

Program Cost-Effectiveness - 2018 PLAN

	Total Resource Benefits / Cost Ratio	Benefits (\$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	\$ 504.2	\$ 371.1	\$ -	44.1	515.5	-	6.3	42	1,204.4	24,009.1
Energy Star Homes	1.15	\$ 335.2	\$ 235.9	\$ 55.0	52.7	1,176.6	7.0	10.2	26	442.4	11,021.7
Home Performance with Energy Star	1.75	\$ 821.2	\$ 287.7	\$ 180.4	70.5	1,174.5	7.0	13.0	72	1,912.4	39,930.2
Energy Star Products	1.56	\$ 1,133.4	\$ 469.6	\$ 258.8	1,427.0	9,711.2	383.1	182.8	15,938	191.6	2,682.9
ISO-NE Forward Capacity Market Expenses	0.00	\$ -	\$ 6.0	\$ -	-	-	-	-	-	-	-
Sub-Total Residential	1.50	\$ 2,794.0	\$ 1,370.2	\$ 494.2	1,594.232	12,577.9	397.1	212.3	16,078	3,750.9	77,643.9
Commercial, Industrial & Municipal											
Large Business Energy Solutions	3.04	\$ 2,005.9	\$ 277.1	\$ 381.9	1,456.172	18,930.2	264.5	259.5	20	-	-
Small Business Energy Solutions	1.91	\$ 976.9	\$ 314.5	\$ 195.7	786.2	10,220.1	78.5	101.8	59	-	-
Municipal Energy Solutions	1.01	\$ 278.5	\$ 157.5	\$ 116.9	137.0	1,781.1	24.8	24.4	21	353.1	4,590.9
Education	0.00	\$ -	\$ 44.6	\$ -	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	\$ -	\$ 14.0	\$ -	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	2.17	\$ 3,261.3	\$ 807.6	\$ 694.5	2,379.339	30,931.4	367.8	385.7	99	353.1	4,590.9
Smart Start	0.00	\$ -	\$ 5.0	\$ -	-	-	-	-	-	-	-
Total	1.80	\$ 6,055.3	\$ 2,182.9	\$ 1,188.7	3,973.6	43,509.3	765.0	598.0	16,177	4,104.1	82,234.8

Annual kWh Savings	3,973,570	76.8% kWh > 55%	Lifetime kWh Savings	43,509,269	64.4% kWh > 55%
Annual MMBTU Savings (in kWh)	1,202,785	23.2%	Lifetime MMBTU Savings (in kWh)	24,100,640	35.6%
	5,176,355	100.0%		67,609,909	100.0%

Program Cost-Effectiveness - 2018 Actual

	Total Resource Benefits / Cost Ratio	Benefits (\$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	1.32	\$ 460.8	\$ 348.3	\$ -	48.5	712.9	(0.4)	1.7	42	1,067.3	24,276.2
Energy Star Homes	2.81	\$ 468.2	\$ 147.7	\$ 19.0	48.1	1,095.2	21.2	1.9	26	840.0	20,976.1
Home Performance with Energy Star	1.78	\$ 1,296.2	\$ 383.0	\$ 346.0	122.7	2,240.9	59.8	1.3	72	3,132.2	66,776.1
Energy Star Products	2.00	\$ 1,415.2	\$ 425.1	\$ 283.4	2,053.0	12,522.4	589.6	266.0	15,938	194.7	2,725.5
ISO-NE Forward Capacity Market Expenses	0.00	\$ -	\$ 5.2	\$ -	-	-	-	-	-	-	-
Sub-Total Residential	1.86	\$ 3,640.4	\$ 1,309.2	\$ 648.4	2,272.294	16,571.4	670.3	270.9	16,078	5,234.2	114,753.9
Commercial, Industrial & Municipal											
Large Business Energy Solutions	1.81	\$ 1,447.1	\$ 304.5	\$ 495.7	1,442.733	18,759.3	122.7	51.9	19	-	-
Small Business Energy Solutions	1.71	\$ 718.4	\$ 241.4	\$ 177.7	582.1	7,674.6	54.2	70.2	46	-	-
Municipal Energy Solutions	0.92	\$ 269.7	\$ 135.1	\$ 157.1	196.8	2,558.7	21.0	22.7	21	140.5	1,826.6
Education	0.00	\$ -	\$ 7.8	\$ -	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	\$ -	\$ 12.1	\$ -	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	1.59	\$ 2,435.1	\$ 701.0	\$ 830.5	2,221.676	28,992.6	197.9	144.8	86	140.5	1,826.6
Smart Start	0.00	\$ -	\$ 1.1	\$ -	-	-	-	-	-	-	-
Total	1.74	\$ 6,075.6	\$ 2,011.3	\$ 1,478.9	4,494.0	45,564.0	868.2	415.8	16,164	5,374.7	116,580.5

Annual kWh Savings	4,493,969	74.0%	kWh > 55%	Lifetime kWh Savings	45,564,007	57.1%	kWh > 55%
Annual MMBTU Savings (in kWh)	<u>1,575,163</u>	<u>26.0%</u>		Lifetime MMBTU Savings (in kWh)	<u>34,166,376</u>	<u>42.9%</u>	
	6,069,132	100.0%			79,730,383	100.0%	

Present Value Benefits - 2018 PLAN

	Total Benefits (\$000)	CAPACITY			ENERGY				Electric DRIPE	Gas Benefit	Gas DRIPE	Other Fuels Benefit	Water Benefit	Other Non-Resource Benefit
		Summer Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak						
Residential Programs														
Home Energy Assistance	\$ 504.2	\$ 10.4	\$ 1.6	\$ 6.3	\$ 10.6	\$ 11.3	\$ 4.4	\$ 4.5	\$ 0.3	\$ -	\$ -	\$ 409.0	\$ -	\$ 45.8
Energy Star Homes	\$ 335.2	\$ 28.6	\$ 3.6	\$ 14.8	\$ 24.0	\$ 25.5	\$ 11.6	\$ 10.8	\$ 0.4	\$ 0.1	\$ 0.0	\$ 182.7	\$ 2.9	\$ 30.2
Home Performance with Energy Star	\$ 821.2	\$ 31.0	\$ 4.1	\$ 16.8	\$ 22.6	\$ 27.4	\$ 9.9	\$ 11.0	\$ 0.5	\$ -	\$ -	\$ 623.3	\$ -	\$ 74.7
Energy Star Products	\$ 1,133.4	\$ 136.2	\$ 25.6	\$ 103.8	\$ 245.7	\$ 152.6	\$ 106.4	\$ 64.9	\$ 7.8	\$ 6.8	\$ 0.1	\$ 31.2	\$ 164.1	\$ 88.1
Sub-Total Residential	\$ 2,794.0	\$ 206.1	\$ 35.0	\$ 141.7	\$ 302.8	\$ 216.8	\$ 132.3	\$ 91.2	\$ 9.0	\$ 7.0	\$ 0.1	\$ 1,246.3	\$ 167.0	\$ 238.8
Commercial/Industrial Programs														
Large Business Energy Solutions	\$ 2,005.9	\$ 360.2	\$ 58.2	\$ 235.8	\$ 479.9	\$ 329.3	\$ 215.0	\$ 135.7	\$ 9.5	\$ -	\$ -	\$ -	\$ -	\$ 182.4
Small Business Energy Solutions	\$ 976.9	\$ 141.4	\$ 22.8	\$ 92.5	\$ 259.1	\$ 177.8	\$ 116.1	\$ 73.2	\$ 5.1	\$ -	\$ -	\$ -	\$ -	\$ 88.8
Municipal Energy Solutions	\$ 278.5	\$ 33.8	\$ 5.5	\$ 22.2	\$ 45.2	\$ 31.0	\$ 20.2	\$ 12.8	\$ 0.9	\$ -	\$ -	\$ 81.7	\$ -	\$ 25.3
Sub-Total Commercial & Industrial	\$ 3,261.3	\$ 535.4	\$ 86.5	\$ 350.4	\$ 784.2	\$ 538.0	\$ 351.3	\$ 221.7	\$ 15.6	\$ -	\$ -	\$ 81.7	\$ -	\$ 296.5
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 6,055.3	\$ 741.6	\$ 121.4	\$ 492.1	\$ 1,087.1	\$ 754.9	\$ 483.6	\$ 312.8	\$ 24.5	\$ 7.0	\$ 0.1	\$ 1,328.0	\$ 167.0	\$ 535.3

Present Value Benefits - 2018 ACTUAL

	Total Benefits (\$000)	CAPACITY				ENERGY				Electric DRIPE	Gas Benefit	Gas DRIPE	Other Fuels Benefit	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	\$ 460.8	\$ 1.4	\$ -	\$ 0.3	\$ 1.0	\$ 21.8	\$ 18.8	\$ 2.0	\$ 1.6	\$ 0.3	\$ -	\$ -	\$ 371.8	\$ -	\$ 41.9
Energy Star Homes	\$ 468.2	\$ 4.1	\$ -	\$ 0.5	\$ 2.2	\$ 33.3	\$ 29.4	\$ 3.5	\$ 2.4	\$ 0.4	\$ 0.1	\$ 0.0	\$ 348.0	\$ 1.7	\$ 42.4
Home Performance with Energy Star	\$ 1,296.2	\$ 2.4	\$ -	\$ 0.3	\$ 1.4	\$ 72.0	\$ 64.1	\$ 2.8	\$ 2.4	\$ 0.9	\$ 11.2	\$ 0.1	\$ 1,020.6	\$ -	\$ 117.8
Energy Star Products	\$ 1,415.2	\$ 182.4	\$ -	\$ 35.2	\$ 142.7	\$ 320.5	\$ 190.6	\$ 137.0	\$ 79.7	\$ 11.0	\$ 6.9	\$ 0.1	\$ 31.7	\$ 163.6	\$ 113.8
ISO-NE Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Residential	\$ 3,640.4	\$ 190.3	\$ -	\$ 36.4	\$ 147.3	\$ 447.6	\$ 302.9	\$ 145.3	\$ 86.2	\$ 12.7	\$ 18.2	\$ 0.1	\$ 1,772.2	\$ 165.3	\$ 315.9
Commercial/Industrial Programs															
Large Business Energy Solutions	\$ 1,447.1	\$ 72.1	\$ -	\$ 11.6	\$ 47.2	\$ 484.6	\$ 591.9	\$ 55.7	\$ 42.4	\$ 10.0	\$ -	\$ -	\$ -	\$ -	\$ 131.6
Small Business Energy Solutions	\$ 718.4	\$ 99.1	\$ -	\$ 15.9	\$ 64.4	\$ 191.2	\$ 136.9	\$ 85.5	\$ 56.2	\$ 3.8	\$ -	\$ -	\$ -	\$ -	\$ 65.3
Municipal Energy Solutions	\$ 269.7	\$ 31.6	\$ -	\$ 5.1	\$ 20.7	\$ 61.0	\$ 50.3	\$ 26.1	\$ 18.8	\$ 1.3	\$ -	\$ -	\$ 30.4	\$ -	\$ 24.5
Education	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ISO Forward Capacity Market Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total Commercial & Industrial	\$ 2,435.1	\$ 202.8	\$ -	\$ 32.6	\$ 132.3	\$ 736.8	\$ 779.1	\$ 167.4	\$ 117.3	\$ 15.1	\$ -	\$ -	\$ 30.4	\$ -	\$ 221.4
Smart Start	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 6,075.6	\$ 393.1	\$ -	\$ 69.0	\$ 279.6	\$ 1,184.4	\$ 1,082.0	\$ 312.6	\$ 203.5	\$ 27.7	\$ 18.2	\$ 0.1	\$ 1,802.5	\$ 165.3	\$ 537.3

**Performance Incentive Calculation
 2018**

	<u>Planned</u>	<u>Actual</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	2.17	1.59
2. Threshold Benefit / Cost Ratio ¹	1.00	1.00
3. Lifetime kWh Savings	30,931,405	28,992,633
4. Threshold Lifetime kWh Savings (65%) ²	20,105,414	
5. Implementation Expenses	\$807,628	\$701,000
6. Benefit / Cost Percentage of Implementaton Expenses	2.75%	2.75%
7. Lifetime kWh Percentage of Implementation Expenses	2.75%	2.75%
8. Commercial & Industrial Performance Incentive	\$44,420	\$38,555
9. Maximum Commercial & Industrial Performance Incentive (6.875%)	\$55,524	
Residential Incentive		
10. Benefit / Cost Ratio	1.50	1.86
11. Threshold Benefit / Cost Ratio ¹	1.00	1.00
12. Lifetime kWh Savings	12,577,864	16,571,374
13. Threshold Lifetime kWh Savings (65%)	8,175,612	
14. Implementation Expenses	\$1,370,222	\$1,309,228
15. Benefit / Cost Percentage of Implementation Expenses	2.75%	2.75%
16. Lifetime kWh Percentage of Implementation Expenses	2.75%	2.75%
17. Residential Performance Incentive	\$75,362	\$72,008
18. Maximum Residential Performance Incentive (6.875%)	\$94,203	
19. TOTAL PLANNED / EARNED INCENTIVE	\$119,782	\$110,563

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.

**Planned Versus Actual Benefit / Cost Ratio by Sector
 2018**

	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial		
1. Benefits (Value) From Eligible Programs	\$ 3,261,254	\$ 2,435,138
2. Implementation Expenses	\$ 807,628	\$ 701,000
3. Member Contribution	\$ 694,500	\$ 830,532
4. Performance Incentive	\$ 44,420	\$ 38,555
5. Total Costs	\$ 1,546,548	\$ 1,570,087
6. Benefit/Cost Ratio - Commercial & Industrial Sector	2.11	1.55
Residential		
7. Benefits (Value) From Eligible Programs	\$ 2,794,043	\$ 3,640,420
8. Implementation Expenses	\$ 1,370,222	\$ 1,309,228
9. Member Contribution	\$ 494,171	\$ 648,371
10. Performance Incentive	\$ 75,362	\$ 72,008
11. Total Costs	\$ 1,939,755	\$ 2,029,606
12. Benefit/Cost Ratio - Residential Sector	1.44	1.79

**Lifetime Energy Savings by Sector and Program
 2018**

	Lifetime kWh Savings	
	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial		
Large Business Energy Solutions	18,930,233	18,759,304
Small Business Energy Solutions	10,220,113	7,674,630
Municipal Energy Solutions	1,781,060	2,558,699
Education	-	-
ISO Forward Capacity Market Expenses	-	-
Total Commercial & Industrial	30,931,405	28,992,633
Residential		
Home Energy Assistance	515,515	712,854
Energy Star Homes	1,176,627	1,095,227
Home Performance with Energy Star	1,174,507	2,240,894
Energy Star Products	9,711,214	12,522,399
Total Residential	12,577,864	16,571,374

	<u>2018</u>
Carry Forward Balance	\$ 260,845
Funding:	
System Benefit Charge	\$ 2,161,104
RGGI Funding	\$ 207,233
FCM Payments	121,156
Interest	33,088
Total Funding for Energy Efficiency Programs	<u>\$ 2,522,581</u>
Expenses:	
Energy Efficiency Expenditures	\$ 2,011,286
Correction-	\$ (3,554)
Member Incentive ¹ - 2017	86,579
Member Incentive ² - 2018	110,563
Total Program Expenses	<u>\$ 2,204,873</u>
Carry Forward Balance	<u><u>\$ 578,553</u></u>

Notes

1. 2017 Member Incentive accrued in 2017 and booked in 2018
2. 2018 Member Incentive accrued in 2018 and booked in 2019

RGGI Retail & Large Business Grant Program
January 1 2016 - December 31, 2018

	<u>C&I</u>
Beginning Balance: 1/1/2016	\$ -
Revenues	
RGGI Grant Proceeds 2016	\$ 32,214
RGGI Grant Proceeds 2017	\$ 20,396
Total Funding	<u>\$ 52,610</u>
Expenses	
2016 Retail	\$ 10,930
2016 Large Business	\$ 7,634
2017 Retail	\$ 24,773
2017 Large Business	\$ 12,757
Total Expenses	<u>\$ 56,094</u>
Ending Balance: 12/31/2017¹	\$ (3,484)
Ending Balance Adjusted for 2016 & 2017 Performance Incentive	
Performance Incentive 2016	\$ 1,392
Performance Incentive 2017	\$ 2,815
Total Performance Incentive²	<u>\$ 4,207</u>
2017 Ending Balance Adjusted for Performance Incentive¹	<u>\$ (7,691)</u>
Beginning Balance: 1/1/2018	\$ (7,691)
Revenues	
RGGI Grant Proceeds 2018	\$ 40,021
Total Funding	<u>\$ 40,021</u>
Expenses	
2018 Retail	\$ 8,271
2018 Large Business	\$ 11,767
Total Expenses	<u>\$ 20,038</u>
Ending Balance: 12/31/2018¹	\$ 12,292
Ending Balance Adjusted for 2018 Performance Incentive	
Performance Incentive 2018	\$ 1,503
Total Performance Incentive	<u>\$ 1,503</u>
2018 Ending Balance Adjusted for Performance Incentive	<u>\$ 10,789</u>

Notes:

1. A negative value, indicated by parantheses, indicates an over-spending of the funds in 2017. This will be reconciled in 2018.
2. The Performance Incentive is equal to 7.5% of the actual expenditures. The total incentive earned will be booked in 2019.