

**2016**

---

**New Hampshire Statewide CORE  
Energy Efficiency Plan**

---



**Jointly Submitted by New Hampshire's Electric and Natural Gas Utilities**

Granite State Electric Company d/b/a Liberty Utilities  
New Hampshire Electric Cooperative, Inc.  
Public Service Company of New Hampshire d/b/a Eversource Energy  
Unitil Energy Systems, Inc.  
EnergyNorth Natural Gas, Inc. d/b/a Liberty Utilities  
Northern Utilities, Inc.

**NHPUC Docket DE 14-216**

**September 30, 2015**





# Table of Contents

<b>I. INTRODUCTION</b>	
A. Background .....	1
B. Program Funding .....	1
C. Program Budgets.....	4
<b>II. CORE PROGRAM CHANGES</b>	
A. Residential Programs.....	6
B. NHSaves Online Presence.....	7
<b>III. UTILITY-SPECIFIC PROGRAM CHANGES</b>	
Eversource .....	9
Unitil Energy Systems, Inc.....	13
<b>IV. MONITORING &amp; EVALUATION</b> .....	16
<b>V. ATTACHMENTS</b>	
Attachment A: Home Energy Assistance Program Implementation Plan.....	18
Attachment B: Completed Monitoring and Evaluation Studies.....	19
Attachment C: Avoided Costs .....	20
Attachment D: Liberty Utilities – Electric Program Cost-Effectiveness .....	22
Attachment DG: Liberty Utilities – Gas Program Cost-Effectiveness.....	27
Attachment E: NHEC – Electric Program Cost-Effectiveness .....	30
Attachment F: Eversource – Electric Program Cost-Effectiveness .....	35
Attachment G: Unitil Energy Systems, Inc. – Electric Program Cost-Effectiveness.....	40
Attachment GG: Unitil – Gas Program Cost-Effectiveness .....	45
Attachment H1: Utility Budgets by Activity.....	48
Attachment H2: Utility Goals by Program .....	52
Attachment I: Liberty Utilities – Electric Detailed Plan by Program .....	57
Attachment IG: Liberty Utilities – Gas Detailed Plan by Program .....	65
Attachment J: NHEC – Electric Detailed Plan by Program.....	71
Attachment K: Eversource – Electric Detailed Plan by Program.....	79
Attachment L: Unitil Energy Systems, Inc. – Electric Detailed Plan by Program .....	88
Attachment LG: Unitil – Gas Detailed Plan by Program.....	96
Attachment M: Summary of Material Changes .....	102
Attachment N: Statewide Goals .....	105



## I. INTRODUCTION

This filing is being made jointly by Granite State Electric Company d/b/a Liberty Utilities, New Hampshire Electric Cooperative, Inc., Public Service Company of New Hampshire d/b/a Eversource Energy and Unitil Energy Systems, Inc. (referred to throughout the remainder of this document as the “NH Electric Utilities”) as well as EnergyNorth Natural Gas, Inc. d/b/a Liberty Utilities and Northern Utilities, Inc. (referred to as the “NH Gas Utilities”) or collectively as the “NH CORE Utilities”.

### A. Background

On September 12, 2014, in Docket DE 14-216, the NH CORE Utilities submitted a two-year plan entitled “2015-2016 New Hampshire Statewide CORE Energy Efficiency Plan” (“two year plan”) with the Commission for approval. On December 31, 2014, the Commission issued Order No. 25,747 approving the CORE Energy Efficiency Programs for 2015 and 2016, as amended by the Settlement Agreement reached in the proceeding. In the two year plan, the NH CORE Utilities committed to provide an update for the 2016 program year by September 30, 2015. In accordance with that commitment, this filing includes the NH CORE Utilities proposed program changes for the program year 2016. The sections contained in the original 2015-2016 New Hampshire Statewide CORE Energy Efficiency Plan that are not updated in this plan, remain in their original form as approved by the Commission.

This plan is separated into the following major categories and each category includes the proposed changes for 2016:

- Program Funding
- Program Budgets
- CORE Program Changes
- Utility-specific Program Changes
- Monitoring and Evaluation
- Attachments (All Attachments included in the 2015-2016 CORE Programs Plan updated for 2016)

### B. Program Funding

#### CORE Electric Energy Efficiency Program Funding

The CORE Electric Energy Efficiency Programs are funded through three main sources: 1) a portion of the System Benefits Charge (SBC) which is applied to the electric bills of all customers receiving delivery service through one of the NH Electric Utilities; 2) a portion of the Regional Greenhouse Gas Initiative (RGGI) auction proceeds subject to certain conditions; and 3) proceeds obtained by each of the NH Electric Utilities from ISO-NE for participation in ISO-NE’s Forward Capacity Market. In addition, any unspent funds from prior program years are carried forward to future years, including interest at the prime rate.

Table I.1 summarizes the original two year plan estimated program funding for 2016, the updated estimated program funding for 2016, and the difference in program funding by source and utility for the CORE Electric Programs. The overall estimated level of funding for 2016 increased by \$380,000, which consists primarily of a) an increase of \$932,000 in carryforward and interest, b) a decrease in SBC funding of \$405,000 due to lower kilowatt-hour sales than

originally projected, and c) a decrease in Forward Capacity Market proceeds of \$147,000 due to an updated forecast.

Of the total increase in the carryforward and interest amount of \$932,000, approximately one-third or \$333,000 represents the difference in the previous estimates of carryforward and interest estimates from Liberty Utilities, New Hampshire Electric Cooperative and Unitil Energy Systems, and \$599,000 from Eversource.

Unitil's carryforward amount includes \$65,000 that was originally budgeted for its revolving loan fund and approved in the 2014 Plan. Since the demand for on-bill financing has decreased due to program design changes, Unitil will utilize these funds in 2016 for its electric Home Performance with ENERGY STAR program.

Eversource's carryforward amount of approximately \$599,000 is allocated to its HEA program (\$136,818) as well as its Customer Engagement Platform (\$462,540). In the Commission's Order No. 25,812 issued on September 11, 2015, the Commission approved Eversource's request to immediately transfer a portion of its 2014 carryforward and interest balance to its 2015 programs, and to include \$136,818 in the 2016 Home Energy Assistance Program.

For the 2015 Program Year, Eversource transferred \$591,540 from the SBC funds set aside in compliance with RSA 125-O:5 for energy efficiency projects at Eversource's facilities to the 2015 program year budget to implement a Customer Engagement Platform (CEP). Eversource estimates that it will spend \$129,000 for the CEP in 2015, leaving a balance of \$462,540 to be carried over to the 2016 CEP budget. For more details, please refer to Eversource's 2016 Budget Development in Section III.1.A and III.1.C.

**Table I.1 – CORE Electric Program Funding 2016**

<b>Electric Programs</b>					
<b>Original 2016 Estimated Program Funding (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
System Benefits Charge (SBC)	1,787.924	1,427.709	14,721.080	2,247.618	20,184.331
Carryforward & Interest	-	-	-	270.860	270.860
RGGI	222.024	203.635	1,904.598	292.830	2,623.088
ISO-NE Forward Capacity Market (FCM)	115.000	55.000	2,075.171	312.800	2,557.971
<b>Total Electric Energy Efficiency Funding</b>	<b>2,124.949</b>	<b>1,686.344</b>	<b>18,700.849</b>	<b>3,124.108</b>	<b>25,636.250</b>
<b>Updated 2016 Estimated Program Funding (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
System Benefits Charge (SBC)	1,714.102	1,398.688	14,462.705	2,203.549	19,779.044
Carryforward (HEA)	-	-	136.818	-	136.818
Carryforward (Municipal)	(2.667)	-	-	-	(2.667)
Carryforward & Interest (Excluding Municipal Carryforward)	150.321	103.249	-	352.362	605.932
RGGI	218.739	206.230	1,908.853	289.263	2,623.085
Carryforward (CEP)	-	-	462.540	-	462.540
ISO-NE Forward Capacity Market (FCM)	210.000	65.000	1,823.283	312.800	2,411.083
<b>Total Electric Energy Efficiency Funding</b>	<b>2,290.495</b>	<b>1,773.167</b>	<b>18,794.199</b>	<b>3,157.974</b>	<b>26,015.835</b>
<b>2016 Estimated Funding Difference (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
System Benefits Charge (SBC)	(73.822)	(29.021)	(258.375)	(44.069)	(405.287)
Carryforward (HEA)	-	-	136.818	-	136.818
Carryforward (Municipal)	(2.667)	-	-	-	(2.667)
Carryforward & Interest (Excluding Municipal Carryforward)	150.321	103.249	-	81.502	335.072
RGGI	(3.286)	2.595	4.255	(3.567)	(0.003)
Carryforward (CEP)	-	-	462.540	-	462.540
ISO-NE Forward Capacity Market (FCM)	95.000	10.000	(251.888)	-	(146.888)
<b>Total Electric Energy Efficiency Funding</b>	<b>165.546</b>	<b>86.823</b>	<b>93.350</b>	<b>33.866</b>	<b>379.585</b>

CORE Gas Energy Efficiency Program Funding

The CORE Gas Energy Efficiency Programs are funded by a portion of the Local Distribution Adjustment Charge (LDAC), which is applied to the gas bills of all customers receiving service through one of the NH Gas Utilities. Similar to the electric programs, any unspent funds from prior program years are carried forward to future years, including interest earned at the prime rate.

Table I.2 below summarizes the original 2016 estimated program funding, the updated 2016 estimated program funding and the difference in program funding by source and utility for the CORE Gas Programs. The overall estimated level of funding for 2016 increased by \$64,600.

**Table I.2 – CORE Gas Program Funding 2016**

<b>New Hampshire Statewide CORE Energy Efficiency Programs Gas Programs</b>			
<b>Original 2016 Estimated Program Funding (\$000's)</b>			
	LU-Gas	Unitil-Gas	Total
Local Distribution Adjustment Charge (LDAC)	5,925.060	1,530.200	7,455.260
Carryforward & Interest	-	7.180	7.180
<b>Total Gas Energy Efficiency Funding</b>	<b>5,925.060</b>	<b>1,537.380</b>	<b>7,462.440</b>
<b>Updated 2016 Estimated Program Funding (\$000's)</b>			
	LU-Gas	Unitil-Gas	Total
Local Distribution Adjustment Charge (LDAC)	5,925.057	1,321.604	7,246.661
Carryforward & Interest	146.503	133.854	280.357
<b>Total Gas Energy Efficiency Funding</b>	<b>6,071.560</b>	<b>1,455.459</b>	<b>7,527.019</b>
<b>2016 Estimated Program Funding Difference (\$000's)</b>			
	LU-Gas	Unitil-Gas	Total
Local Distribution Adjustment Charge (LDAC)	(0.003)	(208.596)	(208.599)
Carryforward & Interest	146.503	126.674	273.177
<b>Total Gas Energy Efficiency Funding</b>	<b>146.500</b>	<b>(81.921)</b>	<b>64.579</b>

## C. Program Budgets

### CORE Electric Energy Efficiency Program Budgets

Table I.3 below summarizes the original 2016 electric program budget, the updated 2016 electric program budget and the difference in electric program budget by sector and utility for the CORE Electric Programs. The overall 2016 electric program budget increased by approximately \$352,000 from the original 2016 budget projection. The increase is largely due to the carryforward for Eversource's HEA and the CEP programs. Without these carryforward amounts, the budget decreased by approximately \$202,000. The program budget figures in Table I.3 do not include the estimated performance incentive, which is summarized in Attachment H2 for each utility, along with individual program budgets. As shown, the HEA Program budget is at least 15.5% of each utility's total program budget.

For Eversource, the HEA Program percentage calculation excludes the 2014 carryforward allocated to HEA and the 2015 carryforward for the CEP<sup>1</sup>.

A summary of the process and assumptions used to develop Eversource's updated 2016 budget by sector can be found in Sections III.1.A. The budget development process is similar for each utility.

**Table I.3 – CORE Electric Program Budget 2016**

<b>Electric Programs</b>					
<b>Original 2016 Program Budgets (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
Residential - Income Eligible (HEA Program)	306.311	243.237	2,696.888	450.453	3,696.889
Residential - All Other	530.590	782.306	5,104.384	915.766	7,333.046
C&I and Municipal	1,119.800	523.497	9,386.494	1,509.928	12,539.719
Smart Start & FCM	20.000	20.000	212.000	30.000	282.000
<b>Total Budget</b>	<b>1,976.701</b>	<b>1,569.040</b>	<b>17,399.766</b>	<b>2,906.147</b>	<b>23,851.654</b>
<b>HEA Program % of Total Budget</b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>
<b>Updated 2016 Program Budgets (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
Residential - Income Eligible (HEA Program)	330.589	255.703	2,751.286	455.327	3,792.905
Residential - All Other	521.148	728.901	5,156.696	1,024.407	7,431.152
C&I and Municipal	1,243.956	654.854	9,366.622	1,427.916	12,693.348
Smart Start & FCM	35.000	10.000	212.000	30.000	287.000
<b>Total Budget</b>	<b>2,130.693</b>	<b>1,649.458</b>	<b>17,486.604</b>	<b>2,937.650</b>	<b>24,204.405</b>
Less Carryforward (HEA)	-	-	127.273	-	127.273
Less Carryforward (Municipal)	(2.481)	-	-	-	(2.481)
Less Carryforward (CEP)	-	-	430.270	-	430.270
<b>Total Budget to Base HEA Allocation</b>	<b>2,133.174</b>	<b>1,649.458</b>	<b>16,929.061</b>	<b>2,937.650</b>	<b>23,649.343</b>
<b>HEA Program (net of HEA carryforward) % of Total Budget<sup>1</sup></b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>	<b>15.5%</b>
<b>2016 Estimated Program Budget Difference (\$000's)</b>					
	LU-Electric	NHEC	Eversource	Unitil	Total
Residential - Income Eligible (HEA Program)	24.278	12.466	54.398	4.874	96.016
Residential - All Other	(9.442)	(53.405)	52.312	108.641	98.106
C&I and Municipal	124.156	131.357	(19.872)	(82.012)	153.629
Smart Start & FCM	15.000	(10.000)	-	-	5.000
<b>Total Budget Before Carryforward</b>	<b>153.992</b>	<b>80.418</b>	<b>86.838</b>	<b>31.503</b>	<b>352.751</b>
Carryforward (HEA)	-	-	(127.273)	-	(127.273)
Carryforward (Municipal)	2.481	-	-	-	2.481
Carryforward (CEP)	-	-	(430.270)	-	(430.270)
<b>Total Budget</b>	<b>156.473</b>	<b>80.418</b>	<b>(470.705)</b>	<b>31.503</b>	<b>(202.311)</b>

<sup>1</sup> Eversource's HEA Program Budget calculation:  $(\$2,751,286 - \$127,273) / \$16,929,061 = 15.5\%$



CORE Gas Energy Efficiency Program Budgets

Table I.4 below summarizes the original 2016 gas program budget, the updated 2016 gas program budget and the difference in gas program budget by sector and utility for the CORE Gas Programs. The overall 2016 gas program budget increased by \$60,000 from the original 2016 budget estimate.

**Table I.4 – CORE Gas Program Budget 2016**

<b>New Hampshire Statewide CORE Energy Efficiency Programs Gas Programs</b>			
<b>Original 2016 Program Budgets (\$000's)</b>			
	LU-Gas	Unitil -Gas	Total
Residential - Income Eligible (HEA Program)	948.887	220.642	1,169.529
Residential - All Other	1,969.926	644.922	2,614.848
Commercial & Industrial	2,567.350	557.936	3,125.286
<b>Total Budget</b>	<b>5,486.163</b>	<b>1,423.500</b>	<b>6,909.663</b>
<b>HEA Program % of Total Budget</b>	<b>17.3%</b>	<b>15.5%</b>	<b>16.9%</b>
<b>Updated 2016 Program Budgets (\$000's)</b>			
	LU-Gas	Unitil -Gas	Total
Residential - Income Eligible (HEA Program)	895.000	208.884	1,103.884
Residential - All Other	2,023.815	568.733	2,592.548
Commercial & Industrial	2,703.000	570.030	3,273.030
<b>Total Budget</b>	<b>5,621.815</b>	<b>1,347.647</b>	<b>6,969.462</b>
<b>HEA Program % of Total Budget</b>	<b>15.9%</b>	<b>15.5%</b>	<b>15.8%</b>
<b>2016 Estimated Program Budget Difference (\$000's)</b>			
	LU-Gas	Unitil -Gas	Total
Residential - Income Eligible (HEA Program)	(53.887)	(11.758)	(65.645)
Residential - All Other	53.889	(76.189)	(22.300)
Commercial & Industrial	135.650	12.094	147.744
<b>Total Budget</b>	<b>135.652</b>	<b>(75.853)</b>	<b>59.799</b>



## **II. CORE PROGRAM CHANGES**

### **A. Residential Programs**

#### **1. ENERGY STAR Products Program**

##### **Lighting**

As described in the 2015-2016 New Hampshire Statewide CORE Energy Efficiency Plan, the lighting program design has been centered on offering in-store, bar-coded coupons and mail-in rebate incentives aimed at encouraging consumers to make purchases of qualifying, ENERGY STAR products. In addition, product markdowns have been utilized with retailers for specific ENERGY STAR products. The use of product markdowns allows for greater control over program expenditures and more strategic promotion of efficient measures. It also allows for the program to be easily scaled up or down, as needed.

Following the lead of other efficiency programs across the region, the NH lighting program design for 2016 will continue with an expansion of product mark downs while retaining product coupons in some retail stores. A major New Hampshire retailer will convert to the markdown model in 2016.

##### **Appliances – “White Goods”**

The ENERGY STAR Appliance Program is designed to offer mail-in incentives on certain ENERGY STAR rated appliances, encouraging consumers to choose more efficient options than the federal baseline. The program also includes a second refrigerator and freezer pickup and recycling program. The current appliance program design will continue in 2016, with the exception that incentives for Advanced Power Strips will be discontinued as they are no longer ENERGY STAR certified. The NH CORE Utilities continue to review the appliance market for new technologies that can be supported through the CORE programs. The potential for adding new ENERGY STAR products beyond 2016 will be addressed in the next multi-year plan. In the meantime, the NH CORE Utilities reserve the right to make modest changes to measures and incentive levels in response to trends in the marketplace.

#### **2. Home Performance with ENERGY STAR**

##### **Program Changes**

Given the high demand throughout the state for this residential weatherization program, along with the availability of third party financing for customers, the NH CORE Utilities are proposing that customers pay the full cost of certain non-cost effective or non-energy saving measures. Starting in 2016, customers will pay the full cost, as compared to 50%, for bathroom fans and timer switches, and certain types of basement insulation. Other measures will continue to be incented at the 50% level up to the existing incentive cap.

##### **Third Party Financing**

In 2015, the NH Electric Utilities began to offer a third party financing option through local financial institutions, which was based on the third party financing option initiated by the NH Gas Utilities in 2014. In 2016, the third party financing option will continue to facilitate customers' access to capital for energy efficiency investments. All participating customers have access to a 2% loan for up to 7 years with a maximum loan amount of \$15,000 for weatherization and an ENERGY STAR heating system replacement, if recommended by the program's energy auditor. While the NH CORE Utilities determine the energy efficiency

measures that qualify for the third party financing option, the lender will process and service the loan. The lender assumes the risk if a customer defaults on its unsecured loan.

This offering has been enhanced by an agreement with the Community Development Finance Authority (CDFA) which will provide up to \$150,000 statewide per year in 2015 and 2016 from its participation in the federal Better Buildings Program (these funds are not considered part of the CORE programs and are therefore not budgeted in this filing). CORE program funding may be utilized for loan buy downs if an energy efficiency project does not meet the federal Better Buildings project guidelines or if the CDFAs funds are fully expended. Any unused CORE funds budgeted for interest rate buy downs will be utilized within the Home Performance with ENERGY STAR program.

#### Estimated 2016 Loan Buy Down Budgets and Participation

The following tables summarize the average buy down amounts, the number of loans and the loan buy down budgets by utility and program for 2016. These amounts are included in each utility's Home Performance with ENERGY STAR program budget.<sup>2</sup>

#### Natural Gas Utilities

##### Liberty Utilities

Program	Average Buy Down Amount	No. of Loans	Total Buy Down Amount
HPwES	\$ 545	26	\$ 14,170
ENERGY STAR Products	\$ 851	24	\$ 20,424
Both	\$ 1,163	2	\$ 2,326
TOTAL		52	\$ 36,920

#### Electric Utilities

Program	Average Buy Down Amount	No. of Loans	Total Buy Down Amount
Eversource	\$ 400	25	\$ 10,000
Liberty Utilities	\$ 478	10	\$ 4,780
NHEC	\$ 500	16	\$ 8,000
Unitil	\$ -	-	\$ -
TOTAL		51	\$ 22,780

## **B. NHSaves Online Presence**

The NH CORE Utilities will continue to make enhancements to NHSaves.com to increase customer usage of the site and deliver energy efficiency education, marketing and information to customers and energy efficiency stakeholders. Additional energy efficiency customer project case studies and blogs covering diverse energy efficiency topics will continue to be added. Brief videos may be incorporated in the site to provide more accessible information about the weatherization process, or to provide an overview of C&I efficiency projects. A stand-alone renewable energy section was launched in 2015 to provide

<sup>2</sup> Given the availability of Better Buildings funding, Unitil and Unitil-Gas did not budget CORE funding to be used for third party interest rate buy-downs. However, for any customer falling outside of the parameters of the Better Buildings program, Unitil will pay for the interest rate buy down out of its gas or electric Home Performance with ENERGY STAR program budget.

information and links for customers to access information on renewable energy incentives and programs in New Hampshire.

To increase awareness and site traffic to NHSaves.com, social media marketing using targeted promotions will be tested. In addition, an online random survey of visitors to the NHSaves.com website will provide valuable information on the website's current usability while also providing guidance on potential future improvements and designs.



### III. UTILITY-SPECIFIC PROGRAM CHANGES

#### 1) Eversource

This section provides information on matters and programs specific to Eversource.

##### A. 2016 Budget Development

The following process and assumptions were used to develop Eversource's 2016 budget.

##### 1. 2016 Energy Efficiency Program Funding

The total 2016 funding available to Eversource's energy efficiency programs was estimated based on the following:

- a) Eversource's System Benefits Charge (SBC) energy efficiency revenue is based on a forecast of 2016 MWH sales and an SBC energy efficiency rate of 1.8 mills per kilowatt-hour.

2016 Forecasted MWH Sales	SBC Rate (mills/kWh)	Total SBC Revenue (\$000's)
8,034,836	1.8	\$14,462.705

- b) The estimated 2016 RGGI proceeds allocated to the NH CORE Programs of \$2.623 million was provided to the NH Electric Utilities by the Commission's staff and allocated to programs in accordance with RSA 125:O:23.

Of these amounts, \$2.15 million of the RGGI proceeds were allocated to the NH Electric Utilities for municipal and local government energy efficiency projects, including projects by local governments that have their own municipal utilities. In addition, \$473,086 was allocated to the Home Energy Assistance (HEA) program. As shown in Table 1, the \$2.15 million was allocated to each NH Electric Utility based on each utility's proportional share of the total 2014 kWh sales, including the 2014 kWh sales of the NH municipal electric utilities. The kWh sales of the municipal electric utilities were assigned to Eversource and the NHEC based on their geographic location. As shown in Table 2, the HEA program funds were allocated to each NH Electric Utility based on each utility's proportional share of the total 2014 kWh sales delivered by each utility. The final RGGI funds allocated to each NH Electric Utility is the summation of the municipal program funds and the HEA program funds.

Table 1:

Utility	2014 kWh Sales	Allocated to:	Total Allocated kWh Sales	Municipal Percent Allocation	2016 Municipal Allocation (\$000's)
LU-Electric	910,685,196		910,685,196	8.31%	\$178.74
NHEC	769,708,352		878,503,799	8.02%	\$172.42
Eversource	7,886,054,000		7,960,903,337	72.67%	\$1,562.47
Unitil	1,204,303,000		1,204,303,000	11.00%	\$236.56
Ashland	18,716,179	NHEC			
Littleton	71,616,717	Eversource			
New Hampton	3,232,620	Eversource			
Wolfeboro	67,454,017	NHEC			
Woodsville	22,625,251	NHEC			
<b>Total</b>	<b>10,954,395,332</b>		<b>10,954,395,332</b>	<b>100.00%</b>	<b>\$2,150.00</b>

Table 2:

Utility	2014 MWh Sales	HEA Percent Allocation	Municipal Program Allocation (\$000's)	HEA Program Allocation (\$000's)	2016 Final RGGI Funds Allocation (\$000's)
LU-Electric	910,685	8.46%	\$ 178.74	\$ 40.00	\$ 218.74
NHEC	769,708	7.15%	\$ 172.42	\$ 33.81	\$ 206.23
Eversource	7,886,054	73.22%	\$ 1,562.47	\$ 346.38	\$ 1,908.85
Unitil	1,204,303	11.18%	\$ 236.56	\$ 52.90	\$ 289.46
<b>Total</b>	<b>10,770,751</b>	<b>100.00%</b>	<b>\$2,150.00</b>	<b>\$ 473.09</b>	<b>\$ 2,623.09</b>

- c) The ISO-NE Forward Capacity Market (FCM) proceeds for the period January through December 2016 are estimated to be \$1.823 million.
- d) The total carryforward and interest balance from the 2014 program year was \$1,255,827. This amount included a Municipal year-end balance of \$373,131. Eversource has notified the Commission that it plans to transfer this amount to its 2015 Municipal Program budget. In addition, the Commission approved Eversource's request to immediately transfer \$300,663 to the 2015 Home Performance with ENERGY STAR Program budget, and \$445,215 to the 2015 Small Business Energy Solutions Program budget. The remaining balance of \$136,818 is included in the 2016 Home Energy Assistance Program budget.
- e) Eversource transferred \$591,540 from the SBC funds set aside in compliance with RSA 125-O:5 for energy efficiency projects at Eversource's facilities to the 2015 program year budget for the distinct purpose of implementing a Customer Engagement Platform (CEP) described in the 2015-2016 New Hampshire Statewide CORE Energy Efficiency Plan (pages 66-70). Eversource estimates that approximately \$129,000 of the funding,



including performance incentive, will be expended for Setup, IT/Implementation in 2015. This leaves a funding balance of \$462,540 to be disbursed in 2016.

- f) The total 2016 funding of \$18.794 million is the summation of the SBC revenue, the 2014 carryforward for HEA, the 2015 carryforward for CEP and the RGGI and FCM proceeds.

Source	2016 Amount (\$000's)
SBC Revenues	\$14,462.705
Carryforward (HEA)	\$136.818
RGGI	\$1,908.853
Carryforward (CEP)	\$462.540
FCM	\$1,823.283
Total	\$18,794.199

## 2. Performance Incentive Budget

A portion of the total 2016 funding is reserved for the performance incentive. The first portion relates to the performance incentive associated with Eversource's Smart Start Program and is calculated based on 6% of the loans repaid<sup>3</sup>. The second portion relates to the performance incentive associated with all of Eversource's other energy efficiency programs and is calculated based on the method approved by the Commission in its Order No. 25,569 issued on September 6, 2013. Reference Attachment F, page 3 for the total 2016 planned performance incentive budget and the commercial/industrial sector and the residential sector performance incentive budgets.

## 3. Total Program Budget and Allocation to the Residential and Commercial/Industrial Sectors

- a) The total program budget is equal to the total 2016 program funding less the performance incentive budget and the Smart Start Program expenses.
- b) For 2016, the carryforward and interest budget of \$127,273 was allocated to the Home Energy Assistance program as approved in the Commission's Order No. 25,812, and the carryforward amount of \$430,270 was allocated for CEP.
- c) The Residential Home Energy Assistance (HEA) Program is first allocated 15.5% of the total program budget (excluding the carryforward amount of \$127,273 allocated for HEA and the carryforward amount of \$430,270 allocated for CEP).
- d) The remaining budget amount (total program budget as defined in (a) above less the HEA Program and the CEP carryforward amounts) is allocated to the residential sector and the commercial/industrial sector based on the funding source.
  - a. The SBC, RGGI and carryforward and interest funds are allocated based on each sector's proportional share of the forecasted 2016 total kWh sales (Residential – 40.48%; Commercial/Industrial – 59.52%). Of the C&I funds, \$1.45 million was allocated to the C&I municipal program.
  - b. Seventy percent (70%) of the FCM budget is allocated to the Commercial/Industrial sector and thirty percent (30%) is allocated to the Residential sector. (As stated in Order No. 24,719 dated December 22,

<sup>3</sup> Docket DE 01-080, Order No. 23,851, November 29, 2001, Section III, page 19.

2006, the Commission stated “We also believe that it is appropriate, as a preliminary matter, to contribute any payments received by utilities for Core program peak load reduction back to the Core programs.”)

- e) Of the Residential and Commercial/Industrial sector budgets, approximately 2% is allocated to marketing activities and approximately 5% is allocated to monitoring and evaluation activities.

4. Customer Engagement Platform (CEP) Budget

The CEP budget included in the 2015-2016 Plan is shown below:

<b>Budget</b>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Setup, IT/Implementation	\$400,000			
Software	\$150,270	\$263,777	\$212,703	\$198,392
	(1/2 year)	(full year)	(full year)	(full year)
<b>Total</b>	<b>\$550,270</b>	<b>\$263,777</b>	<b>\$212,703</b>	<b>\$198,392</b>

Eversource estimates that approximately \$120,000 will be expended for Setup, IT/Implementation in 2015, leaving a budget balance of \$430,270 to be disbursed in 2016. The total CEP budget for 2016 is \$580,539, of which \$430,270 will be funded by the 2015 Carryforward from RSA 125-O:5 and \$150,269 is funded from 2016 CORE Program funds.

<u>Budget</u>	<u>2016</u>
Setup, IT/Implementation	\$280,000
Software (for year 1)	<u>\$300,540</u>
<b>Total</b>	<b>\$580,539</b>

5. Factors Influencing Budget Level

There are several factors that may impact the budget level, including:

- a) Eversource will monitor spending in each of the programs and propose adjustments as necessary (e.g. in response to customer demand) in accordance with the guidelines contained in Section IV.C of the 2015-2016 New Hampshire Statewide CORE Energy Efficiency Plan.
- b) Eversource will accrue interest<sup>4</sup> monthly at the prime rate<sup>5</sup> on the average net balance of the total of the SBC revenue and RGGI and FCM proceeds received less funds expended for programs and services.
- c) Eversource’s SBC revenue is based on sales projections. Actual sales may differ resulting in proportionately more or less SBC revenue available for energy efficiency programs. In addition, RGGI and FCM proceeds are estimated and are subject to change. The budget will be adjusted to reflect actual sales and actual RGGI and FCM proceeds.
- d) Any unspent dollars at the end of the year will be allocated to future year budgets.

The 2016 program budget detail is presented in Attachment H2.

<sup>4</sup> DE 96-150, Order 23,574, November 1, 2000, page 25.

<sup>5</sup> <http://www.moneycafe.com/library/primerate.htm>

## **B. Residential Home Energy Reports Program**

In February 2014, Eversource successfully launched its Home Energy Reports Pilot Program with 25,000 residential participants. Half of the participants received normative (neighbor comparison) messaging whereas the other half earned rewards from saving energy. The one-year pilot program ended in February 2015 with cumulative electric savings of 1.5% for the normative messaging versus 0.31% for rewards messaging. An independent evaluation of the pilot program results is projected to be completed by October 2015. A new program targeting 25,000 high-use residential customers was launched in April 2015. An informational letter on the 2015-2016 Home Energy Reports Program was filed with the Commission on March 27, 2015 in Docket DE 14-216, which provides detailed information on the new program for 2015-2016.

## **C. Customer Engagement Platform (CEP)**

Implementation of the CEP is making great progress at Eversource. The CEP was implemented in both Connecticut and Massachusetts during 2015 and energy usage information for New Hampshire's residential and small business customers has been extracted and verified and is ready to be uploaded into the platform. There are a few key features rolled out in Massachusetts and Connecticut that require additional technical support and testing. These include: improved display of past program participation information, adding the ability to establish energy savings goals, adding role-based access to the product so customers can limit access to certain information and refining customer profile questions. As a result of the additional technical support and testing required, Eversource has delayed the CEP launch in New Hampshire from third-quarter 2015 to first-quarter 2016, in order to ensure these key features are available to New Hampshire customers in the initial product launch.

Please refer to page 12 of Eversource's 2016 budget development summary for detailed CEP program budget information.

## **2) Unitol Energy Systems, Inc.**

This section provides information on matters and programs specific to Unitol.

### **A. Combined Heat and Power (CHP) C&I Pilot Measure for Electric Commercial, Municipal, and Industrial Customers**

#### Overview

The NHPUC's Order No. 25,555 allowed the incorporation of a Combined Heat and Power (CHP) Pilot Measure within Unitol's C&I electric programs in 2013 and 2014. Due to the unexpected withdrawal by a customer in 2014, no projects went forward during the plan period. However, given continued interest expressed by two customers, the Company proposed to extend the pilot in 2015 and 2016.

The objective of the CHP Pilot Measure is to give C&I customers an opportunity to take advantage of this highly efficient technology and to assist in the upfront installation costs. CHP systems reduce electricity (kWh and kW) requirements while providing waste heat to reduce heating and/or hot water (thermal BTUs) requirements. Typically, CHP systems emit

less greenhouse gas than grid generated power. CHP systems can be fueled by natural gas, diesel fuel, wood pellets, etc. The pilot measure has a number of goals:

1. Market the technology and educate customers - especially those with heat and/or hot water needs for at least 6,000 hours per year.
2. Screen projects to determine if they pass the C&I Field Screening Tool (B/C) with current avoided supply costs.
3. Monitor one (possibly two) projects for performance and compare this to proposed energy savings and fuel usage with a cost up to \$25,000.
4. Assist in the upfront cost of installation via rebates capping the total at \$75,000 for all projects for 2015-2016.
5. Advise customers to participate in ISO-NE programs using the equipment as a critical peak asset.

#### 2016 Plan Update

The Company issued an RFP in 2015 but did not receive any proposals from customers. Feedback from customers and other interested parties included the following:

1. Due to the nature of CHP projects and the magnitude of the investment, the timeframe to submit a proposal was too short; and
2. The incentive amount being offered for the pilot measure RFP was insufficient to incent larger CHP systems.

The Company will continue to offer the pilot CHP measure for 2016 by reissuing the RFP in October or November 2015 with an application deadline in early 2016. The RFP will include a requirement that installation of the CHP system take place prior to the end of 2016. The monitoring study of any pilot measure installed may be conducted and concluded in 2017.

Any expenses incurred for the monitoring study will be paid from the System Benefits Charge funds, Forward Capacity Market funds, RGGI funds, and/or any other mechanism designed to fund energy efficiency programs in NH.

#### **Implementation / Delivery**

The CHP Pilot Measure will be included as an allowable measure within the Company's Large, Small, and Municipal business programs. The Company will work with its customers to assure maximum performance from the equipment. For fossil fuel systems above 20kW, the systems must be in compliance with CARB 2007 standards. This is the standard adopted by New Hampshire as referenced in RSA 374-G (Distributed Energy Resources).

#### **Measures of Success**

Success factors for this pilot measure include attainment of the participation, estimated savings, high customer satisfaction ratings, and acceptable M&E results, including an analysis comparing results with the most recent evaluation conducted by the MA Program Administrators.

### **B. Home Performance with ENERGY STAR and On-Bill Financing**

Given the evolution of customer lending programs in the NH CORE programs to the third party lending model, the Company did not spend the \$65,000 in new funding that was budgeted for the residential on-bill financing program and approved in its 2014 Plan. Furthermore, the Company projects that it will not be able to spend the \$65,000 for on-bill

financing in 2015 or 2016. It therefore is carrying these funds over into the Residential Sector CORE programs in 2016, and more specifically dedicating them to expanding the Home Performance with ENERGY STAR program.



## IV. MONITORING & EVALUATION

A settlement agreement approved by the Commission on March 17, 2006 (Order No. 24,599 in DE 05-157) transferred responsibility for monitoring and evaluation efforts from the NH CORE Utilities to the Commission's Staff. Under that agreement, the Commission receives input and advice from the NH CORE Utilities on monitoring and evaluation activities.

In 2016, no changes are anticipated regarding the responsibilities of the parties. Funding for Monitoring and Evaluation is proposed to remain at approximately five percent of the annual program budgets.

From January to August 2015, the following Monitoring and Evaluation studies were completed:

- The Avoided Energy Supply Costs in New England: 2015 Report, March 27, 2015, Revised April 3, 2015. The updated avoided energy and capacity costs were utilized by the NH CORE Utilities in their energy efficiency program benefit-cost analyses for the 2016 Update. (See Attachment M for the summary of the impacts of this new report as compared to the avoided costs used in the original 2015-2016 program screening.)

Additional research is taking place in the fall of 2015 to determine the value of demand that is offset by energy efficiency programs during 'super peak' summer and winter hours, or those times during which the electric grid is under the most stress. This work is currently being undertaken by Tabors Caramanis Rudkevich, Inc. (TCR), the vendor selected to undertake the 2015 Avoided Cost Study, in conjunction with the multistate avoided cost study group, with the expectation that it will be concluded by the end of 2015.

- Large Commercial & Industrial (C&I) Retrofit and New Equipment & Construction Program Impact Evaluation for the New Hampshire Electric and Gas Utilities, June 2015. The objectives of this study were to verify actual energy and demand savings by metering a representative sample of projects completed as part of the Large Business Solutions program in 2013 for both gas and electric end uses. DNV-GL (formerly known as Kema) was selected from a competitive bid process to undertake the study. In addition to measuring actual savings, DNV-GL was charged with explaining the discrepancies between their findings and the savings originally claimed by the NH CORE Utilities, to evaluate customer satisfaction with the programs, and to recommend any changes to the utilities' practices in estimating or tracking savings going forward.

The evaluation found that there was an extremely close correlation between the savings actually modeled and claimed by the utilities and that measured in the field by DNV-GL. Each of the NH CORE Utilities updated the relevant realization rates for their Large Business Solutions programs based on the findings. Specific customers who received support for snowmaking in one case and parking lot lighting in another were discussed at length with evaluators, and modifications were made by the utilities in how demand savings for these types of customers will be claimed going forward.

Customer satisfaction with the programs was found by evaluators to be very high, with 98 percent of the 63 customers surveyed by the evaluators reported being satisfied or very satisfied with the programs. No substantive changes to program delivery were recommended.

Measurement and Verification of the NH CORE/Utility Specific Energy Efficiency Programs  
Eversource's Home Energy Reports Pilot Program's impact evaluation of the first year results is underway and is expected to be completed in October 2015.

The following market assessment, impact and process evaluation studies included in the 2015-2016 Plan are under consideration in conjunction with the Commission's Staff and other interested parties:

- ENERGY STAR Homes Program: a request for proposals for a multi-faceted evaluation has been drafted and is expected to be issued prior to the end of 2015, but is complicated by possible changes to the NH energy codes.
- Municipal Energy Efficiency Program: a process evaluation to examine the effectiveness of program delivery, including review of marketing and promotional activities, project intake and management, technical assistance/audit performance, measure installation, quality assurance processes and customer satisfaction.
- ENERGY STAR Products Program (Appliances): market assessment of current penetration of ENERGY STAR appliances; measurement and verification of energy savings associated with low temperature ductless mini-splits, heat pump water heaters and possibly fossil fuel heating systems; program participant survey to assess customer satisfaction and purchasing behavior.
- ENERGY STAR Products Program (Lighting): focused study to review the adoption, use and program participant satisfaction with LEDs, including measurement and verification of the installation, hours of use and delta watts of LEDs.
- Small Business Energy Solutions Program: impact evaluation to measure and verify energy savings and update hours of use for certain segments; assess the impact of EISA requirements on linear fluorescent lamp savings baseline; impact evaluation will include Municipal projects.

Northeast Energy Efficiency Partnership (NEEP) Regional Evaluation, Measurement & Verification (EM&V) Forum

New Hampshire has elected to participate in the following regional evaluations being facilitated by NEEP's EM&V Forum, which are expected to be completed in either 2015 or 2016.

- Commercial Refrigeration Loadshape Study
- Remaining Useful Life Study
- Incremental Cost Study
- Net Savings Project
- Measure Life Research
- EM&V Methods
- Changing EM&V Paradigm
- Home Energy Management Research
- Loadshape Catalog

Reports and project details are available at <http://www.neep.org/initiatives/emv-forum>.



**ATTACHMENT A: Home Energy Assistance Program Implementation Plan**

**2016 HEA Quarterly Production Schedule**

<b>Utility</b>	<b>Total Jobs</b>	<b>1st. Qtr.</b>	<b>2nd. Qtr.</b>	<b>3rd. Qtr.</b>	<b>4th. Qtr.</b>
LU-Electric	37	9	11	11	6
NHEC	28	6	9	11	2
Eversource	352	89	112	105	46
Unitil	48	8	16	19	5
LU-Gas	306	58	96	100	52
Northern Utilities	32	4	11	14	3
<b>TOTAL Electric</b>	<b>465</b>	<b>112</b>	<b>148</b>	<b>146</b>	<b>59</b>
<b>TOTAL Gas</b>	<b>338</b>	<b>62</b>	<b>107</b>	<b>114</b>	<b>55</b>
<b>Cumulative TOTAL</b>		174	429	689	803

**2016 HEA Job Distribution By County and By Utility**

<b>BY COUNTY</b>	<b>LU-Electric</b>	<b>NHEC</b>	<b>Eversource</b>	<b>Unitil</b>	<b>LU-Gas</b>	<b>Northern Utilities</b>	<b>Grand Total</b>
Belknap		5	39		35		79
Carroll		3	19				22
Cheshire	5		11				16
Coos		2	26		0		28
Grafton	14	9	12				35
Hillsborough	7		149		233		389
Merrimack		3	32	28	32		95
Rockingham	7	3	36	20	6	21	93
Strafford		0	17			11	28
Sullivan	4	3	11				18
Program Totals	37	28	352	48	306	32	803

Note: Quarterly numbers are benchmarks and are not meant to be used to evaluate production on a monthly basis.



## **Attachment B: Completed Monitoring & Evaluation Studies**

### **Evaluation Studies Completed since 2014**

- 2014 -----
1. ERS, New Hampshire Commercial & Industrial New Construction Program Baseline Evaluation for the NH Monitoring and Evaluation Team, March 2014
  2. TecMarket Works, Six-Year Evaluation Plan for CORE Energy Efficiency Programs for the New Hampshire Public Utilities Commission, September 2014
- 2015 -----
3. Tabors Caramanis Rudkevich (TCR), Avoided Energy Supply Costs in New England: 2015 Report, March 2015, Revised April 2015
  4. DNV GL, New Hampshire Utilities Large Commercial & Industrial (C&I) Retrofit and New Equipment & Construction Program Impact Evaluation, June 2015

For a complete list of the monitoring and evaluation studies, please refer to the Commission's website at:

[http://www.puc.state.nh.us/Electric/Monitoring%20and%20Evaluation%20Reports/Monitoring\\_Evaluation\\_Report\\_List.htm](http://www.puc.state.nh.us/Electric/Monitoring%20and%20Evaluation%20Reports/Monitoring_Evaluation_Report_List.htm)



## ATTACHMENT C: AVOIDED COSTS

### Summary of Avoided Electric Costs

In accordance with Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Electric Utilities have based their avoided costs on the 2015 *Avoided Energy Supply Costs in New England: 2015 Final Report* (“2015 AESC”). Use of common avoided costs by the utilities ensures that all New Hampshire customers will have access to the programs and services that result in the same calculated avoided cost, regardless of their utility.

The present value of avoided costs over the life of program measures was calculated using a discount rate of 3.25% and a general inflation rate of 1.00%. The use of the 15% adder to represent non-quantified benefits – including environmental and other benefits as recommended by the Energy Efficiency Working Group, originally authorized by the NHPUC in DR 96-150, Order No. 23,574, dated November 1, 2000, has been discontinued because the 2015 AESC avoided costs include market-based price proxies for power plant emissions of NO<sub>x</sub>, SO<sub>2</sub>, Mercury and CO<sub>2</sub>.

The 2015 AESC avoided costs also include a 9% generic retail adder to account for the expected differential between retail and wholesale market prices. In recognition of diversity among states and utilities in energy service procurement and retail pricing policies, the contractor, Tabors Caramanis Rudkevich (TCR), provided the utility sponsors of the report with the option to remove the adder from the avoided cost data. Eversource, Liberty Utilities, Unitil and NHEC have concluded that the 2015 AESC forecasted wholesale prices of energy and capacity represent a better approximation of the cost of energy service avoided by their retail customers than prices that include a 9% increase to the wholesale prices.

## Avoided Transmission and Distribution Costs

In accordance with Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Electric Utilities have based their avoided transmission and distribution costs on the weighted average of NH utility costs and escalated for inflation and reflected in 2015 dollars.

The following table also includes an adjustment to reduce the energy and capacity line loss multipliers by the estimated losses that are accounted for in the 2015 forecast of energy prices.

Marginal T&D Costs and Line Loss Factors (\$2015)									
<b>Line Loss Multipliers</b>									
	<u>MDC (\$/kW-yr)</u>		<u>MTC</u>	<u>Transmission</u>	<u>Summer</u>	<u>Winter</u>	<u>On-Peak</u>	<u>Off-Peak</u>	
	<u>Res.(1)</u>	<u>C&amp;I(2)</u>	<u>(\$/kW-yr)</u>	<u>Capacity</u>	<u>Capacity</u>	<u>Capacity</u>	<u>Energy</u>	<u>Energy</u>	
NHEC	\$138.90	\$138.90	\$114.00	1.0207	1.0916	1.0916	1.0916	1.0916	1.0916
Liberty	\$122.91	\$89.45	\$51.39	1.1220	1.1500	1.1350	1.0630	1.0890	
PSNH	\$67.59	\$67.59	\$4.15	1.0000	1.0820	1.0820	1.0820	1.0840	
Unitil	\$78.79	\$78.79	\$31.30	1.0000	1.1217	1.1217	1.1217	1.0152	
MWh Sales to Ultimate Customers in 2014									
NHEC	760,840.146	7.06%							
Liberty	910,824.519	8.45%							
Eversource	7,886,054.000	73.13%							
Unitil	<u>1,225,254.000</u>	<u>11.36%</u>							
Total	10,782,972.665	100.00%							
Weighted Average Marginal T&D Costs and Line Loss Factors									
(Energy Line Loss Multipliers have been reduced by estimated transmission losses.)									
<b>Line Loss Multipliers</b>									
	<u>MDC (\$/kW-yr)</u>		<u>MTC</u>	<u>Transmission</u>	<u>Summer</u>	<u>Winter</u>	<u>On-Peak</u>	<u>Off-Peak</u>	
	<u>Res.(1)</u>	<u>C&amp;I(2)</u>	<u>(\$/kW-yr)</u>	<u>Capacity</u>	<u>Capacity</u>	<u>Capacity</u>	<u>Energy</u>	<u>Energy</u>	
2015\$	\$78.57	\$75.74	\$18.98	1.012	1.069	1.068	1.062	1.053	

**Program Cost-Effectiveness - 2016 PLAN**

	Total Resource Benefit/Cost Ratio	Present Value											
		Benefits (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual		Lifetime		Summer kW		Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
					MWh Savings	MWh Savings	Winter kW Savings	Summer kW Savings					
<b>Residential Programs</b>													
ENERGY STAR Homes	2.67	\$ 432.2	\$ 114.7	\$ 47.3	34.8	784.5	10.8	9.1	30	888.9	22,193.2		
NH Home Performance with ENERGY STAR	1.30	\$ 395.8	\$ 187.6	\$ 117.1	30.4	571.3	14.2	6.2	46	1,029.3	21,755.8		
ENERGY STAR Products <sup>1</sup>	3.75	\$ 1,257.5	\$ 218.9	\$ 116.5	1,010.7	13,337.3	290.7	148.3	11,312	86.2	948.0		
Home Energy Assistance	1.26	\$ 417.9	\$ 330.6	\$ -	60.1	989.6	5.7	4.3	37	960.7	21,493.9		
ISO NE FCM - Residential	0.00	\$ -	\$ 10.5	\$ -	-	-	-	-	-	-	-		
<b>Subtotal Residential</b>	<b>2.19</b>	<b>\$ 2,503.4</b>	<b>\$ 862.2</b>	<b>\$ 280.9</b>	<b>1,136.0</b>	<b>15,682.6</b>	<b>321.5</b>	<b>167.9</b>	<b>11,424</b>	<b>2,965.1</b>	<b>66,390.8</b>		
<b>Commercial/Industrial Programs</b>													
Large Business	1.37	\$ 1,797.7	\$ 648.1	\$ 668.5	1,374.4	18,480.6	202.8	246.9	17	-	-		
Small Business	1.38	\$ 1,188.7	\$ 421.3	\$ 442.8	861.0	11,568.1	132.7	173.9	69	-	-		
C&I Education	0.00	\$ -	\$ 10.8	\$ -	-	-	-	-	-	-	-		
Municipal	1.45	\$ 479.4	\$ 163.8	\$ 165.8	344.3	4,549.2	55.7	55.6	41	159.5	3,870.5		
ISO NE FCM - C&I	0.00	\$ -	\$ 24.5	\$ -	-	-	-	-	-	-	-		
<b>Subtotal C&amp;I</b>	<b>1.36</b>	<b>\$ 3,465.8</b>	<b>\$ 1,268.5</b>	<b>\$ 1,277.1</b>	<b>2,579.6</b>	<b>34,597.9</b>	<b>391.3</b>	<b>476.4</b>	<b>128</b>	<b>159</b>	<b>3,871</b>		
<b>Total</b>	<b>1.62</b>	<b>\$ 5,969.2</b>	<b>\$ 2,130.7</b>	<b>\$ 1,558.0</b>	<b>3,715.6</b>	<b>50,280.5</b>	<b>712.8</b>	<b>644.2</b>	<b>11,552</b>	<b>3,125</b>	<b>70,261</b>		

Note 1: Plan includes 10,762 customers purchasing a total of 43,047 Energy Star lighting products (estimated at 4/customer) and 550 Energy Star appliances.

<b>Annual kWh Savings</b>	3,715,633	80.2%	<b>kWh &gt; 55%</b>
<b>Annual MMBTU Savings (in kWh)</b>	915,767	19.8%	
<b>Total Annual Energy Savings</b>	4,631,401	100.0%	

<b>Lifetime kWh Savings</b>	50,280,545	70.9%	<b>kWh &gt; 55%</b>
<b>Lifetime MMBTU Savings (in kWh)</b>	20,592,420	29.1%	
<b>Total Lifetime Energy Savings</b>	70,872,965	100.0%	

Present Value Benefits - 2016 PLAN

	CAPACITY				ENERGY				Non Electric Resource	
	Total Benefits	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak		Summer Off Peak
<b>Residential Programs</b>										
ENERGY STAR Homes	\$432,197	\$29,821	\$0	\$3,281	\$13,289	\$13,442	\$18,450	\$6,569	\$7,848	\$339,497
Home Performance w/Energy Star	\$395,787	\$8,296	\$0	\$1,006	\$4,075	\$9,969	\$17,543	\$2,731	\$3,012	\$349,154
ENERGY STAR Products	\$1,257,494	\$274,152	\$0	\$31,767	\$128,663	\$223,821	\$308,844	\$103,607	\$124,812	\$61,828
Home Energy Assistance	\$417,885	\$10,171	\$0	\$1,151	\$4,663	\$16,547	\$24,271	\$6,719	\$8,289	\$346,074
<b>Subtotal Residential</b>	<b>\$2,503,363</b>	<b>\$322,441</b>	<b>\$0</b>	<b>\$37,206</b>	<b>\$150,690</b>	<b>\$263,779</b>	<b>\$369,109</b>	<b>\$119,625</b>	<b>\$143,961</b>	<b>\$1,096,553</b>
<b>Commercial/Industrial Programs</b>										
Large Business	\$1,797,731	\$486,538	\$0	\$56,456	\$228,656	\$340,733	\$375,003	\$159,988	\$150,357	\$0
Small Business	\$1,188,672	\$344,640	\$0	\$39,956	\$161,829	\$213,278	\$234,729	\$100,132	\$94,107	\$0
C&I Education	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Municipal	\$479,412	\$105,654	\$0	\$12,330	\$49,939	\$83,820	\$92,254	\$39,265	\$36,926	\$59,225
<b>Subtotal C&amp;I</b>	<b>\$3,465,814</b>	<b>\$936,832</b>	<b>\$0</b>	<b>\$108,742</b>	<b>\$440,423</b>	<b>\$637,831</b>	<b>\$701,987</b>	<b>\$299,384</b>	<b>\$281,390</b>	<b>\$59,225</b>
<b>Total</b>	<b>\$5,969,178</b>	<b>\$1,259,273</b>	<b>\$0</b>	<b>\$145,948</b>	<b>\$591,113</b>	<b>\$901,609</b>	<b>\$1,071,095</b>	<b>\$419,009</b>	<b>\$425,351</b>	<b>\$1,155,778</b>



**Performance Incentive Calculation  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial Incentive</b>		
1. Benefit/Cost Ratio	1.31	
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
3. Lifetime kWh Savings	34,597,909	
4. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	22,488,641	
5. Budget	\$1,268,456	
6. Benefit / Cost Percentage of Budget	3.75%	
7. Lifetime kWh Percentage of Budget	3.75%	
<b>8. C/I Incentive</b>	<b>\$95,134</b>	
<b>9. Cap (10%)</b>	<b>\$126,846</b>	
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	2.07	
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
12. Lifetime kWh Savings	15,682,636	
13. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	10,193,714	
14. Budget	\$862,237	
15. Benefit / Cost Percentage of Budget	3.75%	
16. Lifetime kWh Percentage of Budget	3.75%	
<b>17. Residential Incentive</b>	<b>\$64,668</b>	
<b>18. Cap (12%)</b>	<b>\$86,224</b>	
<b>19. TOTAL INCENTIVE EARNED</b>	<b>\$159,802</b>	

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

**Benefit / Cost Ratio by Sector  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$ 3,466	
2. Implementation Expenses	\$ 1,268	
3. Customer Contribution	\$ 1,277	
4. Total Costs Excluding Performance Incentive	\$ 2,546	
5. Benefit/Cost Ratio - C&I Sector	<b>1.36</b>	
6. Benefit/Cost Ratio - C&I Sector including Performance Incentive	<b>1.31</b>	
<b>Residential:</b>		
6. Benefits (Value) From Eligible Programs	\$ 2,503	
7. Implementation Expenses	\$ 862	
8. Customer Contribution	\$ 281	
9. Total Costs Excluding Performance Incentive	\$ 1,143	
10. Benefit/Cost Ratio - Residential Sector	<b>2.19</b>	
11. Benefit/Cost Ratio - Residential Sector including Performance Incentive	<b>2.07</b>	

**Lifetime Energy Savings by Sector and Program  
 2016**

	<b>Lifetime kWh Savings</b>	
	<b><u>Planned</u></b>	<b><u>Actual</u></b>
<b>Commercial &amp; Industrial:</b>		
Large Business	18,480,627	
Small Business	11,568,083	
C&I Education	0	
Municipal	4,549,199	
<b>Total Commercial &amp; Industrial Included for Incentive Calculation</b>	<b>34,597,909</b>	
<b>Residential:</b>		
ENERGY STAR Homes	784,460	
NH Home Performance with ENERGY STAR	571,330	
ENERGY STAR Products	13,337,296	
Home Energy Assistance	989,551	
<b>Total Residential Included for Incentive Calculation</b>	<b>15,682,636</b>	
<b>Total</b>	<b>50,280,545</b>	



**Total Resource Benefit Cost Analysis**  
 Summary of Benefit, Costs Program Year 2016

BCR Activity	TRC Benefit/ Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)	Participant Costs (\$000)	Annual MIMBTU Savings	Lifetime MIMBTU Savings	Annual KWH Savings	Lifetime KWH Savings	Participant Goal
<b>Residential</b>											
Home Energy Assistance	1.13	\$118	\$1,013	\$895	\$895	\$0	6,339	123,267	2	47	306
Home Performance with ENERGY STAR	2.23	\$1,382	\$2,505	\$1,124	\$646	\$478	15,258	305,154	-	-	571
ENERGY STAR Products	1.28	\$470	\$2,136	\$1,666	\$995	\$671	15,590	261,654	41	694	1,417
ENERGY STAR Homes	2.75	\$206	\$323	\$118	\$85	\$33	1,599	39,984	-	-	41
Building Practices and Demo	1.39	\$116	\$414	\$298	\$298	\$0	18,440	55,320	-	-	25,000
<b>Subtotal: Residential</b>	<b>1.56</b>	<b>\$2,292</b>	<b>\$6,392</b>	<b>\$4,100</b>	<b>\$2,919</b>	<b>\$1,182</b>	<b>57,226</b>	<b>785,379</b>	<b>43</b>	<b>741</b>	<b>27,335</b>
<b>Commercial &amp; Industrial</b>											
Large Business	1.88	\$2,324	\$4,979	\$2,655	\$1,488	\$1,167	47,471	725,779.800	-	-	270
Small Business	1.18	\$333	\$2,206	\$1,873	\$1,190	\$683	17,647	319,985.500	2,352	42,336	558
Codes, Audit Training & Education	0.00	(\$25)	\$0	\$25	\$25	\$0	-	-	-	-	-
<b>Subtotal: Commercial &amp; Industrial</b>	<b>1.58</b>	<b>\$2,632</b>	<b>\$7,185</b>	<b>\$4,553</b>	<b>\$2,703</b>	<b>\$1,850</b>	<b>65,118</b>	<b>1,045,765</b>	<b>2</b>	<b>42</b>	<b>828</b>
<b>Grand Total</b>	<b>1.57</b>	<b>\$4,924</b>	<b>\$13,577</b>	<b>\$8,653</b>	<b>\$5,622</b>	<b>\$3,032</b>	<b>122,344</b>	<b>1,831,144</b>	<b>46</b>	<b>783</b>	<b>28,163</b>

**Performance Incentive Calculation  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial Incentive</b>		
1. Target Benefit/Cost Ratio	1.51	
2. Threshold Benefit/Cost Ratio <sup>1</sup>	1.00	
3. Target Lifetime MMBTU	1,045,765	
4. Threshold Lifetime MMBTU (65%) <sup>2</sup>	679,747	
5. Budget	\$2,703,000	
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime MMBTU Percentage	4.00%	
<b>8. Target C/I Incentive</b>	<b>\$216,240</b>	
<b>9. Cap (12%)</b>	<b>\$324,360</b>	
<b>Residential Incentive</b>		
10. Target Benefit/Cost Ratio	1.47	
11. Threshold Benefit/Cost Ratio <sup>1</sup>	1.00	
12. Target Lifetime MMBTU (65%) <sup>2</sup>	785,379	
13. Threshold MMBTU	510,496	
14. Budget	\$2,918,815	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime MMBTU Percentage	4.00%	
<b>17. Target Residential Incentive</b>	<b>\$233,505</b>	
<b>18. Cap (12%)</b>	<b>\$350,258</b>	
<b>19. TOTAL TARGET INCENTIVE</b>	<b>\$449,745</b>	

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

**Benefit / Cost Ratio by Sector**  
 2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$7,185,067	
2. Implementation Expenses	\$2,703,000	
3. Customer Contribution	\$1,850,106	
4. Performance Incentive	\$216,240	
5. Total Costs Including Performance Incentive	<b>\$4,769,346</b>	
6. Benefit/Cost Ratio - C&I Sector	<b>1.58</b>	
7. Benefit/Cost Ratio - C&I Sector including PI	<b>1.51</b>	
<b>Residential:</b>		
8. Benefits (Value) From Eligible Programs	\$6,392,021	
9. Implementation Expenses	\$2,918,815	
10. Customer Contribution	\$1,181,527	
11. Performance Incentive	\$233,505	
12. Total Costs Including Performance Incentive	<b>\$4,333,847</b>	
13. Benefit/Cost Ratio - Residential Sector	<b>1.56</b>	
14. Benefit/Cost Ratio - Residential Sector including PI	<b>1.47</b>	





Program Cost-Effectiveness - 2016 PLAN

	Total Resource Benefit/Cost Ratio	Present Value									
		Benefit (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
<b>Residential Programs</b>											
Home Energy Assistance	1.12	\$ 287.3	\$ 255.7	\$ -	33.3	531.3	9.2	1.5	28	732.8	15,042.3
Home Performance w/Energy Star	1.25	\$ 447.0	\$ 229.2	\$ 128.7	32.4	602.9	32.3	16.3	53	1,281.7	25,905.4
Energy Star Homes	2.46	\$ 504.8	\$ 150.4	\$ 54.8	130.9	3,231.9	36.4	16.5	17	587.7	14,605.4
Energy Star Products <sup>1</sup>	2.58	\$ 1,182.6	\$ 349.3	\$ 109.4	787.9	11,969.5	201.8	87.0	7,317	300.2	3,301.8
FCM Reporting		\$ -	\$ 3.0	\$ -	-	-	-	-	-	-	-
<b>Subtotal Residential</b>	<b>1.89</b>	<b>\$ 2,421.7</b>	<b>\$ 987.6</b>	<b>\$ 292.8</b>	<b>984.5</b>	<b>16,335.6</b>	<b>279.7</b>	<b>119.8</b>	<b>7,415</b>	<b>2,169.6</b>	<b>43,812.6</b>
<b>Commercial/Industrial Programs</b>											
Large Business Energy Solutions	2.09	\$ 1,152.6	\$ 202.4	\$ 349.2	978.3	12,737.8	154.2	146.1	37	-	-
Small Business Energy Solutions	2.02	\$ 783.0	\$ 253.0	\$ 134.9	614.1	7,978.3	68.2	113.6	85	-	-
Municipal EE Program (per SB123)	1.16	\$ 343.2	\$ 160.4	\$ 135.1	306.5	3,979.7	19.1	30.0	32	84.6	2,115.0
Other (Education)		\$ -	\$ 39.0	\$ -	-	-	-	-	-	-	-
FCM Reporting		\$ -	\$ 7.0	\$ -	-	-	-	-	-	-	-
<b>Subtotal C&amp;I</b>	<b>1.78</b>	<b>\$ 2,278.8</b>	<b>\$ 661.9</b>	<b>\$ 619.2</b>	<b>1,898.8</b>	<b>24,695.8</b>	<b>241.5</b>	<b>289.7</b>	<b>154</b>	<b>84.6</b>	<b>2,115.0</b>
Smart Start		\$ -	\$ -	\$ -	-	-	-	-	-	-	-
Other		\$ -	\$ -	\$ -	-	-	-	-	-	-	-
<b>Subtotal Other</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>1.84</b>	<b>\$ 4,700.5</b>	<b>\$ 1,649.5</b>	<b>\$ 912.0</b>	<b>2,883.3</b>	<b>41,031.4</b>	<b>521.2</b>	<b>409.6</b>	<b>7,569</b>	<b>2,254.2</b>	<b>45,927.6</b>

Note 1: Plan includes 5,703 members purchasing a total of 22,811 Energy Star lighting products (estimated at 4/customer) and 1,614 Energy Star appliances.

Annual kWh Savings	2,883,291	81.4%	kWh > 55%
Annual MMBTU Savings (in kWh)	660,668	18.6%	
<b>Total Annual Energy Savings</b>	<b>3,543,959</b>	<b>100.0%</b>	

Lifetime kWh Savings	41,031,394	75.3%	kWh > 55%
Lifetime MMBTU Savings (in kWh)	13,460,613	24.7%	
<b>Total Lifetime Energy Savings</b>	<b>54,492,007</b>	<b>100.0%</b>	

Present Value Benefits - 2016 PLAN

	CAPACITY						ENERGY					
	Total Benefits	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Non Electric Resource		
<b>Residential Programs</b>												
Home Energy Assistance	\$ 287,285	\$ 2,888	\$ -	\$ 337	\$ 1,365	\$ 9,522	\$ 18,420	\$ 1,360	\$ 1,574	\$ 251,820		
Home Performance w/Energy Star	\$ 447,028	\$ 10,600	\$ -	\$ 1,464	\$ 5,930	\$ 10,758	\$ 20,581	\$ 1,858	\$ 2,021	\$ 393,816		
Energy Star Homes	\$ 504,810	\$ 55,298	\$ -	\$ 6,116	\$ 24,771	\$ 58,933	\$ 106,036	\$ 13,524	\$ 15,943	\$ 224,189		
Energy Star Products	\$ 1,182,613	\$ 180,804	\$ -	\$ 20,888	\$ 84,598	\$ 199,350	\$ 273,664	\$ 94,470	\$ 113,504	\$ 215,336		
FCM Reporting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
<b>Subtotal Residential</b>	<b>\$ 2,421,737</b>	<b>\$ 249,589</b>	<b>\$ -</b>	<b>\$ 28,805</b>	<b>\$ 116,664</b>	<b>\$ 278,564</b>	<b>\$ 418,701</b>	<b>\$ 111,211</b>	<b>\$ 133,041</b>	<b>\$ 1,085,161</b>		
<b>Commercial/Industrial Programs</b>												
Large Business Energy Solutions	\$ 1,152,555	\$ 272,528	\$ -	\$ 32,106	\$ 130,034	\$ 267,872	\$ 292,438	\$ 95,339	\$ 62,237	\$ -		
Small Business Energy Solutions	\$ 783,049	\$ 211,359	\$ -	\$ 24,910	\$ 100,889	\$ 172,970	\$ 140,023	\$ 77,860	\$ 55,038	\$ -		
Municipal EE Program (per SB123)	\$ 343,181	\$ 55,724	\$ -	\$ 6,568	\$ 26,600	\$ 82,579	\$ 75,546	\$ 35,001	\$ 28,754	\$ 32,408		
Other (Education)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
FCM Reporting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
<b>Subtotal C&amp;I</b>	<b>\$ 2,278,785</b>	<b>\$ 539,612</b>	<b>\$ -</b>	<b>\$ 63,584</b>	<b>\$ 257,523</b>	<b>\$ 523,421</b>	<b>\$ 508,007</b>	<b>\$ 208,200</b>	<b>\$ 146,030</b>	<b>\$ 32,408</b>		
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
<b>Total</b>	<b>\$ 4,700,522</b>	<b>\$ 789,201</b>	<b>\$ -</b>	<b>\$ 92,388</b>	<b>\$ 374,187</b>	<b>\$ 801,986</b>	<b>\$ 926,708</b>	<b>\$ 319,412</b>	<b>\$ 279,071</b>	<b>\$ 1,117,569</b>		

**Performance Incentive Calculation  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial Incentive</b>		
1. Benefit/Cost Ratio	1.71	0.00
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
3. Lifetime kWh Savings	<b>24,695,768</b>	<b>0</b>
4. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	16,052,249	
5. Budget	\$661,854	\$0
6. Benefit / Cost Percentage of Budget	3.75%	
7. Lifetime kWh Percentage of Budget	3.75%	
<b>8. C/I Incentive</b>	\$49,639	
<b>9. Cap (10%)</b>	\$66,185	
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	1.79	0.00
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
12. Lifetime kWh Savings	<b>16,335,626</b>	<b>0</b>
13. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	10,618,157	
14. Budget	\$987,604	\$0
15. Benefit / Cost Percentage of Budget	3.75%	
16. Lifetime kWh Percentage of Budget	3.75%	
<b>17. Residential Incentive</b>	\$74,070	
<b>18. Cap (10%)</b>	\$98,760	
<b>19. TOTAL INCENTIVE EARNED</b>	<b>\$123,709</b>	

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

**Benefit / Cost Ratio by Sector**  
 2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$ 2,278,785	\$ -
2. Implementation Expenses	\$ 661,854	\$ -
3. Customer Contribution	\$ 619,151	\$ -
4. Estimated Performance Incentive	<u>\$ 49,639</u>	<u>\$ -</u>
5. Total Costs (including Performance Incentive)	\$ 1,330,644	\$ -
6. Benefit/Cost Ratio - C&I Sector	<b>1.71</b>	<b>0.00</b>
<b>Residential:</b>		
7. Benefits (Value) From Eligible Programs	\$ 2,421,737	\$ -
8. Implementation Expenses	\$ 987,604	\$ -
9. Customer Contribution	\$ 292,822	\$ -
10. Estimated Performance Incentive	<u>\$ 74,070</u>	<u>\$ -</u>
11. Total Costs (including Performance Incentive)	\$ 1,354,496	\$ -
12. Benefit/Cost Ratio - Residential Sector	<b>1.79</b>	<b>0.00</b>

**Lifetime Energy Savings by Sector and Program**  
 2016

	<b>Lifetime kWh Savings</b>	
	<b><u>Planned</u></b>	<b><u>Actual</u></b>
<b>Commercial &amp; Industrial:</b>		
Large Business Energy Solutions	12,737,793	0
Small Business Energy Solutions	7,978,317	0
Municipal EE Program (per SB123)	3,979,658	0
Other (Education)	0	0
FCM Reporting	<u>0</u>	<u>0</u>
Total Commercial & Industrial Included for Incentive Calculation	<b>24,695,768</b>	<b>0</b>
<b>Residential:</b>		
Home Energy Assistance	531,288	0
Home Performance w/Energy Star	602,877	0
Energy Star Homes	3,231,914	0
Energy Star Products	11,969,548	0
FCM Reporting	<u>0</u>	<u>0</u>
Total Residential Included for Incentive Calculation	<b>16,335,626</b>	<b>0</b>



**Program Cost-Effectiveness - 2016 PLAN**

	Total Resource Benefit/Cost Ratio	Present Value									
		Benefit (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
<b>Residential Programs</b>											
Home Energy Assistance	1.15	\$ 3,167.0	\$ 2,751.3	\$ -	487.6	8,871.0	70.6	46.3	352	8,372.0	168,662.5
Home Performance w/Energy Star	1.17	\$ 4,035.6	\$ 1,860.4	\$ 1,599.2	295.7	5,414.9	107.4	60.0	507	11,650.0	227,821.8
Energy Star Homes	3.77	\$ 4,239.2	\$ 957.3	\$ 166.8	1,143.2	27,881.9	335.2	176.1	303	5,177.4	128,870.6
Energy Star Products <sup>1</sup>	4.18	\$ 11,263.4	\$ 1,853.0	\$ 843.3	6,137.7	91,936.6	1,694.1	761.1	58,752	12,657.9	149,091.8
Home Energy Reports	1.75	\$ 439.3	\$ 251.0	\$ -	1,755.7	5,267.0	184.4	200.4	25,000	-	-
Customer Engagement Platform		\$ -	\$ 235.0	\$ -	-	-	-	-	-	-	-
FCM Reporting		\$ -	\$ 48.0	\$ -	-	-	-	-	-	-	-
<b>Subtotal Residential</b>	<b>2.19</b>	<b>\$ 23,144.5</b>	<b>\$ 7,956.0</b>	<b>\$ 2,609.3</b>	<b>9,819.8</b>	<b>139,371.5</b>	<b>2,391.8</b>	<b>1,243.9</b>	<b>84,914</b>	<b>37,857.2</b>	<b>674,446.6</b>
<b>Commercial/Industrial Programs</b>											
Large Business Energy Solutions	2.62	\$ 22,225.0	\$ 4,704.8	\$ 3,775.0	18,266.0	247,515.0	2,569.7	2,739.4	320	-	-
Small Business Energy Solutions	2.29	\$ 10,428.6	\$ 2,206.0	\$ 2,343.7	7,535.7	98,130.3	955.3	1,659.4	488	-	-
Municipal	1.62	\$ 5,082.2	\$ 1,453.5	\$ 1,689.1	3,312.9	44,131.3	412.8	709.1	202	1,242.6	29,444.6
Education		\$ -	\$ 206.6	\$ -	-	-	-	-	6	-	-
C&I RFP Energy Rewards Program	2.55	\$ 2,429.8	\$ 431.4	\$ 521.5	1,948.2	24,782.5	245.3	367.8	2	-	-
C&I Partnerships		\$ -	\$ 18.9	\$ -	-	-	-	-	4	-	-
Customer Engagement Platform		\$ -	\$ 345.5	\$ -	-	-	-	-	-	-	-
FCM Reporting		\$ -	\$ 112.0	\$ -	-	-	-	-	-	-	-
<b>Subtotal C&amp;I</b>	<b>2.26</b>	<b>\$ 40,165.6</b>	<b>\$ 9,478.6</b>	<b>\$ 8,329.4</b>	<b>31,062.8</b>	<b>414,559.1</b>	<b>4,183.1</b>	<b>5,475.8</b>	<b>1,023</b>	<b>1,242.6</b>	<b>29,444.6</b>
Smart Start		\$ -	\$ 52.0	\$ -	-	-	-	-	-	-	-
Other		\$ -	\$ -	\$ -	-	-	-	-	-	-	-
<b>Subtotal Other</b>		<b>\$ -</b>	<b>\$ 52.0</b>	<b>\$ -</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>2.23</b>	<b>\$ 63,310.1</b>	<b>\$ 17,486.6</b>	<b>\$ 10,938.6</b>	<b>40,882.6</b>	<b>553,930.6</b>	<b>6,574.9</b>	<b>6,719.7</b>	<b>85,937</b>	<b>39,099.8</b>	<b>703,891.2</b>

Note 1: Plan includes 47,302 customers purchasing a total of 189,209 Energy Star lighting products (estimated at 4/customer) and 11,450 Energy Star appliances.

<b>Annual kWh Savings</b>	40,882,649	78.1%	<b>kWh &gt; 55%</b>
<b>Annual MMBTU Savings (in kWh)</b>	11,459,501	21.9%	
<b>Total Annual Energy Savings</b>	52,342,150	100.0%	

<b>Lifetime kWh Savings</b>	553,930,562	72.9%	<b>kWh &gt; 55%</b>
<b>Lifetime MMBTU Savings (in kWh)</b>	206,298,705	27.1%	
<b>Total Lifetime Energy Savings</b>	760,229,267	100.0%	

Present Value Benefits - 2016 PLAN

	CAPACITY						ENERGY						Non Electric Resource
	Total Benefits	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Summer Peak	Summer Off Peak		
<b>Residential Programs</b>													
Home Energy Assistance	\$ 3,167,025	\$ 117,991	\$ -	\$ 13,358	\$ 54,101	\$ 150,623	\$ 229,678	\$ 56,689	\$ 69,404	\$ 2,475,181	\$ -	\$ -	\$ -
Home Performance w/Energy Star	\$ 4,035,605	\$ 81,734	\$ -	\$ 9,947	\$ 40,286	\$ 91,979	\$ 146,316	\$ 34,861	\$ 39,273	\$ 3,591,209	\$ -	\$ -	\$ -
Energy Star Homes	\$ 4,239,162	\$ 585,177	\$ -	\$ 64,749	\$ 262,245	\$ 504,324	\$ 888,510	\$ 129,471	\$ 151,003	\$ 1,653,684	\$ -	\$ -	\$ -
Energy Star Products	\$ 11,263,404	\$ 1,543,502	\$ -	\$ 178,938	\$ 724,729	\$ 1,527,565	\$ 2,133,853	\$ 723,670	\$ 846,194	\$ 3,584,952	\$ -	\$ -	\$ -
Home Energy Reports	\$ 439,312	\$ 70,987	\$ -	\$ 11,287	\$ 45,714	\$ 96,380	\$ 133,374	\$ 37,210	\$ 44,360	\$ -	\$ -	\$ -	\$ -
Customer Engagement Platform													
FCM Reporting													
<b>Subtotal Residential</b>	<b>\$ 23,144,508</b>	<b>\$ 2,399,390</b>	<b>\$ -</b>	<b>\$ 278,279</b>	<b>\$ 1,127,075</b>	<b>\$ 2,370,871</b>	<b>\$ 3,531,731</b>	<b>\$ 981,901</b>	<b>\$ 1,150,234</b>	<b>\$ 11,305,026</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Commercial/Industrial Programs</b>													
Large Business Energy Solutions	\$ 22,225,002	\$ 5,357,607	\$ -	\$ 626,239	\$ 2,536,366	\$ 4,342,368	\$ 4,507,266	\$ 2,655,617	\$ 2,199,538	\$ -	\$ -	\$ -	\$ -
Small Business Energy Solutions	\$ 10,428,591	\$ 3,093,173	\$ -	\$ 364,259	\$ 1,475,306	\$ 2,193,649	\$ 1,598,613	\$ 1,037,011	\$ 666,580	\$ -	\$ -	\$ -	\$ -
Municipal	\$ 5,082,223	\$ 1,353,606	\$ -	\$ 158,836	\$ 643,312	\$ 985,722	\$ 723,684	\$ 465,985	\$ 299,519	\$ 451,559	\$ -	\$ -	\$ -
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
C&I RFP Energy Rewards Program	\$ 2,429,787	\$ 683,642	\$ -	\$ 80,580	\$ 326,360	\$ 353,463	\$ 325,257	\$ 360,354	\$ 300,132	\$ -	\$ -	\$ -	\$ -
C&I Partnerships	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Engagement Platform													
FCM Reporting													
<b>Subtotal C&amp;I</b>	<b>\$ 40,165,603</b>	<b>\$ 10,488,028</b>	<b>\$ -</b>	<b>\$ 1,229,914</b>	<b>\$ 4,981,344</b>	<b>\$ 7,875,203</b>	<b>\$ 7,154,821</b>	<b>\$ 4,518,967</b>	<b>\$ 3,465,769</b>	<b>\$ 451,559</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	<b>\$ 63,310,111</b>	<b>\$ 12,887,418</b>	<b>\$ -</b>	<b>\$ 1,508,193</b>	<b>\$ 6,108,420</b>	<b>\$ 10,246,074</b>	<b>\$ 10,686,551</b>	<b>\$ 5,500,868</b>	<b>\$ 4,616,003</b>	<b>\$ 11,756,584</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>



**Performance Incentive Calculation**  
 2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial Incentive</b>		
1. Benefit/Cost Ratio	2.17	0.00
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
3. Lifetime kWh Savings	<b>414,559,090</b>	<b>0</b>
4. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	269,463,409	
5. Budget	\$9,478,622	\$0
6. Benefit / Cost Percentage of Budget	3.75%	
7. Lifetime kWh Percentage of Budget	3.75%	
<b>8. C/I Incentive</b>	\$710,897	
<b>9. Cap (10%)</b>	\$947,862	
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	2.07	0.00
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.00	
12. Lifetime kWh Savings	<b>139,371,472</b>	<b>0</b>
13. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	90,591,457	
14. Budget	\$7,955,982	\$0
15. Benefit / Cost Percentage of Budget	3.75%	
16. Lifetime kWh Percentage of Budget	3.75%	
<b>17. Residential Incentive</b>	\$596,699	
<b>18. Cap (10%)</b>	\$795,598	
<b>19. TOTAL INCENTIVE EARNED</b>	<b>\$1,307,595</b>	

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

**Benefit / Cost Ratio by Sector**  
 2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$ 40,165,603	\$ -
2. Implementation Expenses	\$ 9,478,622	\$ -
3. Customer Contribution	\$ 8,329,392	\$ -
4. Estimated Performance Incentive	\$ 710,897	\$ -
5. Total Costs (including Performance Incentive)	<u>\$ 18,518,911</u>	<u>\$ -</u>
6. Benefit/Cost Ratio - C&I Sector	<b>2.17</b>	<b>0.00</b>
 <b>Residential:</b>		
7. Benefits (Value) From Eligible Programs	\$ 23,144,508	\$ -
8. Implementation Expenses	\$ 7,955,982	\$ -
9. Customer Contribution	\$ 2,609,255	\$ -
10. Estimated Performance Incentive	\$ 596,699	\$ -
11. Total Costs (including Performance Incentive)	<u>\$ 11,161,935</u>	<u>\$ -</u>
12. Benefit/Cost Ratio - Residential Sector	<b>2.07</b>	<b>0.00</b>

**Lifetime Energy Savings by Sector and Program  
 2016**

	<b>Lifetime kWh Savings</b>	
	<b><u>Planned</u></b>	<b><u>Actual</u></b>
<b>Commercial &amp; Industrial:</b>		
Large Business Energy Solutions	247,514,975	0
Small Business Energy Solutions	98,130,331	0
Municipal	44,131,322	0
Education	0	0
C&I RFP Energy Rewards Program	24,782,462	0
C&I Partnerships	0	0
FCM Reporting	<u>0</u>	<u>0</u>
<b>Total Commercial &amp; Industrial Included for Incentive Calculation</b>	<b>414,559,090</b>	<b>0</b>
<b>Residential:</b>		
Home Energy Assistance	8,870,954	0
Home Performance w/Energy Star	5,414,924	0
Energy Star Homes	27,881,919	0
Energy Star Products	91,936,633	0
Home Energy Reports	5,267,042	0
Customer Engagement Platform	0	0
FCM Reporting	<u>0</u>	<u>0</u>
<b>Total Residential Included for Incentive Calculation</b>	<b>139,371,472</b>	<b>0</b>



**Program Cost-Effectiveness - 2016 PLAN**

	Total Resource Benefit/Cost Ratio	Benefit (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings	
<b>Residential Programs</b>												
EnergyStar® Homes	1.71	\$ 457.0	\$ 170.0	\$ 96.5	67.6	1,321.3	27.2	11.3	26	894.9	21,691.8	
HP w/EnergyStar®	1.64	\$ 1,197.6	\$ 436.631	\$ 292.4	42.3	755.0	46.1	2.7	101	3,211.0	68,632.1	
EnergyStar® Products	3.50	\$ 2,088.7	\$ 365.0	\$ 232.4	1,433.4	23,633.4	435.0	177.2	15,066	83.0	912.7	
Home Energy Assistance	1.16	\$ 530.3	\$ 455.3	\$ -	52.3	952.7	8.2	2.1	48	1,465.8	28,654.1	
Res Education	0.00	\$ -	\$ 52.8	\$ -	-	-	-	-	-	-	-	
Res Forward Capacity Market Expenses	0.00	\$ -	\$ 15.0	\$ -	-	-	-	-	-	-	-	
<b>Residential Total</b>	<b>2.02</b>	<b>\$ 4,273.6</b>	<b>\$ 1,494.7</b>	<b>\$ 621.3</b>	<b>1,595.5</b>	<b>26,662.4</b>	<b>516.5</b>	<b>193.4</b>	<b>15,241</b>	<b>5,654.7</b>	<b>119,890.7</b>	
<b>Commercial/Industrial Programs</b>												
Large Business Energy Solutions	1.80	\$ 3,066.4	\$ 708.1	\$ 997.9	2,778.5	38,416.9	194.5	279.4	23	-	-	
Small Business Energy Solutions	2.21	\$ 1,683.3	\$ 455.0	\$ 307.3	990.5	13,468.5	150.0	284.8	54	-	-	
Municipal Program	1.08	\$ 328.6	\$ 219.9	\$ 85.2	240.5	3,140.8	17.0	26.0	28	231.0	4,800.6	
C&I Education	0.00	\$ -	\$ 44.9	\$ -	-	-	-	-	-	-	-	
C&I Forward Capacity Market Expenses	0.00	\$ -	\$ 15.0	\$ -	-	-	-	-	-	-	-	
<b>C&amp;I total</b>	<b>1.79</b>	<b>\$ 5,078.4</b>	<b>\$ 1,442.9</b>	<b>\$ 1,390.4</b>	<b>4,009.5</b>	<b>55,026.1</b>	<b>361.5</b>	<b>590.2</b>	<b>105</b>	<b>231.0</b>	<b>4,800.6</b>	
<b>Total</b>	<b>1.89</b>	<b>\$ 9,352.0</b>	<b>\$ 2,937.6</b>	<b>\$ 2,011.7</b>	<b>5,605.1</b>	<b>81,688.6</b>	<b>878.0</b>	<b>783.6</b>	<b>15,346</b>	<b>5,885.7</b>	<b>124,691.3</b>	

Note 1: Plan includes 13,788 customers purchasing a total of 55,152 Energy Star lighting products (estimated at 4/customer) and 1,278 Energy Star appliances.

<b>Annual kWh Savings</b>	5,605,054	76.5%	<b>Lifetime kWh Savings</b>	81,688,552	69.1%	<b>kWh &gt; 55%</b>
<b>Annual MMBTU Savings (in kWh)</b>	<u>1,724,917</u>	23.5%	<b>Lifetime MMBTU Savings (in kWh)</b>	<u>36,543,414</u>	30.9%	
	<b>7,329,971</b>	100.0%		<b>118,231,967</b>	100.0%	

Present Value Benefits - 2016 PLAN

	Total Benefits (\$000)	CAPACITY						ENERGY						Non Electric Resource	
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Summer Peak	Summer Off Peak				
<b>Residential Programs</b>															
EnergyStar® Homes	\$ 457	\$ 30,310	\$ -	\$ 3,414	\$ 13,826	\$ 36,982	\$ 34,895	\$ 4,107	\$ 2,931	\$ 330,568					
HP w/EnergyStar®	\$ 1,198	\$ 5,352	\$ -	\$ 621	\$ 2,517	\$ 15,046	\$ 20,791	\$ 3,878	\$ 4,409	\$ 1,145,020					
Res Energy Star Appliance	\$ 359	\$ 76,197	\$ -	\$ 9,180	\$ 37,181	\$ 42,472	\$ 41,774	\$ 20,236	\$ 12,290	\$ 119,938					
Res Energy Star Lighting	\$ 1,729	\$ 312,788	\$ -	\$ 35,495	\$ 143,762	\$ 362,213	\$ 496,963	\$ 170,895	\$ 207,272	\$ -					
EnergyStar® Products	\$ 2,089	\$ 388,985	\$ -	\$ 44,676	\$ 180,943	\$ 404,684	\$ 538,737	\$ 191,132	\$ 219,562	\$ 119,938					
Home Energy Assistance	\$ 530	\$ 4,574	\$ -	\$ 527	\$ 2,135	\$ 17,985	\$ 25,871	\$ 5,815	\$ 5,635	\$ 467,719					
<b>Subtotal Residential</b>	<b>\$ 4,274</b>	<b>\$ 429,221</b>	<b>\$ -</b>	<b>\$ 49,238</b>	<b>\$ 199,421</b>	<b>\$ 474,698</b>	<b>\$ 620,294</b>	<b>\$ 204,931</b>	<b>\$ 232,537</b>	<b>\$ 2,063,245</b>					
<b>Commercial/Industrial Programs</b>															
Large Business Energy Solutions	\$ 3,066	\$ 577,090	\$ -	\$ 66,899	\$ 270,950	\$ 794,401	\$ 712,910	\$ 366,200	\$ 277,953	\$ -					
Small Business Energy Solutions	\$ 1,683	\$ 551,774	\$ -	\$ 64,605	\$ 261,660	\$ 312,856	\$ 231,682	\$ 157,023	\$ 103,726	\$ -					
Municipal Program	\$ 329	\$ 48,968	\$ -	\$ 5,761	\$ 23,332	\$ 69,991	\$ 52,049	\$ 32,799	\$ 21,029	\$ 74,712					
<b>Subtotal C&amp;I</b>	<b>\$ 5,078</b>	<b>\$ 1,177,833</b>	<b>\$ -</b>	<b>\$ 137,264</b>	<b>\$ 555,942</b>	<b>\$ 1,177,247</b>	<b>\$ 996,641</b>	<b>\$ 556,022</b>	<b>\$ 402,709</b>	<b>\$ 74,712</b>					
<b>Total</b>	<b>\$ 9,352</b>	<b>\$ 1,607,054</b>	<b>\$ -</b>	<b>\$ 186,502</b>	<b>\$ 755,363</b>	<b>\$ 1,651,945</b>	<b>\$ 1,616,935</b>	<b>\$ 760,953</b>	<b>\$ 635,245</b>	<b>\$ 2,137,957</b>					

**Performance Incentive Calculation  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial Incentive</b>		
1. Benefit/Cost Ratio	1.7	
2. Threshold Benefit / Cost Ratio <sup>1</sup>	1.0	
3. Lifetime kWh Savings	<b>55,026,142</b>	
4. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	35,766,992	
5. Implementation Expenses	\$1,442,916	
6. Benefit / Cost Percentage of Budget	3.75%	
7. Lifetime kWh Percentage of Budget	3.75%	
<b>8. C/I Performance Incentive</b>	\$108,219	
<b>9. Maximum C/I Performance Incentive (110%)</b>	\$144,292	
<b>Residential Incentive</b>		
10. Benefit / Cost Ratio	1.9	
11. Threshold Benefit / Cost Ratio <sup>1</sup>	1.0	
12. Lifetime kWh Savings	<b>26,662,411</b>	
13. Threshold Lifetime kWh Savings (65%) <sup>2</sup>	17,330,567	
14. Implementation Expenses	\$1,494,734	
15. Benefit / Cost Percentage of Budget	3.75%	
16. Lifetime kWh Percentage of Budget	3.75%	
<b>17. Residential Performance Incentive</b>	\$112,105	
<b>18. Maximum Residential Performance Incentive (110%)</b>	\$149,473	
<b>19. TOTAL PLANNED / EARNED INCENTIVE</b>	<b>\$220,324</b>	

**Notes**

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings. Affirmed by Order 25,569 on Sept 6, 2013.

**Benefit / Cost Ratio by Sector  
 2016**

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$ 5,078,370	\$ -
2. Implementation Expenses	\$ 1,442,916	\$ -
3. Customer Contribution	\$ 1,390,415	\$ -
4. Performance Incentive	<u>\$ 108,219</u>	<u>\$ -</u>
5. Total Costs	\$ 2,941,550	\$ -
6. Benefit/Cost Ratio - C&I Sector	<b>1.7</b>	
<b>Residential:</b>		
6. Benefits (Value) From Eligible Programs	\$ 4,273,584	\$ -
7. Implementation Expenses	\$ 1,494,734	\$ -
8. Customer Contribution	\$ 621,333	\$ -
9. Performance Incentive	<u>\$ 112,105</u>	<u>\$ -</u>
10. Total Costs	\$ 2,228,172	\$ -
11. Benefit/Cost Ratio - Residential Sector	<b>1.9</b>	



**Lifetime Energy Savings by Sector and Program  
2016**

	<b>Lifetime kWh Savings</b>	
	<b><u>Planned</u></b>	<b><u>Actual</u></b>
<b>Commercial &amp; Industrial:</b>		
Large Business Energy Solutions	38,416,850	
Small Business Energy Solutions	13,468,500	
Municipal Program	3,140,791	
Total C&I kWh	<b>55,026,142</b>	
<b>Residential:</b>		
EnergyStar® Homes	1,321,301	
HP w/EnergyStar®	755,036	
EnergyStar® Products	23,633,361	
Home Energy Assistance	952,712	
Total Residential kWh	<b>26,662,411</b>	



**Total Resource Benefit Cost Analysis**  
 Summary of Benefit, Costs Program Year 2016

BCR Activity	TRC Benefit/ Cost	TRC Net Benefits	Total Benefits (\$000)	Total Costs (\$000)	PA Costs (\$000)	Participant Costs (\$000)	Annual MMBTU Savings	Lifetime MMBTU Savings	Participant Goal
<b>Residential</b>									
Home Energy Assistance	1.01	\$3	\$212	\$209	\$209	\$0	1,112	24,183	32
EnergyStar® Homes	1.53	\$58	\$169	\$110	\$69	\$42	610	14,309	11
HP w/EnergyStar®	1.24	\$55	\$283	\$229	\$148	\$81	1,525	34,783	38
EnergyStar® Products	1.26	\$156	\$758	\$602	\$335	\$267	4,977	92,742	509
Res Education			\$17	\$17	\$17	\$0			
<b>Subtotal: Residential</b>	<b>1.22</b>	<b>\$272</b>	<b>\$1,421</b>	<b>\$1,167</b>	<b>\$778</b>	<b>\$389</b>	<b>8,225</b>	<b>166,018</b>	<b>590</b>
<b>Commercial &amp; Industrial</b>									
Large Business Energy Solutions	1.76	\$778	\$1,801	\$1,023	\$325	\$698	16,626	258,334	42
Small Business Energy Solutions	1.82	\$380	\$841	\$461	\$232	\$229	5,297	117,452	100
C&I Education			\$13	\$13	\$13	\$0			
<b>Subtotal: Commercial &amp; Industrial</b>	<b>1.76</b>	<b>\$1,158</b>	<b>\$2,642</b>	<b>\$1,497</b>	<b>\$570</b>	<b>\$927</b>	<b>21,923</b>	<b>375,786</b>	<b>142</b>
<b>Grand Total</b>	<b>1.53</b>	<b>\$1,430</b>	<b>\$4,064</b>	<b>\$2,664</b>	<b>\$1,348</b>	<b>\$1,316</b>	<b>30,148</b>	<b>541,804</b>	<b>732</b>

## Performance Incentive Calculation 2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial/Industrial</b>		
1. Benefit/Cost Ratio	1.76	
2. Threshold Benefit/Cost Ratio	1.00	
3. Target lifetime MMBTU savings	375,786	
4. Threshold MMBTU savings (65%)	244,261	
5. Budget	\$570,030	
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime MMBTU Percentage	4.00%	
<b>8. C/I Performance Incentive</b>	<b>\$45,602</b>	
<b>9. Cap (12%)</b>	<b>\$68,404</b>	
<b>Residential</b>		
10. Benefit/Cost Ratio	1.22	
11. Threshold Benefit/Cost Ratio	1.00	
12. Target lifetime MMBTU savings	166,018	
13. Threshold MMBTU savings (65%)	107,912	
14. Budget	\$777,617	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime MMBTU Percentage	4.00%	
<b>17. Residential Performance Incentive</b>	<b>\$62,209</b>	
<b>18. Cap (12%)</b>	<b>\$93,314</b>	
<b>19. Total Performance Incentive</b>	<b>\$107,812</b>	

**Benefit / Cost Ratio by Sector**  
2016

	<u>Planned</u>	<u>Actual</u>
<b>Commercial &amp; Industrial:</b>		
1. Benefits (Value) From Eligible Programs	\$ 2,642,271	
2. Implementation Expenses	\$ 570,030	
3. Customer Contribution	\$ 927,063	
4. Performance Incentive	\$ 45,602	
5. Total Costs (Including PI)	\$ 1,542,695	
6. Benefit/Cost Ratio - C&I Sector		1.71
<b>Residential:</b>		
7. Benefits (Value) From Eligible Programs	\$ 1,421,489	
8. Implementation Expenses	\$ 777,617	
9. Customer Contribution	\$ 389,318	
10. Performance Incentive	\$ 62,209	
11. Total Costs (Including PI)	\$ 1,229,144	
12. Benefit/Cost Ratio - Residential Sector		1.16



**NH CORE ENERGY EFFICIENCY PROGRAM - 2016 UTILITY BUDGETS BY ACTIVITY**  
 Residential Programs

Description	Electric Utilities						Gas Utilities			Grand Total
	LU Electric	NHEC	Eversource	Unitil	Sub-total Electric	LU Gas	Unitil Gas	Sub-total Gas		
Home Energy Assistance	\$ 6,612	\$ 14,583	\$ 64,847	\$ 37,401	\$ 123,443	\$ 17,900	\$ 14,623	\$ 32,523	\$ 155,966	
Internal Admin	0	4,732	0	5,000	9,732	0	2,000	2,000	11,732	
External Admin	241,330	198,345	2,408,421	327,779	3,175,875	742,850	148,393	891,243	4,067,118	
Rebate/Services	59,506	26,835	135,454	54,173	275,967	80,550	37,602	118,152	394,119	
Implementation Services	0	1,332	5,000	4,514	10,846	0	3,133	3,133	13,980	
Marketing	23,141	9,876	137,564	26,460	197,041	53,700	3,133	56,833	253,875	
EM&V	\$ 330,589	\$ 255,703	\$ 2,751,286	\$ 455,327	\$ 3,792,905	\$ 895,000	\$ 208,884	\$ 1,103,884	\$ 4,896,789	
Total										
HP w/EnergyStar®	\$ 3,752	\$ 27,083	\$ 43,849	\$ 25,948	\$ 100,633	\$ 12,916	\$ 6,480	\$ 19,396	\$ 120,029	
Internal Admin	0	8,789	0	5,006	13,795	0	1,000	1,000	14,795	
External Admin	127,577	132,289	1,492,424	333,787	2,086,077	497,278	119,000	616,278	2,702,355	
Rebate/Services	33,770	49,836	211,107	43,392	338,105	58,123	18,020	76,143	414,249	
Implementation Services	9,381	1,332	20,000	11,226	41,939	38,749	2,160	40,909	82,848	
Marketing	13,133	9,876	93,020	17,271	133,300	38,749	1,080	39,829	173,129	
EM&V	\$ 187,613	\$ 229,205	\$ 1,860,400	\$ 436,631	\$ 2,713,849	\$ 645,815	\$ 147,740	\$ 793,555	\$ 3,507,404	
Total										
EnergyStar® Homes	\$ 2,293	\$ 21,396	\$ 22,563	\$ 11,968	\$ 58,220	\$ 1,700	\$ 5,500	\$ 7,200	\$ 65,420	
Internal Admin	0	6,943	0	5,831	12,774	0	800	800	13,574	
External Admin	77,964	71,508	749,530	128,333	1,027,335	65,450	45,650	111,100	1,138,435	
Rebate/Services	20,637	39,371	114,813	13,668	188,490	7,650	10,800	18,450	206,940	
Implementation Services	5,733	1,332	22,500	1,700	31,265	5,100	1,000	6,100	37,365	
Marketing	8,026	9,876	47,863	8,500	74,265	5,100	5,000	10,100	84,365	
EM&V	\$ 114,653	\$ 150,426	\$ 957,269	\$ 170,000	\$ 1,392,348	\$ 85,000	\$ 68,750	\$ 153,750	\$ 1,546,098	
Total										
Energy Star® Products	\$ 4,378	\$ 47,644	\$ 43,675	\$ 19,209	\$ 114,906	\$ 19,900	\$ 20,934	\$ 40,834	\$ 155,740	
Internal Admin	0	15,460	0	5,276	20,736	0	0	0	20,736	
External Admin	148,840	153,742	1,511,906	267,482	2,081,970	766,150	289,810	1,055,960	3,137,930	
Rebate/Services	39,399	87,672	84,786	35,156	247,013	89,550	20,067	109,617	356,630	
Implementation Services	10,944	25,000	120,000	20,301	176,245	59,700	2,158	61,858	238,103	
Marketing	15,322	19,752	92,651	17,576	145,301	59,700	2,274	61,974	207,275	
EM&V	\$ 218,882	\$ 349,270	\$ 1,853,018	\$ 365,000	\$ 2,786,170	\$ 995,000	\$ 335,243	\$ 1,330,243	\$ 4,116,413	
Total										

**NH CORE ENERGY EFFICIENCY PROGRAM - 2016 UTILITY BUDGETS BY ACTIVITY**  
**Residential Programs (Continued)**

Description	Electric Utilities						Gas Utilities			Grand Total
	LU Electric	NHEC	Eversource	Unitil	Sub-total Electric	LU Gas	Unitil Gas	Sub-total Gas		
	\$	\$	\$	\$	\$	\$	\$	\$		
Other*										
Internal Admin	-	-	12,587	-	12,587	5,960	-	5,960	18,547	
External Admin	0	3,000	0	30,500	33,500	0	1,200	1,200	34,700	
Rebate/Services	0	0	442,993	0	442,993	229,460	10,800	240,260	683,253	
Implementation Services	0	0	51,728	9,500	61,228	26,820	0	26,820	88,048	
Marketing	0	0	0	20,000	20,000	17,880	5,000	22,880	42,880	
EM&V	10,500	0	26,700	7,776	44,976	17,880	0	17,880	62,856	
<b>Total</b>	<b>\$ 10,500</b>	<b>\$ 3,000</b>	<b>\$ 534,009</b>	<b>\$ 67,776</b>	<b>\$ 615,285</b>	<b>\$ 298,000</b>	<b>\$ 17,000</b>	<b>\$ 315,000</b>	<b>\$ 930,285</b>	
Total Residential										
Internal Admin	\$ 17,035	\$ 110,706	\$ 187,521	\$ 94,526	\$ 409,788	\$ 58,376	\$ 47,537	\$ 105,913	\$ 515,701	
External Admin	0	38,924	0	51,612	90,536	0	5,000	5,000	95,536	
Rebate/Services	595,711	555,884	6,605,274	1,057,381	8,814,250	2,301,188	613,653	2,914,840	11,729,090	
Implementation Services	153,313	203,714	597,888	155,889	1,110,804	262,693	86,489	349,182	1,459,986	
Marketing	26,057	28,996	167,500	57,742	280,295	121,429	13,451	134,880	415,175	
EM&V	70,122	49,380	397,799	77,583	594,884	175,129	11,487	186,616	781,500	
<b>Total</b>	<b>\$ 862,237</b>	<b>\$ 987,604</b>	<b>\$ 7,955,982</b>	<b>\$ 1,494,734</b>	<b>\$ 11,300,557</b>	<b>\$ 2,918,815</b>	<b>\$ 777,617</b>	<b>\$ 3,696,432</b>	<b>\$ 14,996,989</b>	
Total %										
Internal Admin	2.0%	11.2%	2.4%	6.3%	3.6%	2.0%	6.1%	2.9%	3.4%	
External Admin	0.0%	3.9%	0.0%	3.5%	0.8%	0.0%	0.6%	0.1%	0.6%	
Rebate/Services	69.1%	56.3%	83.0%	70.7%	78.0%	78.8%	78.9%	78.9%	78.2%	
Implementation Services	17.8%	20.6%	7.5%	10.4%	9.8%	9.0%	11.1%	9.4%	9.7%	
Marketing	3.0%	2.9%	2.1%	3.9%	2.5%	4.2%	1.7%	3.6%	2.8%	
EM&V	8.1%	5.0%	5.0%	5.2%	5.3%	6.0%	1.5%	5.0%	5.2%	
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	

\* Other includes company-specific programs, education, forward capacity market administration and loan program administration.



**NH CORE ENERGY EFFICIENCY PROGRAM - 2016 UTILITY BUDGETS BY ACTIVITY**  
**C&I and Municipal Programs**

	Electric Utilities						Gas Utilities			Grand Total
	LU Electric	NHEC	Eversource	Unutil	Sub-total Electric	LU Gas	Unutil Gas	Sub-total Gas		
Large Business Energy Solutions	\$ 12,962	\$ 15,790	\$ 110,891	\$ 50,000	\$ 189,643	\$ 29,760	\$ 25,027	\$ 54,787	\$ 244,431	
Internal Admin	0	5,789	0	3,300	9,089	0	2,000	2,000	11,089	
External Admin	440,709	139,406	3,738,749	548,574	4,867,438	1,145,760	226,993	1,372,753	6,240,191	
Rebate/Services	116,658	29,055	594,910	60,000	800,624	133,920	48,368	182,288	982,912	
Implementation Services	32,405	1,332	25,000	7,115	65,852	89,280	1,915	91,195	157,047	
Marketing	45,367	11,031	235,240	39,115	330,752	89,280	21,004	110,284	441,037	
EM&V	648,101	202,403	4,704,790	708,104	6,263,398	1,488,000	325,308	1,813,308	8,076,706	
Total	\$ 8,425	\$ 31,580	\$ 51,994	\$ 35,000	\$ 127,000	\$ 23,800	\$ 21,739	\$ 45,539	\$ 172,539	
Small Business Energy Solutions	0	11,578	0	2,000	13,578	0	2,500	2,500	16,078	
Internal Admin	286,461	139,406	1,679,225	335,250	2,440,342	916,300	169,297	1,085,597	3,525,939	
External Admin	75,828	58,111	349,444	60,000	543,383	107,100	27,672	134,772	678,155	
Rebate/Services	21,063	1,332	15,000	4,550	41,945	71,400	2,130	73,530	115,475	
Implementation Services	29,489	11,031	110,298	18,200	169,018	71,400	8,384	79,784	248,802	
Marketing	421,266	253,038	2,205,962	455,001	3,335,266	1,190,000	231,722	1,421,722	4,756,988	
EM&V	3,276	15,790	34,258	15,200	68,524	0	0	0	68,524	
Total	0	5,789	0	17,500	23,289	0	0	0	23,289	
Municipal	111,376	97,396	1,280,027	151,217	1,640,016	0	0	0	1,640,016	
Internal Admin	29,482	29,055	61,505	18,965	139,006	0	0	0	139,006	
External Admin	8,189	1,332	5,000	6,000	20,521	0	0	0	20,521	
Rebate/Services	11,465	11,031	72,673	10,994	106,163	0	0	0	106,163	
Implementation Services	163,788	160,393	1,453,463	219,876	1,997,519	0	0	0	1,997,519	
Marketing	0	2,508	27,492	7,500	37,500	0	0	0	37,500	
EM&V	9,181	30,979	903,823	0	943,984	19,000	6,000	25,000	968,984	
Total	0	4,614	168,771	2,000	175,385	0	0	0	175,385	
Other*	1,620	0	8,000	10,000	19,620	6,000	7,000	13,000	32,620	
Internal Admin	24,500	0	58,320	9,936	92,756	0	0	0	92,756	
External Admin	35,302	46,020	1,166,407	59,936	1,307,664	25,000	13,000	38,000	1,345,664	
Rebate/Services	0	7,919	0	30,500	38,419	0	0	0	38,419	
Implementation Services	0	0	0	0	0	0	0	0	0	
Marketing	0	0	0	0	0	0	0	0	0	
EM&V	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	

\* Other includes company-specific programs, education, forward capacity market administration and loan program administration.

**NH CORE ENERGY EFFICIENCY PROGRAM - 2016 UTILITY BUDGETS BY ACTIVITY  
 C&I and Municipal Program Total and Grand Total (Residential, C&I and Municipal)**

	Electric Utilities						Gas Utilities			Grand Total
	LU Electric	NHEC	Eversource	Unitil	Sub-total Electric	LU Gas	Unitil Gas	Sub-total Gas		
Total C&I and Municipal	\$ 24,663	\$ 65,668	\$ 224,635	\$ 107,700	\$ 422,667	\$ 53,560	\$ 46,767	\$ 100,327	\$ 522,994	
Internal Admin	0	31,075	0	53,300	84,375	0	4,500	4,500	88,875	
External Admin	847,726	407,187	7,601,825	1,035,042	9,891,780	2,081,060	402,290	2,483,350	12,375,129	
Rebate/Services	221,968	120,835	1,174,631	140,965	1,658,398	241,020	76,040	317,060	1,975,458	
Implementation Services	63,278	3,996	53,000	27,665	147,939	166,680	11,044	177,724	325,663	
Marketing	110,821	33,093	476,531	78,244	698,689	160,680	29,389	190,069	888,758	
EM&V										
Total	\$ 1,268,456	\$ 661,854	\$ 9,530,622	\$ 1,442,916	\$ 12,903,848	\$ 2,703,000	\$ 570,030	\$ 3,273,030	\$ 16,176,878	
Total C&I and Municipal %	1.9%	9.9%	2.4%	7.5%	3.3%	2.0%	8.2%	3.1%	3.2%	
Internal Admin	0.0%	4.7%	0.0%	3.7%	0.7%	0.0%	0.8%	0.1%	0.5%	
External Admin	66.8%	61.5%	79.8%	71.7%	76.7%	77.0%	70.6%	75.9%	76.5%	
Rebate/Services	17.5%	18.3%	12.3%	9.8%	12.9%	8.9%	13.3%	9.7%	12.2%	
Implementation Services	5.0%	0.6%	0.6%	1.9%	1.1%	6.2%	1.9%	5.4%	2.0%	
Marketing	8.7%	5.0%	5.0%	5.4%	5.4%	5.9%	5.2%	5.8%	5.5%	
EM&V	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Grand Total (Residential, C&I and Municipal)	\$ 41,698	\$ 176,374	\$ 412,157	\$ 202,226	\$ 832,455	\$ 111,936	\$ 94,304	\$ 206,240	\$ 1,038,695	
Internal Admin	0	69,999	0	104,912	174,911	0	9,500	9,500	184,411	
External Admin	1,443,437	963,071	14,207,098	2,092,423	18,706,030	4,382,248	1,015,943	5,398,190	24,104,220	
Rebate/Services	375,280	324,549	1,772,519	296,854	2,769,202	503,713	162,530	666,243	3,435,444	
Implementation Services	89,335	32,992	220,500	85,407	428,234	288,109	24,496	312,604	740,838	
Marketing	180,942	82,473	874,330	155,828	1,293,573	335,809	40,876	376,685	1,670,258	
EM&V										
Total	\$ 2,130,693	\$ 1,649,458	\$ 17,486,604	\$ 2,937,650	\$ 24,204,405	\$ 5,621,815	\$ 1,347,647	\$ 6,969,462	\$ 31,173,866	
Total C&I and Municipal %	2.0%	10.7%	2.4%	6.9%	3.4%	2.0%	7.0%	3.0%	3.3%	
Internal Admin	0.0%	4.2%	0.0%	3.6%	0.7%	0.0%	0.7%	0.1%	0.6%	
External Admin	67.7%	58.4%	81.2%	71.2%	77.3%	78.0%	75.4%	77.5%	77.3%	
Rebate/Services	17.6%	19.7%	10.1%	10.1%	11.4%	9.0%	12.1%	9.6%	11.0%	
Implementation Services	4.2%	2.0%	1.3%	2.9%	1.8%	5.1%	1.8%	4.5%	2.4%	
Marketing	8.5%	5.0%	5.0%	5.3%	5.3%	6.0%	3.0%	5.4%	5.4%	
EM&V	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Total										

**NH CORE ELECTRIC PROGRAMS - 2016 UTILITY GOALS BY PROGRAM**  
**Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings**

	LU Electric		NHEC		Eversource		Unitil Electric		Total	
<b>Home Energy Assistance</b>										
Number of Units / Lifetime kWh Savings	37	989,551	28	531,288	352	8,870,954	48	952,712	465	11,344,505
B/C Ratio / Planned Budget	1.26	\$330,589	1.12	\$255,703	1.15	\$2,751,286	1.16	\$455,327		\$3,792,905
/ Lifetime MMBtu Savings		21,494		15,042		168,662		28,654		233,853
<b>Home Performance w/ENERGY STAR</b>										
Number of Participants / Lifetime kWh Savings	46	571,330	53	602,877	507	5,414,924	101	755,036	706	7,344,167
B/C Ratio / Planned Budget	1.30	\$187,613	1.25	\$229,205	1.17	\$1,860,400	1.64	\$436,631		\$2,713,849
/ Lifetime MMBtu Savings		21,756		25,905		227,822		68,632		344,115
<b>ENERGY STAR Homes</b>										
Number of Homes / Lifetime kWh Savings	30	784,460	17	3,231,914	303	27,881,919	26	1,321,301	376	33,219,594
B/C Ratio / Planned Budget	2.67	\$114,653	2.46	\$150,426	3.77	\$957,269	1.71	\$170,000		\$1,392,348
/ Lifetime MMBtu Savings		22,193		14,605		128,871		21,692		187,361
<b>ENERGY STAR Products</b>										
Number of Participants / Lifetime kWh Savings	11,312	13,337,296	7,317	11,969,548	58,752	91,936,633	15,066	23,633,361	92,446	140,876,838
B/C Ratio / Planned Budget	3.75	\$218,882	2.58	\$349,270	4.18	\$1,853,018	3.50	\$365,000		\$2,786,170
/ Lifetime MMBtu Savings		948		3,302		149,092		913		154,254
<b>Large Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	17	18,480,627	37	12,737,793	320	247,514,975	23	38,416,850	397	317,150,245
B/C Ratio / Planned Budget	1.37	\$648,101	2.09	\$202,403	2.62	\$4,704,790	1.80	\$708,104		\$6,263,398
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Small Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	69	11,568,083	85	7,978,317	488	98,130,331	54	13,468,500	696	131,145,231
B/C Ratio / Planned Budget	1.38	\$421,266	2.02	\$253,038	2.29	\$2,205,962	2.21	\$455,001		\$3,335,266
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Municipal</b>										
Number of Participants / Lifetime kWh Savings	41	4,549,199	32	3,979,658	202	44,131,322	28	3,140,791	304	55,800,970
B/C Ratio / Planned Budget	1.45	\$163,788	1.16	\$160,393	1.62	\$1,453,463	1.08	\$219,876		\$1,997,519
/ Lifetime MMBtu Savings		3,871		2,115		29,445		4,801		40,231
<b>Educational Programs</b>										
Number of Participants / Planned Budget	0	\$10,802	0	\$39,020	6	\$206,596	0	\$97,712	6	\$354,130
<b>Company Specific Programs / FCM Expenses</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	25,006	30,049,504	0	0	25,006	30,049,504
B/C Ratio / Planned Budget		\$35,000		\$10,000		\$1,441,819		\$30,000		\$1,516,819
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Smart Start (NHEC/PSNH), RLF (UES)</b>										
Number of Participants / Planned Budget	0	\$0	0	\$0	0	\$52,000	0	\$0	0	\$52,000
<b>Utility Performance Incentive</b>										
Planned Budget		\$159,802		\$123,709		\$1,307,595		\$220,324		\$1,811,430
<b>TOTAL PLANNED BUDGET</b>		<b>\$2,290,495</b>		<b>\$1,773,167</b>		<b>\$18,794,199</b>		<b>\$3,157,974</b>		<b>\$26,015,835</b>

**NH CORE ELECTRIC PROGRAMS  
 SBC and RGGI Funding Allocation  
 2016 Budget**

**Program Allocation Summary**

Program	RGGI	SBC	TOTAL
<b>HEA<sup>1</sup></b>			
LU-Electric	11.2555%	88.7445%	100.0000%
NHEC	12.2992%	87.7008%	100.0000%
Eversource	11.7114%	88.2886%	100.0000%
Unitil	10.8068%	89.1932%	100.0000%
<b>Municipal</b>			
LU-Electric	100.0000%	0.0000%	100.0000%
NHEC	100.0000%	0.0000%	100.0000%
Eversource	100.0000%	0.0000%	100.0000%
Unitil	100.0000%	0.0000%	100.0000%

A	B	C	D	E	F	G	H
Utility	Total Funds	Total SBC	Total RGGI Funds	RGGI HEA <sup>2</sup>	RGGI Municipal <sup>3</sup>	Total RGGI PI <sup>4</sup>	SBC HEA <sup>5</sup>
LU-Electric	\$ 2,290,495	\$2,074,423	\$216,072	\$37,209	\$163,788	\$15,075	\$293,379.53
NHEC	\$ 1,773,167	\$1,566,937	\$206,230	\$31,449	\$160,393	\$14,388	\$224,253.65
Eversource	\$ 18,794,199	\$16,885,346	\$1,908,853	\$322,215	\$1,453,463	\$133,176	\$2,429,071.44
Unitil	\$ 3,157,974	\$2,868,710	\$289,263	\$49,206	\$219,876	\$20,181	\$406,120.65
Total	\$26,015,835	\$23,395,416	\$2,620,419	\$440,080	\$1,997,520	\$182,820	\$3,352,825

Notes:

- <sup>1</sup> HEA Allocation  
 RGGI HEA = RGGI HEA (E) / Total HEA Funds (E + F)  
 SBC HEA = SBC HEA (H) / Total HEA Funds (E + F)
- <sup>2</sup> RGGI HEA = 15.5% of Total RGGI Funds net of RGGI HEA Performance Incentive
- <sup>3</sup> LU Electric RGGI Municipal = 2016 RGGI Municipal is net of 2015 negative carryforward.
- <sup>4</sup> RGGI PI = Performance Incentive applied to HEA and Municipal RGGI Funds
- <sup>5</sup> SBC HEA = Utility's total HEA program funds less RGGI HEA (E)

**NH CORE ELECTRIC PROGRAMS - 2016 UTILITY GOALS BY PROGRAM**  
**Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings**  
**(System Benefits Charge, Forward Capacity Market and Interest Funds Only)**

	LU Electric		NHEC		Eversource		Unitil Electric		Total	
<b>Home Energy Assistance</b>										
Number of Units / Lifetime kWh Savings	33	878,172	25	465,944	311	7,832,040	43	849,754	411	10,025,910
B/C Ratio / Planned Budget	1.12	\$293,380	0.98	\$224,254	1.02	\$2,429,071	1.04	\$406,121		\$3,352,825
/ Lifetime MMBtu Savings		19,075		13,192		148,910		25,557		206,734
<b>Home Performance w/ENERGY STAR</b>										
Number of Participants / Lifetime kWh Savings	46	571,330	53	602,877	507	5,414,924	101	755,036	706	7,344,167
B/C Ratio / Planned Budget	1.30	\$187,613	1.25	\$229,205	1.17	\$1,860,400	1.64	\$436,631		\$2,713,849
/ Lifetime MMBtu Savings		21,756		25,905		227,822		68,632		344,115
<b>ENERGY STAR Homes</b>										
Number of Homes / Lifetime kWh Savings	30	784,460	17	3,231,914	303	27,881,919	26	1,321,301	376	33,219,594
B/C Ratio / Planned Budget	2.67	\$114,653	2.46	\$150,426	3.77	\$957,269	1.71	\$170,000		\$1,392,348
/ Lifetime MMBtu Savings		22,193		14,605		128,871		21,692		187,361
<b>ENERGY STAR Products</b>										
Number of Participants / Lifetime kWh Savings	11,312	13,337,296	7,317	11,969,548	58,752	91,936,633	15,066	23,633,361	92,446	140,876,838
B/C Ratio / Planned Budget	3.75	\$218,882	2.58	\$349,270	4.18	\$1,853,018	3.50	\$365,000		\$2,786,170
/ Lifetime MMBtu Savings		948		3,302		149,092		913		154,254
<b>Large Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	17	18,480,627	37	12,737,793	320	247,514,975	23	38,416,850	397	317,150,245
B/C Ratio / Planned Budget	1.37	\$648,101	2.09	\$202,403	2.62	\$4,704,790	1.80	\$708,104		\$6,263,398
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Small Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	69	11,568,083	85	7,978,317	488	98,130,331	54	13,468,500	696	131,145,231
B/C Ratio / Planned Budget	1.38	\$421,266	2.02	\$253,038	2.29	\$2,205,962	2.21	\$455,001		\$3,335,266
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Municipal</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0		\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Educational Programs</b>										
Number of Participants / Planned Budget	0	\$10,802	0	\$39,020	6	\$206,596	0	\$97,712	6	\$354,130
<b>Company Specific Programs / FCM Expenses</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	25,006	30,049,504	0	0	25,006	30,049,504
B/C Ratio / Planned Budget		\$35,000		\$10,000		\$1,441,819		\$30,000		\$1,516,819
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Smart Start (NHEC/PSNH), RLF (UES)</b>										
Number of Participants / Planned Budget	0	\$0	0	\$0	0	\$52,000	0	\$0	0	\$52,000
<b>Utility Performance Incentive</b>										
Planned Budget		\$144,727		\$109,321		\$1,174,419		\$200,143		\$1,628,610
<b>TOTAL PLANNED BUDGET</b>		<b>\$2,074,423</b>		<b>\$1,566,937</b>		<b>\$16,885,346</b>		<b>\$2,868,710</b>		<b>\$23,395,416</b>

**NH CORE ELECTRIC PROGRAMS - 2016 UTILITY GOALS BY PROGRAM**  
**Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings**

**(Energy Efficiency Fund Only - Regional Greenhouse Gas Initiative)**

	LU Electric		NHEC		Eversource		Unitil Electric		Total	
<b>Home Energy Assistance</b>										
Number of Units / Lifetime kWh Savings	4	111,379	3	65,344	41	1,038,914	5	102,958	54	1,318,595
B/C Ratio / Planned Budget	0.14	\$37,209	0.14	\$31,449	0.13	\$322,215	0.13	\$49,206		\$440,080
/ Lifetime MMBtu Savings		2,419		1,850		19,753		3,097		27,119
<b>Home Performance w/ENERGY STAR</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0	\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>ENERGY STAR Homes</b>										
Number of Homes / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0	\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>ENERGY STAR Products</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0	\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Large Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0	\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Small Business Energy Solutions</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0	\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Municipal</b>										
Number of Participants / Lifetime kWh Savings	41	4,549,199	32	3,979,658	202	44,131,322	28	3,140,791	304	55,800,970
B/C Ratio / Planned Budget	1.45	\$163,788	1.16	\$160,393	1.62	\$1,453,463	1.08	\$219,876		\$1,997,519
/ Lifetime MMBtu Savings		3,871		2,115		29,445		4,801		40,231
<b>Educational Programs</b>										
Number of Participants / Planned Budget		\$0		\$0		\$0		\$0		\$0
<b>Company Specific Programs / FCM Expenses</b>										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget		\$0		\$0		\$0		\$0		\$0
/ Lifetime MMBtu Savings		0		0		0		0		0
<b>Smart Start (NHEC/PSNH), RLF (UES)</b>										
Number of Participants / Planned Budget	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
<b>Utility Performance Incentive</b>										
Planned Budget		\$15,075		\$14,388		\$133,176		\$20,181		\$182,820
<b>TOTAL PLANNED BUDGET</b>		<b>\$216,072</b>		<b>\$206,231</b>		<b>\$1,908,853</b>		<b>\$289,263</b>		<b>\$2,620,419</b>



**NH CORE GAS PROGRAMS - 2016 UTILITY GOALS BY PROGRAM**  
**Total Customers Served, Program Budgets and Lifetime MMBtu Savings**

	LU Gas		Unitil Gas		Total
<b>Home Energy Assistance</b>					
Number of Units / Lifetime MMBtu Savings	306	123,267	32	24,183	338
B/C Ratio / Planned Budget	1.13	\$895,000	1.01	\$208,884	\$1,103,884
<b>Home Performance w/ENERGY STAR</b>					
Number of Participants / Lifetime MMBtu Savings	571	305,154	38	34,783	339,937
B/C Ratio / Planned Budget	2.23	\$645,815	1.24	\$147,740	\$793,555
<b>ENERGY STAR Homes</b>					
Number of Homes / Lifetime MMBtu Savings	41	39,984	11	14,309	52
B/C Ratio / Planned Budget	2.75	\$85,000	1.53	\$68,750	\$153,750
<b>ENERGY STAR Products</b>					
Number of Participants / Lifetime kWh Savings	1,417	261,654	509	92,742	1,926
B/C Ratio / Planned Budget / Lifetime MMBtu Savings	1.28	\$995,000	1.26	\$335,243	\$1,330,243
<b>Large Business Energy Solutions</b>					
Number of Participants / Lifetime MMBtu Savings	270	725,780	42	258,334	312
B/C Ratio / Planned Budget	1.88	\$1,488,000	1.76	\$325,308	\$1,813,308
<b>Small Business Energy Solutions</b>					
Number of Participants / Lifetime MMBtu Savings	558	319,986	100	117,452	437,438
B/C Ratio / Planned Budget	1.18	\$1,190,000	1.82	\$231,722	\$1,421,722
<b>Education</b>					
B/C Ratio / Planned Budget		\$25,000		\$30,000	\$55,000
<b>Company Specific Programs</b>					
Number of Participants / Lifetime MMBtu Savings	25,000	55,320	0	0	25,000
B/C Ratio / Planned Budget	1.39	\$298,000	0.00	\$0	\$298,000
<b>Utility Performance Incentive</b>					
Planned Budget		\$449,745		\$107,812	\$557,557
<b>Total Program Expenses</b>		<b>\$6,071,560</b>		<b>\$1,455,459</b>	<b>\$7,527,019</b>





Liberty Utilities Electric Home Energy Assistance Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			Installation or Realization Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings				
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan		
										2014	2015 / 2016	2014	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	
Weatherization Package (Electric Heat)	3	9.0	1	1	2,799.0	1,486	5,418	5,418	13	86%	86%	143,161	249,715	59,489	59,489	0.0	0.0	0	0.0	0	0	0	-
Weatherization Package (Kerosene Heat)	13	21.0	3	2	0.0	0	-	-	19	86%	86%	-	0	-	-	19.5	5.31	19.7	24.0	4,498.6	2,118	1,035	784
Weatherization Package (Liquid Propane Heat)	8	14.0	6	3	0.0	0	-	-	22	86%	86%	-	0	-	-	19.1	7.32	30.0	12.4	2,809.5	1,832	3,080	693
Weatherization Package (Natural Gas Heat)	0	0.0	-	-	0.0	0	-	-	20	86%	86%	-	0	-	-	22.0	0.00	9.2	9.2	0.0	0	-	-
Weatherization Package (Wood Heat)	2	0.0	4	2	0.0	0	-	-	21	86%	86%	-	0	-	-	30.3	0.00	38.4	38.4	1,093.3	0	2,794	1,397
Weatherization Package (Oil Heat)	17	81.0	32	29	0.0	2	-	-	23	86%	86%	-	3,695	-	-	29.7	10.85	28.0	29.7	8,839.0	18,932	16,320	16,704
Weatherization Package (Other)	0	0.0	-	-	0.0	0	-	-	20	86%	86%	-	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Electric Svgs on Fossil Heated Homes (Ref, DHW, Lighting)	40	291.0	45	36	1,059.0	179	1,182	1,730	12	100%	86%	525,972	691,845	884,566	884,566	0.0	(0.11)	-	-	0.0	(432)	-	-
AS = Ancillary Savings on Weatherized Homes																							
Ancillary Savings: Boiler Circulator Pump Savings	46	0.0	-	-	9.0	0	9	-	20	86%	86%	7,159	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Ancillary Savings: Furnace Fan Savings	12	0.0	-	-	86.0	0	86	-	20	86%	86%	17,110	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Ancillary Savings: Furnace w/new ECM Motor	1	0.0	-	-	733.0	0	733	-	20	86%	86%	7,329	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Ancillary Savings: Central AC	1	0.0	-	-	77.0	0	77	-	20	86%	86%	770	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Ancillary Savings: Room AC (per unit)	44	0.0	-	-	23.0	0	23	-	20	86%	86%	17,332	0	-	-	0.0	0.00	-	-	0.0	0	-	-
Mobile Home Furnaces, Kerosene	4	0.0	4	3	0.0	0	102	102	17	100%	100%	-	0	6,963	5,222	3.3	0.00	8.8	8.8	225.1	0	600	450
Furnaces, LP	2	0.0	2	2	0.0	0	530	530	18	100%	100%	-	0	19,066	19,066	8.4	0.00	5.9	5.9	303.8	0	213	213
Boilers, Oil	5	3.0	5	3	0.0	0	283	283	25	100%	100%	-	0	35,345	21,207	5.0	24.70	16.7	16.7	621.3	1,853	2,089	1,253
Boilers, Gas	0	3.0	-	-	0.0	0	109	109	20	100%	100%	-	0	-	-	0.0	25.13	-	-	0.0	1,357	-	-

Measure	Quantity				Annual Savings per Unit (kWh)				Measure Life				Installation or Realization Rate				Total Lifetime Savings (kWh)				Annual Savings per Unit (MMBTU)				Total Lifetime MMBTU Savings			
	2014		2015		2014		2015		2014		2015		2014		2015		2014		2015		2014		2015		2014		2015	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
Baseload SF	5	39	3.42	3.22	221.5	221.5	221.5	221.5	20	16	7	7	100.0%	100.0%	100.0%	100.0%	4,815.2	15,161	14,247	0.0	0.0	-	-	-	-	-	-	
Baseload MF	17	0	14.18	13.33	221.5	221.5	221.5	221.5	20	7	7	7	100.0%	100.0%	100.0%	100.0%	16,424.5	62,811	59,025	0.0	0.0	-	-	-	-	-	-	
Light Fixtures	10	0	2.44	2.30	24.6	24.6	24.6	24.6	20	20	20	20	100.0%	100.0%	100.0%	100.0%	4,600.0	1,203	1,131	0.0	0.0	-	-	-	-	-	-	
Refrigerator	4	0	4.89	4.59	586.2	586.2	586.2	586.2	7	7	7	7	100.0%	100.0%	100.0%	100.0%	16,412.8	20,063	18,654	0.0	0.0	-	-	-	-	-	-	
Hot Water Saving Measures	1	0	9.29	8.73	80.4	80.4	80.4	80.4	4	4	4	4	100.0%	100.0%	100.0%	100.0%	321.7	4,915	4,915	0.0	0.0	-	-	-	-	-	-	
Fuel Neutral, SF, Electric, CFLs	37	16	48.90	45.95	221.5	221.5	221.5	221.5	20	11	8	11	100.0%	100.0%	100.0%	100.0%	40,839.1	216,589	203,533	0.0	0.0	-	-	-	-	-	-	
SF Fuel Neutral (Oil)	29	33	37.00	35.95	0.0	0.0	0.0	0.0	21	21	21	21	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	28.6	28.6	28.0	28.0	23.1	17,542.2	27,249.8	21,735	17,298
SF Fuel Neutral (LP)	5	9	8.90	8.00	0.0	0.0	0.0	0.0	21	21	22	21	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SF Fuel Neutral (Wood)	2	2	1.00	1.00	0.0	0.0	0.0	0.0	21	19	21	21	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SF Fuel Neutral (Kerosene)	0	0	1.00	1.00	0.0	0.0	0.0	0.0	21	21	21	21	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SF Fuel Neutral (Electric)	1	7	1.00	1.00	4,803.4	4,803.4	4,803.4	4,803.4	18	20	18	20	100.0%	100.0%	100.0%	100.0%	118,105.9	86,584	97,998	0.0	0.0	-	-	-	-	-	-	-
Heating System Replacement	-	-	-	-	-	-	-	-	20	20	20	20	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aerator	-	-	-	-	-	-	-	-	4	4	4	4	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pipe Insulation	-	-	-	-	-	-	-	-	4	4	4	4	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dual Fuel - Electric Secondary	-	-	-	-	-	-	-	-	20	21	20	21	100.0%	100.0%	100.0%	100.0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AS: Boiler Circulator Pump Savings	29	0	40.91	38.60	9.0	9.0	9.0	9.0	20	20	20	20	100.0%	100.0%	100.0%	100.0%	5,231.4	7,363	6,948	0.0	0.0	-	-	-	-	-	-	-
AS: Furnace Fan Savings	7	0	2.92	2.76	86.0	86.0	86.0	86.0	20	20	20	20	100.0%	100.0%	100.0%	100.0%	12,497.3	5,026	4,742	0.0	0.0	-	-	-	-	-	-	-
AS: Furnace w/new ECM Motor	0	0	0.14	0.13	733.0	733.0	733.0	733.0	20	20	20	20	100.0%	100.0%	100.0%	100.0%	5,325.9	2,070	1,953	0.0	0.0	-	-	-	-	-	-	-
AS: Central AC	0	0	0.14	0.13	77.0	77.0	77.0	77.0	20	20	20	20	100.0%	100.0%	100.0%	100.0%	559.5	217	205	0.0	0.0	-	-	-	-	-	-	-
AS: Room AC (per unit)	15	0	18.02	17.00	23.0	23.0	23.0	23.0	20	20	20	20	100.0%	100.0%	100.0%	100.0%	6,754.2	8,288	7,821	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ES Furnace w/ECM (LP), AFUE >=97%	-	-	-	-	-	-	-	-	18	18	18	18	100.0%	100.0%	100.0%	100.0%	0.0	6,048	-	0.0	0.0	5.9	5.9	5.9	5.9	5.9	5.9	212
ES Boiler (LP), AFUE >=90%	-	-	-	-	-	-	-	-	20	20	20	20	100.0%	100.0%	100.0%	100.0%	0.0	-	-	0.0	0.0	10.4	10.4	10.4	10.4	10.4	10.4	10.4
ES Boiler (Oil), AFUE >=85%	-	-	-	-	-	-	-	-	20	20	20	20	100.0%	100.0%	100.0%	100.0%	0.0	-	-	0.0	0.0	5.4	5.4	5.4	5.4	5.4	5.4	430

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service / Realization Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings			
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan		
ASHP Heated Home	6	0.0	2	2,313	5,355	5,355	25	25	25	25	25	100%	100%	100%	0	325,208	0	267,750	267,750	-	-	-
Central AC	0	0	-	-	110	110	14	14	14	14	14	100%	100%	100%	0	30,625	0	-	-	-	-	-
CFL / Screw In Bulb	266	18	-	23	-	-	5	20	-	-	-	100%	100%	100%	554	7,286	0	7,666	5,901	-	-	-
Clothes Washer	4	0	4	166	182	182	11	11	11	11	11	100%	100%	100%	0	7,856	0	7,826	5,901	0.7	0.7	31
Dishwasher	19	1	25	31	31	31	10	10	10	10	10	100%	100%	100%	363	366,150	0	7,826	-	0.2	0.2	47
Elec Baseboard Heated Home (5%)	2	0	-	7,323	-	-	25	25	25	25	25	100%	100%	100%	0	33,172	0	-	-	-	-	-
Gas Heated Home (55%)	0	0	-	481	-	-	25	25	25	25	25	100%	100%	100%	0	18,873	0	18,873	14,527	25.0	0.0	-
Interior HW Fixtures	27	0	38	62	25	25	20	20	20	20	20	100%	100%	100%	0	215,050	0	188,716	145,262	-	-	-
LEDs	17	1	34	506	463	463	25	25	25	25	25	100%	100%	100%	1,150	25,991	1,150	397,189	306,643	44.0	31.8	27,304
LP Heated Home (35%)	2	0	2	520	411	411	25	25	25	25	25	100%	100%	100%	0	28,728	0	20,540	10,270	50.0	43.6	2,180
Oil Heated Home (5%)	21	1	35	114	107	107	12	12	12	12	12	100%	100%	100%	1,284	28,728	1,284	44,310	34,107	-	-	-
Refrigerator	20	1	29	-	-	-	12	12	12	12	12	100%	100%	100%	216	0	0	-	-	-	-	-
Thermostat	20	1	29	-	-	-	12	12	12	12	12	100%	100%	100%	216	0	0	-	-	-	-	-

Measure	Quantity			Annual Savings per Unit (kWh)						Measure Life			In-Service & Realization Rate			Total Lifetime Savings (kWh)			
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan
	Catalog: CFLs	330	2,521	-	23.0	23.0	29.0	28.98	5	5	5	5	62%	62%	62%	23,638	180,578	-	-
Catalog: Interior Fixtures (Lamps and HW Fixtures)	44	62	-	62.3	62.3	29.0	28.98	8	8	8	8	96%	96%	100%	21,130	29,774	-	-	
Catalog: Exterior Fixtures	21	48	-	62.3	62.3	29.0	28.98	5	5	5	5	100%	94%	94%	6,538	14,945	-	-	
Catalog: Torchieres	13	5	-	69.4	69.4	29.0	28.98	8	8	8	8	94%	94%	95%	6,744	2,594	-	-	
Catalog: LED Bulbs	21	1,671	4,498	27.7	27.7	24.6	24.61	20	20	20	20	95%	95%	95%	11,040	878,495	2,103,075	139,799.75	
Catalog: LED Bulbs (Multipack Bulbs)			284			24.6	24.61										132,786		
Catalog: LED Interior Fixtures	4	10	-	27.7	27.7	24.6	24.61	20	8	8	8	95%	95%	62%	2,103	2,103	-	-	
Retail: CFLs	637	879	-	23.0	23.0	29.0	28.98	5	5	5	5	62%	62%	100%	45,628	62,962	-	-	
Retail: CFLs (Multipack Bulbs)	24,686	3,605	20,500	23.0	23.0	28.98	28.98	5	5	5	5	62%	62%	94%	1,768,244	258,224	2,777,466.59	33,402	
Retail: Interior Fixtures (Lamps and HW Fixtures)	247	35	-	62.3	62.3	29.0	28.98	8	8	8	8	96%	95%	95%	118,614	16,808	-	-	
Retail: Exterior Fixtures	16	2	-	62.3	62.3	29.0	28.98	5	5	5	5	100%	100%	100%	4,982	623	-	-	
Retail: Torchieres	4	0	-	69.4	69.4	29.0	28.98	8	8	8	8	94%	100%	100%	2,075	-	-	-	
Retail: LED Bulbs	986	7,532	25,363	27.7	27.7	24.6	24.61	20	20	20	20	95%	95%	100%	518,445	3,959,369	12,482,802	215,077	
Retail: LED Bulbs (Multipack Bulbs)			1,900			24.6	24.61										935,115	105,200	
Retail: LED Interior Fixtures	164	479	1,550	27.7	27.7	24.6	24.61	20	20	8	8	95%	95%	100%	86,210	251,797	305,143	18,978	
Markdown: CFLs (Multipack Bulbs)			900			29.0	28.98										130,415	1,855,529	
Markdown: LED Bulbs			900			24.6	24.61										442,949	5,160,640	
Markdown: LED Bulbs (Multipack Bulbs)			750			24.6	24.61										369,125	4,675,577	



Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service or Realization Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings			
	2014		2015	2015		2016	2014		2015	2015		2016	2014		2015	2015		2014		2015	2015	
	Plan	Actual	Plan	Plan	Plan	Plan	Plan	Plan	Actual	Plan	Plan	Plan	Plan	Plan	Actual	Plan	Plan	Plan	Plan	Actual	Plan	Plan
<b>NEW EQUIPMENT TRACK</b>																						
NC - Chiller	-	-	0.0	120,658	120,658	0.0	15	15	20	100%	99.86%	-	-	-	-	-	-	-	-	-	-	-
NC - Compressed Air	-	-	4.9	13,095	13,095	3.0	15	15	15	100%	99.86%	953,747	588,450	-	-	-	-	-	-	-	-	-
NC - Custom	3.4	1.0	2.6	66,102	66,102	1.9	15	15	15	93%	99.86%	2,543,326	1,893,186	2,121,321	3,773,895	1,893,186	-	-	-	-	-	-
NC - HVAC	-	7.0	1.5	43,613	43,613	1.0	15	17	15	100%	99.86%	953,747	653,273	-	4,705,512	653,273	-	-	-	-	-	-
NC - Lighting	3.5	7.0	1.2	71,150	71,150	1.0	15	15	15	100%	99.86%	1,271,663	1,065,756	2,204,787	91,674	1,065,756	-	-	-	-	-	-
NC - Motor	-	-	0.0	5,933	5,933	0.0	20	20	20	100%	99.86%	-	-	-	-	-	-	-	-	-	-	-
NC - VFD	-	4.0	1.6	26,922	26,922	1.0	15	15	15	100%	99.86%	635,832	403,265	-	1,747,105	403,265	-	-	-	-	-	-
Cooling	1.5	-	-	-	-	-	10	10	10	93%	99.86%	-	-	274,434	-	-	-	-	-	-	-	-
Process	0.8	-	-	7,099	7,099	-	15	21	14	93%	99.86%	-	-	73,874	-	-	-	-	-	-	-	-
<b>RETROFIT TRACK</b>																						
Retro - Compressed Air	-	-	2.6	32,960	32,960	1.5	13	13	13	100%	99.86%	1,102,108	641,820	-	-	-	-	-	-	-	-	-
Retro - Custom	8.1	4.0	3.6	117,570	117,570	2.0	13	13	13	100%	99.86%	5,510,540	3,052,540	7,391,184	15,500,784	3,052,540	-	-	-	-	-	-
Retro - Lighting	29.3	62.0	7.4	143,713	143,713	5.0	13	13	13	94%	99.86%	13,776,350	9,328,247	9,453,409	13,849,368	9,328,247	-	-	-	-	-	-
Retro - Motor	-	-	0.0	23,730	23,730	0.0	15	15	15	100%	99.86%	-	-	-	-	-	-	-	-	-	-	-
Retro - VFD	-	-	1.9	65,791	65,791	1.0	13	13	13	100%	99.86%	1,653,162	854,090	-	-	-	-	-	-	-	-	-
<b>Fuel Neutral Heating, Hot Water and Controls</b>																						
ENERGY STAR Qualified Freestanding Water Heater >= 0.67 EF	4.8	-	-	-	-	-	13	13	13	100%	100%	-	-	-	-	-	-	-	3	187	-	-
Furnace, Oil (forced hot air) >= 85% AFUE w/ECM (up to 150 MBH)	4.8	-	-	-	-	-	18	18	18	100%	100%	-	-	-	-	-	-	-	16	1,384	-	-
Furnace, Oil (forced hot air) >= 95% AFUE w/ECM (up to 150 MBH)	4.6	-	-	-	-	-	18	18	18	100%	100%	-	-	-	-	-	-	-	16	1,343	-	-
Furnace, LP (forced hot air) >= 97% AFUE w/ECM (up to 150 MBH)	4.8	-	-	-	-	-	18	18	18	100%	100%	-	-	-	-	-	-	-	19	1,590	-	-
7-Day Programmable Thermostats (Gas)	4.8	-	-	-	-	-	15	15	15	100%	100%	-	-	-	-	-	-	-	8	552	-	-
Boiler Reset Controls, LP, After Market, 1 shift operation	4.8	-	-	-	-	-	15	15	15	100%	100%	-	-	-	-	-	-	-	19	1,383	-	-
Boiler Reset Controls, LP, After Market, >1 shift operation	4.8	-	-	-	-	-	15	15	15	100%	100%	-	-	-	-	-	-	-	36	2,543	-	-
Steam Traps, Oil (greater than 10 steam traps requires pre-approval)	4.8	-	-	-	-	-	3	3	3	100%	100%	-	-	-	-	-	-	-	26	368	-	-

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service or Installation Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings				
	2014 Plan	2014 Actual	2016 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Actual	2014 Plan	2015 Plan	2016 Plan	
<b>RETROFIT TRACK</b>																							
Retro - Compressed Air	-	2	0.3	65,755.2	19,087.6	65,755.2	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retro - Custom	101	29	2.9	6,159	19,088	19,088	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retro - Lighting	-	101	60.2	7,665	29,387	12,713.3	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retro - Motor	-	-	0.9	11,865.0	11,865.0	11,865.0	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retro - Other	-	306	0.7	287	-	-	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Retro - VFD	-	385	0.7	77,887.0	77,887.0	77,887.0	13	13.0	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Lighting - Direct Install	2	-	-	7,665	-	-	13	13	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Process	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>NEW EQUIPMENT TRACK</b>																							
NC - Chiller	-	2	0.0	2,966.3	32,877.6	30,165	13	20.0	20	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
NC - Compressed Air	2	2	0.3	8,311	32,877.6	32,878	13	13	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
NC - Custom	0	2	11.7	19,337	4,771.9	4,772	15	15.0	15	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%
NC - HVAC	0	2	4.1	60,811	13,594.0	13,594	15	15.0	15	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%
NC - Lighting	22	7	17.5	3,557	7,141	3,178.3	15	15.0	15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
NC - Motor	-	5	0.0	2,966.3	2,966.3	2,966	15	15.0	15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
NC - VFD	1	-	0.4	10,387	25,953.9	25,954	15	15.0	15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Cooling	0	-	-	3,557	-	-	15	16	16	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%
Lighting (Occ Sensors Only)	1	-	-	3,557	-	-	15	14	14	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%
Process	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Fuel Neutral Heating, Hot Water and Controls</b>																							
ENERGY STAR Qualified Freestanding Water Heater >= 0.67 EF	6	-	-	-	-	-	13	13	13	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Furnace, Gas (forced hot air) >= 95% AFUE w/ECM (up to 150 MBH)	5	-	-	-	-	-	18	18	18	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Furnace, Oil (forced hot air) >= 85% AFUE w/ECM (up to 150 MBH)	6	-	-	-	-	-	18	18	18	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Furnace, Gas (forced hot air) >= 97% AFUE w/ECM (up to 150 MBH)	6	-	-	-	-	-	18	18	18	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
7-Day Programmable Thermostats (Gas)	6	1	1	-	-	-	15	15	15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Boiler Reset Controls, Gas, After Market, 1 shift operation	6	-	-	-	-	-	15	15	15	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Steam Traps, Gas (greater than 10 steam traps requires pre-approval)	6	-	-	-	-	-	3	3	3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Source or Ductless Mini Split Heat Pump (Energy Star >= 14.5 SEER), >= 8.2	-	1	-	-	-	-	12	12	12	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air Source or Ductless Mini Split Heat Pump (Energy Star >= 19.0 SEER >= 10.0H)	-	1	-	-	-	-	12	12	12	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Measure	Quantity		Annual Savings per Unit (kWh)			Measure Life			In-Service or		Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)		Total Lifetime MMBTU Savings		
	2014		2014		2014		2014		2014		2014		2014		2014		2014	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
Custom - New	-	2	4,772	4,772	15	15	100%	100%	214,622	214,622	-	-	-	-	-	-	-	-
Custom - Retrofit	-	1	19,088	19,088	13	13	100%	100%	598,471	598,471	-	-	-	-	-	-	-	-
HVAC - New	-	1	13,594	13,594	15	15	100%	100%	-	-	87,630	87,630	0	171	2,057	-	-	-
Cooling - New	1	5	3,178	3,178	15	15	100%	100%	345,272	345,272	0	0	0	0	0	-	-	-
Lighting - New	2	7	40,812	18,415	13	14	100%	100%	1,333,299	333,725	918,270	918,270	0	0	0	-	-	-
Lighting - Retrofit	6	2	40,812	115,192	13	13	100%	100%	2,994,998	3,202,099	3,139,504	3,139,504	0	0	0	-	-	-
Lighting - Direct Install	-	21	-	183	13	13	100%	100%	49,920	-	-	-	-	-	-	-	-	-
Motor - New	-	-	2,966	2,966	20	20	100%	100%	-	-	-	-	-	-	-	-	-	-
Motor - Retrofit	-	-	25,954	11,865	15	15	100%	100%	-	-	-	-	-	-	-	-	-	-
VFD - New	-	-	77,887	25,954	13	13	100%	100%	-	-	680,865	680,865	0	0	0	-	-	-
Other - New	1	-	39,978	-	15	15	100%	100%	-	-	-	-	-	-	-	-	-	-
Other - Retrofit	-	38	-	347	10	10	100%	100%	-	-	-	-	-	-	-	-	-	-
VFD - Retrofit	-	-	77,887	77,887	13	13	100%	100%	59,847	506,266	-	-	-	-	-	-	-	-
Energy Star DMSHP (Any, SEER >=20, HSPF >=10, Cooling)	-	0	124	124	12	12	100%	100%	5,970	5,970	-	-	-	-	-	-	-	-
Energy Star DMSHP (Oil, SEER >=20, HSPF >=10, Heating)	-	4	536	536	12	12	100%	100%	12,874	12,874	-	-	-	-	-	-	-	-
Energy Star DMSHP (LP, SEER >=20, HSPF >=10, Heating)	-	2	536	536	12	12	100%	100%	12,874	12,874	-	-	-	-	-	-	-	-
Energy Star Wifi TSTAT for DMSHP	-	2	110	110	15	15	100%	100%	6,582	6,582	-	-	-	-	-	-	-	-
Energy Star Wifi TSTAT for DMSHP	-	4	168	168	18	18	100%	100%	3,024	3,024	-	-	-	-	-	-	-	-
Furnace: Oil, w/ECM, AFUE >= 85%, up to 150 MBH	-	1	168	168	18	18	100%	100%	3,024	3,024	-	-	-	-	-	-	-	-
Furnace: Oil, w/ECM, AFUE >= 87%, up to 150 MBH	-	1	168	168	18	18	100%	100%	3,024	3,024	-	-	-	-	-	-	-	-
Furnace: LP, Condensing, AFUE >= 90%, up to 301-499 MBH	-	1	-	-	25	25	100%	100%	-	-	-	-	-	-	-	-	-	-
Furnace: LP, Condensing, AFUE >= 90%, up to 301-499 MBH	-	1	-	-	25	25	100%	100%	-	-	-	-	-	-	-	-	-	-
Boiler: Oil, AFUE >= 85%, up to 301-499 MBH	-	2	-	-	25	25	100%	100%	-	-	-	-	-	-	-	-	-	-
On Demand Tankless Water Heater, Gas, >= 82 EF w/Electronic Ignition	5	-	-	-	15	15	100%	100%	-	-	-	-	7	-	-	558.69	-	-
On Demand Tankless Water Heater, Gas, >= 95 EF w/Electronic Ignition	5	-	-	-	15	15	100%	100%	-	-	-	-	10	-	-	754.62	-	-
Boilers (up to 300 MBH), Condensing (for homes with LP heat)	6	1	-	-	25	25	100%	100%	-	-	-	-	23	0	-	3,185.16	-	-
Boilers (up to 300 MBH) (for homes with oil heat)	6	1	-	-	25	25	100%	100%	-	-	-	-	23	68	1,710	3,185.16	-	-
Boiler Reset Controls, LP, After Market, 1 shift operation	5	1	-	-	15	15	100%	100%	-	-	-	-	19	36	533	1,518.69	-	-
7-Day Programmable Thermostats	2	2	-	-	15	15	100%	100%	-	-	-	-	-	8	-	-	-	231



Liberty Utilities Gas  
 NHPUC Docket No. DE 14-216  
 Attachment IG (2016 Plan)  
 Home Energy Assistance Program

Liberty Utilities Gas Home Energy Assistance Program

Measure	Quantity			Annual Savings per Unit (mmbtu)			Measure Life			Installation or Realization Rate		Total Lifetime Savings (mmbtu)			
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan
Low Income	181.6	422.0			20.0	19.1		20.0	18.0			100.0%	100.0%		
Low Income - Single Family			108.2	82.7	20.0	27.7	31.9	20.0	20.0	20.0	20.5	100.0%	100.0%	59,875.6	54,228.7
Low Income - Multifamily			216.0	223.0	20.0	16.9	16.6	20.0	20.0	20.0	18.7	100.0%	100.0%	73,137.6	69,038.7

Liberty Utilities Gas Home Performance with ENERGY STAR®

Measure	Quantity				Annual Savings per Unit (mmbtu)				Measure Life			Installation or Realization Rate		Total Lifetime Savings (mmbtu)					
	2014		2015		2014		2015		2016		2014	2015	2016	2014	2015	2016	2014	2015	2016
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan
Single Family (1-4 Units)	50.6	135.0	92	121.0	32.9	27.4	32.9	27.5	20.0	22.0	20.0	20.0	100%	100%	20.0	33,290.7	81,536.9	60,536.0	66,547.1
Multi-Family (5+ Units)	471.0	399.0	376	450.0	32.9	26.9	23.0	26.5	20.0	22.0	20.0	20.0	100%	100%	20.0	309,918.0	235,769.1	173,087.8	238,606.9

Liberty Utilities Gas ENERGY STAR® Homes Program

Measure	Quantity			Annual Savings per Unit (mmbtu)			Measure Life			In-Service / Realization Rate		Total Lifetime Savings (mmbtu)				
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014	2015 / 2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan
	Energy Star Homes	37.2	10.0	15.2	27.2	30.9	65.0	25.0	24.1	25.0	25.0	100%	100%	25,314.5	7,462.0	24,741.5

Measure	Quantity			Annual Savings per Unit (mmbtu)			Measure Life			In-Service / Realization Rate			Total Lifetime Savings (mmbtu)		
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014	2015 / 2016 Plan	2014 Actual	2014 Plan	2015 Plan	2016 Plan
Water Heater - Tankless, On-Demand >= .82	45.0	50.0	60	9.7	9.7	10.2	10.2	10.2	10.2	19	100%	20.0	20.0	11,628	-
Water Heater - Tankless, On-Demand >= .94	35.0	79.0	47	10.3	10.3	10.5	10.5	10.5	10.5	19	100%	20.0	20.0	9,377	17,157
Water Heater - Indirect (attached to ES FHW Boiler; Combined eff rating >=85% (EF=.82)	70.0	67.0	65	8.0	8.0	8.0	8.0	8.0	8.0	20	100%	20.0	20.0	10,400	10,560
Water Heater - Condensing (EF 0.95)	4.0	1.0	2	8.5	8.5	8.5	8.5	8.5	8.5	15	100%	15.0	15.0	255	255
Water Heater - Stand Alone Storage Tank (EF 0.67)	3.0	21.0	25	3.7	3.7	4.2	4.2	4.2	4.2	13	100%	13.0	13.0	1,365	-
Water Heater - Integrated w/Condensing Boiler >= 90% AFUE	55.0	239.0	155	17.8	17.8	23.8	23.8	23.8	23.8	17	100%	20.0	20.0	62,713	63,228
Water Heater - Integrated w/Condensing Boiler >= 95% AFUE			19			23.8	23.8	23.8	23.8	20	100%			9,044	9,520
Furnace 95+ AFUE (<150) w/ECM Motor	265.0	122.0	155	4.5	4.5	15.9	15.9	15.9	15.9	17	100%	18.0	18.0	41,897	42,167
Furnace 97+ AFUE (<150) w/ECM Motor	42.4	56.0	88	5.9	5.9	17.3	17.3	17.3	17.3	17	100%	18.0	18.0	25,881	26,175
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	75.0	72.0	69	10.4	10.4	12.0	12.0	12.0	12.0	18	100%	20.0	20.0	14,817	15,120
Condensing Boiler >= 95% AFUE (Up to 300 MBH)	52.0	88.0	63	13.1	13.1	13.9	13.9	13.9	13.9	19	100%	20.0	20.0	16,638	16,902
Boiler Reset Controls	8.0	3.0	4	4.5	4.5	4.5	4.5	4.5	4.5	15	100%	15.0	15.0	203	270
Thermostat - Standard, 7-Day Programmable	910.0	367.0	380	3.2	3.2	3.2	3.2	3.2	3.2	15	100%	15.0	15.0	18,240	16,416
Thermostat - WiFi (Heating Only)	100.0	0.0	65	6.6	6.6	6.9	6.9	6.9	6.9	15	100%	15.0	15.0	9,900.0	-
Thermostat - WiFi (Cooling & Heating)	72.0	144.0	-	6.6	6.6	6.9	6.9	6.9	6.9	15	100%	15.0	15.0	6,728	32,085
Heat Recovery Ventilator (-133 kWh penalty)	5.0	1.0	2	7.7	7.7	7.7	7.7	7.7	7.7	20	100%	20.0	20.0	154	308
Boiler - Early Replacement, Steam - Retirement: 82%+ AFUE	4.0	3.0	4	43.9	43.9	43.9	43.9	43.9	43.9	10	100%	10.0	10.0	1,756.0	2,634
Boiler - Early Replacement, Steam - EE: 82%+ AFUE	4.0	3.0	4	3.5	3.5	3.5	3.5	3.5	3.5	20	100%	20.0	20.0	280	420
Boiler - Early Replacement, FHW - Retirement: 90 AFUE (65%-90%)	16.0	16.0	16	23.6	23.6	23.6	23.6	23.6	23.6	10	100%	10.0	10.0	3,776	4,484
Boiler - Early Replacement, FHW - EE 90 AFUE (80%-90%)	16.0	16.0	16	10.4	10.4	10.4	10.4	10.4	10.4	20	100%	20.0	20.0	3,328	3,952

Measure	Quantity				Annual Savings per Unit (mmbtu)				Measure Life				Installation or Realization Rate		Total Lifetime Savings (mmbtu)			
	2014		2015		2014		2015		2014		2015		2014	2015 / 2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
Large Retrofit Custom	10	14	6	13	3041.4	2,634.5	2,338.7	2,787.0	15	15	15	15	100%	443,436.1	542,875	131,904	561,581	
Large New Equipment Custom	4	13	21	10	785.5	719.7	777.0	463.0	19	19	19	18	100%	61,043.3	178,966	341,084	84,266	
Furnace 95+ AFUE (<150) w/ECM Motor	10	0	0	0	4.3	0	9.0	9.0	18	18	18	18	100%	774.0	-	-	-	
Furnace 97+ AFUE (<150) w/ECM Motor	3	0	0	0	5.9	0	9.9	9.9	18	18	18	18	100%	318.6	-	-	-	
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	0	3	1	12	0.0	22.8	30.6	30.6	25	25	25	25	100%	-	1,710	765	9,180	
Condensing Boiler >= 96% AFUE (Up to 300 MBH)	8	0	2	26	56.1	0	27.8	27.8	25	25	25	25	100%	11,699.3	-	2,920	18,070	
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	2	3	0	0	103.0	103.0	107.3	107.3	25	25	25	25	100%	5,150.0	7,725	-	4,380	
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	3	1	0	0	189.2	189.2	197.2	197.2	25	25	25	25	100%	14,190.0	4,730	-	-	
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	4	0	2	3	331.2	0	345.1	345.1	25	25	25	25	100%	33,120.0	-	17,255	25,883	
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	12	0	0	0	48.3	0	12.0	12.0	17	17	17	17	100%	9,853.2	-	-	-	
Infrared Heater, Low Intensity (all sizes)	12	1	0	0	20.7	20.7	19.0	19.0	15	15	15	15	100%	3,726.0	311	-	-	
Water Heater - Indirect (attached to ES FHW Boiler; Combined eff rating >=85% (EF=-.82)	0	0	3	0	40.9	0	40.9	40.9	18	18	18	18	100%	-	-	117	-	
Water Heater - Stand Alone Storage Tank (EF 0.67)	2	0	0	0	58.6	0	58.6	58.6	12	12	12	12	100%	1,406.4	-	-	2,110	
Condensed Unit Heater >= 90% thermal efficiency (up to 300 MBH)	1	0	0	3	106.6	0	106.6	106.6	12	12	12	12	100%	1,279.2	-	-	-	
Kitchen - Fryer	1	0	0	0	30.6	0	30.6	30.6	12	12	12	12	100%	367.2	-	-	1,469	
Kitchen - Steamer (ES >= 38% efficiency)	1	0	0	4	110.3	0	110.3	110.3	12	12	12	12	100%	1,323.6	-	-	-	
Kitchen - Convection Oven (>= 44% efficiency)	1	0	0	0	84.5	0	84.5	84.5	12	12	12	12	100%	1,014.0	-	-	-	
Kitchen - Combination Oven (>= 44% efficiency)	1	0	0	0	211.3	0	211.3	211.3	12	12	12	12	100%	2,535.6	-	-	-	
Kitchen - Conveyor Oven (>= 44% efficiency)	1	0	0	0	18.5	0	18.5	18.5	12	12	12	12	100%	222.0	-	-	-	
Kitchen - Rack Oven (>= 50% efficiency)	34	0	0	0	12.6	0	12.6	12.6	5	5	5	5	100%	2,142.0	-	-	-	
Kitchen - Griddle	16	0	2	4	35.5	0	35.5	35.5	15	15	15	15	100%	8,520.0	-	1,065	2,130	
Boiler Reset Controls	42	189	129	134	25.7	110.2	25.7	25.7	3	3	3	3	100%	3,238.2	62,480	9,946	10,331	
Steam Trap	20	0	48	52	7.7	0	7.7	7.7	15	15	15	15	100%	2,310.0	-	5,544	6,006	

Measure	Quantity				Annual Savings per Unit (mmbtu)				Measure Life				In-Service & Realization Rate		Total Lifetime Savings (mmbtu)							
	2014		2015		2014		2015		2016		2014		2015		2015 / 2016		2014 Plan		2015 Plan		2016 Plan	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
Small Retrofit Custom	28.9	21.0	5.0	45.0	115.4	65.6	230.3	55.0	21	23	19	19	100%	100%	71,228.1	32,179	21,532	46,778				
Small New Equipment Custom	12.0	12.0	24.0	38.0	280.0	208.5	276.7	191.0	18	21	22	16	100%	100%	60,481.5	52,896	148,098	119,031				
Furnace 95+ AFUE (<150) w/ECM Motor	50.0	4.0	3.0	4.0	4.3	4.3	9.0	9.0	18	18	18	18	100%	100%	3,870.0	309.60	486	648				
Furnace 97+ AFUE (<150) w/ECM Motor	16.1	1.0	9.0	10.0	5.9	5.9	9.9	9.9	18	18	18	18	100%	100%	1,715.0	106.20	1,604	1,782				
Boiler >=95% AFUE, <= 300 mbh	11.0	1.0	60.0	62.0	29.3	29.3	30.6	30.6	25	25	25	25	100%	100%	8,057.5	732.50	45,900	47,430				
Condensing Boiler >= 96% AFUE (Up to 300 MBH)	65.0	50.0	3.0	11.0	22.8	22.8	27.8	27.8	25	25	25	25	100%	100%	37,050.0	28,500.00	2,085	7,645				
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	22.0	11.0	5.0	6.0	56.1	56.1	58.4	58.4	25	25	25	25	100%	100%	30,855.0	15,427.50	7,300	8,760				
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	13.0	7.0	42.8	7.0	103.0	103.0	107.3	107.3	25	25	25	25	100%	100%	33,475.0	18,025.00	114,737	18,778				
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	-	2.0	2.0	3.0	189.2	189.2	197.2	197.2	25	25	25	25	100%	100%	-	9,460.00	9,860	14,790				
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	-	-	1.0	3.0	345.1	345.1	345.1	345.1	17	17	17	17	100%	100%	-	23,811.90	8,628	25,883				
Infrared Heater, Low Intensity (all sizes)	25.0	29.0	5.0	4.0	48.3	48.3	12.0	12.0	17	17	17	17	100%	100%	20,527.5	-	1,020	816				
Water Heater - Tankless, On-Demand >= 82	18.0	-	1.0	-	7.1	7.1	7.1	7.1	20	20	20	20	100%	100%	2,556.0	-	142	-				
Water Heater - Tankless, On-Demand >= 94	12.0	11.0	2.0	2.0	9.4	9.4	9.4	9.4	20	20	20	20	100%	100%	2,256.0	2,068.00	376	376				
Water Heater - Indirect (attached to ES FHW Boiler; Combined eff rating >=85% (EF= 82)	55.0	33.0	16.0	18.0	20.7	20.7	19.0	19.0	15	15	15	15	100%	100%	17,077.5	10,246.50	4,560	5,130				
Water Heater - Condensing (EF 0.95)	12.0	1.0	-	-	25.0	25.0	25.0	25.0	15	15	15	15	100%	100%	4,500.0	375.00	-	-				
Water Heater - Stand Alone Storage Tank (EF 0.67)	12.0	-	3.0	-	24.6	24.6	3.0	3.0	20	20	20	20	100%	100%	5,904.0	-	117	-				
Water Heater - Integrated w/Condensing Boiler >= 90% AFUE	-	3.0	-	-	24.6	24.6	24.6	24.6	20	20	20	20	100%	100%	-	1,476.00	-	-				
Condensed Unit Heater >= 90% thermal efficiency (up to 300 MBH)	10.0	-	2.0	2.0	40.9	40.9	40.9	40.9	18	18	18	18	100%	100%	7,362.0	-	1,472	1,472				
Kitchen - Fryer	15.0	10.0	5.0	5.0	58.6	58.6	58.6	58.6	12	12	12	12	100%	100%	10,548.0	7,032.00	3,516	3,516				
Kitchen - Steamer (ES >= 38% efficiency)	5.0	-	-	-	106.6	106.6	106.6	106.6	12	12	12	12	100%	100%	6,396.0	-	-	-				
Kitchen - Convection Oven (>= 44% efficiency)	5.0	7.0	10.0	10.0	30.6	30.6	30.6	30.6	12	12	12	12	100%	100%	1,836.0	-	-	-				
Kitchen - Combination Oven (>= 44% efficiency)	3.0	-	-	-	110.3	110.3	110.3	110.3	12	12	12	12	100%	100%	3,970.8	-	-	-				
Kitchen - Conveyor Oven (>= 44% efficiency)	3.0	-	-	-	84.5	84.5	84.5	84.5	12	12	12	12	100%	100%	3,042.0	-	-	-				
Kitchen - Rack Oven (>= 50% efficiency)	3.0	-	-	-	211.3	211.3	211.3	211.3	12	12	12	12	100%	100%	7,606.8	-	-	-				
Kitchen - Griddle	3.0	-	-	-	18.5	18.5	18.5	18.5	12	12	12	12	100%	100%	666.0	-	-	-				
Kitchen - Pre Rinse Sprayers	100.0	85.0	141.0	14.0	12.6	33.6	12.6	12.6	5	5	5	5	100%	100%	6,300.0	14,280.00	8,883	882				
Boiler Reset Controls	8.0	1.0	5.0	8.0	35.5	35.5	35.5	35.5	15	15	15	15	100%	100%	4,260.0	532.50	2,663	4,260				
Steam Trap	12.0	32.0	25.0	29.0	25.7	23.2	25.7	25.7	3	3	3	3	100%	100%	925.2	2,226.70	1,928	2,236				
Thermostat - Standard, 7-Day Programmable	30.0	61.0	9.0	15.0	7.7	7.7	7.7	7.7	15	15	15	15	100%	100%	3,465.0	7,045.50	1,040	1,733				
Aerator	-	1,248.0	-	257.0	1.7	1.7	1.7	1.7	10	10	10	10	100%	100%	-	21,216.00	-	-				
Shower Head	-	244.0	-	-	5.2	5.2	5.2	5.2	10	10	10	10	100%	100%	-	12,688.00	-	-				
Shower Head Hand Handle	-	157.0	-	-	5.2	5.2	5.2	5.2	10	10	10	10	100%	100%	-	8,164.00	-	-				



NHEC Home Performance with Energy Star Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			Installation or Realization Rate		Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings							
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan					
	CFL Lighting	70	14	52	43	294	225.14	221	221	6.0	8	20	20	100.00%	123,409	25,216	228,651	191,922	23	22	23	8	4,319	4,620	8,652
LED Lighting		16			401		221			20	20	20	100%		128,240							12	23,972	22,500	12,567
Fixtures		27			286					20	20	20	100%		154,499							0	2,050	1,105	531
Hot Water Measures		28	32	27	75	52	80			4	4	4	100%		8,368	6,667	8,604				3	2,539	1,300	3,112	
Air Sealing		57			357					15			100%		305,252										
Insulation		55			181					25			100%		248,573										
Weatherization: Electric Heat					4,388					11			100%												
Weatherization: LP Heat	10	17		53						19	21	20	100%									23			
Weatherization: Oil Heat	45	32		53						20	20	20	100%												
Weatherization: Kerosene	5	1		53						20	17	20	100%												
Weatherization: Wood Heat	5	18		53						22	20	20	100%												
Electric Savings for Fossil Heated Homes			47	39	499	499	499			20	20	20	100%			453,804	380,907								
Electric Baseload: Single Family	70				128					8.3			100%	73,631											
Fuel Neutral Weatherization													100%												
Thermostat		17				579				17			100%		167,467										
AS: Boiler Circulator Pump Savings	45	4	19	16	9.0	9	9			20	20	20	100%	8,100	720	3,350	2,812								
AS: Furnace Fan Savings	5	3	3	3	86.0	86	86			20	20	20	100%	8,600	5,160	5,601	4,701								
AS: Furnace w/New ECM Motor			0	0	733	733	733			20	20	20	100%	23,920	460	2,387	2,004								
AS: Room AC (per unit)	52	1	16	13	23.0	23	23			20	20	20	100%			7,329	6,152								
Heating System Replacements:													100%												
ES Furnace w/ECM (LP), AFUE >=95%			3	1		168	168			18	18	18	100%			8,591	2,749								
ES Furnace w/ECM (LP), AFUE >=96%			0	0		168	168			18	18	18	100%												
ES Furnace w/ECM (LP), AFUE >=97%			1	0		168	168			18	18	18	100%			4,127	1,321								
ES Furnace w/ECM (Oil), AFUE >=85%			1	0		168	168			18	18	18	100%			3,682	1,178								
ES Furnace w/ECM (Oil), AFUE >=90%			1	0		168	168			18	18	18	100%			1,651	528								
ES Boiler (LP), AFUE>=90%			3	1						20	20	20	100%												
ES Boiler (LP), AFUE>=96%			1	0						20	20	20	100%												
ES Boiler (Oil), AFUE>=85%			10	3						20	20	20	100%												
ES Boiler (Oil), AFUE>=90%			1	0						20	20	20	100%												
BRC: Oil, Boiler Reset Controls			2	1						15	15	15	100%												



Measure	Quantity						Annual Savings per Unit (kWh)						Measure Life						In-Service / Realization Rate						Total Lifetime Savings (kWh)						Annual Savings per Unit (MMBTU)						Total Lifetime MMBTU Savings					
	2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016							
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan							
LED Bulbs	29	48	18	128	103		23	28	25	25	25	20	20	20	20	100%	100%	100%	2,667	63,091	50,529																					
ES CFL Lights	68	39	62	62		62	62					5	5	5	5	80%	100%	100%	84,686	1,656	1,179,496																					
ES Light Fixture (Interior)	19	5	11	11	9	166	182	182	182	182	182	11	11	11	11	100%	100%	100%	34,610	21,358	17,106																					
ES Clothes Washer	27	8	20	31	0	31	31	31	31	31	31	10	10	10	10	100%	100%	100%	8,478	6,239	6,429																					
ES Dishwasher	27	9	17	14	14	114	107	107	107	107	107	12	12	12	12	100%	100%	100%	36,936	21,672	6,429																					
ES Refrigerator	2	5				110	(166)					14	14	14	14	100%	100%	100%	3,088	(11,620)																						
ES Central AC																																										
Oil Heated Homes																																										
Wood Heated Homes																																										
Electric Heated Homes																																										
GSHP (Heating)		5	4	5	4	4	13,401	11,029	11,029	11,029	11,029	25	25	25	25	100%	100%	100%		1,472,716	1,179,496																					
GSHP (Cooling)		5	4	5	4	4	141	90	90	90	25	25	25	25	25	100%	100%	100%		12,018	9,625																					
GSHP (Hot Water)		5	4	5	4	4	2,292	1,627	1,627	1,627	25	25	25	25	25	100%	100%	100%		217,255	174,000																					
GSHP (Lights & Appliances)		5	4	5	4	4	(533)	(533)	(533)	(533)	19	19	19	19	19	100%	100%	100%		(71,172)	(57,002)																					
Propane Home (Heating)	26	2	9	9	7	757		129	129	129	25	25	25	25	25	100%	100%	100%	491,966	27,561	22,073																					
Propane Home (Cooling)																																										
Propane Home (Hot Water)		2	9	9	7	7						10	10	10	10	100%	100%	100%																								
Propane Home (Lights & Appliances)																																										
Split Sys HP (Heating)		7	7	7	6	6	(236)	(236)	(236)	(236)	25	25	25	25	25	100%	100%	100%		(50,421)	(40,382)																					
Split Sys HP (Cooling)		7	7	7	6	6	10,937	10,937	10,937	10,937	25	25	25	25	25	100%	100%	100%		2,044,604	1,637,520																					
Split Sys HP (Hot Water)		7	7	7	6	6	(42)	(42)	(42)	(42)	25	25	25	25	25	100%	100%	100%		(7,852)	(6,288)																					
Split Sys HP (Lights & Appliances)		7	7	7	6	6	1,792	1,792	1,792	1,792	25	25	25	25	25	100%	100%	100%		335,003	268,304																					
ASHP		5	5	5	5	5	12,818	(197)	(197)	(197)	25	25	25	25	25	100%	100%	100%		(36,828)	(29,495)																					
Hot Water		5	5	5	5	5	(156)				10	10	10	10	10	100%	100%	100%																								
Ventilation		7	7	7	7	7					19	19	19	19	19	100%	100%	100%																								

NHEC Energy Star® Products Program - Lighting

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service & Realization Rate			Total Lifetime Savings (kWh)			
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan
	Catalog Sales: CFLs	1,118	1,085			5.00	5			62%				80,082	77,718	
Catalog Sales: LED Bulbs		1,402				20			95%					737,073		
Retail Sales: CFLs	1,883	499			5.00	5			62%				134,878	35,743		
Retail Sales: Multipacks	19,903	10,473	9,243	1,597	5.00	5	29	29	62%				1,425,640	750,175	834,399	144,151
Retail Sales: Interior Fixture	492	103			8.00	8			96%				236,268	49,463		
Retail Sales: Exterior Fixture		5			5.00	5			100%					1,557		
Retail Sales: Torchieres		1			8.00	8			94%					519		
Retail Sales: LED Fixtures	224		2,054	1,141	20.00	20	25	25	95%				117,751	363,918	216,455	
Retail Sales: LED Multipacks			3,081	456			25	25	95%					1,440,510	213,311	
Retail Sales: LED Bulbs	3,354	11,449	5,135	6,615	20	20	25	25	95%				1,763,107	6,018,430	2,362,942	3,093,010
Markdown: CFLs (Multipack Bulbs)			8,000	2,509			29	29	96%					1,117,507		
Markdown: LEDs				11,634			25	25	95%					5,439,431		
Markdown: LEDs (Multipack Bulbs)				684			25	25	95%					319,967		

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service / Realization Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings						
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan				
																						2016 Plan	2016 Plan	2016 Plan	2016 Plan
Energy Star Clothes Washer	712	840	803	662	166	261	182	182	11	11	11	100%	100%	1,296,979	2,408,683	1,605,029	1,323,056	0.74	0.74	0.45	5,777	6,815	4,006	3,302	
Energy Star Room A/C	415	341	468	339	16	16	16	16	9	9	9	100%	100%	60,344	49,584	68,092	49,285								
Smartstrip Power Strip	60	9			75	75			5	5	5	100%	100%	22,469	3,377										
Energy Star Refrigerator	692	745	780	484	107	107	40	40	12	12	12	100%	100%	888,528	956,580	1,002,126	230,266								
2nd Refrigerator/Freezer Pickup	79	121	111	81	835	835	755	755	8	8	8	100%	100%	527,720	808,280	744,793	487,428								
2nd Freezer Pickup	4	45	62	32	663	663	658	658	8	8	8	100%	100%	21,216	238,680	331,170	169,922								
Energy Star Room Air Purifiers	4	15	4	16	391	391	391	391	9	9	9	100%	100%	14,063	52,735	15,679	56,743								
Room AC Pickup																									
Energy Star Central Air Conditioner																									
Energy Star Mini Split Heat Pump-Cooling																									
Energy Star Mini Split Heat Pump-Fossil Retrofit																									
Energy Star Mini Split Heat Pump-Electric Retrofit	57				34,370				8			100%	100%	15,673											
Energy Star Mini Split Heat Pump, SEER 14.5, HSPF 8.2 cooling	57				142,210				8			100%	100%	64,848											
Energy Star Mini Split Heat Pump, SEER 14.5, HSPF 8.2 heating	57				104,930	123			8			100%	100%	47,848											
Energy Star Mini Split Heat Pump, SEER 19, HSPF 10 cooling	57				751,000	(2,158)			8			100%	100%	342,456											
Energy Star Mini Split Heat Pump, SEER 19, HSPF 10 heating																									
Furn: LP, Furnace, FHA, AFUE >=95% w/ECM	11	4			168	168			18	18	18	100%	100%	32,041	12,096										
Furn: LP, Furnace, FHA, AFUE >=96% w/ECM	5				168	168			18	18	18	100%	100%	16,020	0										
Furn: LP, Furnace, FHA, AFUE >=97% w/ECM	5	5			168	168			18	18	18	100%	100%	16,020	15,120										
Furn: Oil, Furnace, FHA, AFUE >=85% w/ECM	5	2			168	168			18	18	18	100%	100%	16,020	6,048										
Furn: Oil, Furnace, FHA, AFUE >=90 w/ECM	5	5			168	168			18	18	18	100%	100%	16,020	0										
Boil: LP Boiler, FHW, AFUE >= 90%	11	8							20	20	20	100%	100%												
Boil: LP Boiler, FHW, AFUE >=96%	11	8							20	20	20	100%	100%												
Boil: Oil Boiler, FHW, AFUE >=85%	21	49							20	20	20	100%	100%												
Boil: Oil Boiler, FHW, AFUE >=90%	11	2							20	20	20	100%	100%												
Boil: LP, Combo condensing boiler w/ On-Demand DWH 90%	11	6							20	20	20	100%	100%												
Boil: Oil, Combo condensing boiler w/ On-Demand DWH 90%	11	2							20	20	20	100%	100%												
DHW: LP, Tankless Water Heaters (EF>= 0.82)	5	32							20	20	20	100%	100%												
DHW: LP, Indirect Water Heater (attached to LP Energy Star FHW boiler)	11	1							20	20	20	100%	100%												
DHW: Oil, Indirect Water Heater (attached to oil Energy Star FHW boiler)	21	43							13	13	13	100%	100%												
DHW: LP, Stand Alone Storage Water Heater (EF>=0.67)	5								10	10	10	100%	100%												
DHW: Energy Star Heat Pump 50 Gal Water Heater, EF>=2.3 (ES=EF>=2.0)	32	88			1,775	1,775			10	10	10	100%	100%	564,208	1,562,000										
DHW: Energy Star Heat Pump 80 Gal Water Heater, EF>=2.3 (ES=EF>=2.0)	11	4			2,672	2,672			10	10	10	100%	100%	283,110	106,880										
BRC: Gas, Boiler Reset Controls	5	13							15	15	15	100%	100%												
BRC: LP, Boiler Reset Controls	5								15	15	15	100%	100%												
BRC: Oil, Boiler Reset Controls	5								15	15	15	100%	100%												
TSTAT: LP, 7-Day Programmable Thermostats	5	2							15	15	15	100%	100%												
TSTAT: Oil, 7-Day Programmable Thermostats	5	41			14	14			15	15	15	100%	100%	1,144	432										
TSTAT: LP, WiFi Enabled 7-Day Programmable Thermostats	1	1			14	14			15	15	15	100%	100%	1,144	8,855										
TSTAT: Oil, WiFi Enabled 7-Day Programmable Thermostats	207	207							15	15	15	100%	100%	0	0										

Measure	Quantity						Annual Savings per Unit (kWh)						Measure Life						In-Service or Realization Rate						Total Lifetime Savings (kWh)						Annual Savings per Unit (MMBTU)						Total Lifetime MMBTU Savings					
	2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016							
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan									
Snowmaking-Retrofit	2	3	1	2	2	33,129	141,052	150,767	150,767	13	13	13	13	89.0%	89%	99.86%	7,708,605	4,895,915	2,429,826	2,429,826	13	13	13	13	89.0%	89%	99.86%	4,895,915	2,429,826	2,429,826	3,594,115											
Lighting-Retrofit	13	2	15	6	6	29,141	98,245	18,812	18,812	13	13	13	13	89.0%	89%	99.86%	4,383,098	2,273,389	3,335,005	3,335,005	13	13	13	13	89.0%	89%	99.86%	2,273,389	3,335,005	3,335,005	1,345,370											
VFD-Retrofit	1	1	1	2	2	38,743	24,496	25,544	25,544	13	13	13	13	89.0%	89%	99.86%	448,257	283,419	411,686	411,686	13	13	13	13	89.0%	89%	99.86%	283,419	411,686	411,686	608,951											
Refrigeration-Retrofit																																										
Motors-Retrofit	2					5,870				13	13	13	13				135,832																									
Lighting-Retrofit Occupancy Sensors		2					3,861							89.0%																												
Compressed Air - Retrofit		1					38,625			13	13	13	13	89.0%																												
Lighting-New		1					99,864			15	15	15	15	89.0%	100%																											
Lighting-Retrofit-LED		5		2	2		32,263	5,497	5,497	13	13	13	13	89.0%	89%	99.86%	1,866,415	1,866,415	2,039,225	2,039,225	13	13	13	13	89.0%	89%	99.86%	1,866,415	2,039,225	2,039,225	7,038,154											
Parking Lot Lights		2					32,436	21,088	21,088	13	13	13	13	89.0%																												
Catalog Sales		8					7,182			6	6	6	6	89.0%																												

NHEC Small Business Energy Solutions Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service or Installation Rate		Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings			
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2015 Plan	2016 Plan	2014 Plan	2015 Actual	2016 Plan	2014 Plan	2015 Plan	2014 Plan	2015 Actual	2016 Plan	2014 Plan	2015 Actual	2016 Plan	2014 Plan	2015 Actual	2016 Plan	
	Lighting-Retrofit	28	16	19	13,604	6,264	7,884	13	13	13	100%	100%	1,302,820	1,302,820	1,950,076	2,604,703					
Refrigeration-Retrofit	5	1	3	19,101	2,611	2,462	13	13	13	100%	100%	33,937	33,937	101,493	135,563						
Refrigeration Controls -Retrofit		1			8,139							105,807									
VFD-Retrofit		1			3,366							43,758	43,758								
Lighting-New Construction								15	15	100%	100%	0	0								
Lighting LED-New Construction		2			25,467			15	15	100%	100%	764,001									
HVAC-New Construction	3	2		6,925	54,387		15	15	15	100%	100%	1,631,595	1,631,595								
Refrigeration-New Construction		2			4,716			15	15	100%	100%	141,480	141,480								
Compressed Air								13	13	100%	100%	0	0								
Catalog CFL		24			1,829			6	6	100%	100%	263,376	263,376								
Catalog LED								20	20	100%	100%	0	0								
Lighting Retrofit LED		24	25		11,482	9,299	13	13	13	100%	100%	3,582,493	3,582,493	3,066,720	4,096,197						
Lighting Controls - Retrofit		2			257			13	13	100%	100%	6,682									
Parking Lot Lights - Retrofit		17	6		6,234	9,251	13	13	13	100%	100%	1,377,692	1,377,692	762,741	1,018,787						
Parking Lot Lights - New		3			4,260			15	15	100%	100%	191,715									
EMS New		1			137,463			15	15	100%	100%	2,061,945									
Insulation Retrofit		1			17,726			13	13	100%	100%	230,438									
Motors - Retrofit		1			4,401			13	13	100%	100%	57,213									
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)			6		105	105	12	12	12	100%	100%	0	0	7,986	10,667						
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)			6		751	751	12	12	12	100%	100%	0	0	57,155	76,342						
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)			3		34	34	12	12	12	100%	100%	0	0	1,308	1,747						
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)			3		142	142	12	12	12	100%	100%	0	0	5,412	7,228						
Energy Star Wifi TSTAT for ASHP			10		142	142	12	12	12	100%	100%	0	0	20,275	27,082						
Heat Pump Water Heater		3			1,775		15	15	15	100%	100%	53,250									

Measure	Quantity						Annual Savings per Unit (kWh)			Measure Life			In-Service or Installation Rate			Total Lifetime Savings (kWh)			Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings								
	2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	
SCI Interior Lighting LED			12		13			9,299		9,299		13		100%			1,473,197		1,561,841											
Parking Lot Lights			6		6		14,233		14,233		13		100%			1,127,394		1,195,231												
Refrigeration			3		3		1,799		1,799		13		100%			71,257		75,544												
Refrigeration Controls			2		2		8,752		8,752		13		100%			173,316		183,744												
LCI Interior Lighting LED			8		8		8,687		8,687		13		100%			765,563		911,941												
Boilers (up to 300 MBH)			2		2						25		100%			6,296		6,296												
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)			5		5		105		105		12		100%			45,060		45,060												
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)			5		5		751		751		12		100%																	

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			Installation or Realization Rate		Total Lifetime Savings (kWh)			Annual Savings Per Unit (MMBTU)			Total Lifetime MMBTU Savings					
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014	2015	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Update		
	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update		
Electric Savings for Fossil Heated Homes	334.8	350.0	272.6	336.3	0.0	1181.6	1399.98	12	0	12	18	86.20%	86.20%	4,120,384	0	3,263,748	7,307,139	0.0	0.0	0.0	0	0	
Baseload (Lighting & Appliances-Refs)	0.0	274.0	0.0	0.0	791.7	0.0	0.0	0	19	0	0	86.20%	86.20%	0	3,512,329	0	0	0.0	0.0	0.0	0	0	
Weatherization - Electric Heat	8.6	13.0	6.9	16.0	5464.8	5417.8	4506.8	13	19	13	19.3	86.20%	86.20%	370,607	1,161,741	410,302	1,199,156	0.0	0.0	0.0	28,536	0	
Weatherization - Kerosene Heated	83.7	74.0	14.3	73.1	0.0	1272.8	0.0	20	12	20	18.5	86.20%	86.20%	0	997,883	0	0	19.5	0.0	19.7	22.4	26,016	
Weatherization - LP Heated	40.2	49.0	22.4	44.0	0.0	1573.6	0.0	20	16	20	20.0	86.20%	86.20%	0	1,081,733	0	0	19.1	0.0	28.0	21.4	10,659	
Weatherization - NG Heated	63.6	88.0	21.2	72.5	0.0	892.6	0.0	20	18	20	21.6	86.20%	86.20%	0	1,239,189	0	0	8.0	0.0	9.2	21.9	3,435	
Weatherization - Wood Heated	16.7	21.0	21.5	20.1	1856.1	0.0	0.0	21	14	21	22.0	86.20%	86.20%	0	481,133	0	0	30.3	0.0	38.4	31.8	12,116	
Weatherization - Oil Heated	130.6	118.0	193.2	126.6	1405.4	0.0	0.0	21	16	21	20.7	86.20%	86.20%	0	2,269,363	0	0	29.7	0.0	28.0	27.2	98,543	
Primary Fuel Heating Savings (NG)	0.0	88.0	0.0	0.0	0.0	0.0	0.0	0	22	0	0	86.20%	86.20%	0	0	0	0	0.0	17.7	0.0	0	0	
Primary Fuel Heating Savings (Kerosene)	0.0	74.0	0.0	0.0	0.0	0.0	0.0	0	20	0	0	86.20%	86.20%	0	0	0	0	0.0	20.5	0.0	0	0	
Primary Fuel Heating Savings (Oil)	0.0	118.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	86.20%	86.20%	0	0	0	0	0.0	30.6	0.0	0	0	
Primary Fuel Heating Savings (Propane)	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	86.20%	86.20%	0	0	0	0	0.0	17.2	0.0	0	0	
Primary Fuel Heating Savings (Wood)	0.0	21.0	0.0	0.0	0.0	0.0	0.0	0	20	0	0	86.20%	86.20%	0	0	0	0	0.0	40.4	0.0	0	0	
Secondary Fuel Savings (Kerosene)	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0	18	0	0	86.20%	86.20%	0	0	0	0	0.0	7.2	0.0	0	0	
Secondary Fuel Savings (NG)	0.0	230.0	0.0	0.0	0.0	0.0	0.0	0	8	0	0	86.20%	86.20%	0	0	0	0	0.0	0.6	0.0	0	0	
Secondary Fuel Savings (Oil)	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0	23	0	0	86.20%	86.20%	0	0	0	0	0.0	5.1	0.0	0	0	
Secondary Fuel Savings (LP)	0.0	56.0	0.0	0.0	0.0	0.0	0.0	0	11	0	0	86.20%	86.20%	0	0	0	0	0.0	1.2	0.0	0	0	
Secondary Fuel Savings (Wood)	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	86.20%	86.20%	0	0	0	0	0.0	6.9	0.0	0	0	
Third Fuel Savings (LP)	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0	4	0	0	86.20%	86.20%	0	0	0	0	0.0	1.0	0.0	0	0	
Third Fuel Savings (Wood)	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0	15	0	0	86.20%	86.20%	0	0	0	0	0.0	-1.3	0.0	0	0	
AS = Ancillary Savings on Weatherized Homes:																							
AS: Boiler Circulator Pump Savings (80%)	267.8	0.0	0.0	0.0	9.0	0.0	0.0	20	0	0	0	86.20%	86.20%	41,560	0	0	0	0.0	0.0	0.0	0	0	
AS: Furnace Fan Savings (20%)	67.0	0.0	0.0	0.0	86.0	0.0	0.0	20	0	0	0	86.20%	86.20%	99,281	0	0	0	0.0	0.0	0.0	0	0	
AS: Furnace w/new ECM Motor (5% of 20%)	3.3	0.0	0.0	0.0	733.0	0.0	0.0	20	0	0	17	86.20%	100.00%	42,310	0	0	0	3.3	8.3	8.8	9.2	0	
AS: Central AC (5% of 20%)	3.3	0.0	0.0	0.0	77.0	0.0	0.0	20	0	0	20	86.20%	86.20%	4,445	0	0	0	0.0	0.0	0.0	0	0	
AS: Room AC (per unit) (75% of those w/o CAC)	255.0	0.0	0.0	0.0	23.0	0.0	0.0	20	0	0	0	86.20%	86.20%	101,127	0	0	0	0.0	0.0	0.0	0	0	
Heating System Replacements:																							
- Boilers, NG	0.0	7.0	0.0	0.0	336.0	0.0	0.0	0	20	0	0	100.00%	100.00%	0	47,040	0	0	0.0	20.0	0.0	0	0	
- Boilers, Oil	19.7	14.0	0.0	0.0	446.8	0.0	0.0	25	20	0	0	100.00%	100.00%	0	125,100	0	0	5.0	13.5	13.5	0	0	
- Furnaces, K1	84.3	19.0	0.0	0.0	125.0	102.4	102.4	17	18	17	17	100.00%	100.00%	0	42,750	0	0	3.3	8.3	8.8	9.2	0	
- Furnaces, NG	0.0	8.0	0.0	0.0	197.8	0.0	0.0	0	18	0	0	86.20%	86.20%	0	24,546	0	0	0.0	21.5	21.5	0	0	
- Furnaces, Oil	0.0	17.0	0.0	0.0	217.1	109.3	109.3	0	18	20	20	86.20%	100.00%	0	57,254	0	0	0.0	15.4	15.4	14.3	0	
- Furnaces, LP	23.6	23.0	0.0	0.0	77.1	0.0	0.0	18	18	18	18	86.20%	86.20%	0	27,510	0	0	8.4	24.1	24.1	0	0	
Heating System Replacements																							
- Kerosene Mobile Home Furnaces			34.3	20.1	102.4	117.0	102.4	17	18	17	18.0	100.00%	100.00%	0	0	59,696	42,343	8.8	9.2	8.8	9.2	3,332	
- LP Furnace/Boiler			13.5	10.3	529.6	105.6	529.6	18	18	18	18.2	100.00%	100.00%	0	0	129,120	19,839	5.9	21.2	5.9	21.2	3,986	
- Oil Furnace/Boiler			39.8	55.6	282.8	272.6	282.8	25	18	25	18.8	100.00%	100.00%	0	0	281,498	284,923	16.7	14.3	16.7	14.3	14,956	
- NG Furnace/Boiler			8.0	4.4	109.3	217.9	109.3	20	20	20	18.2	100.00%	100.00%	0	0	17,514	17,554	18.9	15.8	18.9	15.8	1,271	

Notes:

1. For 2015-2016 Planning, combined Furnace and Boilers quantities (for 2014) they were listed separately.

Planning Assumptions

- All Annual Energy Savings and Measure Lives were updated for 2016 to reflect more current information based on Jan - Aug 2015 participation results.
  - average electric savings associated with fossil heated homes increased from 1,181.6 to 1,399.9 kWh/year
  - average electric savings for electric heat weatherization projects decreased from 5,417.8 to 4,506.8 kWh/year
  - average MMBTU savings for Kerosene (19.7->22.4) and Natural Gas (9.2->21.9) weatherization projects increased, while savings for Liquid Propane (28.0->21.4), Wood (38.4->31.8) and Oil (28.1->27.2) decreased.
  - average modeled kWh savings for heating systems were updated as follows: Kerosene (102.4->117.0), LP (529.6->105.6), Oil (282.8->272.6), Natural Gas (109.3->217.9)
  - average modeled MMBtu savings for heating systems were updated as follows: Kerosene (8.8->9.2), LP (5.9->21.2), Oil (16.7->14.3), Natural Gas (18.9->15.8)
- US DOE WAP Collaboration: Weatherization Assistance Program funding is expected to pay for additional MMBTU Savings.
- Heating System Replacements: Measure lives updated to reflect the expected mix of furnaces (measure life=18) and boilers (measure life=20).
- For gas heated homes, customer may be served by both gas and electric utilities in this program, but gas companies will pay for the weatherization project up to their cap first and will claim associated MMBTU savings.
- Ancillary kWh Savings are not separately added to HEA as they are in HPWES as these savings are modeled by CAAs in Performance Systems Development's TREAT auditing software.

Measure	Quantity				Annual Savings per Unit (kWh)				Measure Life				Installation or Realization Rate		Total Lifetime Savings (kWh)				Annual Savings Per Unit (MMBTU)				Total Lifetime MMBTU Savings					
	2014		2015		2016		2014		2015		2016		2014	2015	2014		2015		2016		2014		2015		2016			
	Plan	Actual	Plan	Update	Plan	Update	Plan	Actual	Plan	Update	Plan	Actual	Plan	Update	2014	Actual	Plan	Update	2014	Actual	Plan	Update	2014	Actual	Plan	Update		
Electric Baseload: Single Family	77.2	90.0	27.9	103.5	138.0	524.9	221.5	369.1	7	17	20	20	20	100.00%	100.00%	74,317	798,633	123,454	763,992	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Electric Baseload: Multi-Family	273.2	384.0	111.5	0.0	138.0	192.4	221.5	369.1	7	20	20	20	20	100.00%	100.00%	263,070	1,456,908	493,817	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Light Fixtures	115.1	0.0	19.4	19.5	23.0	87.5	24.6	36.9	20	20	20	20	20	100.00%	100.00%	52,941	0	9,535	14,431	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Refrigerator	86.3	0.0	38.7	39.1	586.2	586.2	586.2	586.2	7	7	7	7	7	100.00%	100.00%	354,248	0	158,982	160,415	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Hot Water Saving Measures	115.1	0.0	77.5	78.2	80.4	80.4	80.4	80.4	4	4	4	4	4	100.00%	100.00%	37,031	0	24,928	44,018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fuel Neutral, SF, Electric, LEDs	587.3	537.0	399.0	403.0	138.0	578.1	221.5	369.1	8	16	20	20	20	100.00%	100.00%	648,254	5,052,718	1,767,522	2,975,485	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SF Fuel Neutral (Oil) Primary fuel	463.4	388.0	290.9	287.2	0.0	0.0	0.0	0.0	21	20	19	19	19	100.00%	100.00%	0	0	0	0	29.0	28.9	28.0	29.6	281,936	224,567	158,666	165,312	
SF Fuel Neutral (LP) Primary fuel	70.5	91.0	30.7	62.2	0.0	0.0	0.0	0.0	21	19	19	19	19	100.00%	100.00%	0	0	0	0	23.0	24.6	30.0	30.0	33,230	42,717	17,836	36,087	
SF Fuel Neutral (Gas) Primary fuel	2.3	0.0	2.0	2.0	0.0	0.0	0.0	0.0	19	19	21	21	21	100.00%	100.00%	0	0	0	0	15.5	0.0	9.2	9.2	680	0	377	382	
SF Fuel Neutral (Wood) Primary fuel	37.0	55.0	55.9	37.6	0.0	0.0	0.0	0.0	21	21	21	21	21	100.00%	100.00%	0	0	0	0	28.0	28.1	38.4	26.5	21,238	32,021	44,535	20,666	
SF Fuel Neutral (Kerosene) Primary fuel	2.3	3.0	8.0	2.0	0.0	0.0	0.0	0.0	21	19	21	21	21	100.00%	100.00%	0	0	0	0	29.0	24.3	19.7	19.7	1,431	1,420	3,363	864	
SF Fuel Neutral (Kerosene) Secondary fuel	11.7	83.0	11.6	12.1	6,552.2	3,581.5	4,803.4	4,803.4	18	17	18	18	18	100.00%	100.00%	1,387,306	5,050,889	1,002,205	1,047,187	0.0	0.0	0.0	0.0	0	0	0	0	
SF Fuel Neutral (LP) Third fuel	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0	20	0	0	0	100.00%	100.00%	0	0	0	0	0.0	10.4	0.0	0.0	0	5,816	0	0	0
SF Fuel Neutral (Oil) Secondary fuel	0.0	39.0	0.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	0	100.00%	100.00%	0	0	0	0	8.2	0.0	0.0	0.0	0	6,737	0	0	0
SF Fuel Neutral (LP) Secondary fuel	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0	18	0	0	0	100.00%	100.00%	0	0	0	0	5.2	0.0	0.0	0.0	0	569	0	0	0
SF Fuel Neutral (Gas) Secondary fuel	0.0	131.0	0.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	0	100.00%	100.00%	0	0	0	0	9.8	0.0	0.0	0.0	0	27,259	0	0	0
SF Fuel Neutral (Wood) Secondary fuel	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0	21	0	0	0	100.00%	100.00%	0	0	0	0	13.6	0.0	0.0	0.0	0	1,125	0	0	0
SF Fuel Neutral (Kerosene) Secondary fuel	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0	4	0	0	0	100.00%	100.00%	0	0	0	0	0.7	0.0	0.0	0.0	0	14	0	0	0
<b>AS = Ancillary Energy Savings <sup>3</sup></b>	495.0	0.0	271.2	254.1	9.0	0.0	9.0	9.0	20	20	20	20	20	100.00%	100.00%	89,098	0	48,820	45,742	0.0	0.0	0.0	0.0	0	0	0	0	0
AS: Boiler Circulator Pump Savings	34.5	0.0	38.7	97.7	86.0	0.0	86.0	86.0	20	20	20	20	20	100.00%	100.00%	59,399	0	66,644	168,111	0.0	0.0	0.0	0.0	0	0	0	0	0
AS: Furnace Fan Savings	1.7	0.0	1.9	4.9	733.0	0.0	733.0	733.0	20	20	20	20	20	100.00%	100.00%	25,313	0	28,401	71,642	0.0	0.0	0.0	0.0	0	0	0	0	0
AS: Furnace w/new ECM Motor	1.7	0.0	1.9	9.8	77.0	0.0	77.0	77.0	20	20	20	20	20	100.00%	100.00%	2,659	0	2,983	15,052	0.0	0.0	0.0	0.0	0	0	0	0	0
AS: Central AC	215.8	0.0	127.8	141.7	23.0	0.0	23.0	23.0	20	20	20	20	20	100.00%	100.00%	99,276	0	58,807	65,169	0.0	0.0	0.0	0.0	0	0	0	0	0
AS: Room AC (per unit)	0.0	0.0	3.6	3.3	0.0	0.0	168.0	168.0	18	18	18	18	18	100.00%	100.00%	0	0	11,023	10,080	0.0	0.0	4.5	4.5	0	0	295	270	
ES Furnace w/ECM (LP), AFUE >=95%	0.0	0.0	0.0	0.0	0.0	0.0	168.0	168.0	18	18	18	18	18	100.00%	100.00%	0	0	0	0	0.0	0.0	5.6	5.6	0	0	0	0	0
ES Furnace w/ECM (LP), AFUE >=96%	0.0	0.0	0.0	0.0	0.0	0.0	168.0	168.0	18	18	18	18	18	100.00%	100.00%	0	0	5,295	3,360	0.0	0.0	5.9	5.9	0	0	186	118	
ES Furnace w/ECM (LP), AFUE >=97%	0.0	0.0	0.0	0.0	0.0	0.0	168.0	168.0	18	18	18	18	18	100.00%	100.00%	0	0	4,724	20,160	0.0	0.0	18.0	18.0	0	0	506	2,160	
ES Furnace w/ECM (Oil), AFUE >=85%	0.0	0.0	0.7	2.2	0.0	0.0	168.0	168.0	18	18	18	18	18	100.00%	100.00%	0	0	2,118	6,720	0.0	0.0	20.7	20.7	0	0	261	828	
ES Furnace w/ECM (Oil), AFUE >=90%	0.0	0.0	0.0	1.0	0.0	0.0	168.0	168.0	20	20	20	20	20	100.00%	100.00%	0	0	0	3,360	0.0	0.0	10.4	10.4	0	0	827	208	
ES Boiler (LP), AFUE >=90%	0.0	0.0	1.1	0.7	0.0	0.0	0.0	0.0	20	20	20	20	20	100.00%	100.00%	0	0	0	0	0.0	0.0	13.1	13.1	0	0	279	175	
ES Boiler (LP), AFUE >=95%	0.0	0.0	12.6	5.0	0.0	0.0	0.0	0.0	20	20	20	20	20	100.00%	100.00%	0	0	0	0	0.0	0.0	5.4	5.4	0	0	1,358	538	
ES Boiler (Oil), AFUE >=85%	0.0	0.0	0.8	1.0	0.0	0.0	0.0	0.0	20	20	20	20	20	100.00%	100.00%	0	0	0	0	0.0	0.0	10.8	10.8	0	0	171	215	
ES Boiler (Oil), AFUE >=90%	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	15	15	15	15	15	100.00%	100.00%	0	0	0	0	0.0	0.0	9.6	9.6	0	0	299	0	
BRC: Oil, Boiler Reset Controls	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	1	1	1	1	1	100.00%	100.00%	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0	0
3rd Party Loan Buydown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0	0	0	0	0

**Planning Assumptions**

1. For CFL and LED Annual kWh savings, we assumed the same weighted average energy savings as the lighting program but longer hours use (3 hours/day vs. 2 hours/day as the program requires retrofit lights to be on 3 or more hours/day).  
 As we transition to LEDs, the measure life has been updated for the Lighting Measures for 2015-2016.
2. Ancillary kWh Savings are added to HPwES planned savings per the Cadmus Evaluation and recommendations. HPwES uses prescriptive rather than modeled audit recommendations and captures these savings separately.
3. Fossil (LP and Oil) heating system replacements are included here (rather than in the ESAppliance Program) and will be incented when a new system is recommended.
4. As Eversource works down the list of high use electrically heated homes, we are seeing lower annual kWh savings and that has been accounted for in this plan.



Eversource ENERGY STAR® Homes Program

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service / Realization Rate			Total Lifetime Savings (kWh)			Annual Savings Per Unit (MIMBTU)			Total Lifetime MIMBTU Savings		
	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	
	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	
ES CFLs	3,292.9	372.0	0.0	0.0	23.0	23.0	24.6	24.6	5	8	20	8	100.00%	378,599	68,433	0	0	0.00	0.00	0	0
ES Light Fixture (Interior)	329.3	251.0	243.8	303.3	62.3	62.3	24.6	24.6	20	20	20	20	100.00%	410,089	312,590	120,004	149,286	0.00	0.00	0	0
ES Clothes Washer	32.9	49.0	43.9	54.6	165.6	165.6	181.8	181.8	11	11	11	11	100.00%	59,983	89,258	87,750	109,162	0.74	0.74	398	443
ES Dishwasher	214.0	297.0	195.1	0.0	31.4	31.4	31.4	31.4	10	10	10	10	100.00%	67,208	93,258	61,250	0	0.19	0.19	561	0
ES Refrigerator	296.4	402.0	231.6	288.2	114.0	114.0	107.0	39.6	12	12	12	12	100.00%	405,419	549,936	297,421	137,037	0.00	0.00	0	0
ES Thermostats	247.0	297.0	207.3	257.8	0.0	0.0	0.0	0.0	12	12	15	15	100.00%	0	0	0	0	0.00	0.00	0	0
Oil Heated Homes	3.3	1.0	4.9	3.0	519.8	73.0	410.8	410.8	25	25	25	25	100.00%	42,793	1,825	50,082	31,151	27.11	43.60	678	5,315
Natural Gas Heated Homes	62.6	59.0	36.6	78.9	481.5	506.0	98.3	98.3	25	25	25	25	100.00%	753,094	-204,325	89,881	193,809	15.57	23.10	22,960	45,544
Liquid Propane Heated Homes <sup>1</sup>	148.2	149.0	126.8	100.1	736.7	736.7	462.6	462.6	25	25	25	25	100.00%	1,874,472	2,744,175	1,466,331	1,157,623	38.54	31.80	143,543	79,577
Electric Baseboard Heated Home	0.0	0.0	14.6	0.0	7,323.0	7,323.0	7,935.8	7,935.8	25	25	25	25	100.00%	0	0	2,902,451	0	0.00	0.00	0	0
ASHP Heated Home (MF) <sup>1</sup>	115.3	162.0	61.0	75.8	2,313.0	4,450.8	5,355.0	5,355.0	25	25	25	25	100.00%	6,664,377	18,025,825	8,160,606	10,151,892	0.89	0.00	3,624	0
GSHP Heated Home	0.0	34.0	0.0	0.0	0.0	2,511.8	0.0	0.0	25	25	25	25	100.00%	0	2,135,050	0	0	10.19	8,660	0	0
Wood Heated Homes	0.0	1.0	0.0	0.0	0.0	2,148.0	0.0	0.0	25	25	25	25	100.00%	0	53,700	0	0	57.00	1,425	0	0
LEDs	0.0	558.0	2,438.3	3,033.2	0.0	27.7	24.6	24.6	0	20	20	20	100.00%	0	308,764	1,200,037	1,492,860	0.00	0.00	0	0
Geothermal & Air Source Heat Pump Program																					
GSHP (Heating)	33.2	43.0	30.4	30.3	11,583.0	12,486.4	12,250.0	12,250.0	25	25	25	25	100.00%	9,611,083	13,422,900	9,296,821	9,289,313	5.00	0.00	5,375	0
GSHP (Cooling)	33.2	43.0	30.4	30.3	90.0	87.4	69.0	69.0	25	25	25	25	100.00%	74,678	93,925	52,366	52,323	0.00	0.00	0	0
GSHP (Hot Water)	33.2	43.0	30.4	30.3	1,373.0	1,497.9	1,819.0	1,819.0	25	25	25	25	100.00%	1,139,257	1,610,200	1,380,483	1,379,368	3.77	0.00	4,050	0
GSHP (Lights & Appliances)	33.2	43.0	30.4	30.3	-159.0	-87.7	-162.0	-162.0	25	25	25	25	100.00%	-131,931	-94,325	-122,946	-122,846	0.00	0.00	0	0
ASHP (Heating)	9.1	0.0	9.0	15.2	4,789.6	9,671.0	9,671.0	9,671.0	25	25	25	25	100.00%	1,089,279	0	2,182,030	3,666,814	0.00	0.00	0	0
ASHP (Cooling)	9.1	0.0	9.0	15.2	130.3	130.3	71.0	71.0	25	25	25	25	100.00%	29,633	0	16,019	26,920	0.00	0.00	0	0
ASHP (Hot Water)	9.1	0.0	9.0	15.2	0.0	0.0	520.0	520.0	25	25	25	25	100.00%	0	0	117,326	197,161	0.00	0.00	0	0
ASHP (Lights & Appliances)	9.1	0.0	9.0	15.2	80.1	80.1	-79.0	-79.0	25	25	25	25	100.00%	18,208	0	-17,824	-29,953	0.00	0.00	0	0

Notes:

1. Includes wood savings.

Planning Assumptions

- The Energy Star Homes Heat Pump Program was merged in to the Energy Star Homes program for 2015-2016. The new single family homes with heat pumps are listed at the bottom of the table above.
- Measure Life Changes:
  - > LEDs have a longer life than CFLs due to longer hours (20 years at 2 hours/day)
- Lighting & Appliance Energy Savings have been updated to per the EPA Energy Star Appliance Calculators and NH evaluation results.

Eversource ENERGY STAR® Products Program - Lighting

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			In-Service & Realization Rate			Total Lifetime Savings (kWh)			
	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update
	Catalog CFLs	3,171	23,100			23.0	23.0			5	5			227,131	1,654,640	0
Catalog Interior Fixtures (Lamps and HW Fixtures)	417	734			62.3	62.3			8	8			200,359	352,480	0	0
Catalog Exterior Fixtures	209	108			62.3	62.3			5	5			64,950	33,625	0	0
Catalog Torchieres	125	0			69.4	69.4			8	8			64,929	0	0	0
Catalog LED Fixtures	42	0	138	7,001	27.7	27.7	24.6	24.6	20	20	8	96.40%	21,932	0	0	26,222
Catalog LED Bulbs	209	20,922	13,144	7,001	27.7	27.7	24.6	24.6	20	20	20	95.00%	109,662	10,998,131	6,145,597	3,273,190
Catalog LED Multi-packs		1,395	830		27.7	27.7	24.6	24.6	20	20	20	90.00%	0	385,955	367,714	0
Retail CFLs	6,144	13,740			23.0	23.0			5	5			440,066	984,188	0	0
Retail CFL Multi-packs	237,818	78,976	77,397	13,155	23.0	23.0	29.0	29.0	5	5	5	62.30%	17,034,795	5,657,005	6,987,039	1,187,551
Retail Interior Fixtures (Lamps and HW Fixtures)	2,378	1,236			62.3	62.3			8	8			1,142,048	593,550	0	0
Retail Exterior Fixtures	159	6			62.3	62.3			5	5			49,362	1,868	0	0
Retail Torchieres	40	0			69.4	69.4			8	8			20,561	0	0	0
Retail LED Fixtures	1,585	1,590			27.7	27.7			20	20			833,431	835,820	0	0
Retail LED Bulbs	9,513	64,828	71,473	31,034	27.7	27.7	24.6	24.6	20	20	20	95.00%	5,000,588	34,078,329	32,890,272	14,510,122
Retail LED Bulbs Labeled as Retail CFLs													0	0	0	0
Retail LED Bulbs Multi-Packs			5,507	4,223			24.6	24.6			20	95.00%	0	0	2,574,651	1,974,641
Markdown: CFLs (Multipack Bulbs)		10,602	605	25,756	23.0	23.0	29.0	29.0	5	5	5	62.30%	0	759,415	84,521	2,325,140
Markdown: LED Bulbs (Single)		3,665	2,531	95,512	27.7	27.7	24.6	24.6	20	20	20	90.00%	0	1,926,592	1,121,081	44,657,221
Markdown: LED Bulbs (Multipack Bulbs) <sup>1</sup>		6,126	561	6,132	27.7	27.7	24.6	24.6	20	20	20	95.00%	0	3,220,273	266,124	2,867,237
Retail LED Interior Fixtures			13,342	6,259			24.6	24.6			8	90.00%	0	0	2,363,878	1,187,795

**Notes**

Plan to utilize lighting product markdowns rather than rebate forms for those retailers who no longer allow coupons.

**Planning Assumptions**

1. The Annual kWh Savings for both CFLs and LEDs were adjusted to reflect the weighted average of bulbs they are intended to replace.  
 > kWh Savings = (Delta Watts) \* (2 hours/days \* 386 days/year) / 1000 to convert from watt hours to kWh
2. Transitioning to incent more LEDs in 2015-2016, but providing some incentives for lower cost CFLs (e.g., multi-packs).
3. Updated "In-service and realization rates" to reflect those identified in the NH CORE Residential Energy Star Lighting Program Impact and Process Evaluation.  
 - See page 1-6 in <http://www.puc.state.nh.us/Electric/Monitoring%20and%20Evaluation%20Reports/NH-RESLFinal%20Delivered%2010252012.pdf>



Measure	Quantity			Annual Savings per Unit/Project (kWh)			Measure Life			In-Service or Realization Rate			Total Lifetime Savings (kWh)			Annual Savings Per Unit/Project (MMBTU)			Total Lifetime MMBTU Savings			
	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Update		
<b>New Equipment Track</b>																						
Cooling	34.1	39.0	28.2	39.6	29,101.0	27,094.5	39,908.4	30,273.5	15	15	15	15	92.50%	13,775,376	14,600,372	15,993,461	18,391,058	0	0	0	0	
Heating	13.7	5.0	14.3	14.8	92,703.7	203,255.0	94,862.4	71,190.5	15	15	15	15	92.50%	17,602,467	14,100,816	18,680,114	15,658,436	0	0	0	0	
Lighting	19.3	20.0	17.7	6.5	71,500.6	41,201.4	59,831.5	24,539.5	15	15	15	15	92.50%	19,161,696	11,433,395	14,714,089	2,407,416	0	0	0	0	
Lighting LED	17.8	8.0	22.4	22.4	45,441.8	47,773.1	45,441.8	45,441.8	15	15	15	15	92.50%	11,228,596	5,302,817	0	15,241,933	0	0	0	0	
Lighting OS	10.1	14.0	4.5	4.5	15,758.3	20,961.3	15,758.3	15,758.3	10	10	10	10	92.50%	1,476,646	2,714,487	0	701,551	0	0	0	0	
Other	0.0	4.0	43.9	8.0	131,253.0	188,922.9	131,253.0	131,253.0	15	15	15	15	92.50%	0	9,284,891	0	3,439,777	0	0	0	0	
Parking Lot Lighting	2.4	2.0	20.5	20.2	109,625.0	132,533.5	2,250.0	80,296.5	15	15	15	15	92.50%	3,652,850	367,785	1,371,507	9,647,735	0	0	0	0	
Process	23.9	26.0	20.5	20.2	68,414.0	131,095.5	117,825.5	117,825.5	15	15	15	15	92.50%	22,667,049	54,976,015	32,973,324	35,023,382	0	0	0	0	
<b>Retrofit Track</b>																						
Cooling	28.3	5.0	8.5	18.6	74,036.6	74,760.0	93,521.4	64,463.9	13	13	13	13	94.00%	24,774,236	4,450,179	9,844,960	15,834,104	0	0	0	0	
Heating	10.1	1.0	5.3	8.5	52,795.8	58,350.0	52,904.1	40,632.3	13	13	13	13	94.00%	6,712,134	713,037	3,426,090	4,492,313	0	0	0	0	
Lighting	74.1	46.0	93.5	6.9	58,441.6	115,850.9	69,199.6	51,898.3	13	13	13	13	94.00%	52,766,721	65,122,103	78,892,908	4,610,601	0	0	0	0	
Lighting-LED	23.6	37.0	0.0	74.1	84,061.8	45,474.1	49,884.3	49,884.3	13	13	13	13	94.00%	24,255,070	20,560,651	0	47,969,880	0	0	0	0	
Lighting-OS Only	18.6	14.0	0.0	14.9	30,130.2	5,746.3	5,131.4	5,131.4	9	9	9	9	94.00%	4,945,904	680,590	0	694,573	0	0	0	0	
Other	0.0	2.0	15.3	3.6	10,631.7	290,486.8	30,062.7	30,062.7	14	14	14	14	94.00%	0	7,469,595	5,746,144	1,448,285	0	0	0	0	
Parking Lot Lights	16.9	24.0	36.2	40.7	47,681.1	58,823.4	21,950.7	36,589.0	13	13	13	13	94.00%	9,867,577	17,208,204	9,702,149	19,313,475	0	0	0	0	
Process	50.7	26.0	67.3	34.7	47,153.0	332,905.3	91,880.3	123,052.5	12	12	12	12	94.00%	26,320,722	101,117,241	71,833,817	52,640,455	0	0	0	0	
<b>Fuel Neutral Heating, Hot Water and Controls</b>																						
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)	1.5	3.0			104.9	104.9			12	12			100.00%	1,889	3,778	0	0	0	0	0	0	
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)	1.5	3.0			751.0	751.0			12	12			100.00%	13,517	27,036	0	0	88	0	0	0	
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)	0.4	3.0			34.4	34.4			12	12			100.00%	155	1,238	0	0	0	0	0	0	
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)	0.4	3.0			142.2	142.2			12	12			100.00%	640	5,120	0	0	0	0	0	0	
Indirect Water Heater (attached to Oil Energy Star FHW boiler)		3.0			0.0	0.0			14	14			100.00%	0	0	0	0	0	869	0	0	
Boilers (301 to 499 MBH), Condensing	0.5	10.0			0.0	0.0			25	25			100.00%	0	0	0	0	496	10,575	0	0	
Boilers (500 to 999 MBH)	0.9	6.0			0.0	0.0			25	25			100.00%	0	0	0	0	1,807	11,565	0	0	
Boilers (1000 to 1700 MBH), Condensing	0.1				0.0	0.0			25	25			100.00%	0	0	0	0	334	0	0	0	
Boilers (1000 to 1700 MBH)	5.6				0.0	0.0			25	25			100.00%	0	0	0	0	142.6	142.6	0	0	
Boilers (1701 to 2000 MBH)	9.2				0.0	0.0			25	25			100.00%	0	0	0	0	249.0	249.0	0	0	
7-Day Programmable Thermostats		39.0			0.0	14.4			15	15			100.00%	0	8,424	0	0	7.7	7.7	0	0	
Boiler Reset Controls, After Market, 1 shift operation	0.6	3.0			0.0	0.0			15	15			100.00%	0	0	0	0	19.3	19.3	0	0	
Steam Traps (greater than 10 steam traps requires pre-approval)		101.0			0.0	0.0			3	3			100.00%	0	0	0	0	25.7	25.7	0	0	
Steam Traps (greater than 10 steam traps requires pre-approval)		438.0			0.0	0.0			3	3			100.00%	0	0	0	0	25.7	25.7	0	0	
WiFi Enabled 7-Day Programmable Thermostats: WiFi Enabled (Elec)		2.0			14.4	14.4			15	15			100.00%	0	432	0	0	0	0	0	0	
WiFi Enabled 7-Day Programmable Thermostats: WiFi Enabled (OIL)		7.0			14.4	14.4			15	15			100.00%	0	1,512	0	0	0	0	6.6	0	

**Planning Assumptions**

- Annual Savings were updated based on recent trends and reflect expected project sizes.
- The New Construction Track projects are expected to be generally smaller projects - both costs and energy savings. This reflects in a larger number of jobs to be completed in 2016.
- Separated out Lighting (LED) and Lighting Occupancy Sensor projects for 2016 due to the higher quantity expected.
- Fossil Heating System incentives eliminated as a result of SB 268 (no Energy Efficiency Funds (REGG)).
- "Heating" projects are mostly efficient snowmaking equipment (we use heating because we don't have a snowmaking load shape yet), and we are expecting smaller projects in 2016 than we've seen in 2014.
- Updated In-Service or Realization Rate for 2016 to reflect that found in the DNV-GL Impact Evaluation, final report in 2015.
- See Table 3, page 4 (avg New Construction + Retrofit): <http://www.puc.state.nh.us/Electric/Monitoring%20and%20Evaluation%20Reports/NH%20CI%20FINAL%20Report%20-%20June%202015.pdf>

Measure	Quantity			Annual Savings per Project (kWh)			Measure Life			In-Service or Installation Rate			Total Lifetime Savings (kWh)			Annual Savings Per Unit (MMBTU)			Total Lifetime MMBTU Savings					
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016			
	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update			
Lighting - New Equipment & Construction	79.6	66.0	39.3	13,847.0	19,606.0	18,194.1	14	15	15	100.00%	100.00%	100.00%	15,946,149	18,879,402	17,025,896	0	0	0	0	0	0	0		
Lighting - Retrofit	116.9	190.0	138.4	19,948.0	22,850.0	23,569.9	13	13	13	100.00%	100.00%	100.00%	30,508,520	56,482,915	42,233,041	0	0	0	0	0	0	0	0	
Lighting - Direct Install	177.6	172.0	187.6	14,777.0	15,045.0	16,169.2	12	13	13	100.00%	100.00%	100.00%	32,614,190	32,967,808	38,258,064	0	0	0	0	0	0	0	0	0
Lighting - Catalog Sales	460.5	8,591.0	120.4	46.3	46.3	1,618.1	6	6	13	100.00%	100.00%	100.00%	127,929	2,386,838	2,533,108	0	0	0	0	0	0	0	0	0
SmartStrips	55.7	2.0	57.8	75.0	75.0	75.0	5	5	5	100.00%	100.00%	100.00%	20,882	750	21,689	0	0	0	0	0	0	0	0	0
<b>Fuel Neutral Heating, Hot Water and Controls</b>																								
Central Air Conditioner (Energy Star >= 14.5 SEER), 3 ton (Elec)		2.0		110.3	110.3		14	14		100.00%	100.00%	100.00%	0	3,088	0	0	0	0	0	0	0	0	0	0
Central Air Conditioner (Energy Star >= 14.5 SEER), 6 ton		2.0		220.6	220.6		14	14		100.00%	100.00%	100.00%	0	6,176	0	0	0	0	0	0	0	0	0	0
--				0.0						100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)	68.9	38.0		104.9	104.9		12	12		100.00%	100.00%	100.00%	86,763	47,852	0	0	0	0	0	0	0	0	0	0
Energy Star Mini Split Heat Pump (SEER>=19, HSPF>=10)	68.9	38.0		751.0	751.0		12	12		100.00%	100.00%	100.00%	620,922	342,458	0	0	0	0	0	0	0	0	0	0
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)	34.4	16.0		34.4	34.4		12	12		100.00%	100.00%	100.00%	14,211	6,600	0	0	0	0	0	0	0	0	0	0
Energy Star Mini Split Heat Pump (SEER>=14.5, HSPF>=8.2)	34.4	16.0		142.2	142.2		12	12		100.00%	100.00%	100.00%	58,790	27,305	0	0	0	0	0	0	0	0	0	0
DHW: Heat Pump Water Heater 50 Gallon Electric, EF>=2.3 (ES=EF>=2.0)	40.0			0.0	1,775.0		12	10		100.00%	100.00%	100.00%	0	710,000	0	0	0	0	0	0	0	0	0	0
DHW: Heat Pump Water Heater 80 Gallon Electric, EF>=2.3 (ES=EF>=2.0)	2.0			0.0	2,672.0		10	10		100.00%	100.00%	100.00%	0	53,440	0	0	0	0	0	0	0	0	0	0
Indirect Water Heater:>40 Gal (attached to LP Energy Star FHW boiler)	4.6	3.0		0.0	0.0		14	14		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Indirect Water Heater (attached to Oil Energy Star FHW boiler)	23.0	4.0		0.0	0.0		14	14		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
On Demand Tankless Water Heater, EF >=0.82 EF w/Electronic Ignition	11.5	1.0		0.0	0.0		20	20		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Combo condensing boiler w/ On-Demand DWH 90% (LP)	6.9	15.0		0.0	168.0		18	18		100.00%	100.00%	100.00%	0	45,360	0	0	0	0	0	0	0	0	0	0
Furnace (forced hot air) >= 95% AFUE w/ECM (up to 150 MBH) (LP)	32.2	4.0		0.0	168.0		18	18		100.00%	100.00%	100.00%	0	3,024	0	0	0	0	0	0	0	0	0	0
Furnace (forced hot air) >= 85% AFUE w/ECM (up to 150 MBH) (Oil)		1.0		0.0	168.0		18	18		100.00%	100.00%	100.00%	0	3,024	0	0	0	0	0	0	0	0	0	0
Furnace (forced hot air) >= 97% AFUE w/ECM (up to 150 MBH) (LP)		1.0		0.0	168.0		18	18		100.00%	100.00%	100.00%	0	3,024	0	0	0	0	0	0	0	0	0	0
Boilers (up to 300 MBH), Condensing (AFUE>=90%, (LP)		13.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (up to 300 MBH): AFUE>=85% (Oil)		4.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (up to 300 MBH), AFUE>=95% (LP) Condensing		6.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (up to 300 MBH): AFUE>=87% (Oil)		4.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (301 to 499 MBH), AFUE>=90 (LP) Condensing	11.5	10.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (301 to 499 MBH)	23.0			0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boilers (500 to 999 MBH), AFUE>=90% Condensing (LP)	4.6	4.0		0.0	0.0		25	25		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
7-Day Programmable Thermostats: & or 5-2 Day Programmable (LP)	9.2	1.0		0.0	14.4		15	15		100.00%	100.00%	100.00%	0	2,592	0	0	0	0	0	0	0	0	0	0
Boiler Reset Controls, After Market, 1 shift operation (LP)		7.0		0.0	0.0		15	15		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Boiler Reset Controls, After Market, 1 shift operation (Oil)		1.0		0.0	0.0		15	15		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
Unit Heaters (up to 300 MBH), Condensing (AFUE>=90%, LP)		3.0		0.0	0.0		18	18		100.00%	100.00%	100.00%	0	0	0	0	0	0	0	0	0	0	0	0
--																								
WiFi Enabled 7-Day Programmable Thermostats: WiFi Enabled (elec)		34.0		14.4	14.4		15	15		100.00%	100.00%	100.00%	0	7,344	0	0	0	0	0	0	0	0	0	0
WiFi Enabled 7-Day Programmable Thermostats: WiFi Enabled (LP)		1.0		14.4	14.4		15	15		100.00%	100.00%	100.00%	0	216	0	0	0	0	0	0	0	0	0	0
WiFi Enabled 7-Day Programmable Thermostats: WiFi Enabled (Oil)		6.0		14.4	14.4		15	15		100.00%	100.00%	100.00%	0	1,296	0	0	0	0	0	0	0	0	0	0

**Planning Assumptions**

- Annual kWh Savings were on track so no changes were made to original 2016 plan. Quantities changes to reflect 2015 trends between New, Retrofit and Direct install and revised budget.
- Annual kWh Savings for "Lighting - Catalog Sales" (or online sales) were updated to reflect projects (purchase of more than one bulb) rather than on a per bulb basis, and the measure life updated to reflect the purchase of longer life LEDs.



Eversource Company Specific Programs  
 A. C&I RFP Program  
 B. Home Energy Reports

Measure	Quantity			Annual Savings per Unit/Project (kWh)			Measure Life			In-Service or Realization Rate			Total Lifetime Savings (kWh)			
	2014		2016	2014		2016	2014		2016	2014		2016	2014		2016	
	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	Plan	Actual	Update	
A. C&I RFP: Lighting	1.3	1.0	2.0	13.8	13.8	168,249.3	13	13	13	100.00%	100.00%	6,432,278	1,541,410	6,451,384	4,297,441	
A. C&I RFP: Process	5.3	8.0	3.4	3.5	293,068.7	244,267.9	12	15	13	100.00%	100.00%	12,904,784	40,668,116	12,639,655	10,777,143	
A. C&I RFP: Cooling	3.6	0.0	3.1	9.3	197,000.0	119,692.5	11	11	13	100.00%	100.00%	7,487,151	0	14,528,177	7,671,843	
A. C&I RFP: Lighting (Occ Sensors Only)	4.1	0.0	2.7	10.4	30,767.0	31,799.2	10	10	9	100.00%	100.00%	1,262,129	0	2,978,515	1,223,827	
A. C&I RFP: Parking Lot Lights	0.0	2.0	1.7		42,923.0	37,675.0		13	13	100.00%	100.00%	0	1,115,998	0	812,208	
B. Home Energy Reports	25,000.0	25,000.0	25,000.0	25,000.0	75.8	61.2	1	1	3	100.00%	100.00%	1,896,000	1,427,000	4,589,501	5,267,042	

**Planning Assumptions**

**A. C&I RFP Program**

1. PSNH estimated 2016 projects based on trends seen in 2014 and 2015, which resulted in larger projects, but less of them (lighting specifically).

**B. Home Energy Reports Program**

1. Annual kWh Savings were developed with contractor based on "high use" participants currently in the 2015 program.
2. Average annual kWh savings/participant for 2016 were revised from 90.7 kWh to 70.2 kWh based on an updated forecast.





Unitil ENERGY STAR® Homes Program

Measure	Quantity				Annual Savings per Unit kWh				Measure Life				In-Service / Realization Rate				Total Lifetime Savings kWh				Annual Saving per Unit MMBtu				Lifetime Savings MMBtu								
	2014 Actual		2015 Plan		2016 Plan		2014 Actual		2015 Plan		2016 Plan		2014 Actual		2015 Plan		2016 Plan		2014 Actual		2015 Plan		2016 Plan		2014 Actual		2015 Plan		2016 Plan				
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	
E-STAR Homes - CFLs	904	96	415	382	23	23		5	5	20	25	25	20	20	100%	100%	103,945	11,040	204,022	187,806	11,040	11,040	187,806	153,556									
E-STAR Homes - LEDs (incl. fixtures)	151	86	7	6	28	28		20	20	20	25	25	20	20	100%	100%	89,370	48,160	2,508	2,309	48,160	48,160	2,309	153,556									
E-STAR Homes - Dishwashers	42	16	14	13	26	33		10	10	11	33	33	11	11	100%	100%	10,834	5,280	17,742	16,332	5,280	5,280	16,332	16,128									
E-STAR Homes - Refrigerators	18	16	14	13	114	114		12	12	12	168	107	12	12	100%	100%	24,049	21,888	39,623	36,473	21,888	21,888	36,473	33,389									
E-STAR Homes - Clotheswashers	18	4	14	13	37	261		11	11	11	261	261	11	11	100%	100%	7,155	11,484	99,623	96,473	11,484	11,484	96,473	22,940									
E-STAR Homes - Thermostats	38	5	7	6	44,403	10,105		15	15	12	536	536	15	15	100%	100%	3,713,313	1,263,125	45,060	38,623	1,263,125	1,263,125	38,623	511,262									
E-STAR Homes - Heating (GSHP and ASHP)	3	5	7	6	3	3		25	25	12	128	600	12	12	100%	100%	84,075	28,800	50,400	43,200	28,800	28,800	43,200	6,517									
E-STAR Homes - Cooling (electric)	19	9	7	6	177	128		25	25	25	128	600	25	25	100%	100%	84,075	28,800	50,400	43,200	28,800	28,800	43,200	6,517									
E-STAR Homes Heating (non-electric)	38	12	28	25	247	913		25	25	25	791	791	25	25	100%	100%	234,270	273,900	546,499	503,064	273,900	273,900	503,064	514,150									
E-STAR Homes Cooling (non-electric)	38	13	28	25	58	58		15	15	25	58	58	15	15	100%	100%	39,934	36,760	62,902	57,903	36,760	36,760	57,903	37,570									
E-STAR Homes Water Heating	38	13	28	25	3,234	2,621		15	15	15	152	152	15	15	100%	100%	194,040	117,945	62,902	57,903	117,945	117,945	57,903	59,179									
E-STAR Homes - Water Heating (Elec, GS/ASHP)	4	3						15	15	15			15	15	100%	100%																	

Notes in an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity				Annual Savings per Unit kWh				Measure Life				In-Service / Realization Rate				Total Lifetime Savings kWh				Annual Saving per Unit MMBtu				Lifetime Savings MMBtu						
	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update			
	Air Sealing, Oil	33	48	45	81	0	0	0	0	15	15	15	15	0	0	0	0	69,409	214,920	0	0	5.2	12.0	10	10	2,577	8,669	7,045	12,568		
Air Sealing, Electric	6	10	6	5	1,433	746	746	746	15	15	15	15	0	0	0	0	0	0	0	0	12.5	7.9	9	9	3,119	1,064	847	2,125			
Air Sealing, Propane	17	9	6	15	0	0	0	0	15	15	15	15	0	0	0	0	0	0	0	0	23.5	21.9	23	23	19,564	26,220	20,636	46,016			
Insulation, Oil	33	48	45	81	0	0	0	0	25	25	20	25	1,693	1,693	0	0	7,493	10,800	0	0	23.5	21.9	23	23	19,564	26,220	20,636	46,016			
Insulation, Electric	6	10	6	5	1,741	1,693	1,693	1,693	25	25	20	25	0	0	0	0	227,453	435,180	204,525	189,054	38.5	19.8	14	14	16,009	4,460	1,716	5,382			
Insulation, Propane	17	9	6	15	86	0	0	0	25	25	20	25	0	0	0	0	35,798	19,350	0	0	38.5	19.8	14	14	16,009	4,460	1,716	5,382			
Thermostats, Oil	12	15	15	16	0	14	14	14	15	15	15	15	0	0	0	0	0	0	0	0	38.5	19.8	14	14	16,009	4,460	1,716	5,382			
Thermostats, Propane	1	2	2	3	0	14	14	14	15	15	15	15	0	0	0	0	0	0	0	0	38.5	19.8	14	14	16,009	4,460	1,716	5,382			
Thermostats Electric	1	3	3	3	315	1,113	1,113	330	15	15	15	15	0	0	0	0	4,725	50,103	432	654	1.3	1.3	3	3	20	20	80	122			
Refrigerators	2	3	3	3	1,076	714	714	330	15	15	15	15	0	0	0	0	4,725	50,103	432	654	1.3	1.3	3	3	20	20	80	122			
LED Fixtures	494	362	335	505	28	37	37	37	20	20	20	20	30,128	14,994	14,994	5,574	30,128	14,994	14,994	5,574	0.1	0.1	1	1	33	61	116	228			
Aerators	14	60	56	40	28	37	37	37	20	20	20	20	276,640	247,269	247,269	372,816	276,640	247,269	247,269	372,816	0.3	0.3	1	1	61	61	116	444			
showersheds	47	14	13	25	22	37	37	37	7	7	7	7	7,840	44,584	41,211	29,825	7,840	44,584	41,211	29,825	0.1	0.1	1	1	33	61	116	228			
DHW Pipe Wrap	31	31	17	6	17	237	237	64	7	7	7	7	3,689	3,689	3,689	41,475	3,689	3,689	41,475	0.3	0.3	1	1	61	61	116	444				
Boiler - Oil/AFUE >=90%																															
Boiler - Propane AFUE >=90%																															
Furnace w/ECM - Oil AFUE >=85%																															
Furnace w/ECM - Propane AFUE >=85%																															
Room AC Ancillary Savings	24	24	22	11	50	50	50	168	9	9	9	9	10,870	10,870	10,870	10,048	10,742	10,870	10,048	10,870	6	6	6	6	106	106	106	106			
Central AC Ancillary Savings	13	12	11	11	77	77	77	43	15	15	15	15	13,950	13,950	13,950	12,895	14,749	13,950	12,895	13,950	0	0	0	0	0	0	0	0			
CFLs	266	124	23	43	23	43	43	43	7	7	8	8	19,964	19,964	19,964	19,964	42,895	19,964	19,964	19,964	0	0	0	0	0	0	0	0			

Note: in an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Unitil ENERGY STAR® Products Program - Lighting

Measure	Quantity				Annual Savings per Unit kWh				Measure Life				In-Service / Realization Rate		Total Lifetime Savings kWh			
	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014	2015	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update
	Catalog/Online: CFLs		1,232		0		23		24.61		5			62.3%	62.3%		88,267	
Catalog/Online: CFL Multipacks		3,526		17		28		24.61		20			96.4%	96.4%		0		3,226
Catalog/Online: LED Fixtures (interior and exterior)		137		871		62		24.61		10			95.0%	95.0%		1,853,724		407,243
Catalog/Online: LED Bulbs		15,854		2,310		23		28.99		5			95.0%	95.0%		83,774		0
Retail/Coupon: LED Multipacks	26,518		12,950		23	28.99	28.99	28.99	28.99	5	5	5	62.3%	62.3%	1,899,882	1,135,860	1,169,356	208,590
Retail/Coupon: CFLs				0				28.99					62.3%	62.3%	0	0	0	0
Retail/Coupon: LED Bulbs	5,821	11,441	15,540	10,138	28	24.61	24.61	24.61	24.61	20	20	20	95.0%	95.0%	3,060,274	6,014,877	7,265,783	4,740,100
Retail/Coupon: LED Fixtures	194	0	1,295	1,011	28	24.61	24.61	24.61	24.61	20	20	8	95.0%	96.4%	101,992	614,405	614,405	191,867
Retail/Coupon: CFL Fixtures (interior and exterior)	265				62					8			93.5%	96.4%	122,896			
Markdown CFL Bulbs (negotiated)			1,942	1,942		28.99	28.99	28.99	28.99		5	5	62.3%	62.3%			175,403	739,003
Markdown CFL Multipacks (negotiated)				8,184				24.61	24.61		5	5	62.3%	62.3%				1,062,759
Markdown LED multi-packs (negotiated)			647	30,349		24.61	24.61	24.61	24.61		20	20	95.0%	95.0%			302,741	14,189,909
Markdown LEDs (negotiated)						24.61	24.61	24.61	24.61		20	20	95.0%	95.0%				0
Markdown LED fixtures (negotiated)						24.61	24.61	24.61	24.61		20	20	95.0%	95.0%				0

Measure	Quantity				Annual Savings per Unit kWh				Measure Life				In-Service/Realization Rate				Total Lifetime Savings kWh				Annual Saving per Unit MMBtu				Lifetime Savings MMBtu			
	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan Update
Energy Star Clothes Washer	884	967	764	430	166	166	182	182	11	11	11	11	11	100%	100%	1,609,852	1,765,742	1,530,117	1,530,117	860,860	1	1	5,638	5,152				
Energy Star Room A/C	707	477	287	258	16	16	16	16	9	9	9	9	100%	100%	103,081	68,688	41,675	41,675	37,515									
Energy Star Central A/C		12	3	4	110	110	109	109	14	14	14	14	100%	100%	18,529	4,652	4,632	4,632	6,103									
Energy Star Room A/C Turn-in/Recycle			0	5	835	835	835	755	8	8	8	8	100%	100%	236,140	641,280	638,186	638,186	311,664									
2nd Refrigerator Pickup (not replaced)		662	817	631	430	114	107	107	40	12	12	12	100%	100%	932,642	1,117,656	809,617	809,617	204,491									
Energy Star Refrigerator		8	24	57	663	663	663	663	8	8	8	8	100%	100%	40,178	127,296	304,036	304,036	53,040									
2nd Freezer Pickup																												
Ductless Mini Split (Cooling only)				8																								
Mini Split Heat Pump HSPF>=10, SEER >=18, EER>=12.5 cooling				25																								
Mini Split Heat Pump HSPF>=10, SEER >=18, EER>=12.5 heating				25																								
Mini Split Heat Pump HSPF>=8.5, SEER >=15, EER>=12.5 cooling			35	35	600	536	600	44																				
Mini Split Heat Pump HSPF>=8.5, SEER >=15, EER>=12.5 heating			35	35	536	600	44																					
DHW: Heat Pump Water Heater 50 Gallon Electric, EF>=2.3 (ES-EF>=2.0)	5	10	10	7	1,775	1,775	1,775	1,775	10	10	10	10	100%	100%	89,638	177,500	177,500	177,500	124,250									
Energy Star Water Heater 80 Gallon Electric, EF>=2.3 (ES-EF>=2.0)	3	0	1	1	2,672	2,672	2,672	118	10	10	10	10	100%	100%	67,469	0	26,720	26,720	7,082									
Energy Star WiFi Thermostat for Heat Pumps	18	39	29	29	79	79	110	118	5	5	5	5	100%	100%	6,982	15,405	14,398	14,398	8,499									
Smartstrip Power Strip	34	34	0	0	390	390	390	390	9	9	9	9	100%	100%	88,651	119,340	0	0	0									
Mini Split HP SEER 14.5, EER 12 HSPF 8.2 (Heating)	3	18	142	142	142	142	142	390	12	12	12	12	100%	100%	4,309	30,672	0	0	0									
Mini Split HP SEER 14.5, EER 12 HSPF 8.2 (Cooling)	3	18	34	34	751	751	751	751	12	12	12	12	100%	100%	1,042	7,344	0	0	0									
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Heating)	8	50	105	105	105	105	105	105	12	12	12	12	100%	100%	68,267	450,600	0	0	0									
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Cooling)	8	50	105	105	105	105	105	105	12	12	12	12	100%	100%	9,539	69,000	0	0	0									
DHW: LP, Tankless Water Heaters (EF>= 0.82)	3	6	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	490									
DHW: LP, Tankless Water Heaters (EF>= 0.94) (added from Report)	18	6	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	2,828									
DHW: LP, Indirect Water Heater (attached to LP Energy Star FHW boiler)	18	19	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	2,828									
DHW: LP, Stand Alone Storage Water Heater (EF>=0.67)	5	0	0	0	0	0	0	0	13	13	13	13	100%	100%	0	0	0	0	243									
Boil: Oil, Combo condensing boiler w/ On-Demand DHW 90%	10	4	4	4	168	168	168	168	18	18	18	18	100%	100%	30,543	12,096	0	0	818									
Furn: LP, Furnace, FHA, AFUE >=95% w/ECM	10	4	4	4	168	168	168	168	18	18	18	18	100%	100%	30,543	12,096	0	0	1,009									
Furn: LP, Furnace, FHA, AFUE >=96% w/ECM	18	7	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	3,676									
Boiler, LP, FHW, AFUE >=90%	18	7	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	1,456									
Boiler, LP, FHW, AFUE >=96%	3	8	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	662									
Boiler, Oil, FHW, AFUE >=85%	18	25	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	2,096									
Boiler, Oil, FHW, AFUE >=90%	10	1	0	0	0	0	0	0	20	20	20	20	100%	100%	0	0	0	0	1,901									
TSTAT: Oil, 7-Day Programmable Thermostats	10	0	0	0	14	14	14	14	15	15	15	15	100%	100%	2,181	0	0	0	2,172									
TSTAT: Oil, 7-Day Programmable Thermostats	10	15	14	14	14	14	14	14	15	15	15	15	100%	100%	2,181	3,240	0	0	485									
TSTAT: WiFi Enabled 7-Day Programmable Thermostats	3	0	0	0	0	0	0	0	15	15	15	15	100%	100%	0	0	0	0	720									
BRC: LP, Boiler Reset Controls	3	0	0	0	0	0	0	0	15	15	15	15	100%	100%	0	0	0	0	485									
BRC: Oil, Boiler Reset Controls	3	2	0	0	0	0	0	0	15	15	15	15	100%	100%	0	0	0	0	170									
Steam Boiler (1 oil and 1 LP)	3	2	0	0	0	0	0	0	15	15	15	15	100%	100%	0	0	0	0	170									

Unit#1 Home Energy Assistance Program

Measure	Quantity				Annual Savings per Unit kWh				Measure Life				In-Service / Realization Rate		Total Lifetime Savings kWh						Annual Saving per Unit MMBtu						Lifetime Savings MMBtu					
	2014 Actual		2015 Plan		2016 Plan		2016 Plan Update		2014 Actual		2015 Plan		2016 Plan		2016 Plan Update		2014 Actual		2015 Plan		2016 Plan		2016 Plan Update		2014 Actual		2015 Plan		2016 Plan		2016 Plan Update	
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update		
CFLs	583	163				23	23			7	7				85,603	23,934																
LEDs		190	231	209	384	37	37	37	37	20	20	20	20	20	127,635	127,635	155,768	141,003	283,488	283,488												
Refrigerator - SF	67	28	10	9	2	821	939	939	762	12	12	12	12	12	597,679	263,225	99,063	89,673	18,288	18,288												
Refrigerator - MF					3	645									23,220				23,220													
Weatherization - SF	33	19	39	35	22	63	480	1,806	480	20	20	20	20	20	38,556	166,349	1,374,954	1,244,620	192,845	192,845	57	73			31					12,294		
Weatherization - MF	17	28			26	63	550		550	20	20	20	20	20	19,862	281,598			270,072		72	66			25						12,153	
DHW/MF Non-Elec																																
DHW MF Elec	17	10	27	24	60	120	240	49	49	7	7	7	7	7	13,154	15,322	9,036	8,179	20,580	20,580					1					210		
DHW - Aerators and showerheads					3				500										10,500						1						31	
DHW Pipe Wrap																																
DHW Elec	1	6				140	86			7	7				903	3,294																
DHW Non-Elec	10	0				0	297			7	7																					
DHW Gas																																
DHW Oil	10					0				7	7																					
Thermostats		12	10	9	5		41	126	126	15	15	15	15	15																		
Furnace Replacement	7	15	6	5	8	168	168	90	248	18	18	18	18	18	18,671	45,360	9,145	8,278	35,661	35,661	18	5	23	23	12	2,045	1,133	2,320	2,100	1,673		
Boiler Replacement	7	1	3	3	1	168	0	132	132	20	20	15	15	20	21,450		5,797	5,797	2,640	2,640	18	0	17	17	18	2,349	0	729	729	368		
AC Ancillary Savings																																
Heating Ancillary Savings	51					39				9					16,166				32,640	32,640												
Heat System Tune Up		2				0	0			5	5								52,800	52,800					2							

Measure	Quantity			Annual Savings per Unit (kWh)				Measure Life				Realization Rate				Total Lifetime Savings (kWh)				Annual Savings per Unit (MMBTU)				Total Lifetime MMBTU Savings								
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Plan Update		
Lighting - Fluorescents - Retro	15	2	5	4	2	30,435	5,557	13,093	13,093	13,093	13	13	13	13	13	5,740,979	144,482	794,668	715,049	340,409												
Lighting LEDs - Retro		3	10	9	3	110	11,662	24,732	24,732	24,732	13	13	13	13	13	1,868	454,818	3,098,304	2,787,881	964,548												
Central AC (Energy Star=14.5 SEER), 3 ton	1	1				142	37,690				14	12	13	13	13	2,064	565,350															
Mini Split HP SEER 14.5, EER 12 HSPF 8.2 (Heating)	1					34					12	12				499																
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Cooling)	2					751					12	12				21,797					5											
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Cooling)	2					105					12	12				3,046																
Mini Split Heat Pump Cooling SEER 20			6	6	4			600	600	66	18	18	18	18	18		68,689	61,807	4,752	4,752												
Mini Split Heat Pump (+ Oil) SEER 20			3	3	4			536	536	409	18	18	18	18	18		30,706	27,629	29,464	29,464												
Mini Split Heat Pump (+ LP) SEER 20			3	3				536	536		18	18	18	18	18		30,706	27,629			42											
Boiler Replacement						0					25																					
Furnace Replacement (95% AFUE) w/ECM										168																						
Furnace Replacement (97% AFUE) w/ECM										168																						
Condensing Boiler <=300 MBH 90% AFUE			3	3	3			0	0	0	25	25	25	25	25		0	0	0	0					31	31		2295	2295	2295	2295	
Condensing Boiler <=301-499 MBH 90% AFUE										0																						
Condensing Boiler <=500-999 MBH 90% AFUE										0																						
Condensing Boiler <=1000-1700 MBH 90% AFUE										0																						
Condensing Boiler >1700 MBH 90% AFUE	6					0		188	188	188	15																					
Indirect Water Heater			2	2	4						18	18	18	18	18		6,768	6,768	13,536	13,536					35	35		1253	1253	1253	2506	
Weatherization			1	1	1					77,000																						
VFDs			0	0	0					0																						
Custom			3	3	4					20,000																						
Energy Star WiFi Thermostat for Mini-Split only		2					53,269				15	15	15	15	15																	
HPWH 50 Gallon Electric, EF>=2.3 (ES=EF>=2.0)			2	2	0			110	110	118	10	10	10	10	10		4,937	0	0	0												
HPWH 80 Gallon Electric, EF>=2.3 (ES=EF>=2.0)			0	0	0			1,775	1,775	1,775	10	10	10	10	10																	
			0	0	0					2672																						

Note: in an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity			Annual Savings per Unit (kWh)			Measure Life			Realization Rate			Total Lifetime Savings (kWh)						Annual Savings per Unit (MMBTU)			Total Lifetime MMBTU Savings							
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	
<b>NEW EQUIPMENT TRACK</b>																													
Lighting - Fluorescents - New	2																												
Lighting LEDs - New	1		1	1																									
HVAC	2		27,683	30,224																									
Non-Lighting (Rolled Up)	2		75,529																										
Compressed Air	2		211,443																										
Motors	2		303,246																										
VFDs	2		85,644																										
Process	3		117,966																										
<b>RETROFIT TRACK</b>																													
Non Lighting (Rolled Up Average)	3		68,952																										
Lighting - Fluorescents - Retro	4		143,306																										
Freezer/Cooler LEDs	2		83,273																										
Lighting LEDs - Retro	2		86,473																										
Air Compressors - Retro	5		48,606																										
VFD - Retro																													
CFL Bulbs																													
Motors																													
Occupancy Sensors																													
Custom - Process	1		346,458																										
Custom - Other																													

Notes in an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	2014				2015				2016				In-Service / Realization Rate				2016 Plan Update	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	2014	2015	2014 Plan	2015 Plan	2016 Plan	
Lighting - Other	54	994		15,533		23		13	8									
Lighting - LEDs - New			12				15,000											
Lighting - LEDs - Retro	1	33	18	26,730	19,662	22,603	31,000	13	13	13	13	13	96.9%	100%	10,509,393	182,896	3,240,000	
Lighting - Fluorescents - New			3				20,000											
Lighting - Fluorescents - Retro			15	12,449	14,760	13,994	7,500	13	13	13	13	13	96.9%	100%	474,101	9,396,090	7,294,000	
Non-Lighting	18	40	26															
Air Compressors			4				7,400											
VFD			3				40,000											
Energy Management System			0				10,000											
Air Conditioning	1	3	2	110	11,624	10,738	10,000	14	15	15	15	15	96.9%	100%	1,140	446,760	300,000	
ECM			3				34,000											
Custom			6				4,000											
<b>Fuel Neutral Heating, Hot Water and Controls</b>			6				4,276											
Mini Split HP SEER 14.5, EER 12 HSPF 8.2 (Heating)	1			142				12										
Mini Split HP SEER 14.5, EER 12 HSPF 8.2 (Cooling)	1			34				12										
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Heating)		2					750											
Mini Split HP SEER 19, EER 12.83 HSPF 10 (Cooling)		2					100											
On Demand Tankless Water Heater, EF >= 0.82 EF																		
On Demand Tankless Water Heater >= .95 EF																		

Notes in an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.



Unitil Gas Home Performance with ENERGY STAR®

Measure	Quantity				Annual Savings per Unit (MMBTU)				Measure Life				Installation or Realization Rate			Total Annual MMBTU Savings						Total Lifetime MMBTU Savings								
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan		
	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update		
HPwES Air Sealing	19	27	25	24	11.60	16.70	12.27	12.27	8	15	15	15	15	100%	100%	100%	220	451	306	297	314	314	314	314	3,306	6,764	4,588	4,448	4,703	
HPwES Insulation	19	27	25	24	27.87	24.76	25.50	25.50	32	25	25	25	25	100%	100%	100%	530	669	636	616	1,197	1,197	1,197	1,197	13,238	16,713	15,893	15,405	29,925	
HPwES Thermostats	10	1	5	5	5.75	1.68	3.20	3.20	3	15	15	15	15	100%	100%	100%	58	2	16	16	6	6	6	6	863	25	239	244	96	
HPwES showerheads	4	9	12	13	7.01	0.63	1.20	1.20	0.2	7	7	7	7	100%	100%	100%	28	6	15	15	5	5	5	5	196	40	105	107	32	
HPwES DHW ISMs (aerators)																														

In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity						Annual Savings per Unit (MMBTU)						Measure Life						Installation or Realization Rate						Total Annual MMBTU Savings						Total Lifetime MMBTU Savings						
	2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		
	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Update			
Boiler Reset Controls	8	1	4	4	4	4	5	5	5	5	5	5	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
Boiler (forced hot water) >= 95% AFUE	72	68	41	52	4	4	13	13	12	12	14	14	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Boiler (forced hot water) 90% AFUE	20	15	61	56	45	45	10	10	14	14	11	11	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Furnace (forced hot air) >=95% AFUE w/ECM	52	30	33	22	36	36	5	5	16	16	16	16	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Furnace (forced hot air) >= 97% AFUE w/ECM			29	34	27	27			17	17	17	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Combo water heater/condensing boiler >=90%		10	33	22	27	27			24	24	24	24	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Combo water heater/condensing boiler >=95%		32	8	9	9	9			24	24	24	24	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
On-Demand Tankless Water Heaters (EF 0.94)		60	45	37	39	61	10	10	11	11	11	11	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Indirect Water Heater (attached to EStar FHW boiler)	48	40	41	43	45	45	8	8	8	8	8	8	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Programmable Thermostats (Energy Star)	100	202	57	43	150	150	3	3	3	3	3	3	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Wi-Fi Thermostats (controls gas heat only)	44	39	41	34	35	35	7	7	7	7	7	7	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
Wi-Fi Thermostats (controls elec cooling & gas heat)		2	0	4	4	14			7	7	7	7	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
Heat Recovery Ventilator		2	0	2	2	2	4	4	4	4	4	4	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Energy Star Storage Water Heater (0.67 EF)	12	116	2	4	4	4	4	4	4	4	4	4	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
On-Demand Tankless Water Heaters (EF 0.82)	48	23	61	65	65	65	10	10	10	10	10	10	20	20	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
Furnace (forced hot air) >= 97% AFUE (6%)	4	11	6	6	6	6	6	6	6	6	6	6	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
Integrated water heater/condensing boiler	24	24	18	18	18	18	18	18	18	18	18	18	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	

In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity						Annual Savings per Unit (MMBTU)						Measure Life				Installation or Realization Rate		Total Annual MMBTU Savings						Total Lifetime MMBTU Savings						
	2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		2014		2015		2016		
	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Plan	Update	Plan	Actual	Plan	Actual	Update	Plan	Actual	Plan	Actual	Update	Plan	Actual	Plan	Actual	Plan	Actual	Update		
RNC ES Homes (Heating)	13	11	13	13	13	11	45	69	36	36	48	25	25	25	25	25	25	100%	100%	587	757	462	455	528	14,677	18,934	11,540	11,374	13,200		
RNC ES Homes (Cooling)	7	8	6	6	6	11	0	0	0	0	0	25	25	25	25	25	25	100%	100%	0	0	0	0	0	0	0	0	0	0	0	
RNC ES Homes (Water Heating)	13	11	13	13	13	11	12	6	5	5	5	15	15	15	15	15	15	100%	100%	153	63	58	57	52	2,298	945	868	856	776		
RNC Clotheswashers	4	5	3	3	3	3	10	10	3	3	10	11	11	11	11	11	11	100%	100%	42	51	11	11	30	465	556	117	116	333		
RNC Dishwashers	8	9	4	4	4	0	2	2	2	2	2	10	10	10	10	10	10	100%	100%	13	14	6	6	0	127	135	63	62	0		
RNS Refrigerators		9	6	6	6	5						12	12	12	12	12	12	100%	100%												
RNC LEDs		54	154	151	151	55							19	19	19	19	19	100%	100%												
RNC CFLs																															

In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Unitil Gas Home Energy Assistance Program

Measure	Quantity			Annual Savings per Unit (MMBTU)			Measure Life			Installation or Realization Rate		Total Annual MMBTU Savings						Total Lifetime MMBTU Savings																				
	2014 Plan	2014 Actual	2015 Plan	2015 Plan	2016 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2015 Plan	2016 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2015 Plan	2016 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2015 Plan	2016 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2015 Plan	2016 Plan	2016 Update								
Air Sealing (SF or SF+MF)	30	6	45	45	45	19	13	30	19	7	9	15	15	15	15	25	25	15	100%	100%	100%	100%	392	103	316	857	317	170	5,883	1,547	4,736	4,751	2,553	22,103	2,309	21,437	21,505	13,920
Insulation (SF or SF+MF)	30	6	45	45	45	19	30	19	7	9	29	25	25	25	25	25	25	25	100%	100%	100%	100%	884	92	857	860	557	557	22,103	2,309	21,437	21,505	13,920	22,103	2,309	21,437	21,505	13,920
Air Sealing MF	13	82	13	13	13	13	6	9	4	4	4	15	15	15	15	15	15	15	100%	100%	100%	100%	79	247	857	860	49	49	1,186	3,702	3,702	3,702	730	1,186	3,702	3,702	730	
Insulation MF	13	82	13	13	13	13	6	9	4	4	12	25	25	25	25	25	25	25	100%	100%	100%	100%	113	1,149	1,149	1,149	156	156	2,823	28,721	28,721	28,721	3,904	2,823	28,721	28,721	3,904	
DHW ISMs (aerators & pipewrap)	22	24	4	4	4	32	6	6	1	4	1	7	7	7	7	7	7	7	100%	100%	100%	100%	135	26	19	19	19	17	942	185	134	134	121	942	185	134	134	121
Furnace Replacement w/ECM Motor	4	1	1	1	1	4	30	30	23	23	23	20	18	18	18	18	18	18	100%	100%	100%	100%	135	31	23	23	23	92	2,695	413	413	413	1,650	2,695	413	413	1,650	
Boiler Replacement	13	4	2	2	2	2	8	8	2	2	3	15	15	15	15	15	15	15	100%	100%	100%	100%	103	9	33	33	26	26	1,540	133	493	493	384	1,540	133	493	493	384
Thermostats	13	4	5	5	5	8	8	8	2	7	7	1	1	1	1	1	1	1	100%	100%	100%	100%	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Non-Energy Saving Measures	13	4	5	5	5	8	8	8	2	7	7	1	1	1	1	1	1	1	100%	100%	100%	100%	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LED bulbs	13	64	34	34	34	32	0	0	0	0	0	1	1	1	1	1	1	1	100%	100%	100%	100%	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			268	269	269	0																																

Note: In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity			Annual Savings per Unit (MMBTU)			Measure Life			Installation or Realization Rate			Total Annual MMBTU Savings						Total Lifetime MMBTU Savings																			
	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Update	2014	2015	2016	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Update	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2016 Update														
<b>RETROFIT TRACK</b>																																						
Custom HVAC			6	6	6	5					300				25	25	25						864	836	1,500				21,609	20,899	37,500							
Custom Water			4	4	4	3					45				15	15	15						119	115	135				1,791	1,732	2,025							
On demand, Tankless Water Heater >= .82																																						
Furnace 95+ AFUE (<150) w/ECM Motor			7	5	7	2																																
Custom SCI Weatherization			5	4	5	9																																
Custom Heating / Water Heating Equipment			3	3	3	3																																
Condensing boiler <= 300 mbh (90% AFUE)			4	141	132																																	
Infrared			1	307																																		
Fryers																																						
Boiler >=96% AFUE, <= 300 mbh																																						
High Efficiency Gas Convection Oven (>=44% efficiency)																																						
Boiler Reset Controls (all now in Gas Networks)																																						
<b>NEW EQUIPMENT TRACK (Gas Networks)</b>																																						
Thermostat - Standard, 7-Day Programmable			4	20	22	25	22																															
Steam Trap			7	14	2	4	2																															
On demand, Tankless Water Heater >= .94																																						
Kitchen - Pre Rinse Spray Valve																																						
Kitchen - Gas Steamer (Energy Star >=38% efficiency)																																						
Kitchen - Gas Griddle																																						
Kitchen - Gas Conveyor Oven (>=44% efficiency)			7	1	4	3	2																															
Kitchen - Gas Convection Oven (>=44% efficiency)																																						
Kitchen - Gas Combination Oven (>=44% efficiency)			7	3	3	5	4																															
Kitchen - Fryers																																						
Integrated water heater/condensing boiler (0.9 EF, 0.9 AFUE)			7	2	2	4	2																															
Infrared Heaters			13	4																																		
Furnace 97+ AFUE (<150) w/ECM Motor																																						
Furnace 95+ AFUE (<150) w/ECM Motor																																						
Convection Oven																																						
Condensing Unit Heaters																																						
Condensing Stand Alone >95% TE, >75000 btu																																						
Condensing boiler 500-999 mbh 90% AFUE																																						
Condensing boiler 301-499 mbh 90% AFUE																																						
Condensing boiler 1701+ mbh 90% AFUE																																						
Condensing boiler 1000-1700 mbh 90% AFUE																																						
Condensing boiler <= 300 mbh 90% AFUE																																						
Condensing Boiler <= 300 mbh >=96% AFUE																																						
Combo Boiler-Water Heater AFUE >=85% (EF=.82)																																						
Boiler Reset Controls																																						

Note: In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

Measure	Quantity				Annual Savings per Unit (MMBTU)				Measure Life				Installation or Realization Rate		Total Annual MMBTU Savings				Total Lifetime MMBTU Savings										
	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	2014 Plan	2014 Actual	2015 Plan	2016 Plan	
	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	Update	
<b>RETROFIT TRACK</b>	5	3	1	1	2	4,132	1,452	2,373	2,373	2,100	18	25	15	15	15	15	20,551	4,355	2,820	2,820	3,818	369,925	108,880	42,306	42,306	57,267			
C&I Retrofit Custom Multi-Family																													
Custom HVAC		5	1	1	3		2,808	9,450	9,450	3,500		15	15	15	15			14,038	9,190	9,190	9,545		210,575	137,855	137,855	143,168			
Custom Process		4	1	1	3		28	6,000	6,000	780		15	20	20	20			110	8,645	8,645	2,127		1,650	172,893	172,893	42,541			
Custom Hot Water		36	1	1	3		32				3	3						1,161					3,483						
Custom Steam Traps																													
<b>NEW EQUIPMENT TRACK</b>																													
Furnace 94+ AFUE w/ECM Motor		0					9	9	9	9	18	18	18	18	18														
Furnace 95+ AFUE (<150) w/ECM Motor		4					10	10	10	10	18	18	18	18	18														
Furnace 97+ AFUE (<150) w/ECM Motor					2		31	31	31	31		25	25	25	25														
Condensing boiler <= 300 mbh 90% AFUE							58	58	58	58		25	25	25	25														
Condensing boiler 301-499 mbh 90% AFUE							107	107	107	107		25	25	25	25														
Condensing boiler 500-999 mbh 90% AFUE	4	189	2	2	1		197	197	197	197	25	25	25	25	25														
Condensing boiler 1000-1700 mbh 90% AFUE	3	331	2	2	2		345	345	345	28	48	48	48	48	48														
Condensing boiler 1701+ mbh 90% AFUE							28	28	28	28	7	7	7	7	7														
Condensing Boiler <= 300 mbh >=96% AFUE							48	48	48	48	17	17	17	17	17														
Infrared							7	7	7	7	20	20	20	20	20														
On demand, Tankless Water Heater >= 82	1						7	7	7	7	20	20	20	20	20														
On demand, Tankless Water Heater >= 94	1						9	9	9	9	20	20	20	20	20														
Combo Boiler-Water Heater AFUE >=85% (EF=.82)					5		19	19	19	19	15	15	15	15	15														
Condensing Stand Alone >95% TE, >75000 btu		25					25	25	25	25	15	15	15	15	15														
WATER HEATER TANK 0.67 EF							3	3	3	3	13	13	13	13	13														
Integrated water heater/condensing boiler (0.9 EF, 0.9 AFUE)		41					41	41	41	41	18	18	18	18	18														
Condensing Unit Heaters		0					36	36	36	36	20	20	20	20	20														
Boiler Reset Controls							59	59	59	59	12	12	12	12	12														
Kitchen - Fryers		107					107	107	107	107	12	12	12	12	12														
Kitchen - Gas Steamer (Energy Star >=38% efficiency)		31			1		31	31	31	31	12	12	12	12	12														
Kitchen - Gas Convection Oven (>=44% efficiency)							110	110	110	110	12	12	12	12	12														
Kitchen - Gas Convection Oven (>=44% efficiency)		85					85	85	85	85	12	12	12	12	12														
Kitchen - Gas Combination Oven (>=44% efficiency)		211					211	211	211	211	12	12	12	12	12														
Kitchen - Gas Conveyor Oven (>=44% efficiency)		19					19	19	19	19	12	12	12	12	12														
Kitchen - Gas Rack Oven (>=50% efficiency)		0					26	26	26	26	3	3	3	3	3														
Kitchen - Gas Griddle		13					13	13	13	13	5	5	5	5	5														
Steam Trap		8					8	8	8	8	0	0	0	0	0														
Kitchen - Pre Rinse Spray Valve		5			5		5	5	5	5	15	15	15	15	15														
Thermostats		0					0	0	0	0	0	0	0	0	0														
Hydronic Boiler (301-499 mbh)		0					0	0	0	0	0	0	0	0	0														
Custom Projects																													

Note: In an effort to better match planning, reporting, and modeling, the Company is adding, amending, and/or updating some measure names from previously filed versions of this attachment.

## Attachment M: Summary of Material Changes

Topic	Description of Change
<b>Program Design, Evolution, Measure and Incentive Changes</b>	
<p>Avoided Energy Supply Costs</p>	<ul style="list-style-type: none"> <li>▪ Utilized the avoided costs from the <i>Avoided Energy Costs in New England: 2015 Report</i><sup>1</sup>, issued March 27, 2015 and revised April 3, 2015.</li> <li>▪ Reflects the following avoided energy supply cost changes (on a levelized basis – assuming an average 13 year measure life for electric savings, 18 year measure life for fossil savings):               <ul style="list-style-type: none"> <li>• \$/kWh: Winter peak (-1.6%) and winter off-peak energy costs (+0.8%)</li> <li>• \$/kWh: Summer peak (-10.0%) and off-peak energy costs (-12.1%)</li> <li>• \$/kW: Summer generation costs (+46.1%)</li> <li>• \$/MMBtu: Natural Gas for residential buildings (-4.3%)</li> <li>• \$/MMBtu: Natural Gas for residential hot water (+1.6%)</li> <li>• \$/MMBtu: Commercial &amp; Industrial gas heat (+9.1%)</li> <li>• \$/MMBtu: Residential Oil (-31.8%)</li> <li>• \$/MMBtu: Liquid Propane (-35.0%)</li> <li>• \$/MMBtu: Kerosene (-32.3%)</li> <li>• \$/MMBtu: Wood (-33.4%)</li> <li>• \$/Gallon: Water / Sewer costs (-0.2%)</li> </ul> </li> </ul>
<p>ENERGY STAR Products Program (Lighting, Appliances and Electric Heating/Cooling and Hot Water Systems)</p>	<ul style="list-style-type: none"> <li>▪ Will utilize lighting product markdowns for those retailers that no longer allow rebates / coupons.</li> <li>▪ Eliminated incentives for Advanced Power Strips as they are no Energy Star certified, but will continue to market through the online catalog.</li> <li>▪ Reduced rebate on Energy Star refrigerators from \$30 to \$20 due to a decrease in incremental cost per Energy Star calculations.</li> </ul>

<sup>1</sup> <http://www.puc.state.nh.us/Electric/Monitoring%20and%20Evaluation%20Reports/merged%20report.pdf>

Home Performance with ENERGY STAR	<ul style="list-style-type: none"> <li>Increased customer cost from 50% to 100% for certain measures that are not cost-effective, such as bathroom fans for ventilation and certain types/applications of insulation.</li> </ul>
ENERGY STAR Homes	<ul style="list-style-type: none"> <li>Eliminated incentives for Energy Star dishwashers as they have become standard practice in new homes.</li> </ul>
<b>Changes in Savings Assumptions</b>	
Home Energy Assistance Program	<ul style="list-style-type: none"> <li>Revised annual electric and MMBTU savings to reflect more current projects modeled by the Community Action Agencies in the TREAT software.</li> <li>Measure lives updated to reflect more current projects/measure mix.</li> <li>Average project costs were adjusted to reflect 2014 and 2015 actual project results.</li> </ul>
ENERGY STAR Products (Lighting & Appliances)	<ul style="list-style-type: none"> <li>Updated annual energy savings for Central AC and Air Source Heat Pumps to reflect changes in baseline equipment due to changes to the federal standards<sup>2</sup>.</li> <li>Updated annual energy savings for refrigerators based on the new minimum federal standards and the Energy Star calculator.</li> </ul>
Large Business Energy Solutions Program	<ul style="list-style-type: none"> <li>Updated annual energy savings by measure to reflect more recent (2014 and 2015) projects.</li> <li>Updated the In-Service or Realization Rate to reflect the average of the New Equipment/Construction and Retrofit Track per DNV-GL's 2015 impact evaluation.</li> </ul>
Small Business Energy Solutions Program	<ul style="list-style-type: none"> <li>Updated annual energy savings by measure to reflect more recent (2014 and 2015) projects.</li> </ul>
Municipal Program	<ul style="list-style-type: none"> <li>Updated annual energy savings by measure to reflect more recent (2014 and 2015) projects.</li> </ul>

<sup>2</sup> [http://www1.eere.energy.gov/buildings/appliance\\_standards/product.aspx/productid/75#standards](http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/75#standards)



Eversource's RFP Program	<ul style="list-style-type: none"> <li>▪ Updated annual energy savings by measure to reflect more recent (2014 and 2015) projects.</li> </ul>
<b>Changes in Funding Sources</b>	
Third Party Financing	<ul style="list-style-type: none"> <li>▪ All electric and gas utilities to partner with CDFA on 3<sup>rd</sup> party loan buy downs through the Better Buildings Program. CORE program funding may be utilized for loan buy downs if an energy efficiency project does not meet the federal Better Buildings project guidelines or if the CDFA funds are fully expended.</li> </ul>
Eversource's Customer Engagement Platform Carryover	<ul style="list-style-type: none"> <li>▪ Carried over the unspent 2015 Customer Engagement Platform (CEP) funding balance of \$462,540 to the 2016 CEP program funding. (The CEP funding was transferred from the SBC funds that were set aside in compliance with RSA 125-O:5 for energy efficiency projects at Eversource's facilities to the 2015 program year for the distinct purpose of implementing the CEP.)</li> </ul>
Unitil's On-Bill Financing funding moved to Residential sector	<ul style="list-style-type: none"> <li>▪ Unitil to transfer \$65,000 from unspent on-bill financing funds from 2014 to the Residential Home Performance with ENERGY STAR Program (electric).</li> </ul>



**NH CORE PROGRAMS**  
**2016 Statewide Goals**  
**CORE & Company-Specific Programs**

Description	Program Budget <sup>(1)</sup>	kWh Savings		MIMBtu Savings		Customers Count
		Annual	Lifetime	Annual	Lifetime	
<b><u>Electric Utilities</u></b>						
CORE Programs						
Municipal Program	\$ 1,997,519	4,204,201	55,800,970	1,718	40,231	304
All Other CORE Programs	20,283,937	45,179,562	641,080,580	49,379	919,583	95,087
Sub-total	\$ 22,281,456	49,383,763	696,881,550	51,097	959,814	95,391
Company Specific Programs <sup>(2)</sup>	1,922,949	3,703,864	30,049,504	-	-	25,012
<b>Total Electric</b>	<b>\$ 24,204,405</b>	<b>53,087,627</b>	<b>726,931,054</b>	<b>51,097</b>	<b>959,814</b>	<b>120,403</b>
<b><u>Gas Utilities</u></b>						
CORE Programs	\$ 6,616,462	35,464	777,625	134,052	2,317,628	3,895
Company Specific Programs <sup>(2)</sup>	353,000	-	-	18,440	55,320	25,000
<b>Total Gas</b>	<b>\$ 6,969,462</b>	<b>35,464</b>	<b>777,625</b>	<b>152,492</b>	<b>2,372,949</b>	<b>28,895</b>
<b>Grand Total</b>	<b>\$ 31,173,867</b>	<b>53,123,091</b>	<b>727,708,679</b>	<b>203,589</b>	<b>3,332,762</b>	<b>149,298</b>

**Notes:**

(1) Program budgets shown in this report exclude the performance incentive (PI).

(2) Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.

**NH CORE PROGRAMS**  
**2016 Statewide Goals**  
**CORE Programs <sup>(1)</sup>**

Description	Program Budget	kWh Savings		MMBtu Savings		Customers Count
		Annual	Lifetime	Annual	Lifetime	
<b><u>Electric Utilities</u></b>						
<b>Residential</b>						
Home Energy Assistance	\$ 3,792,905	633,281	11,344,505	11,531	233,853	465
NH Home Performance w/Energy Star	2,713,849	400,760	7,344,167	17,172	344,115	706
EnergyStar® Homes	1,392,348	1,377,458	33,219,594	7,549	187,361	376
EnergyStar® Products	2,786,170	9,369,655	140,876,838	13,127	154,254	92,446
Sub-total	\$ 10,685,273	11,781,154	192,785,104	49,379	919,583	93,994
<b>Commercial &amp; Industrial</b>						
Large Business Energy Solutions	\$ 6,263,398	23,397,144	317,150,245	-	-	397
Small Business Energy Solutions	3,335,266	10,001,264	131,145,231	-	-	696
Municipal Program	1,997,519	4,204,201	55,800,970	1,718	40,231	304
Sub-total	\$ 11,596,183	37,602,609	504,096,446	1,718	40,231	1,397
<b>Total Electric</b>	<b>\$ 22,281,456</b>	<b>49,383,763</b>	<b>696,881,550</b>	<b>51,097</b>	<b>959,814</b>	<b>95,391</b>
<b><u>Gas Utilities</u></b>						
<b>Residential</b>						
Home Energy Assistance	\$ 1,103,884	9,792	236,109	7,451	147,451	338
NH Home Performance w/Energy Star	793,555	-	-	16,783	339,937	609
EnergyStar® Homes	153,750	14,291	339,322	2,209	54,292	52
EnergyStar® Products	1,330,243	11,378	202,151	20,568	354,396	1,926
Sub-total	\$ 3,381,432	35,462	777,583	47,011	896,077	2,925
<b>Commercial &amp; Industrial</b>						
Large Business Energy Solutions	\$ 1,813,308	-	-	64,097	984,114	312
Small Business Energy Solutions	1,421,722	2,3520	42,3360	22,944	437,438	658
Sub-total	\$ 3,235,030	2	42	87,041	1,421,552	970
<b>Total Gas</b>	<b>\$ 6,616,462</b>	<b>35,464</b>	<b>777,625</b>	<b>134,052</b>	<b>2,317,628</b>	<b>3,895</b>
<b>Grand Total</b>	<b>\$ 28,897,919</b>	<b>49,419,227</b>	<b>697,659,175</b>	<b>185,149</b>	<b>3,277,442</b>	<b>99,286</b>

**Notes:**

(1) Amounts shown above pertain only to the CORE programs. The amounts pertaining to the Company-Specific programs are shown on Attachment N, page 3.

**NH CORE PROGRAMS**  
**2016 Statewide Goals**  
**Company-Specific Programs <sup>(1)</sup>**

Description	Program Budget		kWh Savings		MIMbtu Savings		Customers Count
			Annual	Lifetime	Annual	Lifetime	
<b><u>Electric Utilities</u></b>							
<b>Residential</b>							
Home Energy Reports	\$ 251,006		1,755,681	5,267,042	-	-	25,000
Customer Engagement Platform	235,002		-	-	-	-	-
Education	52,776		-	-	-	-	-
Revolving Loan Fund	-		-	-	-	-	-
Forward Capacity Market Expenses <sup>(2)</sup>	76,500		-	-	-	-	-
Sub-total	\$ 615,285		1,755,681	5,267,042	-	-	25,000
<b>Commercial &amp; Industrial</b>							
Smart Start	\$ 52,000		-	-	-	-	-
C&I Customer Partnerships	18,919		-	-	-	-	4
C&I RFP Program	431,355		1,948,183	24,782,462	-	-	2
Customer Engagement Platform	345,537		-	-	-	-	-
Education	301,354		-	-	-	-	6
Forward Capacity Market Expenses <sup>(2)</sup>	158,500		-	-	-	-	-
Sub-total	\$ 1,307,664		1,948,183	24,782,462	-	-	12
<b>Total Residential and C&amp;I</b>	<b>\$ 1,922,949</b>		<b>3,703,864</b>	<b>30,049,504</b>			<b>25,012</b>
<b><u>Gas Utilities</u></b>							
<b>Residential</b>							
Building Practices & Demonstration	\$ 298,000		-	-	18,440	55,320	25,000
Education	17,000		-	-	-	-	-
Sub-total	\$ 315,000		-	-	18,440	55,320	25,000
<b>Commercial &amp; Industrial</b>							
Building Practices & Demonstration	\$ -		-	-	-	-	-
Education	38,000		-	-	-	-	-
Sub-total	\$ 38,000		-	-	-	-	-
<b>Total Residential and C&amp;I</b>	<b>\$ 353,000</b>				<b>18,440</b>	<b>55,320</b>	<b>25,000</b>
<b>Grand Total</b>	<b>\$ 2,275,949</b>		<b>3,703,864</b>	<b>30,049,504</b>	<b>18,440</b>	<b>55,320</b>	<b>50,012</b>

**Notes:**

- (1) Amounts shown above pertain only to the Company-Specific programs. The amounts pertaining to the CORE programs are shown on Attachment N, page 2. Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.
- (2) Amounts shown are budgeted expenses related to the electric utilities' participation in ISO-NE's Forward Capacity Market.





WHEN NEW HAMPSHIRE SAVES, *we all win.*

**NHSAVES**  
*we all win*