

December 26, 2017

BY HAND DELIVERY AND ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**RE: Docket No. 4755 – The Narragansett Electric Company d/b/a National Grid
Amended 2018 Energy Efficiency Program Plan – Revised Tables**

Dear Ms. Massaro:

In accordance with the Rhode Island Public Utilities Commission's (PUC) order at the Open Meeting on December 20, 2017, the Company has revised the 2018 Energy Efficiency (EE) Annual Plan, as reflected in the enclosed revised Electric and Gas tables. Please see the Revised Attachments 5 and 6, which reflect the following changes:

- The electric and gas fund balances have been updated with projection information consistent with the Company's response to the PUC's Record Request No. PUC 1-24. *See* tables E-1 and G-1.
- Demonstrations research and development budgets have been excluded from the shareholder incentive calculations. *See* tables E-3, E-9, G-3, and G-9.

The total overall electric and gas budget, energy savings goals, benefits, benefit cost ratios, cost of saved energy, and number of customers the Company plans to serve are the same as the filed 2018 EE Plan. In addition, the total budgets in the 2018 EE Plan are still consistent with the State of Rhode Island's legislated Budget Cap.

For the electric energy efficiency programs, the revisions have resulted in the following changes:

- The proposed EE Program Charge has decreased from the original proposal of \$0.01000 per kWh by \$0.00028 per kWh and is now \$0.00972 per kWh;
- The Energy Efficiency Resource Management Council (EERMC) and Rhode Island Office of Energy Resources (OER) budgets are tied to the EE Program Charge and, therefore, have decrease by \$20,010 each, for a total decrease of \$40,020;
- The Company's planned shareholder incentive has decreased by \$89,350; and
- The decreases in the EERMC, OER, and shareholder incentive budgets total \$129,370. In consultation with the settling parties, the Company allocated these funds to all programs in the Evaluation Budget.

For the energy efficiency gas programs, the enclosed revisions have resulted in the following changes:

- The proposed EE Program Charge has decreased from the original proposal of \$0.898 per dekatherm (Dth) by \$0.029 per Dth and is now \$0.869 per Dth for residential customers. For commercial and industrial customers, the EE Program Charge has decreased from the original proposal of \$0.727 per Dth by \$0.056 per Dth and is now \$0.671;
- As noted above, the EERMC and OER budgets are tied to the EE Program Charge. Therefore, the EERMC and OER budgets have decreased by \$15,357 each, for a total decrease of \$30,714; and
- The Company's planned shareholder incentive has decreased by \$22,428; The decreases in the EERMC, OER, and shareholder incentive budgets total \$53,142. In consultation with the settling parties, the Company has allocated these funds to all programs in the Evaluation Budget.

For the 2019 EE Plan, the Company and settling parties will collaborate on solutions that address the process for updating the EE Program Charge as actual information becomes available.

Accordingly, the Company respectfully requests that the PUC approve the 2018 EE Plan as revised through the enclosed amendments at the next scheduled Open Meeting on January 3, 2018 so the Company can deliver the expected economic benefits from the 2018 EE Plan and meet the 2018 goals set forth in the Plan. If approved, the EE Program Charge will take effect on January 5, 2018¹.

Thank you for your attention to this filing. If you have any questions, please contact me at 781-907-2121.

Sincerely,



Raquel J. Webster

cc: Jon Hagopian, Esq.
Steve Scialabba, Division

¹ If the PUC approves these changes at the January 3, 2018 open meeting, the Company respectfully requests that the EE Program Charge take effect on January 5, 2018 so that the Company has sufficient time to make the necessary updates to its billing system to reflect the approved EE Program Charge.

**Table E-1
National Grid
Electric DSM Funding Sources in 2018 by Sector
\$(000)**

	<u>Projections by Sector</u>			Total
	Income Eligible Residential	Non-Income Eligible Residential	Commercial & Industrial	
(1) Projected Budget (from E-2):	\$12,523.41	\$36,025.20	\$46,019.97	\$94,568.6
Sources of Other Funding:				
(2) Projected DSM Commitments at Year-End 2017:	\$0.00	\$0.00	\$0.00	\$0.00
(3) Projected Year-End 2017 Fund Balance and Interest:	\$0.00	(\$211.70)	\$11,110.05	\$10,898.35
(4) Projected FCM Payments from ISO-NE:	\$806.50	\$9,829.60	\$15,462.80	\$26,098.95
(5) Total Other Funding:	\$806.50	\$9,617.90	\$26,572.85	\$36,997.30
(6) Customer Funding Required:	\$11,716.91	\$26,407.30	\$19,447.12	\$57,571.29
(7) Payment to State Budget	\$0.0	\$0.0	\$0.0	\$12,500.0
(8) Total Funding Required:	\$11,716.9	\$26,407.3	\$19,447.1	\$70,071.3
(9) Forecasted kWh Sales:	225,348,908	2,746,458,844	4,320,390,848	7,292,198,600
(10) Energy Efficiency Program charge per kWh, excluding uncollectible recovery:				\$0.00960
(11) Proposed System Reliability Factor per kWh, excluding uncollectible recovery:				<u>\$0.00000</u>
(12) Total Proposed Energy Efficiency Charge per kWh, excluding uncollectible recovery:				\$0.00960
(13) Currently Effective Uncollectible Rate				1.25%
(14) Energy Efficiency Program charge per kWh, including uncollectible recovery:				\$0.00972
(15) Currently Effective EE Charge				<u>\$0.01124</u>
(16) Proposed Adjustment to Reflect Fully Reconciling Funding Mechanism				(\$0.00152)

Notes:

- (1) Projected Budget from E-2 includes OER and EERMC costs allocated to each sector based on forecasted sales and RIBB costs allocated to C&I sector.
- (2) DSM Commitments are projects that are under construction with anticipated completion in 2018.
- (3) Fund balance projections include projected revenue and spend through year end with Low Income sector set to \$0 through projected subsidization from other sectors, minus commitments which are illustrated separately on line (2).
- (4) The total projection of FCM revenue is allocated by kWh sales to each sector.
- (5) Line (1) + Line (2) + Line (3)
- (6) Line (1) - Line (5)
- (7) In accordance with Section 17 of 2017-H 5175 Substitute A as Amended, the 2018 Energy Efficiency and Conservation Procurement Plan includes \$12,500,000 in its Plan that will be transferred to the State Controller by June 30, 2018. Since this payment is not part of the implementation and oversight of energy efficiency programs it is not included in implementation budgets nor is it included in cost-effectiveness screening.
- (8) Line (6) + Line (7)
- (9) Per Company Forecast
- (10) Line (8) ÷ Line (9), truncated to 5 decimal places
- (11) Proposed System Reliability Factor is from the 2018 System Reliability Procurement Plan. Charge reflects projected year-end 2017 positive fund balance.
- (12) Line (10) + Line (11)
- (13) Per Energy Efficiency Program Provision, R.I.P.U.C. No 2172
- (14) Line (12) ÷ (1-Line (13), truncated to 5 decimal places
- (15) Currently Effective EE Charge includes System Reliability Factor and uncollectible recovery.
- (16) Line (14) - Line (15)

**Table E-2
National Grid
2018 Electric Energy Efficiency Program Budget (\$000)**

	Program Planning & Administration	Marketing	Rebates and Other Customer Incentives	Sales, Technical Assistance & Training	Evaluation & Market Research	Shareholder Incentive	Grand Total
Non-Income Eligible Residential							
Residential New Construction	\$63.9	\$2.5	\$407.0	\$238.0	\$53.3		\$764.6
ENERGY STAR® HVAC	\$70.2	\$108.5	\$1,494.9	\$512.3	\$20.7		\$2,206.6
EnergyWise	\$338.3	\$414.9	\$12,422.3	\$1,453.9	\$286.9		\$14,916.3
EnergyWise Multifamily	\$91.3	\$43.8	\$2,130.0	\$711.0	\$86.4		\$3,062.6
ENERGY STAR® Lighting	\$218.4	\$516.2	\$5,572.7	\$269.6	\$191.7		\$6,768.6
Residential Consumer Products	\$84.3	\$568.7	\$523.4	\$642.0	\$12.7		\$1,831.1
Home Energy Reports	\$84.7	\$10.9	\$2,466.2	\$10.2	\$57.2		\$2,629.3
Energy Efficiency Education Programs	\$0.0	\$40.0	\$0.0	\$0.0	\$0.0		\$40.0
Residential Demonstration and R&D	\$11.3	\$63.5	\$437.8	\$235.0	\$175.0		\$922.6
Community Based Initiatives - Residential	\$6.2	\$80.0	\$76.8	\$0.0	\$0.0		\$163.0
Comprehensive Marketing - Residential	\$5.7	\$550.8	\$0.0	\$0.0	\$0.1		\$556.7
Residential Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,646.9	\$1,646.9
Subtotal - Non-Income Eligible Residential	\$974.4	\$2,399.9	\$25,531.1	\$4,072.0	\$884.1	\$1,646.9	\$35,508.4
Income Eligible Residential							
Single Family - Income Eligible Services	\$272.5	\$129.2	\$7,087.4	\$1,596.8	\$243.4		\$9,329.3
Income Eligible Multifamily	\$85.5	\$9.5	\$1,880.0	\$515.3	\$67.1		\$2,557.4
Income Eligible Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$594.3	\$594.3
Subtotal - Income Eligible Residential	\$358.0	\$138.7	\$8,967.4	\$2,112.1	\$310.5	\$594.3	\$12,481.0
Commercial & Industrial							
Large Commercial New Construction	\$239.9	\$367.7	\$4,193.4	\$1,182.6	\$128.0		\$6,111.7
Large Commercial Retrofit	\$659.4	\$276.2	\$19,352.8	\$3,241.6	\$500.7		\$24,030.7
Small Business Direct Install	\$288.1	\$336.9	\$5,625.4	\$463.2	\$210.9		\$6,924.5
Commercial Demonstration and R&D	\$19.4	\$58.0	\$515.8	\$360.6	\$40.0		\$993.8
Community Based Initiatives - C&I	\$1.7	\$20.0	\$19.2	\$0.0	\$0.0		\$40.9
Comprehensive Marketing - C&I	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0
Finance Costs	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0		\$0.0
RI Infrastructure Bank	\$0.0	\$0.0	\$5,000.0	\$0.0	\$0.0		\$5,000.0
Commercial & Industrial Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2,105.4	\$2,105.4
Subtotal - Commercial & Industrial	\$1,208.5	\$1,058.8	\$34,706.5	\$5,248.0	\$879.7	\$2,105.4	\$45,207.0
Regulatory							
OER	\$686.1	\$0.0	\$0.0	\$0.0	\$0.0		\$686.1
EERMC	\$686.1	\$0.0	\$0.0	\$0.0	\$0.0		\$686.1
Subtotal - Regulatory	\$1,372.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$1,372.1
Grand Total	\$3,913.0	\$3,597.4	\$69,205.1	\$11,432.1	\$2,074.4	\$4,346.7	\$94,568.6
System Reliability Procurement							\$399.3

Notes:

- (1) 2017 Commitments are anticipated to be \$0.
- (2) For more information on Finance Costs, please refer to the 2018 C&I Program Description, Attachment 2.
- (3) OER and EERMC total 2.0% of customers' EE Program Charge collected on Table E-1, minus 2%.
- (4) System Reliability funds are included for illustrative purposes. They are part of the 2018 System Reliability Procurement Report, filed as a separate docket.

Table E-3
National Grid
Derivation of the 2018 Spending and Implementation Budgets (\$000)

	Proposed 2018 Budget From E-2	Regulatory Costs	Shareholder Incentive	Eligible Sector Spending Budget for Shareholder Incentive on E-9	Implementation Expenses for Cost- Effectiveness on E-5
Non-Income Eligible Residential					
Residential New Construction	\$764.6				\$764.6
ENERGY STAR® HVAC	\$2,206.6				\$2,206.6
EnergyWise	\$14,916.3				\$14,916.3
EnergyWise Multifamily	\$3,062.6				\$3,062.6
ENERGY STAR® Lighting	\$6,768.6				\$6,768.6
Residential Consumer Products	\$1,831.1				\$1,831.1
Home Energy Reports	\$2,629.3				\$2,629.3
Energy Efficiency Education Programs	\$40.0				\$40.0
Residential Demonstration and R&D	\$922.6				\$922.6
Community Based Initiatives - Residential	\$163.0				\$163.0
Comprehensive Marketing - Residential	\$556.7				\$556.7
Residential Shareholder Incentive	\$1,646.9		\$1,646.9		\$0.0
Subtotal - Non-Income Eligible Residential	\$35,508.4	\$0.0	\$1,646.9	\$32,938.9	\$33,861.5
Income Eligible Residential					
Single Family - Income Eligible Services	\$9,329.3				\$9,329.3
Income Eligible Multifamily	\$2,557.4				\$2,557.4
Income Eligible Shareholder Incentive	\$594.3		\$594.3		\$0.0
Subtotal - Income Eligible Residential	\$12,481.0	\$0.0	\$594.3	\$11,886.7	\$11,886.7
Commercial & Industrial					
Large Commercial New Construction	\$6,111.7				\$6,111.7
Large Commercial Retrofit	\$24,030.7				\$24,030.7
Small Business Direct Install	\$6,924.5				\$6,924.5
Commercial Demonstration and R&D	\$993.8				\$993.8
Community Based Initiatives - C&I	\$40.9				\$40.9
Comprehensive Marketing - C&I	\$0.0				\$0.0
Finance Costs	\$0.0				\$0.0
RI Infrastructure Bank	\$5,000.0				\$5,000.0
Commercial & Industrial Shareholder Incentive	\$2,105.4		\$2,105.4		\$0.0
Subtotal - Commercial & Industrial	\$45,207.0	\$0.0	\$2,105.4	\$42,107.9	\$43,101.6
Regulatory					
OER	\$686.1	\$686.1			\$686.1
EERMC	\$686.1	\$686.1			\$686.1
Subtotal - Regulatory	\$1,372.1	\$1,372.1	\$0.0	\$0.0	\$1,372.1
Grand Total	\$94,568.6	\$1,372.1	\$4,346.7	\$86,933.4	\$90,221.9

Notes:

- (1) Spending budget = Total Budget from E-2 minus Regulatory costs, Residential and Commercial Demonstration and R&D costs, and shareholder incentive.
- (2) Implementation Expenses = Total Budget from E-2 minus shareholder incentive.

**Table E-4
National Grid
Proposed 2018 Budget Compared to Approved 2017 Budget (\$000)**

	Proposed Implementation Budget 2018	Approved Implementation Budget 2017	Difference
Non-Income Eligible Residential			
Residential New Construction	\$764.6	\$1,045.3	-\$280.7
ENERGY STAR® HVAC	\$2,206.6	\$1,669.5	\$537.1
EnergyWise	\$14,916.3	\$9,630.0	\$5,286.3
EnergyWise Multifamily	\$3,062.6	\$3,443.5	-\$380.9
ENERGY STAR® Lighting	\$6,768.6	\$9,412.4	-\$2,643.8
Residential Consumer Products	\$1,831.1	\$2,125.0	-\$293.9
Home Energy Reports	\$2,629.3	\$2,447.0	\$182.4
Energy Efficiency Education Programs	\$40.0	\$40.0	\$0.0
Residential Demonstration and R&D	\$922.6	\$1,179.5	-\$256.9
Community Based Initiatives - Residential	\$163.0	\$270.8	-\$107.8
Comprehensive Marketing - Residential	\$556.7	\$535.4	\$21.3
Subtotal - Non-Income Eligible Residential	\$33,861.5	\$31,798.4	\$2,063.0
Income Eligible Residential			
Single Family - Income Eligible Services	\$9,329.3	\$9,268.1	\$61.2
Income Eligible Multifamily	\$2,557.4	\$2,708.4	-\$151.1
Subtotal - Income Eligible Residential	\$11,886.7	\$11,976.5	-\$89.9
Commercial & Industrial			
Large Commercial New Construction	\$6,111.7	\$5,121.4	\$990.3
Large Commercial Retrofit	\$24,030.7	\$23,708.4	\$322.3
Small Business Direct Install	\$6,924.5	\$8,831.4	-\$1,906.8
Community Based Initiatives - C&I	\$40.9	\$0.0	\$40.9
Commercial Demonstration and R&D	\$993.8	\$874.4	\$119.4
Finance Costs	\$0.0	\$1,300.0	-\$1,300.0
RI Infrastructure Bank	\$5,000.0	\$4,900.0	\$100.0
Subtotal Commercial & Industrial	\$43,101.6	\$44,735.6	-\$1,633.9
Regulatory			
EERMC	\$686.1	\$816.3	-\$130.2
OER	\$686.1	\$816.3	-\$130.2
Subtotal Regulatory	\$1,372.1	\$1,632.5	-\$260.4
TOTAL IMPLEMENTATION BUDGET	\$90,221.9	\$90,143.1	\$78.9
OTHER EXPENSE ITEMS			
Commitments	\$0.0	\$0.0	\$0.0
Company Incentive	\$4,346.7	\$4,425.5	-\$78.9
Subtotal - Other Expense Items	\$4,346.7	\$4,425.5	-\$78.9
TOTAL BUDGET	\$94,568.6	\$94,568.6	\$0.0

Notes:

- (1) Program Implementation Budget excludes Commitments, Company Incentive; derived on Table E-3
- (2) Total Budget includes Implementation, Commitments; illustrated on Table E-3

Table E-5
National Grid
Calculation of 2018 Program Year Cost-Effectiveness
All Dollar Values in (\$000)

	RI Test Benefit/ Cost¹	Total Benefit	Program Implementation Expenses²	Customer Contribution	Shareholder Incentive	¢/Lifetime kWh
Non-Income Eligible Residential						
Residential New Construction	2.10	\$ 1,815.5	\$ 764.6	\$ 99.3		11.7
ENERGY STAR® HVAC	2.50	\$ 8,925.9	\$ 2,206.6	\$ 1,365.4		13.6
EnergyWise	2.10	\$ 38,184.6	\$ 14,916.3	\$ 3,235.6		46.3
EnergyWise Multifamily	2.55	\$ 9,083.1	\$ 3,062.6	\$ 495.0		11.5
Home Energy Reports	1.88	\$ 4,931.6	\$ 2,629.3	\$ -		10.5
ENERGY STAR® Lighting	3.16	\$ 27,790.5	\$ 6,768.6	\$ 2,030.0		4.2
Residential Consumer Products	1.73	\$ 3,906.0	\$ 1,831.1	\$ 429.6		10.2
Energy Efficiency Education Programs			\$ 40.0			
Residential Demonstration and R&D			\$ 922.6			
Community Based Initiatives - Residential			\$ 163.0			
Comprehensive Marketing - Residential			\$ 556.7			
n-Income Eligible Residential SUBTOTAL	2.19	\$ 94,637.2	\$ 33,861.5	\$ 7,654.8	\$ 1,646.9	11.5
Income Eligible Residential						
Single Family - Income Eligible Services	3.28	\$ 30,565.2	\$ 9,329.3	\$ -		26.1
Income Eligible Multifamily	3.25	\$ 8,311.3	\$ 2,557.4	\$ -		10.6
Income Eligible Residential SUBTOTAL	3.11	\$ 38,876.5	\$ 11,886.7	\$ -	\$ 594.3	19.8
Commercial & Industrial						
Large Commercial New Construction	5.17	\$ 33,691.5	\$ 6,111.7	\$ 402.4		3.1
Large Commercial Retrofit	3.94	\$ 156,597.8	\$ 24,030.7	\$ 15,759.0		4.0
Small Business Direct Install	2.05	\$ 18,635.9	\$ 6,924.5	\$ 2,177.8		7.6
Commercial Demonstration and R&D			\$ 993.8			
Community Based Initiatives - C&I			\$ 40.9			
Finance Costs			\$ -			
RI Infrastructure Bank			\$ 5,000.0			
C&I SUBTOTAL	3.29	\$ 208,925.2	\$ 43,101.6	\$ 18,339.3	\$ 2,105.4	4.7
Regulatory						
OER			\$ 686.1			
EERMC			\$ 686.1			
Regulatory SUBTOTAL			\$ 1,372.1			
TOTAL	2.84	\$ 342,439.0	\$ 90,221.9	\$ 25,994.1	\$ 4,346.7	6.7

Notes:

(1) RI Test B/C Test = (Energy + Capacity + Resource Benefits+Economic Benefits + Carbon Benefits) / (Program Implementation + Customer Contribution + Shareholder Incentive)

Also includes effects of free-ridership and spillover.

(2) For Implementation Expenses derivation, see Table E-3.

Table E-5A
National Grid
Calculation of 2018 Program Year Cost-Effectiveness with TRC Test
All Dollar Values in (\$000)

	TRC Benefit/ Cost ¹	Total Benefit	Program Implementation Expenses ²	Customer Contribution	Shareholder Incentive	¢/Lifetime kWh
Non-Income Eligible Residential						
Residential New Construction	1.17	\$1,009.3	\$ 764.6	\$ 99.3		\$ 11.7
ENERGY STAR® HVAC	1.41	\$5,051.7	\$ 2,206.6	\$ 1,365.4		\$ 13.6
EnergyWise	1.24	\$22,520.2	\$ 14,916.3	\$ 3,235.6		\$ 46.3
EnergyWise Multifamily	1.62	\$5,759.7	\$ 3,062.6	\$ 495.0		\$ 11.5
Home Energy Reports	0.78	\$2,064.0	\$ 2,629.3	\$ -		\$ 10.5
ENERGY STAR® Lighting	1.66	\$14,629.6	\$ 6,768.6	\$ 2,030.0		\$ 4.2
Residential Consumer Products	0.94	\$2,132.7	\$ 1,831.1	\$ 429.6		\$ 10.2
Energy Efficiency Education Programs			\$ 40.0			
Residential Demonstration and R&D			\$ 922.6			
Community Based Initiatives - Residential			\$ 163.0			
Comprehensive Marketing - Residential			\$ 556.7			
Non-Income Eligible Residential SUBTOTAL	1.23	\$ 53,167.1	\$ 33,861.5	\$ 7,654.8	\$ 1,646.9	\$ 11.5
Income Eligible Residential						
Single Family - Income Eligible Services	2.33	\$ 21,716.5	\$ 9,329.3	\$ -		\$ 26.1
Income Eligible Multifamily	2.27	\$ 5,802.2	\$ 2,557.4	\$ -		\$ 10.6
Income Eligible Residential SUBTOTAL	2.20	\$ 27,518.7	\$ 11,886.7	\$ -	\$ 594.3	\$ 19.8
Commercial & Industrial						
Large Commercial New Construction	3.29	\$ 21,430.4	\$ 6,111.7	\$ 402.4		\$ 3.1
Large Commercial Retrofit	2.37	\$ 94,370.7	\$ 24,030.7	\$ 15,759.0		\$ 4.0
Small Business Direct Install	1.01	\$ 9,230.3	\$ 6,924.5	\$ 2,177.8		\$ 7.6
Commercial Demonstration and R&D			\$ 993.8			
Comprehensive Marketing - C&I			\$ -			
Community Based Initiatives - C&I			\$ 40.9			
Finance Costs			\$ -			
RI Infrastructure Bank			\$ 5,000.0			
C&I SUBTOTAL	1.97	\$ 125,031.5	\$ 43,101.6	\$ 18,339.3	\$ 2,105.4	\$ 4.7
Regulatory						
OER			\$ 686.1			
EERMC			\$ 686.1			
Regulatory SUBTOTAL			\$ 1,372.1			
TOTAL	1.71	\$ 205,717.3	\$ 90,221.9	\$ 25,994.1	\$ 4,346.7	\$ 6.7

Notes:

(1) TRC B/C Test = (Energy + Capacity + Resource Benefits) / (Program Implementation + Customer Contribution + Shareholder Incentive)

Also includes effects of free-ridership and spillover.

(2) For Implementation Expenses derivation, see Table E-3.

Table E-7
National Grid
Comparison of 2018 and 2017 Goals

	Proposed 2018			Approved 2017		Difference	
	Annual Demand Savings (kW)	Annual Energy Savings (MWh)	Planned Unique Participants	Annual Demand Savings (kW)	Annual Energy Savings (MWh)	Annual Demand Savings (kW)	Annual Energy Savings (MWh)
Non-Income Eligible Residential							
Residential New Construction	49	619	501	54	1,065	-5	-446
ENERGY STAR® HVAC	433	2,091	1,794	330	1,376	102	715
EnergyWise	286	6,157	10,000	376	6,545	-90	-388
EnergyWise Multifamily	329	4,207	6,000	288	3,519	41	689
Home Energy Reports	3,325	25,054	213,750	3,119	26,184	206	-1,130
ENERGY STAR® Lighting	4,413	38,891	292,150	5,466	46,856	-1,053	-7,965
Residential Consumer Products	429	2,849	9,682	705	4,708	-275	-1,860
Non-Income Eligible Residential SUBTOTAL	9,264	79,868	533,877	10,337	90,254	-1,073	-10,385
Income Eligible Residential							
Single Family - Income Eligible Services	696	4,185	2,750	652	4,350	44	-165
Income Eligible Multifamily	170	3,287	4,800	145	2,726	25	560
Income Eligible Residential SUBTOTAL	865	7,472	7,550	797	7,076	69	396
Commercial & Industrial							
Large Commercial New Construction	1,728	13,959	139	1,276	14,270	452	-311
Large Commercial Retrofit	11,910	75,616	2,193	13,317	77,611	-1,407	-1,995
Small Business Direct Install	1,034	9,940	565	2,815	12,136	-1,781	-2,196
C&I SUBTOTAL	14,673	99,515	2,897	17,409	104,017	-2,736	-4,502
TOTAL	24,802	186,855	544,324	28,543	201,347	-3,741	-14,491

Notes:

- (1) Planned 2018 participation takes into account net-to-gross and estimates unique participation by taking into account 2017 unique customer accounts to savings ratios. Therefore the number of planned measures may be more than the estimated participants shown. For measure counts please view the widget tables in Attachments 1 and 2. Table E-7 no longer includes a comparison to the previous year's participation. Due to the way unique participation is calculated it is not possible to compare year-over-year results.
- (2) There are additional Low Income participants in Residential New Construction.
- (3) A customer can participate in more than one program, for example, ENERGY STAR® Lighting and Home Energy Reports, therefore the population reached can be more than 100%.
- (4) Beginning in 2017, Home Energy Reports participation was counted as the number of customers receiving reports (i.e., the "treatment group") adjusted by the "Read Rate" of 75% from the most recent Customer Engagement Tracker Survey.

Table E-8
National Grid
Avoided Costs Used in 2018 Benefit-Cost Model

	Rhode Island					DRIPE for Installations in 2017				
	Winter Peak Energy	Winter Off-Peak Energy	Summer Peak Energy	Summer Off-Peak Energy	Annual Market Capacity Value	Winter Peak Energy	Winter Off-Peak Energy	Summer Peak Energy	Summer Off-Peak Energy	Annual Market Capacity Value
Units:	\$/kWh	\$/kWh	\$/kWh	\$/kWh	\$/kW-yr	\$/kWh	\$/kWh	\$/kWh	\$/kWh	\$/kW-yr
Period:										
2018	0.053	0.046	0.037	0.030	159.47	0.00	0.00	0.00	0.00	
2019	0.057	0.051	0.043	0.036	108.94					
2020	0.062	0.053	0.052	0.040	79.18					
2021	0.068	0.060	0.056	0.045	119.97					
2022	0.069	0.060	0.058	0.046	113.05					
2023	0.073	0.063	0.062	0.050	106.23					
2024	0.075	0.066	0.064	0.053	110.63					
2025	0.077	0.068	0.068	0.055	121.93					
2026	0.077	0.067	0.070	0.055	133.47					
2027	0.077	0.068	0.070	0.056	144.59					
2028	0.078	0.069	0.074	0.058	155.98					
2029	0.080	0.071	0.077	0.060	168.21					
2030	0.082	0.073	0.079	0.061	184.74					
2031	0.082	0.074	0.085	0.063	192.10					
2032	0.083	0.075	0.088	0.064	192.10					
2033	0.085	0.077	0.092	0.066	192.10					
2034	0.086	0.079	0.096	0.068	192.10					
2035	0.088	0.080	0.100	0.070	192.10					
2036	0.089	0.082	0.104	0.072	192.10					
2037	0.090	0.084	0.108	0.074	192.10					
2038	0.092	0.086	0.113	0.076	192.10					
2039	0.093	0.088	0.118	0.078	192.10					
2040	0.095	0.090	0.123	0.080	192.10					
2041	0.096	0.092	0.128	0.083	192.10					
2042	0.098	0.094	0.134	0.085	192.10					
2043	0.100	0.096	0.140	0.088	192.10					
2044	0.101	0.098	0.146	0.090	192.10					
2045	0.103	0.100	0.152	0.093	192.10					
2046	0.105	0.102	0.159	0.095	192.10					
2047	0.106	0.104	0.165	0.098	192.10					

Source:
AESC 2015 Study Update, Appendix B, in 2017 dollars

**Table E-9
National Grid
2018 Targeted Shareholder Incentive**

Energy Incentive Rate: 3.50%

	(1)	(2)	(3)	(4)	(5)
Sector	Spending Budget \$(000)	Target Incentive \$(000)	Annual kWh Savings Goal	Threshold kWh Savings	Target Incentive Per kWh
Income Eligible Residential	\$11,887	\$416	7,471,934	5,603,951	\$0.056
Non-Income Eligible Residential	\$32,939	\$1,153	79,868,307	59,901,230	\$0.014
Commercial & Industrial	\$42,108	\$1,474	99,515,244	74,636,433	\$0.015
Total	\$86,933	\$3,043	186,855,485	140,141,613	\$0.016

Demand Incentive Rate: 1.50%

	(6)	(7)	(8)	(9)	(10)
Sector	Spending Budget \$(000)	Target Incentive \$(000)	Annual kW Savings Goal	Threshold kW Savings	Target Incentive Per kW
Income Eligible Residential	\$11,887	\$178	865	649	\$206.1
Non-Income Eligible Residential	\$32,939	\$494	9,264	6,948	\$53.3
Commercial & Industrial	\$42,108	\$632	14,673	11,004	\$43.0
Total	\$86,933	\$1,304	24,802	18,602	\$52.6

Notes:

- (1) and (6) Eligible Spending Budget excludes Regulatory Costs, Residential and Commercial Demonstration and R&D costs, and Shareholder Incentive. See Table E-3 for details.
 - (2) Equal to the incentive rate (3.5%) x Column (1).
 - (3) and (8) See Table E-7
 - (4) and (9) 75% of Column (3). No incentive is earned on annual kWh savings in the sector unless the Company achieves at least this threshold level of performance.
 - (5) Column (2)*1000/Column (3). This illustration is for achieved savings equal to the savings target. The incentive earned per kWh will vary with the percent of the savings target achieved
 - (7) Equal to the incentive rate (1.5%) x Column (1).
 - (10) Column (7)*1000/Column (8). This illustration is for achieved savings equal to the savings target. The incentive earned per kW will vary with the percent of the savings target achieved
- The shareholder incentive for Energy and Demand incentives will be calculated as follows, where SB is the Spending Budget in the sector:
- From 75% of savings to 100% of savings: Shareholder Incentive = SB x (0.15 x % of savings achieved – 0.10)
 - x 0.7 for electric energy savings
 - x 0.3 for electric demand savings
 - x 1.0 for natural gas savings
 - From 100% of savings to 125% of savings: Shareholder Incentive = SB x (0.05 x % of savings achieved)

Table E-10
National Grid
Revolving Loan Fund Projections

Large C&I Revolving Loan Fund		Small Business Revolving Loan Fund	
(1) Total Loan Fund Deposits Through 2017	\$ 21,979,678	(1) Total Loan Fund Deposits Through 2017	\$ 4,658,971
(2) Current Loan Fund Balance	\$ 14,439,704	(2) Current Loan Fund Balance	\$ 2,747,899
<i>Loans Paid Year-To-Date</i>	\$ 5,377,709	<i>Loans Paid Year-To-Date</i>	\$ 1,518,374
<i>Repayments Year-To-Date</i>	\$ 2,429,390	<i>Repayments Year-To-Date</i>	\$ 1,805,496
(3) Projected Additional Loans by Year End 2017	\$ 5,994,473	(3) Projected Additional Loans by Year End 2017	\$ 1,718,084
(4) Projected Additional Repayments by Year End 2017	\$ 1,388,223	(4) Projected Additional Repayments by Year End 2017	\$ 902,748
(5) Projected Year End Loan Fund Balance 2017	\$ 9,833,453	(5) Projected Year End Loan Fund Balance 2017	\$ 1,932,563
(6) 2018 Fund Injection	\$ -	(6) 2018 Fund Injection	\$ -
(7) Projected Loan Fund Balance, January 2018	\$ 9,833,453	(7) Projected Loan Fund Balance, January 2018	\$ 1,932,563
(8) Projected Repayments throughout 2018	\$ 3,929,654	(8) Projected Repayments throughout 2018	\$ 2,000,000
(9) Estimated Loans in 2018	\$ 11,000,000	(9) Estimated Loans in 2018	\$ 2,800,000
(10) Projected Year End Loan Fund Balance 2018	\$ 2,763,107	(10) Projected Year End Loan Fund Balance 2018	\$ 1,132,563
 Public Sector Revolving Loan Fund 			
(1) Total Loan Fund Deposits Through 2017	\$ 1,562,529		
(2) Current Loan Fund Balance	\$ 712,259		
<i>Loans Paid Year-To-Date</i>	\$ -		
<i>Repayments Year-To-Date</i>	\$ 229,074		
(3) Projected Additional Loans by Year End	\$ 18,003		
(4) Projected Additional Repayments by Year End	\$ 114,537		
(5) Projected Year End Loan Fund Balance	\$ 808,793		
(6) 2018 Fund Injection	\$ -		
(7) Projected Loan Fund Balance, January 2018	\$ 808,793		
(8) Projected Repayments throughout 2018	\$ 305,000		
(9) Estimated Loans in 2018	\$ -		
(10) Projected Year End Loan Fund Balance 2018	\$ 1,113,793		

Notes

- 1 Funding injections since loan funds began.
- 2 Current Loan Fund Balance is through August 2017; it includes all loans and repayments made by August 2017. Public Sector Revolving Loan Fund reduced by transfers to RI PEP Incentives.
- 3 Projected Loans from September to Year-End 2017 is estimated based on projects currently under construction that are anticipated to be paid out by year-end. It is difficult to project this amount accurately due to the fact that projects could be delayed by a month or two resulting in payment occurring in 2018 instead of 2017.
- 4 Projected Repayments from September to Year-End 2017 is estimated based on the monthly average amount of repayments
- 5 Equal to (2) - (3) + (4)
- 6 Proposed 2018 Fund Injection detailed on Table E-2
- 7 Equal to (5) + (6)
- 8 Assumption based on monthly average repayments in 2017 over 12 month period; repayments accumulate over time and may vary widely.
- 9 Amount projected to be lent to customers in 2018
- 10 Equal to (7) + (8) - (9)

**Table G-1
National Grid
Gas DSM Funding Sources in 2018 by Sector
\$(000)**

	<u>Projections by Sector</u>			Total
	Income Eligible Residential	Non-Income Eligible Residential	Commercial & Industrial	
(1) Projected Budget (from G-2):	\$6,722.6	\$13,403.9	\$7,954.4	\$28,080.9
Sources of Other Funding:				
(2) Estimated Year-End 2017 Fund Balance and Interest:	\$844.82	(\$2,240.5)	\$694.5	(\$701.1)
(3) Low Income Weatherization in Base Rates:	<u>\$200.00</u>			<u>\$200.00</u>
(4) Total Other Funding:	\$1,044.8	(\$2,240.5)	\$694.5	(\$501.1)
(5) Customer Funding Required:	\$5,677.8	\$15,644.4	\$7,259.9	\$28,582.1
(6) Forecasted Firm Dth Sales	1,472,733	17,914,287	20,035,568	39,422,588
(7) Forecasted Non Firm Dth Sales			169,933	169,933
(8) Less: Exempt DG Customers			(1,371,214)	(1,371,214)
(9) Forecasted Dth Sales:	1,472,733	17,914,287	18,834,287	38,221,307
Average Energy Efficiency Program Charge per Dth				
(10) excluding Uncollectible Recovery:				\$0.747
Proposed Energy Efficiency Program Charge per Dth				
(11) excluding Uncollectible Recovery	\$0.842	\$0.842	\$0.650	
(12) Currently Effective Uncollectible Rate	<u>3.18%</u>	<u>3.18%</u>	<u>3.18%</u>	
Proposed Energy Efficiency Program Charge per Dth including Uncollectible Recovery:	\$0.869	\$0.869	\$0.671	
Currently Effective Energy Efficiency Program Charge				
(14) per Dth	\$0.888	\$0.888	\$0.726	
Adjustment to Reflect Fully Reconciling Funding				
(15) Mechanism	(\$0.019)	(\$0.019)	(\$0.055)	

Notes

(1) Projected Budget from G-2 includes OER and EERMC costs allocated to each sector based on forecasted sales.

(2) Fund Balance projections include projected revenue and spend through year-end with Residential and C&I sector subsidies applied to Income Eligible as detailed in the 2017 EE Plan Table G-1.

(11) As agreed to by the settling parties, the proposed EE program charges allow for the use of collections from one sector to fund energy efficiency services in other sectors that would otherwise not be supported with the proposed collection rates. The C&I charge includes collection of \$4,998.3 of which \$4,437.8 will be allocated to the low income sector and \$560.5 to the residential sector.

**Table G-2
National Grid
2018 Gas Energy Efficiency Program Budget (\$000)**

	Program Planning and Administration	Marketing	Rebates and Other Customer Incentives	Sales, Technical Assistance and Training	Evaluation & Market Research	Shareholder Incentive	Grand Total
Non-Income Eligible Residential:							
ENERGY STAR [®] HVAC	\$51.7	\$119.7	\$1,309.3	\$243.7	\$5.9	\$0.0	\$1,730.4
EnergyWise	\$202.3	\$80.7	\$6,726.1	\$1,338.8	\$22.9	\$0.0	\$8,370.8
EnergyWise Multifamily	\$51.8	\$33.6	\$797.5	\$356.0	\$28.1	\$0.0	\$1,267.1
Home Energy Reports	\$18.9	\$1.0	\$397.9	\$5.1	\$5.8	\$0.0	\$428.7
Residential Demonstration and R&D	\$0.1	\$19.5	\$0.0	\$0.0	\$0.0	\$0.0	\$19.6
Residential New Construction	\$18.8	\$3.1	\$368.5	\$181.3	\$15.8	\$0.0	\$587.4
Comprehensive Marketing - Residential	\$0.5	\$73.2	\$0.0	\$0.0	\$0.0	\$0.0	\$73.7
Community Based Initiatives - Residential	\$0.0	\$20.0	\$19.2	\$0.0	\$0.0	\$0.0	\$39.2
Residential Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$624.9	\$624.9
Subtotal - Non-Income Eligible Residential	\$344.1	\$350.7	\$9,618.4	\$2,125.0	\$78.6	\$624.9	\$13,141.6
Income Eligible Residential:							
Single Family - Income Eligible Services	\$116.8	\$14.6	\$3,037.5	\$812.3	\$51.3	\$0.0	\$4,032.4
Income Eligible Multifamily	\$70.1	\$9.9	\$1,885.8	\$348.9	\$34.9	\$0.0	\$2,349.5
Income Eligible Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$319.1	\$319.1
Subtotal - Income Eligible Residential	\$186.8	\$24.4	\$4,923.3	\$1,161.2	\$86.2	\$319.1	\$6,701.1
Commercial & Industrial							
Large Commercial New Construction	\$79.2	\$194.7	\$1,601.4	\$658.4	\$124.4	\$0.0	\$2,658.1
Large Commercial Retrofit	\$140.6	\$291.8	\$1,644.2	\$1,452.3	\$114.3	\$0.0	\$3,643.3
Small Business Direct Install	\$5.1	\$26.9	\$57.0	\$40.0	\$3.5	\$0.0	\$132.5
Commercial & Industrial Multifamily	\$18.0	\$15.6	\$264.5	\$109.6	\$2.4	\$0.0	\$410.2
Commercial Demonstration and R&D	\$0.1	\$18.5	\$331.1	\$106.4	\$26.0	\$0.0	\$482.1
Finance Costs	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
RI Infrastructure Bank	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Community Based Initiatives - C&I	\$0.0	\$5.0	\$4.8	\$0.0	\$0.0	\$0.0	\$9.8
Commercial & Industrial Shareholder Incentive	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$342.7	\$342.7
Subtotal - Commercial & Industrial	\$243.0	\$552.6	\$3,903.0	\$2,366.7	\$270.7	\$342.7	\$7,678.6
Regulatory							
EERMC	\$279.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$279.8
OER	\$279.8	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$279.8
Subtotal - Regulatory	\$559.6	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$559.6
Grand Total	\$1,333.5	\$927.6	\$18,444.7	\$5,652.9	\$435.6	\$1,286.6	\$28,080.9

Notes:

(1) OER and EERMC is equal to 2% of total collections from customers' Energy Efficiency Program Charge, reduced by 2%.

**Table G-3
National Grid
Derivation of the 2018 Spending & Implementation Budgets (\$000)**

	Proposed 2018 Budget From G-2 (\$000)	Outside Finance and Stakeholder Oversight Costs (\$000)	Shareholder Incentive (\$000)	Eligible Sector Spending Budget for Shareholder Incentive on G-9 (\$000)¹	Implementation Expenses for Cost-Effectiveness on G-5 (\$000)²
Non-Income Eligible Residential					
ENERGY STAR [®] HVAC	\$ 1,730.4		\$ -		\$ 1,730.4
EnergyWise	\$ 8,370.8		\$ -		\$ 8,370.8
EnergyWise Multifamily	\$ 1,267.1		\$ -		\$ 1,267.1
Home Energy Reports	\$ 428.7		\$ -		\$ 428.7
Residential Demonstration and R&D	\$ 19.6		\$ -		\$ 19.6
Residential New Construction	\$ 587.4				\$ 587.4
Comprehensive Marketing - Residential	\$ 73.7		\$ -		\$ 73.7
Community Based Initiatives - Residential	\$ 39.2		\$ -		\$ 39.2
Residential Shareholder Incentive	\$ 624.9		\$ 624.9		\$ -
Subtotal - Non-Income Eligible Residential	\$ 13,141.6	\$ -	\$ 624.9	\$ 12,497.2	\$ 12,516.7
Income Eligible Residential					
Single Family - Income Eligible Services	\$ 4,032.4		\$ -		\$ 4,032.4
Income Eligible Multifamily	\$ 2,349.5		\$ -		\$ 2,349.5
Income Eligible Shareholder Incentive	\$ 319.1		\$ 319.1		\$ -
Subtotal - Income Eligible Residential	\$ 6,701.1	\$ -	\$ 319.1	\$ 6,382.0	\$ 6,382.0
Commercial & Industrial					
Large Commercial New Construction	\$ 2,658.1		\$ -		\$ 2,658.1
Large Commercial Retrofit	\$ 3,643.3		\$ -		\$ 3,643.3
Small Business Direct Install	\$ 132.5		\$ -		\$ 132.5
Commercial & Industrial Multifamily	\$ 410.2		\$ -		\$ 410.2
Commercial Demonstration and R&D	\$ 482.1		\$ -		\$ 482.1
Finance Costs	\$ -	\$ -	\$ -		\$ -
Community Based Initiatives - C&I	\$ 9.8		\$ -		\$ 9.8
Commercial & Industrial Shareholder Incentive	\$ 342.7		\$ 342.7		\$ -
Subtotal - Commercial & Industrial	\$ 7,678.6	\$ -	\$ 342.7	\$ 6,853.8	\$ 7,335.9
Regulatory					
EERMC	\$ 279.8	\$ 279.8			\$ 279.8
OER	\$ 279.8	\$ 279.8			\$ 279.8
Subtotal - Regulatory	\$ 559.6	\$ 559.6	\$ -		\$ 559.6
Grand Total	\$ 28,080.9	\$ 559.6	\$ 1,286.6	\$ 25,732.9	\$ 26,794.3

Notes:

- (1) Eligible Sector Spending Budget = Budget from G-2 minus Regulatory Costs, Residential and Commercial Demonstration and R&D Costs, and Shareholder Incentive
- (2) Implementation Expenses = Budget from G-2 minus Shareholder Incentive

**Table G-4
National Grid
Proposed 2018 Budget Compared to Approved 2017 Budget (\$000)**

	Proposed Budget 2018 from G-2	2017 Approved Gas Budget	Difference
Non-Income Eligible Residential			
ENERGY STAR® HVAC	\$ 1,730.4	\$ 1,803.5	\$ (73.1)
EnergyWise	\$ 8,370.8	\$ 6,917.2	\$ 1,453.6
EnergyWise Multifamily	\$ 1,267.1	\$ 1,823.6	\$ (556.5)
Home Energy Reports	\$ 428.7	\$ 497.0	\$ (68.3)
Residential Demonstration and R&D	\$ 19.6	\$ 264.4	\$ (244.8)
Residential New Construction	\$ 587.4	\$ 840.7	\$ (253.3)
Comprehensive Marketing - Residential	\$ 73.7	\$ 69.8	\$ 3.8
Community Based Initiatives - Residential	\$ 39.2	\$ 79.6	\$ (40.4)
Residential Shareholder Incentive	\$ 624.9	\$ 614.8	\$ 10.1
Subtotal - Non-Income Eligible Residential	\$ 13,141.6	\$ 12,910.5	\$ 231.1
Income Eligible Residential			
Single Family - Income Eligible Services	\$ 4,032.4	\$ 3,640.6	\$ 391.8
Income Eligible Multifamily	\$ 2,349.5	\$ 2,216.6	\$ 133.0
Income Eligible Shareholder Incentive	\$ 319.1	\$ 292.9	\$ 26.2
Subtotal - Income Eligible Residential	\$ 6,701.1	\$ 6,150.0	\$ 551.0
Commercial & Industrial			
Large Commercial New Construction	\$ 2,658.1	\$ 2,086.3	\$ 571.8
Large Commercial Retrofit	\$ 3,643.3	\$ 5,830.5	\$ (2,187.2)
Small Business Direct Install	\$ 132.5	\$ 268.7	\$ (136.2)
Commercial & Industrial Multifamily	\$ 410.2	\$ 738.9	\$ (328.7)
Commercial Demonstration and R&D	\$ 482.1	\$ 73.8	\$ 408.3
Finance Costs	\$ -	\$ 500.0	\$ (500.0)
RI Infrastructure Bank	\$ -	\$ 100.0	\$ (100.0)
Community Based Initiatives - C&I	\$ 9.8	\$ -	\$ 9.8
Commercial & Industrial Shareholder Incentive	\$ 342.7	\$ 479.9	\$ (137.2)
Subtotal Commercial & Industrial	\$ 7,678.6	\$ 10,078.0	\$ (2,399.4)
Regulatory			
EERMC	\$ 279.8	\$ 304.3	\$ (24.5)
OER	\$ 279.8	\$ 304.3	\$ (24.5)
Subtotal Regulatory	\$ 559.6	\$ 608.5	\$ (48.9)
TOTAL BUDGET	\$ 28,080.9	\$ 29,747.1	\$ (1,666.2)

Notes:

(1) RIIB expense moved to electric sector for Program Year 2018.

Table G-5
National Grid
Calculation of 2018 Program Year Cost-Effectiveness
All Dollar Values in (\$000)

	Rhode Island Benefit/ Cost	Total Benefit	Program Implementation Expenses	Customer Contribution	Shareholder Incentive	\$/Lifetime MMBtu
Non-Income Eligible Residential						
Energy Star® HVAC	2.35	\$ 11,069.6	\$ 1,730.4	\$ 2,988.3		\$ 9.89
EnergyWise	1.92	\$ 20,460.7	\$ 8,370.8	\$ 2,301.5		\$ 16.37
EnergyWise MultiFamily	3.38	\$ 4,963.0	\$ 1,267.1	\$ 199.4		\$ 7.39
Home Energy Reports	3.07	\$ 1,318.1	\$ 428.7	\$ -		\$ 5.55
Residential New Construction	1.61	\$ 1,038.2	\$ 587.4	\$ 59.4		\$ 10.32
Comprehensive Marketing - Residential			\$ 73.7			
Community Based Initiatives - Residential			\$ 39.2			
Residential Demonstration and R&D			\$ 19.6			
Non-Income Eligible Residential Subtotal	2.08	\$ 38,849.6	\$ 12,516.7	\$ 5,548.6	\$ 624.9	\$ 12.31
Income Eligible Residential						
Single Family - Income Eligible Services	3.23	\$ 13,030.0	\$ 4,032.4	\$ -		\$ 15.98
Income Eligible Multifamily	3.33	\$ 7,821.5	\$ 2,349.5	\$ -		\$ 8.20
Income Eligible Residential Subtotal	3.11	\$ 20,851.4	\$ 6,382.0	\$ -	\$ 319.1	\$ 11.84
Large Commercial & Industrial						
Large Commercial New Construction	2.66	\$ 12,451.1	\$ 2,658.1	\$ 2,015.1		\$ 5.86
Large Commercial Retrofit	5.42	\$ 25,463.3	\$ 3,643.3	\$ 1,054.6		\$ 2.57
Small Business Direct Install	3.72	\$ 537.7	\$ 132.5	\$ 11.9		\$ 4.85
Commercial & Industrial Multifamily	7.56	\$ 3,321.7	\$ 410.2	\$ 29.4		\$ 4.72
Commercial Demonstration and R&D			\$ 482.1			
Community Based Initiatives - C&I			\$ 9.8			
Finance Costs			\$ -			
Commercial & Industrial Subtotal	3.87	\$ 41,773.8	\$ 7,335.9	\$ 3,111.0	\$ 342.7	\$ 3.80
Regulatory						
EERMC			\$ 279.8			
OER			\$ 279.8			
Regulatory Subtotal			\$ 559.6			
Grand Total	2.76	\$ 101,474.8	\$ 26,794.3	\$ 8,659.6	\$ 1,286.6	\$ 7.45

Table G-5A
National Grid
Calculation of 2018 Program Year Cost-Effectiveness with TRC Test
All Dollar Values in (\$000)

	TRC Benefit/ Cost	Total Benefit	Program Implementation Expenses	Customer Contribution	Shareholder Incentive	\$/Lifetime MMBtu
Non-Income Eligible Residential						
Energy Star® HVAC	1.25	\$ 5,899.2	\$ 1,730.4	\$ 2,988.3		\$ 9.89
EnergyWise	1.09	\$ 11,590.0	\$ 8,370.8	\$ 2,301.5		\$ 16.37
EnergyWise MultiFamily	2.33	\$ 3,422.0	\$ 1,267.1	\$ 199.4		\$ 7.31
Home Energy Reports	1.26	\$ 541.1	\$ 428.7	\$ -		\$ 5.54
Residential New Construction	0.97	\$ 624.2	\$ 587.4	\$ 59.4		\$ 10.30
Comprehensive Marketing - Residential			\$ 73.7			
Community Based Initiatives - Residential			\$ 39.2			
Residential Demonstration and R&D			\$ 19.6			
Non-Income Eligible Residential Subtotal	1.18	\$ 22,076.6	\$ 12,516.7	\$ 5,548.6	\$ 624.9	\$ 12.30
Income Eligible Residential						
Single Family - Income Eligible Services	2.40	\$ 9,671.7	\$ 4,032.4	\$ -		\$ 15.96
Income Eligible Multifamily	2.26	\$ 5,306.1	\$ 2,349.5	\$ -		\$ 8.18
Income Eligible Residential Subtotal	2.24	\$ 14,977.8	\$ 6,382.0	\$ -	\$ 319.1	\$ 11.83
Large Commercial & Industrial						
Large Commercial New Construction	1.55	\$ 7,248.2	\$ 2,658.1	\$ 2,015.1		\$ 5.85
Large Commercial Retrofit	3.21	\$ 15,080.9	\$ 3,643.3	\$ 1,054.6		\$ 2.56
Small Business Direct Install	2.55	\$ 368.0	\$ 132.5	\$ 11.9		\$ 4.85
Commercial & Industrial Multifamily	6.25	\$ 2,746.1	\$ 410.2	\$ 29.4		\$ 4.70
Commercial Demonstration and R&D			\$ 482.1			
Community Based Initiatives - C&I			\$ 9.8			
Finance Costs			\$ -			
Commercial & Industrial Subtotal	2.36	\$ 25,443.3	\$ 7,335.9	\$ 3,111.0	\$ 342.7	\$ 3.79
Regulatory						
EERMC			\$ 279.8			
OER			\$ 279.8			
Regulatory Subtotal			\$ 559.6			
Grand Total	1.70	\$ 62,497.7	\$ 26,794.3	\$ 8,659.6	\$ 1,286.6	\$ 7.45

**Table G-6
National Grid
Summary of 2018 Benefits and Savings by Program**

	Benefits (\$000)			MMBTU Gas Saved	
	Total	Natural Gas	Non-Gas Benefit	Annual	Lifetime
Non-Income Eligible Residential					
EnergyWise	\$20,460.7	\$9,052.9	\$11,407.8	26,787	651,844
Energy Star® HVAC	\$11,069.6	\$6,555.2	\$4,514.4	27,513	476,963
EnergyWise Multifamily	\$4,963.0	\$2,847.9	\$2,115.1	12,069	198,403
Home Energy Reports	\$1,318.1	\$966.6	\$351.5	77,220	77,220
Residential New Construction	\$1,038.2	\$866.9	\$171.4	3,117	62,649
Non-Income Eligible Residential SUBTOTAL	\$38,849.6	\$20,289.5	\$18,560.1	146,706	1,467,079
Income Eligible Residential					
Single Family - Income Eligible Services	\$13,030.0	\$3,492.8	\$9,537.2	12,620	252,400
Income Eligible Multifamily	\$7,821.5	\$4,153.9	\$3,667.5	16,222	286,654
Income Eligible Residential SUBTOTAL	\$20,851.4	\$7,646.7	\$13,204.7	28,842	539,054
Commercial & Industrial					
Large Commercial New Construction	\$12,451.1	\$10,464.8	\$1,986.2	42,764	798,090
Large Commercial Retrofit	\$25,463.3	\$23,922.8	\$1,540.4	186,780	1,828,898
Small Business Direct Install	\$537.7	\$508.4	\$29.3	3,059	29,753
Commercial & Industrial Multifamily	\$3,321.7	\$1,278.6	\$2,043.1	6,643	93,179
Commercial & Industrial SUBTOTAL	\$41,773.8	\$36,174.7	\$5,599.0	239,246	2,749,920
TOTAL	\$101,474.8	\$64,110.9	\$37,363.8	414,795	4,756,052

**Table G-7
National Grid
Comparison of 2018 and 2017 Goals**

	Proposed 2018		Approved 2017	Difference
	Annual Energy Savings (MMBTU Natural Gas)	Planned Unique Participants	Annual Energy Savings (MMBTU Natural Gas)	Annual Energy Savings (MMBTU Natural Gas)
Non-Income Eligible Residential				
EnergyWise	26,787	2,275	28,587	-1,800
Energy Star® HVAC	27,513	1,557	27,393	121
EnergyWise Multifamily	12,069	2,500	11,518	550
Home Energy Reports	77,220	104,250	59,164	18,056
Residential New Construction	3,117	255	11,575	-8,458
Non-Income Eligible Residential SUBTOTAL	146,706	110,837	138,237	8,469
Income Eligible Residential				
Single Family - Income Eligible Services	12,620	675	11,032	1,588
Income Eligible Multifamily	16,222	3,500	15,810	412
Income Eligible Residential SUBTOTAL	28,842	4,175	26,842	2,000
Commercial & Industrial				
Large Commercial New Construction	42,764	105	53,516	-10,752
Large Commercial Retrofit	186,780	158	187,938	-1,158
Small Business Direct Install	3,059	30	3,639	-580
Commercial & Industrial Multifamily	6,643	1,698	4,434	2,209
Commercial & Industrial SUBTOTAL	239,246	1,992	249,527	-10,281
TOTAL	414,795	117,004	414,606	189

Notes:

- (1) Participants can participate in more than one program, for example Home Energy Reports and EnergyWise.
- (2) Planned 2018 participation takes into account net-to-gross and estimates unique participation by taking into account 2016 unique customer accounts to savings ratios. Therefore the number of planned measures may be more than the planned participants. For measure counts please view the widgets tables at the end of the Residential and C&I text sections. Table G-7 no longer includes a comparison to the previous year's participation. Due to the way unique participation is calculated it is not possible to compare year-over-year results.
- (3) Beginning in 2017, Home Energy Reports participation will be counted as the number of customers receiving reports (i.e., the "treatment group") adjusted by the "Read Rate" of 75% from the most recent Customer Engagement Tracker Survey.

**Table G-8
National Grid
Avoided Costs Used in 2018 Benefit-Cost Model**

Year	RESIDENTIAL				COMMERCIAL & INDUSTRIAL			ALL RETAIL END USES
	Non Heating	Hot Water	Heating	All	Non Heating	Heating	All	
2018	4.53	5.92	6.38	6.16	4.76	5.70	5.36	5.77
2019	5.21	6.48	6.90	6.72	5.40	6.27	5.96	6.35
2020	5.67	6.92	7.33	7.15	5.85	6.70	6.40	6.78
2021	6.07	7.33	7.75	7.56	6.25	7.11	6.80	7.19
2022	6.00	7.25	7.67	7.50	6.19	7.04	6.73	7.13
2023	6.35	7.61	8.02	7.84	6.54	7.39	7.09	7.47
2024	6.64	7.91	8.33	8.14	6.82	7.68	7.37	7.76
2025	6.76	8.02	8.43	8.25	6.95	7.80	7.50	7.88
2026	6.59	7.85	8.27	8.08	6.77	7.63	7.32	7.71
2027	6.49	7.76	8.18	7.99	6.68	7.54	7.23	7.62
2028	6.55	7.80	8.22	8.04	6.73	7.58	7.28	7.67
2029	6.60	7.85	8.27	8.10	6.78	7.63	7.33	7.73
2030	6.60	7.85	8.27	8.10	6.79	7.64	7.34	7.73
2031	6.55	7.81	8.22	8.05	6.74	7.59	7.29	7.68
2032	6.61	7.86	8.28	8.11	6.80	7.65	7.35	7.74
2033	6.67	7.92	8.34	8.17	6.86	7.71	7.40	7.80
2034	6.73	7.98	8.40	8.23	6.92	7.76	7.46	7.86
2035	6.79	8.04	8.46	8.28	6.98	7.82	7.52	7.92
2036	6.85	8.10	8.52	8.34	7.04	7.88	7.58	7.97
2037	6.91	8.16	8.58	8.40	7.10	7.94	7.64	8.03
2038	6.97	8.22	8.64	8.46	7.16	8.00	7.70	8.10
2039	7.03	8.28	8.70	8.52	7.22	8.06	7.76	8.16
2040	7.10	8.34	8.76	8.59	7.28	8.13	7.83	8.22
2041	7.16	8.40	8.82	8.65	7.34	8.19	7.89	8.28
2042	7.22	8.47	8.88	8.71	7.41	8.25	7.95	8.34
2043	7.29	8.53	8.94	8.77	7.47	8.31	8.01	8.40
2044	7.35	8.59	9.01	8.83	7.54	8.38	8.08	8.47
2045	7.42	8.66	9.07	8.90	7.60	8.44	8.14	8.53
2046	7.48	8.72	9.13	8.96	7.67	8.50	8.21	8.60

From 2015 Avoided Cost Study Update
Appendix C for Southern New England

**Table G-9
National Grid
2018 Targeted Shareholder Incentive**

Incentive Rate: 5.00%

	(1)	(2)	(3)	(4)	(5)
Sector	Eligible Spending Budget \$(000)	Target Incentive \$(000)	Target Savings Goal (MMBTU)	Threshold Savings (MMBTU)	Target Incentive Per Annual MMBTU
Income Eligible Residential	\$6,382	\$319.1	28,842	21,632	\$11.06
Non-Income Eligible Residential	\$12,497	\$624.9	146,706	110,030	\$4.26
Commercial & Industrial	\$6,854	\$342.7	239,246	179,435	\$1.43
Total	\$25,733	\$1,286.6	414,795	311,096	\$3.10

Notes:

- (1) Eligible Spending Budget excludes EERMC, OER, Residential and Commercial Demonstration and R&D Costs, and Shareholder Incentive. See Table G-3 for details.
 - (2) Equal to the incentive rate (5.0%) x Column (1).
 - (3) See Table G-7
 - (4) 75% of Column (3). No incentive is earned on annual MMBTU savings in the sector unless the Company achieves at least this threshold level of performance.
 - (5) Column (2)*1000/Column (3). This illustration is for achieved savings equal to the savings target. The incentive earned per MMBtu will vary with the percent of the savings target achieved
- The shareholder incentive will be calculated as follow, where SB is the Spending Budget in the sector
- From 75% of savings to 100% of savings: Shareholder Incentive = SB x (0.15 x % of savings achieved – 0.10)
 - From 100% of savings to 125% of savings: Shareholder Incentive = SB x (0.05 x % of savings achieved)

**Table G-10
National Grid
Revolving Loan Fund Projections**

Large C&I Revolving Loan Fund

(1)	Total Loan Fund Deposits Through 2017	\$ 1,291,679
(2)	Current Loan Fund Balance	\$ 1,967,496
(3)	Projected Loans by Year End 2017	\$ 487,871
(4)	Projected Repayments by Year End 2017	\$ 200,000
(5)	Projected Year End Loan Fund Balance 2017	\$ 1,679,625
(6)	2018 Fund Injection	\$ -
(7)	Projected Loan Fund Balance, January 2018	\$ 1,679,625
(8)	Projected Repayments throughout 2018	\$ 600,000
(9)	Estimated Loans in 2018	\$ 1,000,000
(10)	Projected Year End Loan Fund Balance 2018	\$ 1,279,625

Notes

- 2 Current Loan Fund Balance is through July 2017
- 3 Projected Loans by Year End 2017 is estimated based on current commitments
- 4 Projected Repayments by Year End 2017 is estimated based on projected loans by year end and repayment schedules
- 5 Equal to (2) - (3) + (4)
- 6 Fund Injection, as budgeted on E-2
- 7 Equal to (5) + (6)
- 8 Assumption based on average repayments over 12 months; repayments accumulate over time and may vary widely.