

Program Cost-Effectiveness - 2019 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
Residential Programs											
Home Energy Assistance	1.77	885.6	499.4	-	65.6	766.2	6.7	9.3	63	1,773.7	35,336.1
Energy Star Homes	1.71	540.2	246.7	69.6	65.0	1,479.6	8.4	12.8	33	559.3	13,933.8
Home Performance with Energy Star	2.44	2,304.9	519.5	425.0	166.0	2,767.6	12.3	30.6	169	4,506.4	94,091.3
Energy Star Products	1.60	1,579.4	602.9	382.8	2,244.5	13,751.6	615.3	270.9	129,153	162.8	2,278.8
ISO-NE Forward Capacity Market Expenses	0.00	-	6.0	-	-	-	-	-	-	-	-
Sub-Total Residential	1.93	5,310.1	1,874.5	877.4	2,541.1	18,764.9	642.7	323.6	129,418	7,002.2	145,640.0
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.00	1,974.7	381.5	606.8	1,581.5	20,560.0	239.8	218.0	24	-	-
Small Business Energy Solutions	1.32	1,248.0	500.0	445.5	1,144.7	15,089.6	70.9	105.3	116	-	-
Municipal Energy Solutions	1.04	301.6	159.4	129.7	166.0	2,158.3	13.0	19.2	24	379.9	4,938.5
Education	0.00	-	60.5	-	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	-	14.0	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	1.53	3,524.3	1,115.4	1,182.0	2,892.3	37,807.9	323.7	342.5	163	379.9	4,938.5
Smart Start	0.00	-	5.0	-	-	-	-	-	-	-	-
Total	1.75	8,834.4	2,994.9	2,059.4	5,433.4	56,572.9	966.4	666.1	129,581	7,382.1	150,578.5

Note: a 10% NEI adder is applied to total benefits excluding water, and an additional 10% NEI adder is applied to total benefits of the Home Energy Assistance program, excluding water.

Annual kWh Savings	5,433,375	71.5% kWh > 55%	Lifetime kWh Savings	56,572,854	56.2% kWh > 55%
Annual MMBTU Savings (in kWh)	<u>2,163,491</u>	<u>28.5%</u>	Lifetime MMBTU Savings (in kWh)	<u>44,130,211</u>	<u>43.8%</u>
	7,596,866	100.0%		100,703,065	100.0%

Program Cost-Effectiveness - 2019 ACTUAL

	Total Resource Benefit / Cost Ratio	Benefit (\$000)	Utility Costs (\$000)	Member Costs (\$000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Members Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.36	722.0	529.8	-	62.4	832.8	15.7	3.5	63	1,456.8	31,422.2
Energy Star Homes	4.68	1,306.9	181.9	97.6	187.2	4,553.9	83.7	5.4	49	1,464.6	36,591.8
Home Performance with Energy Star	2.07	1,897.9	548.2	368.6	125.3	2,332.5	55.6	1.5	169	3,646.4	77,161.4
Energy Star Products	1.76	1,867.9	527.2	536.0	3,172.8	17,805.0	930.3	353.4	129,153	171.1	2,395.3
ISO-NE Forward Capacity Market Expenses	0.00	-	3.7	-	-	-	-	-	-	-	-
Sub-Total Residential	2.07	5,794.6	1,790.8	1,002.2	3,547.7	25,524.2	1,085.3	363.8	129,434	6,738.9	147,570.8
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.23	1,614.9	226.1	497.6	1,393.2	18,179.9	185.2	150.0	14	-	-
Small Business Energy Solutions	1.85	1,179.7	336.5	299.9	1,189.1	15,795.3	61.9	68.6	64	-	-
Municipal Energy Solutions	1.39	637.2	239.4	218.3	341.5	4,559.6	22.3	33.4	24	577.6	8,573.0
Education	0.00	-	16.5	-	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	-	8.5	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	1.86	3,431.8	827.0	1,015.8	2,923.8	38,534.7	269.4	252.0	102	577.6	8,573.0
Smart Start	0.00	-	-	-	-	-	-	-	-	-	-
Total	1.99	9,226.5	2,617.8	2,018.0	6,471.5	64,058.9	1,354.7	615.7	129,536	7,316.5	156,143.8

Note: a 10% NEI adder is applied to total benefits excluding water, and an additional 10% NEI adder is applied to total benefits of the Home Energy Assistance program, excluding water.

Annual kWh Savings	6,471,519	75.1% kWh > 55%	Lifetime kWh Savings	64,058,908	58.3% kWh > 55%
Annual MMBTU Savings (in kWh)	<u>2,144,251</u>	<u>24.9%</u>	Lifetime MMBTU Savings (in kWh)	<u>45,761,247</u>	<u>41.7%</u>
	8,615,770	100.0%		109,820,155	100.0%

Present Value Benefits - 2019 PLAN

	Total Benefits (\$000)	CAPACITY				ENERGY				Electric DRIPE	Total Electric Benefit	Gas Benefit	Gas DRIPE	Total Gas Benefit	Other Fuels	Fossil Emissions	Water Benefit	Other Non-Resource Benefit
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak									
Residential Programs																		
Home Energy Assistance	\$ 886	\$ 8	\$ -	\$ 11	\$ 9	\$ 14	\$ 15	\$ 5	\$ 6	\$ 4	\$ 72	\$ -	\$ -	\$ -	\$ 634	\$ 38	\$ -	\$ 141.25
Energy Star Homes	\$ 540	\$ 19	\$ -	\$ 21	\$ 18	\$ 24	\$ 26	\$ 10	\$ 11	\$ 5	\$ 135	\$ 0	\$ 0	\$ 0	\$ 338	\$ 16	\$ 4	\$ 47
Home Performance with Energy Star	\$ 2,305	\$ 38	\$ -	\$ 45	\$ 39	\$ 44	\$ 54	\$ 17	\$ 21	\$ 13	\$ 274	\$ -	\$ -	\$ -	\$ 1,736	\$ 94	\$ -	\$ 201
Energy Star Products	\$ 1,579	\$ 83	\$ -	\$ 157	\$ 136	\$ 338	\$ 207	\$ 145	\$ 89	\$ 63	\$ 1,217	\$ 8	\$ 0	\$ 8	\$ 21	\$ 2	\$ 207	\$ 125
ISO-NE Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Residential	\$ 5,310	\$ 148	\$ -	\$ 234	\$ 202	\$ 420	\$ 303	\$ 178	\$ 127	\$ 86	\$ 1,697	\$ 8	\$ 0	\$ 8	\$ 2,729	\$ 151	\$ 211	\$ 514
Commercial/Industrial Programs																		
Large Business Energy Solutions	\$ 1,975	\$ 163	\$ -	\$ 227	\$ 197	\$ 453	\$ 398	\$ 150	\$ 104	\$ 102	\$ 1,795	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 179.52
Small Business Energy Solutions	\$ 1,248	\$ 81	\$ -	\$ 112	\$ 97	\$ 295	\$ 238	\$ 141	\$ 114	\$ 56	\$ 1,135	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 113
Municipal Energy Solutions	\$ 302	\$ 14	\$ -	\$ 20	\$ 17	\$ 47	\$ 34	\$ 19	\$ 13	\$ 9	\$ 176	\$ -	\$ -	\$ -	\$ 93	\$ 5	\$ -	\$ 27
C&I Customer Partnerships	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ISO Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Commercial & Industrial	\$ 3,524	\$ 259	\$ -	\$ 359	\$ 311	\$ 796	\$ 670	\$ 310	\$ 232	\$ 167	\$ 3,106	\$ -	\$ -	\$ -	\$ 93	\$ 5	\$ -	\$ 320
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 8,834	\$ 407	\$ -	\$ 593	\$ 514	\$ 1,216	\$ 973	\$ 488	\$ 359	\$ 253	\$ 4,803	\$ 8	\$ 0	\$ 8	\$ 2,822	\$ 156	\$ 211	\$ 834

Present Value Benefits - 2019 ACTUAL

	Total Benefits (\$000)	CAPACITY				ENERGY				Electric DRIPE	Total Electric Benefit	Gas Benefit	Gas DRIPE	Total Gas Benefit	Other Fuels	Fossil Emissions	Water Benefit	Other Non-Resource Benefit
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak									
Residential Programs																		
Home Energy Assistance	\$ 722	\$ 2	\$ -	\$ 3	\$ 3	\$ 20	\$ 18	\$ 3	\$ 3	\$ 2	\$ 54	\$ -	\$ -	\$ -	\$ 521	\$ 32	\$ -	\$ 115.00
Energy Star Homes	\$ 1,307	\$ 7	\$ -	\$ 8	\$ 7	\$ 114	\$ 103	\$ 6	\$ 7	\$ 5	\$ 258	\$ 0	\$ 0	\$ 0	\$ 889	\$ 43	\$ 2	\$ 115
Home Performance with Energy Star	\$ 1,898	\$ 1	\$ -	\$ 1	\$ 1	\$ 62	\$ 55	\$ 2	\$ 2	\$ 3	\$ 127	\$ -	\$ -	\$ -	\$ 1,520	\$ 86	\$ -	\$ 165
Energy Star Products	\$ 1,868	\$ 90	\$ -	\$ 183	\$ 159	\$ 466	\$ 266	\$ 188	\$ 104	\$ 74	\$ 1,530	\$ 5	\$ 0	\$ 6	\$ 30	\$ 2	\$ 143	\$ 157
ISO-NE Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Residential	\$ 5,795	\$ 101	\$ -	\$ 196	\$ 170	\$ 663	\$ 442	\$ 199	\$ 115	\$ 83	\$ 1,969	\$ 5	\$ 0	\$ 6	\$ 2,961	\$ 164	\$ 145	\$ 551
Commercial/Industrial Programs																		
Large Business Energy Solutions	\$ 1,615	\$ 113	\$ -	\$ 157	\$ 136	\$ 403	\$ 403	\$ 105	\$ 76	\$ 76	\$ 1,468	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 146.81
Small Business Energy Solutions	\$ 1,180	\$ 53	\$ -	\$ 73	\$ 63	\$ 323	\$ 309	\$ 109	\$ 98	\$ 44	\$ 1,072	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 107
Municipal Energy Solutions	\$ 637	\$ 26	\$ -	\$ 36	\$ 31	\$ 93	\$ 76	\$ 40	\$ 31	\$ 17	\$ 349	\$ -	\$ -	\$ -	\$ 223	\$ 8	\$ -	\$ 57
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ISO Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Commercial & Industrial	\$ 3,432	\$ 192	\$ -	\$ 265	\$ 230	\$ 819	\$ 787	\$ 254	\$ 205	\$ 137	\$ 2,890	\$ -	\$ -	\$ -	\$ 223	\$ 8	\$ -	\$ 311
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 9,226	\$ 292	\$ -	\$ 461	\$ 400	\$ 1,482	\$ 1,230	\$ 453	\$ 321	\$ 221	\$ 4,859	\$ 5	\$ 0	\$ 6	\$ 3,184	\$ 172	\$ 145	\$ 862

**Performance Incentive Calculation
 2019**

	<u>Planned</u>	<u>Actual</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	1.49	1.8
2. Threshold Benefit / Cost Ratio ¹	1.00	
3. Lifetime kWh Savings	37,807,916	38,534,703
4. Threshold Lifetime kWh Savings (65%) ²	24,575,145	
5. Implementation Expenses	\$1,115,387	\$827,033
6. Benefit / Cost Percentage of Implementaton Expenses	2.75%	
7. Lifetime kWh Percentage of Implementation Expenses	2.75%	
8. Commercial & Industrial Performance Incentive	\$61,346	\$45,487
9. Maximum Commercial & Industrial Performance Incentive (6.875%)	\$76,683	
Residential Incentive		
10. Benefit / Cost Ratio	1.86	2.0
11. Threshold Benefit / Cost Ratio ¹	1.00	
12. Lifetime kWh Savings	18,764,939	25,524,205
13. Threshold Lifetime kWh Savings (65%)	12,197,210	
14. Implementation Expenses	\$1,874,496	\$1,790,786
15. Benefit / Cost Percentage of Implementation Expenses	2.75%	
16. Lifetime kWh Percentage of Implementation Expenses	2.75%	
17. Residential Performance Incentive	\$103,097	\$98,493
18. Maximum Residential Performance Incentive (6.875%)	\$128,872	
19. TOTAL PLANNED / EARNED INCENTIVE	\$164,444	\$143,980

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.
3. Benefit Cost ratios are Nominal\$/Nominal\$

**Planned Versus Actual Benefit / Cost Ratio by Sector
2019**

	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial		
1. Benefits (Value) From Eligible Programs	\$ 3,524,345	\$ 3,431,803
2. Implementation Expenses	\$ 1,115,387	\$ 827,033
3. Member Contribution	\$ 1,181,975	\$ 1,015,777
4. Performance Incentive	\$ 61,346	\$ 45,487
5. Total Costs	\$ 2,358,708	\$ 1,888,297
6. Benefit/Cost Ratio - Commercial & Industrial Sector	1.49	1.82
Residential		
7. Benefits (Value) From Eligible Programs	\$ 5,310,102	\$ 5,794,647
8. Implementation Expenses	\$ 1,874,496	\$ 1,790,786
9. Member Contribution	\$ 877,397	\$ 1,002,173
10. Performance Incentive	\$ 103,097	\$ 98,493
11. Total Costs	\$ 2,854,990	\$ 2,891,452
12. Benefit/Cost Ratio - Residential Sector	1.86	2.00

**Lifetime Energy Savings by Sector and Program
 2019**

	Lifetime kWh Savings	
	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial		
Large Business Energy Solutions	20,560,046	18,179,865
Small Business Energy Solutions	15,089,568	15,795,263
Municipal Energy Solutions	2,158,302	4,559,574
Smart Start	-	-
Education	-	-
ISO Forward Capacity Market Expenses	-	-
Total Commercial & Industrial	37,807,916	38,534,703
Residential		
Home Energy Assistance	766,167	832,828
Energy Star Homes	1,479,559	4,553,860
Home Performance with Energy Star	2,767,602	2,332,471
Energy Star Products	13,751,611	17,805,046
ISO-NE Forward Capacity Market Expenses	-	-
Total Residential	18,764,939	25,524,205

2019

Carry Forward Balance	\$	689,115
Funding:		
System Benefit Charge	\$	2,852,780
RGGI Funding	\$	209,602
FCM Payments		135,196
Interest		68,253
Total Funding for Energy Efficiency Programs	\$	3,265,831
Expenses:		
Energy Efficiency Expenditures	\$	2,617,819
Performance Incentive ¹ - 2018		110,563
Performance Incentive ² - 2019		143,980
Total Program Expenses	\$	2,872,362
Carry Forward Balance	\$	1,082,584

Notes

1. 2018 Performance Incentive accrued in 2018 and booked in 2019
2. 2019 Performance Incentive accrued in 2019 and booked in 2020

RGGI Retail & Large Business Grant Program
 January 1 2016 - December 31, 2019

Beginning Balance: 1/1/2016	<u>C&I</u> \$ -
Revenues	
RGGI Grant Proceeds 2016	\$ 32,214
RGGI Grant Proceeds 2017	\$ 20,396
RGGI Grant Proceeds 2018	\$ 40,021
Total Funding	<u>\$ 92,631</u>
Expenses	
2016 Retail	\$ 10,930
2016 Large Business	\$ 7,634
2017 Retail	\$ 24,773
2017 Large Business	\$ 12,757
2018 Retail	\$ 8,271
2018 Large Business	\$ 11,767
Total Expenses	<u>\$ 76,132</u>
Ending Balance: 12/31/2017	\$ 16,499
Beginning Balance: 1/1/2019	\$ 16,499
Revenues	
RGGI Grant Proceeds 2019	\$ 44,258
Total Funding	<u>\$ 44,258</u>
Expenses	
2019 Retail	\$ 38,963
2019 Large Business	\$ 2,400
Total Expenses	<u>\$ 41,363</u>
Ending Balance: 12/31/2019	\$ 19,394
Performance Incentive	
Performance Incentive 2016	\$ 1,392
Performance Incentive 2017	\$ 2,815
Performance Incentive 2018	\$ 1,503
Performance Incentive 2019	\$ 3,102
Total Performance Incentive	<u>\$ 8,812</u>
2019 Ending Balance Adjusted for Performance Incentive	<u><u>\$ 10,582</u></u>

Notes:

1. The Performance Incentive is equal to 7.5% of the actual expenditures. The total