

# 2019 EE Annual Plan Final Draft

nationalgrid



RI EERMC

September 20, 2018

- The final draft incorporates feedback from:
  - OER
  - EERMC C-Team
  - People's Power & Light (now Green Energy Consumers Alliance)
  - Acadia Center
  - TEC-RI
  - City of Providence
- Screening models underwent extensive review by C-Team.
- Second draft balances stakeholder interests, lowers budgets, and maintains commitment to innovation.

- Updated beneficial electrification of heat goals
- Expanded residential lighting to meet customer demand
- Included text explaining expansion of customer service in promoting energy efficiency
- Modified gas HVAC offering



- New approach for K-12 Schools
- Moving the market to higher efficiency in New Construction
- Small Business heat pump demo will include electric resistance heating as well as all delivered fuels
- New battery storage demo under Demand Response
- Added savings in Custom (Industrial Initiative), Small Business, Variable Speed Drives, and Street Lighting
- Cut costs in Lighting, Custom, HVAC
- Subtracted savings from CHP due new information (3,500 gross MWh) and then build up from there
- Navy CHP 2020 commitment decreased from \$3.0MM to \$2.8MM, EERMC feedback on including commitment?

- Added executive summary
- Updated to comply with PUC's recent revised Standards that compare Cost of EE to Cost of Energy Supply
  - Based on components of RI Test (4600 Matrix)
    - EE Cost = Implementation Cost + Customer Cost + Shareholder Incentive
    - Energy Supply Cost = majority of avoided costs aka benefits from RI Test
- Added section on how EE advances Docket 4600 principles and goals for the electric and gas system
- All graphs and tables completed and bill impacts included

Evaluations verified current assumptions and updates based on participants' actual experience

Program		Impact	Effect on Net Savings
Residential	Income Eligible Single Family	Deemed Savings	Decrease
	Lighting and Products	Gross savings / RR	Decrease
	HVAC / RNC	NTG	Slight increase / decrease
Commercial & Industrial	Upstream Lighting	Realization Rate	Increase
		In-Service Rate	Decrease
	Upstream HVAC and WH	Net-to-Gross	Decrease
	Small Business	Realization Rate	Slight decrease
	Comprehensive Design	Realization Rate	Decrease

# Final Draft Overview by the Numbers

## Savings Increases

Elec – 2,641 MWh  
Gas – 333 MMBTU

Electric Programs	2019 Annual Plan First Draft	2019 Annual Plan Second Draft	% Change vs First Draft
Annual Savings (MWh)	192,036	194,677	1.4%
Lifetime Savings (MWh)	1,678,632	1,694,194	0.9%
Total Spending	\$ 111,445,235	\$ 110,362,010	-1%
Cost/Lifetime kWh	\$ 0.075	\$ 0.072	-5%
EE Program Charge per kWh	\$ 0.01168	\$ 0.01155	-1%

## Budget Reductions

Elec - \$1.08M  
Gas - \$678.5K

Gas Programs	2019 Annual Plan First Draft	2019 Annual Plan Second Draft	% Change vs First Draft
Annual Savings (MMBtu)	432,369	432,708	0.1%
Lifetime Savings (MMBtu)	4,418,408	4,426,644	0.2%
Cost/Lifetime MMBtu	\$ 9.53	\$ 9.29	-3%
Total Spending	\$ 32,271,266	\$ 31,592,799	-2%
C&I EE Program Charge per Dth	\$ 0.536	\$ 0.494	-9%
RESI EE Program Charge per Dth	\$ 0.857	\$ 0.728	-18%

# Comparison of 2017, 2018, and 2019 nationalgrid

Electric Programs	2017 Annual Plan	2018 Annual Plan	2019 3 Year Plan	2019 Annual Plan	% Change vs 2017	% Change vs 2018	% Change vs 3YP
Annual Savings (MWh)	201,347	186,855	194,677	194,677	-3%	4%	0%
Lifetime Savings (MWh)	2,065,732	1,735,472	1,904,592	1,694,194	-18%	-2%	-11%
Annual Summer kW Savings	28,543	24,802	35,188	30,117	6%	21%	-14%
Total Spending	\$ 94,568,586	\$ 94,568,584	\$ 124,932,991	\$ 110,362,010	17%	17%	-12%
Cost/Lifetime kWh	\$ 0.058	\$ 0.067	\$ 0.077	\$ 0.072	24%	7%	-7%
EE Program Charge per kWh	\$ 0.01124	\$ 0.00972	\$ 0.01390	\$ 0.01155	3%	19%	-17%

Gas Programs	2017 Annual Plan	2018 Annual Plan	2019 3 Year Plan	2019 Annual Plan	% Change vs 2017	% Change vs 2018	% Change vs 3YP
Annual Savings (MMBtu)	414,606	414,795	408,100	432,708	4%	4%	6%
Lifetime Savings (MMBtu)	4,945,564	4,756,052	4,709,195	4,426,644	-10%	-7%	-6%
Cost/Lifetime MMBtu	\$ 7.96	\$ 7.45	\$ 8.33	\$ 9.29	17%	25%	12%
Total Spending	\$ 29,747,068	\$ 28,080,908	\$ 30,776,029	\$ 31,592,799	6%	13%	3%
C&I EE Program Charge per Dth	\$ 0.726	\$ 0.727	\$ 0.739	\$ 0.494	-32%	-32%	-33%
Resi EE Program Charge per Dth	\$ 0.888	\$ 0.898	\$ 0.903	\$ 0.728	-18%	-19%	-19%



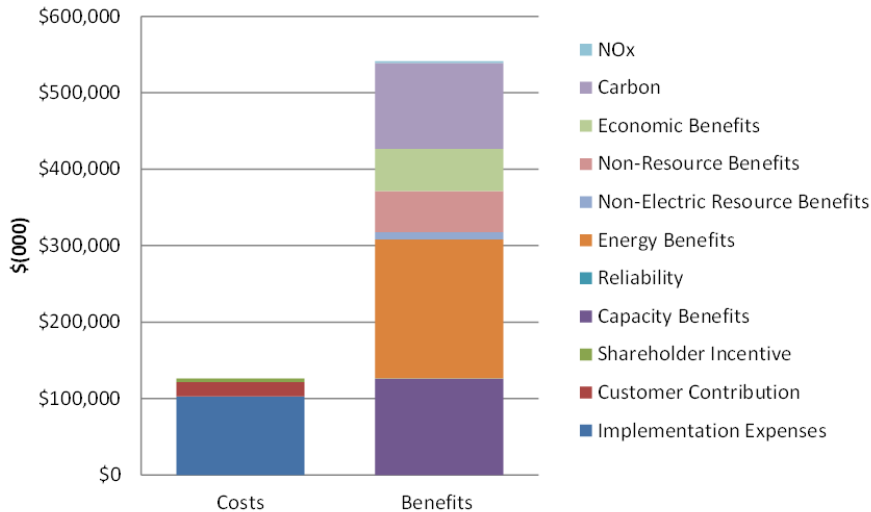
# Final Draft Electric Savings in MMBtu nationalgrid

	Cost per Lifetime Energy Savings \$/Lifetime Gross MMBtu		
	2018 Plan	2019 Plan	% Change
<b>Non-Income Eligible Residential</b>			
Residential New Construction	\$32.6	\$16.6	-49%
ENERGY STAR® HVAC	\$24.3	\$24.2	0%
EnergyWise	\$26.6	\$31.8	19%
EnergyWise Multifamily	\$29.9	\$27.4	-9%
Home Energy Reports	\$30.7	\$32.1	4%
ENERGY STAR® Lighting	\$7.9	\$8.5	8%
Residential Consumer Products	\$21.5	\$15.6	-27%
<b>Residential SUBTOTAL</b>	<b>\$18.2</b>	<b>\$16.9</b>	<b>-7%</b>
<i>Residential Subtotal without Demand Response</i>		\$16.8	-8%
<b>Income Eligible Residential</b>			
Single Family - Income Eligible Services	\$20.3	\$34.1	68%
Income Eligible Multifamily	\$23.5	\$28.2	20%
<b>Income Eligible Residential SUBTOTAL</b>	<b>\$20.9</b>	<b>\$32.6</b>	<b>56%</b>
<b>Commercial &amp; Industrial</b>			
Large Commercial New Construction	\$7.8	\$7.8	0%
Large Commercial Retrofit	\$10.7	\$9.7	-9%
Small Business Direct Install	\$25.1	\$22.0	-13%
<b>C&amp;I SUBTOTAL</b>	<b>\$12.5</b>	<b>\$12.3</b>	<b>-1%</b>
<i>C&amp;I Subtotal without Demand Response</i>		\$11.9	-5%
<b>TOTAL</b>	<b>\$15.0</b>	<b>\$15.4</b>	<b>3%</b>
<i>Total without Demand Response</i>		\$15.1	1%

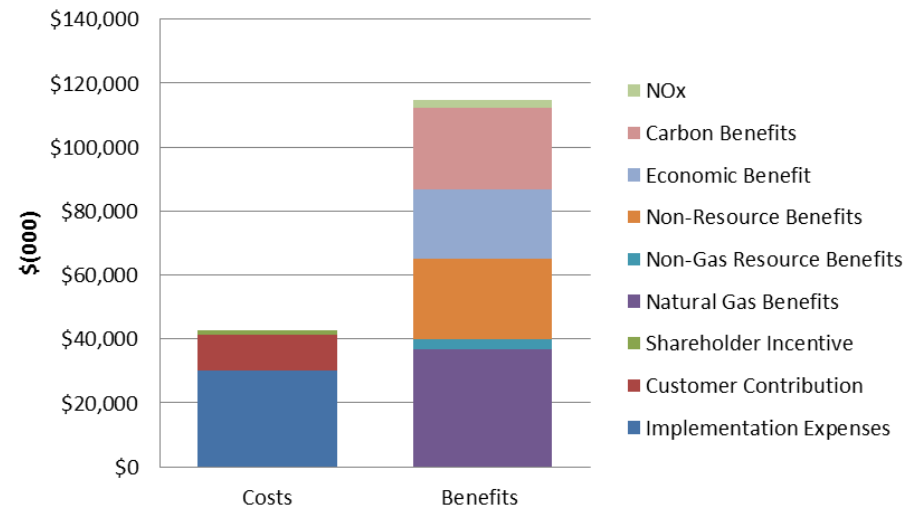
- Table responds to EERMC request to better display impacts from more delivered fuels savings.
- MMBtu = Illustrative all fuel savings (electric, oil, propane)
- Gross savings:
  - Excludes adjustment for what the Company can claim
  - Represents the actual energy savings realized by customer.
- Savings still reflect changes to lifetime and annual savings from evaluation results and federal lighting standards.

- Total benefits of \$656 Million over the life of the measures.
- Avoids 1.1 million tons of carbon
- Investments in Plan will add \$85.7M to RI GDP and create 1,257 job-years of employment.

### 2019 Electric Costs vs Benefits



### 2019 Gas Costs vs Benefits

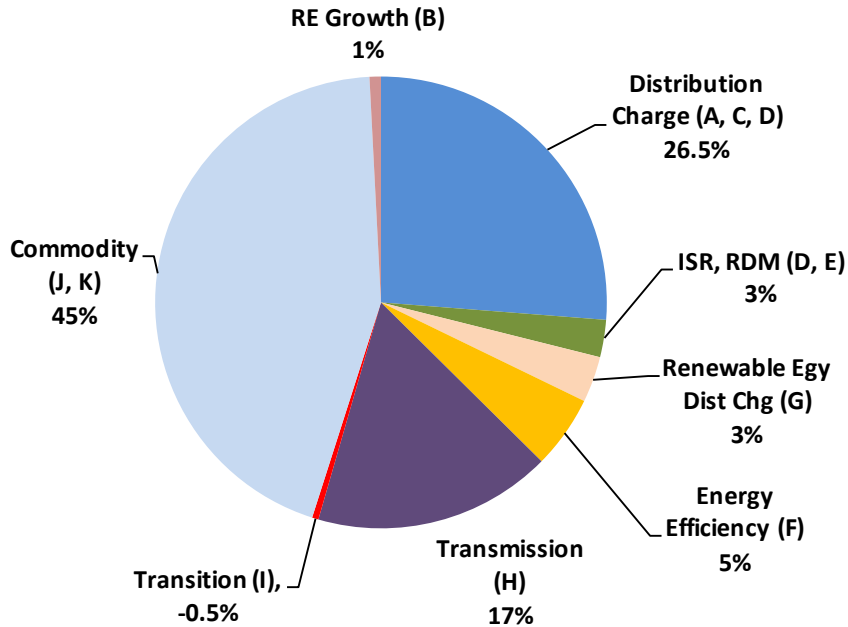


- The 2019 Bill Impact analysis finds, over the lifetime of the programs proposed for 2019, the average Rhode Island customer's bill will be less than if there were no programs.
- The average customer's bill combines the impacts of EE participants and non-EE participants.

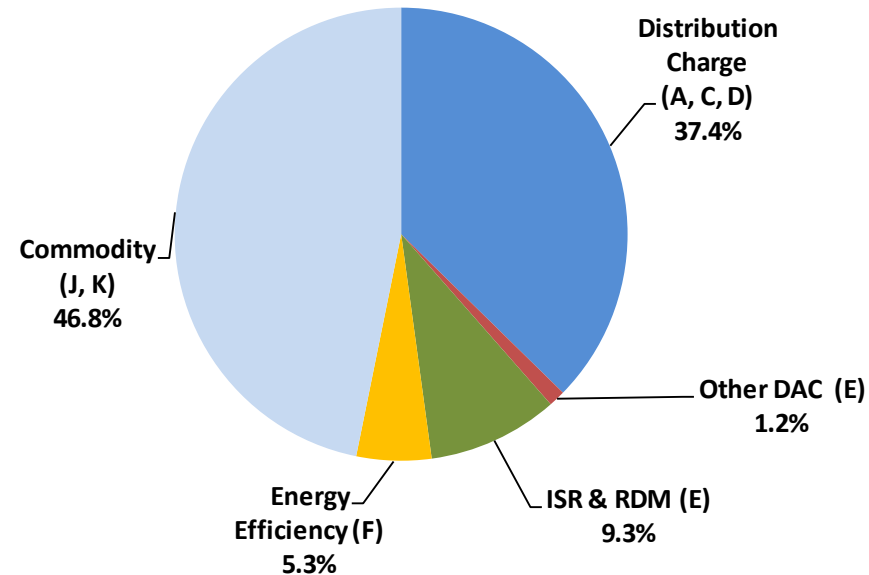
Customer Segment	Average Participant Savings %	Average Participant Savings \$	Average Customer Savings %	Average Customer Savings \$
Residential	1.20%	\$30.36	0.98%	\$24.90
Income Eligible	2.57%	\$62.30	1.76%	\$42.72
Small C&I	17.55%	\$1,443.52	1.27%	\$104.45
Medium C&I	10.59%	\$2,532.31	2.03%	\$484.53
Large C&I	3.29%	\$18,441.21	1.96%	\$10,966.40

# Sample Energy Bills by Component nationalgrid

Electric  
500 kWh Residential Monthly Bill



The Narragansett Electric Company - Gas  
Average Residential Heating Annual Bill



- EE Charge is a small portion of the bill but provides the benefit of giving customers the tools to reduce all bill categories.

- Energy Efficiency is the least cost form of energy and empowers customers to take control of their energy bills.
- The Final Draft:
  - Incorporates hundreds of stakeholder comments.
  - Complies with Least-Cost Procurement and the Standards.
  - Meets the Three-Year Plan savings targets.
  - Provides savings opportunities to all customer segments
  - Cost-effective and less than the cost of supply
  - Benefits the citizens of Rhode Island, environment, and economy.