

Program Cost-Effectiveness - 2016 ACTUAL

	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
Residential Programs											
EnergyStar® Homes	1.10	\$ 463.7	\$ 167.1	\$ 256.3	199.7	3,310.897	89.4	21.2	104	512.4	12,566.0
HP w/EnergyStar®	1.49	\$ 625.9	\$ 268.193	\$ 151.3	61.8	1,266.579	21.7	1.6	55	1,583.9	34,323.5
Res Energy Star Appliance	2.23	\$ 396.3	\$ 155.1	\$ 22.6	202.6	2,208.037	61.3	52.1	1,047	95.9	1,054.9
Res Energy Star Lighting	4.72	\$ 2,207.8	\$ 203.2	\$ 264.9	1,561.5	27,592.234	480.5	160.9	17,218	-	-
EnergyStar® Products	4.03	\$ 2,604.1	\$ 358.2	\$ 287.5	1,764.1	29,800.271	541.8	213.0	18,265	95.9	1,054.9
Home Energy Assistance	1.23	\$ 456.0	\$ 369.3	\$ -	54.1	930.615	7.8	3.0	51	1,229.0	24,587.4
Res Education		\$ -	\$ 19.3	\$ -							
Res Forward Capacity Market Expenses		\$ -	\$ 20.9	\$ -							
Residential Total	2.19	\$ 4,149.7	\$ 1,203.105	\$ 695.1	2,079.695	35,308.363	660.7	238.7	18,475	3,421.2	72,531.8
Commercial/Industrial Programs											
Large Business Energy Solutions	3.03	\$ 6,016.9	\$ 688.3	\$ 1,295.7	4,938.6	71,202.268	590.8	554.9	24	1,239.1	18,585.9
Small Business Energy Solutions	1.76	\$ 1,806.8	\$ 499.1	\$ 530.3	1,451.9	18,905.151	189.5	253.8	56	-	-
Municipal Program	1.64	\$ 395.5	\$ 134.4	\$ 106.7	159.8	2,077.283	16.8	33.2	6	579.1	11,669.5
C&I Education		\$ -	\$ 2.6	\$ -							
C&I Forward Capacity Market Expenses		\$ -	\$ 15.0	\$ -							
C&I total	2.51	\$ 8,219.3	\$ 1,339.449	\$ 1,932.7	6,550.338	92,184.702	797.1	841.9	86	1,818.2	30,255.4
Total	2.39	\$ 12,368.9	\$ 2,542.6	\$ 2,627.8	8,630.0	127,493.065	1,457.8	1,080.6	18,561	5,239.3	102,787.2

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.

Annual kWh Savings	8,630,033	84.9%	kWh > 55%	Lifetime kWh Savings	127,493,065	80.9%	kWh > 55%
Annual MMBTU Savings (in kWh)	1,535,496	15.1%		Lifetime MMBTU Savings (in kWh)	30,123,944	19.1%	
	10,165,529	100.0%			157,617,009	100.0%	

Present Value Benefits - 2016 ACTUAL

	Total Benefits (\$000)	CAPACITY				ENERGY					
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Non Electric Resource	
Residential Programs											
EnergyStar® Homes	\$ 464	\$ 49,277	\$ -	\$ 5,629	\$ 22,800	\$ 114,680	\$ 58,969	\$ 11,483	\$ 9,551	\$ 191,269	
HP w/EnergyStar®	\$ 626	\$ 4,153	\$ -	\$ 469	\$ 1,901	\$ 25,816	\$ 38,179	\$ 5,625	\$ 5,231	\$ 544,500	
Res Energy Star Appliance	\$ 396	\$ 83,295	\$ -	\$ 10,008	\$ 40,533	\$ 45,406	\$ 46,486	\$ 20,378	\$ 11,539	\$ 138,626	
Res Energy Star Lighting	\$ 2,208	\$ 395,997	\$ -	\$ 44,896	\$ 181,837	\$ 463,923	\$ 636,496	\$ 219,041	\$ 265,651	\$ -	
EnergyStar® Products	\$ 2,604	\$ 479,292	\$ -	\$ 54,904	\$ 222,370	\$ 509,329	\$ 682,982	\$ 239,419	\$ 277,190	\$ 138,626	
Home Energy Assistance	\$ 456	\$ 5,808	\$ -	\$ 680	\$ 2,755	\$ 17,772	\$ 22,553	\$ 6,356	\$ 6,995	\$ 393,090	
Subtotal Residential	\$ 4,150	\$ 538,529	\$ -	\$ 61,683	\$ 249,825	\$ 667,597	\$ 802,684	\$ 262,883	\$ 298,967	\$ 1,267,485	
Commercial/Industrial Programs											
Large Business Energy Solutions	\$ 6,017	\$ 1,086,497	\$ -	\$ 126,941	\$ 514,132	\$ 1,962,822	\$ 993,716	\$ 835,109	\$ 359,979	\$ 137,743	
Small Business Energy Solutions	\$ 1,807	\$ 472,517	\$ -	\$ 55,679	\$ 225,507	\$ 379,164	\$ 351,668	\$ 185,088	\$ 137,224	\$ -	
Municipal Program	\$ 396	\$ 61,683	\$ -	\$ 7,270	\$ 29,443	\$ 45,956	\$ 34,400	\$ 21,629	\$ 14,197	\$ 180,924	
Subtotal C&I	\$ 8,219	\$ 1,620,696	\$ -	\$ 189,889	\$ 769,082	\$ 2,387,943	\$ 1,379,785	\$ 1,041,826	\$ 511,399	\$ 318,667	
Total	\$ 12,369	\$ 2,159,226	\$ -	\$ 251,572	\$ 1,018,907	\$ 3,055,539	\$ 2,182,468	\$ 1,304,709	\$ 810,366	\$ 1,586,152	

**Performance Incentive Calculation
 2016**

	<u>Actual</u>	<u>Planned</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	2.40	1.70
2. Threshold Benefit / Cost Ratio ¹	1.0	1.0
3. Lifetime kWh Savings	92,184,702	55,026,142
4. Threshold Lifetime kWh Savings (65%) ²		35,766,992
5. Implementation Expenses	\$1,353,393	\$1,442,916
6. Benefit / Cost Percentage of Budget	5.00%	3.75%
7. Lifetime kWh Percentage of Budget	5.00%	3.75%
8. C/I Performance Incentive	\$135,339	\$108,219
9. Maximum C/I Performance Incentive (110%)	\$135,339	\$144,292
Residential Incentive		
10. Benefit / Cost Ratio	2.07	1.90
11. Threshold Benefit / Cost Ratio ¹	1.0	1.0
12. Lifetime kWh Savings	35,308,363	26,662,411
13. Threshold Lifetime kWh Savings (65%) ²		17,330,567
14. Implementation Expenses	\$1,203,105	\$1,494,734
15. Benefit / Cost Percentage of Budget	4.08%	3.75%
16. Lifetime kWh Percentage of Budget	4.97%	3.75%
17. Residential Performance Incentive	\$108,833	\$112,105
18. Maximum Residential Performance Incentive (110%)	\$120,310	\$149,473
19. TOTAL EARNED / PLANNED INCENTIVE	\$244,173	\$220,324

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.

**Planned Versus Actual Benefit / Cost Ratio by Sector
 2016**

	<u>Actual</u>	<u>Planned</u>
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	\$ 8,219,288	\$ 5,078,370
2. Implementation Expenses	\$ 1,353,393	\$ 1,442,916
3. Customer Contribution	\$ 1,932,692	\$ 1,390,415
4. Performance Incentive	<u>\$ 135,339</u>	<u>\$ 108,219</u>
5. Total Costs	\$ 3,421,424	\$ 2,941,550
6. Benefit/Cost Ratio - C&I Sector	2.40	1.70
Residential:		
7. Benefits (Value) From Eligible Programs	\$ 4,149,653	\$ 4,273,584
8. Implementation Expenses	\$ 1,203,105	\$ 1,494,734
9. Customer Contribution	\$ 695,088	\$ 621,333
10. Performance Incentive	<u>\$ 108,833</u>	<u>\$ 112,105</u>
11. Total Costs	\$ 2,007,026	\$ 2,228,172
12. Benefit/Cost Ratio - Residential Sector	2.07	1.90

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

	Lifetime kWh Savings	
	<u>Actual</u>	<u>Planned</u>
Commercial & Industrial:		
Large Business Energy Solutions	71,202,268	38,416,850
Small Business Energy Solutions	18,905,151	13,468,500
Municipal Program	2,077,283	3,140,791
Total C&I kWh	92,184,702	55,026,142
Residential:		
EnergyStar® Homes	3,310,897	1,321,301
HP w/EnergyStar®	1,266,579	755,036
EnergyStar® Products	29,800,271	23,633,361
Home Energy Assistance	930,615	952,712
Total Residential kWh	35,308,363	26,662,410

2016 Annual Report Reconciliation
Unitil Electric Energy Efficiency
January 1, 2016 - December 31, 2016

Unitil Electric Annual Report 2016
2016 Electric Revenue and Expense Reconciliation

		<u>2016 Total</u>
1. Beginning Balance: 1/1/2016	(Over)/Under	(\$993,937)
Revenues		
2. System Benefits Charge Revenue		\$ 2,145,569
3. FCM Revenue		\$ 273,101
4. RGGI Proceeds		\$ 255,588
5. Interest		\$ 33,990
6. Total Funding	Σ Lines 2 - 5	<u>\$ 2,708,248</u>
Expenses		
7. Program Expenses		\$ 2,556,497
8. PI - Current Year Estimate		\$ 220,325
9. PI - Prior Year(s) True-Up		\$ 33,141
10. Total Expenses	Σ Lines 7 - 9	<u>\$ 2,809,963</u>
11. Ending Balance: 12/31/2016	Lines 1 - 6 + 10	<u>\$ (892,222)</u>
Ending Balance Adjusted for Current Year Actual PI		
12. Actual Performance Incentive - 2016	Attachment G	<u>\$ 244,173</u>
13. Ending Balance w/ Actual PI	Lines 11 - 8 + 12	<u>\$ (868,374)</u>

Notes:

Line 13: A negative value indicates an over-collection (i.e.: the carryover will increase the following year's available funding.)

**2016 Annual Report Reconciliation
 Unitil Electric RGGI Grant Program
 January 1, 2016 - December 31, 2016**

**Annual Report 2016
 Revenue and Expense Reconciliation**

	<u>C&I</u>	
Beginning Balance: 1/1/2016		\$0
Revenues		
RGGI Grant Proceeds	\$	77,929
Total Funding	\$	<u>77,929</u>
Expenses		
C&I Retail Partners Program	\$	5,357
C&I Large Business Partners Program	\$	1,964
Total Expenses	\$	<u>7,322</u>
Ending Balance: 12/31/2016¹	\$	(70,607)
 Ending Balance Adjusted for Current Year Actual PI		
Actual PI - 2016 ²	\$	147
Ending Balance w/ Actual PI¹	\$	<u>(70,460)</u>

Notes:

¹ A negative value, indicated by parantheses, indicates an over-collection (i.e.: the carryover will increase the following year's available funding.)

² The "Actual PI - 2016" is equal to 7.5% of the actual expenditures.