boys and Girls Club
20-Jun	State NEED Youth Awards	Regional			Held at the MA State House in Boston
23-Jun	National NEED YAP	Regional	24	9	Held in Washington DC
8-Jul	ASLP workshops	Regional	8	50	held at MA Maritime Acad
8-Jul	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
9-Jul	ASLP workshops	Regional	7	50	held at MA Maritime Acad
9-Jul	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
10-Jul	ASLP workshops	Regional	8	50	held at MA Maritime Acad
10-Jul	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
11-Jul	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
14-Jul	ASLP workshops	Regional	8	50	held at MA Maritime Acad
July 15-18	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
July 22-25	Falmouth Energy Camp	Falmouth	2	21	held at Morse Pond School
21-Jul	Barnstable Summer Program	Barnstabl	2	12	Held at Barnstable HM Charter School, Marstons Mills
22-Jul	Barnstable Summer Program	Barnstabl	3	12	Held at Barnstable HM Charter School, Marstons Mills
23-Jul	Barnstable Summer Program	Barnstabl	2	12	Held at Barnstable HM Charter School, Marstons Mills
24-Jul	Barnstable Summer Program	Barnstabl	4	36	Field trip to CCCC
5-Aug	WBNERR Block Party	Falmouth	150		families
Sept 18-19	MVRHS class meetings	MV Reg	3	24	meetings and trainings
10-Oct	Energy Club meeting	Falmouth	2	15	Morse Pond School
Oct 3-4	MV Living Local Event	MV Reg	500+		families for Energy Ed table
Oct 8, 15,22,29	Energy Club meeting	Falmouth	2	15	
Oct 28-29	MVRHS class meetings	MV Reg	2	24	meetings and trainings
13-Nov	MAST teacher's workshop	Regional	25		teacher workshop on NEED SoE
18-Nov	STEM Program for energy ed	Regional	1	25	Mattacheese MS
19-Nov	Energy Club meeting	Falmouth	1	15	last club meeting
5-Dec	Teacher's workshop	Regional	15		with Linda Werner on Energy Ed in STEM
11-Dec	STEM Program for energy ed	Regional	1	22	Mattacheese MS
12-Dec	Teacher's Workshop	Regional	16		teacher workshop on NEED SoE
Dec 17-19	Teacher's Workshops and student meetings	Regional	18	12	MVRHS, West Tisbury School, Oak Bluffs School