

Rhode Island Energy Efficiency

Fourth Quarter 2019 | National Grid

February 20, 2019

Overview

In 2019, National Grid's energy efficiency programs showed strong performance, achieving 451,297 annual MMBtu of natural gas savings (104% of goal) and 189,993 annual MWh of electric savings (98% of goal). In the fourth quarter the Company demonstrated its ongoing commitment of the expansion of energy efficiency programs into complementary areas, including exceeding the Company's EnergyStar HVAC program target for the installation of air source heat pumps (ASHPs) target by nearly 4x times, with preliminary results showing the installation of ASHPs in 338 homes. In addition, progress was made in zero energy homes with the ground breaking of a five-unit zero energy condominium in Olneyville, the awarding of a Zero Energy Ocean State RFP, and a well-attended Zero Energy training.

- **Zero Energy Homes and Buildings** – In the fourth quarter Zero Energy for the Ocean State (ZEOS) Request for Proposal (RFP) awarded \$675K across three project teams to design and construct affordable energy efficient Zero Energy housing units for low and moderate-income residents in Rhode Island. RI Housing and the Office of Energy Resources (OER) are leading the effort, with National Grid providing support through the Residential New Construction program. On October 28th officials broke ground on Sheridan Small Homes, a five-unit condominium project of compact, affordable, zero-energy homes being developed by ONE Neighborhood Builders, a community development. Finally, a Zero Energy Forum was held at the Tiverton Library where approximately 45 people participated in the Forum, including some outstanding presenters who provided insights on how school, single family and multifamily projects in the Northeast are getting to zero with smart design and an integrated approach.
- **Active Demand Reduction** – Over 3,100 residential thermostats enrolled in the ConnectedSolutions Program. Over the course of 12 events this summer, these customers delivered an average of 1.8MW of active demand response curtailment. 15 residential batteries enrolled in the ConnectedSolutions Program. Over 27 events this summer, these customers delivered an average 0.08MW of demand response. Combined with the Commercial ConnectedSolutions program implemented this summer through 115 customer accounts participating in one event 31.5MW of active demand reduction was achieved.
- **Heating Electrification** – Preliminary results for 2019 show that the Rhode Island Heat Pump initiative has led to the installation of air source heat pumps (ASHPs) in 405 homes and three multifamily facilities through December 31st, leading to the full or partial displacement of heating systems that would otherwise rely on delivered fuels (oil or propane) or electric resistance heat. For the EnergyStar HVAC program, the program achieved over 4x its 2019 goal of 85 installations. The Income Eligible Multifamily program also achieved its 2019 goal, installing 76 Air Source Heat Pumps in multifamily facilities. These achievements represent early but strong progress towards the Company's ongoing commitment to the decarbonization of Rhode Island's heating sector.

The fourth quarter of 2019 demonstrated solid performance for the electric and gas portfolios towards achieving the Company's annual savings goals, while also showing increased impacts of efforts in other areas of significance regarding the potential future role of energy efficiency in producing financial and environmental benefits for all Rhode Islanders.

2019 Program & Initiative Updates

Residential New Construction (RNC)

- The Residential New Construction (RNC) program achieved 874 Annual MWh of electric savings (115% of goal) and 3,499 Annual MMBtu of gas savings (74% of goal) in 2019.
- The program enrolled 97 customer residences in the fourth quarter and completed 72 customer residences.
- The program hosted a Zero Energy Building Forum in collaboration with the Commercial and Industrial EE Program and New Buildings Institute (NBI).
- Zero Energy for the Ocean State (ZEOS) Request for Proposal (RFP) – Awarded \$675K across three project teams to design and construct affordable energy efficient Zero Energy housing units for low and moderate-income residents in Rhode Island. RI Housing and Office of Energy Resources (OER) are leading the effort, with National Grid providing support through the RNC program.
- On October 28th officials broke ground on Sheridan Small Homes, a five-unit condominium project of compact, affordable, zero-energy homes being developed by ONE Neighborhood Builders, a community development.



Groundbreaking at Sheridan Small Homes, Providence

- The first tri-plex of the nine-unit Wynfield Place, Warwick development was completed. The tri-plex was used as an education tool to demonstrate zero energy design and construction.



Attendees at blower door & duct testing workshop, Wynfield Estates, Warwick

Challenges:

- The RNC program exceeded the annual electric savings goal but it is becoming increasingly challenging to meet the annual gas savings goal due to:
 - A shift in heating system fuel type installed in new housing starts (more electric)
 - Stringent baseline for gas heating and hot water equipment.
 - The number of affordable housing projects selecting central gas boilers is declining due to the selection of heat pumps.
- Of the 639 homes completed in 2019, only 38% (240) had gas heat, which represents a significant decrease from several years ago when 90% of new homes had gas heat.
- The majority (69%) of projects achieved Tier I savings (15-25%) over the program baseline. This is due to the more stringent baseline that is currently in place for the program. Many of these homes would have achieved >25% savings in the past.

Income Eligible Services (IES)

- *“Very professional, friendly, and helpful my home is warm. I so needed it.”- Michael, an IES program customer from Cranston, RI.*
- The National Grid Income Eligible Services program was challenged in 2019, achieving 2,923 annual MWh of electric savings (78% of goal) and 7,212 annual MMBtu of gas savings (79% of goal) in 2019.
- The Standardization Group (including Paul Salera representing the Community Action Program (CAP) Executive Directors, Weatherization Directors from each Agency, Jonathan Rascoe, a process expert from the Department of Human Services (DHS), Julie Capobianco from DHS and David MacLellan from CLEAResult met three times in the fourth quarter.
- To reduce paperwork, a new Audit process was implemented in a test roll out.
- A new Auditor Evaluation process was developed for roll out in the first quarter of 2020.
- Standardized KPI's were developed to ensure apt comparisons between agencies.

Challenges and Progress:

- The DOE Corrective Action Plan created a significant distraction during what is usually a very productive time for the National Grid IES program, negatively impacting production. Ensuring equitable distribution of resources in the future is critical to ensuring that National Grid IES meets its goals.
- Savings came in lower for electric and gas due to the following:
 - Available measure replacement opportunities were lower than planned (i.e., lighting installs averaged 14.5 bulbs/home versus 20 planned resulting in approximately 18,000 bulbs less than planned).
 - Reduction in staffing could not achieve the planned weatherization goals.
 - A quality assurance check in September led to savings per unit corrections for several electric measures in the IES electric program that resulted in negative impacts to the program's claimed energy savings, leaving a small window for gap closure opportunities.

EnergyWise

- EnergyWise had a strong 2019, achieving 7,996 annual MWh of electric savings (98% of goal) and 32,197 annual MMBtu of gas savings (116% of goal) in 2019.
- The program is still finalizing precise numbers but overall the program had a very strong year, completing over 12,000 audits and seeing 35% of participants move on to weatherize their homes.
- The 100% landlord incentive produced a lot of interest with assessments to renters/landlords increasing by 20% over the prior year to 1,308. 315 landlord owned single family homes were also weatherized.

EnergyWise Multifamily, Income Eligible Multifamily, C&I Multifamily

- The EnergyWise Multifamily program achieved 1,216 annual MWh of electric savings (34% of goal) and 16,630 annual MMBTU of gas savings (104% of goal) in 2019.
- The Income Eligible Multifamily program achieved 2,559 annual MWh of electric savings (80% of goal) and 23,719 MMBTU of annual gas savings (116% of goal) in 2019.
- The C&I Multifamily program achieved 10,979 MMBTU of annual gas savings (101% of goal) in 2019.
- In 2019 the multifamily income eligible program achieved its overall goal for the installation of Air Source Heat Pumps. The program installed 76 electric resistance to electric Air Source Heat Pumps at three separate multifamily sites in 2019.
- Income Eligible Multifamily projects were completed in Providence (2 projects). Major highlights of these projects include high efficiency boilers, electric resistance to electric Air Source Heat Pumps, and micro Combined Heat and Power (CHP) generation unit. One of the Providence apartment projects achieved annual MWh savings of 990 MWh for a facility with 156 multifamily dwellings.
- Completed market rate projects in the fourth quarter included apartment complexes in Warwick and Riverside. Work done included condensing boilers, high efficiency heating pumps, heat pump insulation, LED lamps, smart strips, low flow shower heads, Wi-Fi thermostats, and insulation in customer dwellings.
- In 2019 the multifamily electric programs were challenged in meeting their annual energy savings goals due to declining lighting energy savings opportunities which have contributed the majority of energy savings to the programs throughout their history.
- Year-end quality assurance checks led to updates across multifamily programs in areas including free ridership, realizations rates, load shapes, measures lives, and NEIs. This led to downward adjustments in annual MWh/MMBtu of energy savings from approximately 6-10%, depending on the program. The Income Eligible gas program was not impacted. Annual year end quality assurance checks are ongoing across all programs and may result in energy savings adjustments prior to filing final results in the 2019 Year End Report.
- The 2020 Annual Plan has outlined numerous steps the program is taking in 2020 to improve its performance relative to annual electric energy savings targets. Examples include: a commitment to examine program redesign, rebalancing energy savings targets to increase the share of non-lighting energy savings, examining a tiered incentive approach, providing greater customer choice to the condominium market, and increasing the program's marketing and community focus. More details of these examples can be found on Bates pages 194-196 of the 2020 Annual Plan.

ENERGYSTAR® HVAC (Heating and Cooling)

- The ENERGYSTAR® HVAC (Heating and Cooling) program had a solid 2019, achieving 2,407 annual MWh of electric savings (89% of goal) and 33,853 annual MMBtu of gas savings (121% of goal).
- The RI Heat Pump (Fuel Optimization) initiative had tremendous success through the fourth quarter, with 419 rebates approved and paid, totaling over \$996K in rebates for the partial or full displacement of electric resistance, oil or propane.
- Following the PUC's Open Meeting on December 17, 2019 the Company began planning for an orderly winddown of the residential heat pump enhanced incentive offering for customers relying on the use of delivered fuels (oil and propane) for home heating purposes. While the Residential HVAC program is not currently offering enhanced incentives for customers wishing to convert from the use of delivered fuels to the use of high-efficiency electric heat pumps, the Company is actively working with external stakeholders in order to ensure an orderly wind down of this enhanced rebate program and to explore options for the provision of ongoing support (outside of energy efficiency programs) for delivered fuel displacement programs.

Challenges

- For Electric Resistance (ER) heat customers to qualify for the enhanced \$1,000/ton ASHP rebate, one of the pre-requisites is proving a 900 kwh difference between the three winter months and three lower usage months. Both customers and participating contractors have expressed their concerns regarding this eligibility barrier. In most cases, customers who heat by electric resistance seek alternate means of heating their home (i.e. pellet or wood stove). As a result, their bill doesn't demonstrate the winter spike in energy consumption required to qualify which may have resulted in missed opportunities. As 2020 electrification goals are significantly higher, National Grid has decided to remove the kwh requirement.

ENERGYSTAR® Lighting and Residential Consumer Products

- ENERGYSTAR® Lighting had a strong year, achieving 51,665 Annual MWh of electric savings (107% of goal) and 7,074 Annual kW of electric demand (106% of goal). Residential Consumer Products also had a strong 2019, achieving 5,180 Annual MWh of electric savings (132% of goal) and 1,121 Annual kW of electric demand (168% of goal).
- October marked Energy Awareness Month and the Residential Lighting Program supported the month with lighting promotions in Lowe's, Walmart, and Costco.
- The shelf stocking data gathering for lighting and thermostats was conducted in the fourth quarter and assists in determining market transformation.
- Black Friday lighting promotions were supported at The Home Depot (promoting smart LED bulbs) and on the marketplace. (marketplace.nationalgridus.com)
- ENERGY STAR version 5.0 for dehumidifiers became effective on 10/31. Version 5.0 dehumidifiers will have 13% energy savings over non-certified models.



10/24 education table at Raytheon in Portsmouth, RI

Home Energy Reports (HER)

- The Home Energy Reports electric and gas programs had a solid 2019 with the electric program achieving 24,938 annual MWh of electric savings (103% of goal) and the gas program achieving 111,117 annual MMBtu of gas savings (96% of goal).
- Home Energy Reports focused on two specific segments in the fourth quarter. Income Eligible customers had messaging directed to the Income Eligible segment. High users received target rank messaging that allowed them to set personal goals to improve their rank and reduce overall energy usage. There was also a Customer Engagement Tracker conducted to measure the pulse of home energy report recipients.

Community Initiative

- The following communities took part on this initiative in 2019 and achieved the following stretch goals. Note, stretch goals were set 25% above baseline performance for the previous year, for each community.
 - Participating communities:
 - Gloucester: Home Energy Assessments 126%; Weatherization 113%
 - Middletown: Home Energy Assessments 137%; Weatherization, 95%
 - Newport: Home Energy Assessments, 111%; Weatherization, 72%
 - Portsmouth: Home Energy Assessments, 112%; Weatherization, 104%
 - Westerly: Home Energy Assessments, 164%; Weatherization, 72%
 - Additionally, Results for Aquidneck Island communities were achieved in 4 months although goals were for 12-month period.

Code Compliance Enhancement Initiative (CCEI)

Workforce Development

- CCEI delivered 5 trainings across the state on the energy code, building best practices, and verification testing as part of RIBA's Pre-Apprenticeship Certification Program. These classes are for plumbing, carpentry and electrical apprentices of all ages and work experience looking to enter or re-enter the construction workforce.

Tailored Services for Providence:

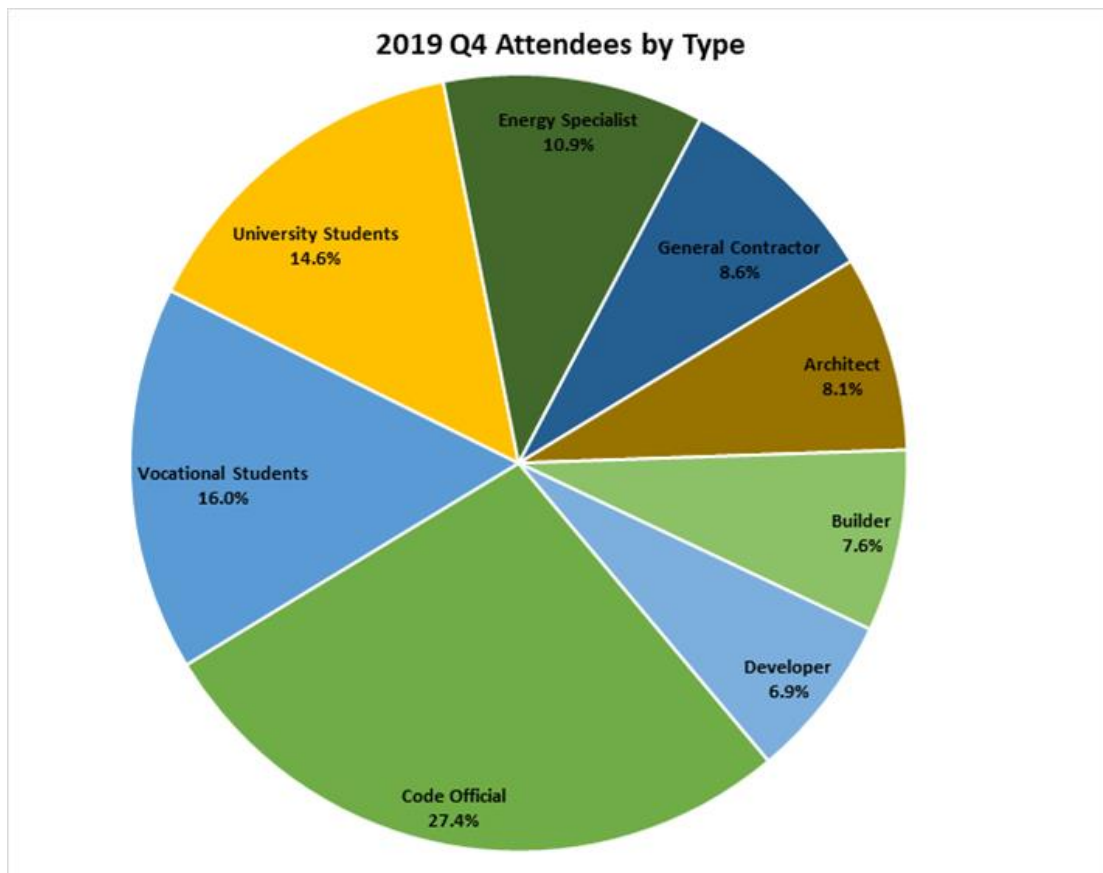
- CCEI acted on several recommendations from the 2019 Providence Energy Code Study, including hosting a training customized for the city's Department of Inspections & Standards and developing a checklist designed to aid city inspectors (currently under review of the Department Director).



Students from RIBA's Pre-Apprenticeship Certification Program at a CCEI training in East Providence.

Relevant KPIs

- Eight training events that engaged 146 industry stakeholders were held during this quarter. Five of these events were focused on residential construction (89 attendees), and three were for commercial (57 attendees).



Removing Weakening Amendments amid Rapid Code Changes

- Rhode Island's current energy code (2015 IECC) just went into full effect this quarter, but the state is already preparing for its next update (2018 IECC). This rapid update cadence risks carrying over previous anti-efficiency amendments the state has made to its energy code, thereby decreasing the energy saving impact of the new code. This quarter, CCEI prepared an analysis of these amendments and submitted code change proposals to the state aiming for their removal for the next code update.

Large Commercial New Construction

- The Large Commercial New Construction program finished 2019 with 12,921 Annual MWh of electric savings (119% of goal) and 47,339 Annual MMBtu of gas savings (111% of goal).
- The EnergySmart Grocer initiative plans to revisit this location in 2020 to recommend adding floating controls which could generate a significant amount of savings.



Rooftop condenser and compressors packaged in one unit at the customer's site in North Kingstown, RI

Project Highlights

- A food processor in southern Rhode Island constructed a processing building with an ammonia refrigeration system serving medium temp spaces and three evaporative compressors. The measures installed were compressor Variable Frequency Drive controls, evaporative condenser, and kitchen demand control ventilation. As a result, 95 MWh and 434 in MMBtu savings were claimed in 2019.

Large Commercial Retrofit

- In 2019, the Large Commercial Retrofit program achieved 65,149 annual MWh of electric savings (89% of goal) and 161,814 Annual MMBtu of gas savings (104% of goal).

Project Highlights

Industrial Initiative

- An industrial food packaging company installed a "1 Shot" laminator that can achieved the same production results while eliminating the need for an additional "pass" through the laminating machine. This project will result in a 65.5% reduction in kWh during the laminating process.
- The industrial food packaging company will be able to reduce annual electric consumption by 4% because of the new laminator.
- The proposed "1 Shot" laminator can achieve the same production results with one pass at the same line speed as the Back-to-Back process that was previously being utilized.



- A nationwide pharmacy chain executed a large roll out of exterior lighting upgrades, yielding 515 MWh in the final quarter of 2019. This roll out included 26 locations throughout the state.

Challenges

- The costs to deliver savings exceeded what the Company planned for 2019. The Company is investigating the factors that contributed to this including measure mix and timing.

Small Business Direct Install

- The Small Business Direct Install program had a solid year, achieving 12,167 MWh of electric savings (100% of goal) and 2,938 Annual MMBtu of gas savings (114% of goal).

Project Highlights

- In the fourth quarter, a small plastic manufacturer used the Customer Directed Option in the Small Business Program to complete an LED lighting retrofit project which will save ~46 MWh per year. This will save the customer the customer ~\$6,900 per year. In addition to the cost savings, the customer was pleased with the impact the upgrade had on their office space.

Residential ConnectedSolutions

- The thermostat measure within the Residential ConnectedSolutions program achieved an average of 1.8 MW of active demand response curtailment over 12 events over the summer with over 3,100 thermostats enrolled in the program.
- The battery measure within the Residential ConnectedSolutions program achieved an average of 0.08 MW of curtailment over 27 events during the summer. There were 15 customers enrolled in the program.
- Residential Behavioral Demand response was called two times this summer with an average of 153,000 emails delivered to residential and small-medium business customers.

Challenges and Progress

- Savings for behavioral demand response is still being researched so curtailment can be measured. Currently an evaluation firm is leveraging residential AMI meters in Worcester, MA to test feasible savings estimates.

Commercial Connected Solutions

- The Targeted Dispatch measure of the Commercial Connected Solutions program curtailed an average of 31.5 MW with 115 customer accounts participating in one event over the summer.
- The Commercial Connected Solutions' - Daily Dispatch did not get any enrollments for the summer of 2019.

Challenges and Progress

- In December of 2019 the PUC clarified that solar and storage over 25 kW, can be eligible for net metering as long as the storage is only charged from the solar and not from the grid, for customers who are not on time varying rates. The Company is working through its sales channel to enroll customer-owned assets that can curtail or generate 40-60 times per summer into the program for this year.

Pilots, Demonstrations, and Assessments

Pilots

Gas Demand Response (Commercial)

- Currently there are three customers enrolled in the Gas DR Pilot program. An event was called on December 20th and all three customers responded to this event.
- Total gas reduction for the December 20th event was 317 MMBtu.

Challenges and Progress

- Reduction from two customers was lower than expected. The learnings from these participants, including opportunities for alternative curtailment strategies, are still being evaluated.

Zero Energy Buildings (Commercial)

- In the fourth quarter, two events were held to promote education and awareness on Zero Energy Buildings. A Zero energy webinar was held in November of 2019 and a Zero Energy Forum was held at the Tiverton Library in Rhode Island.
- Approximately 45 people participated in the Forum. We had some outstanding presenters who were able to provide insights on how school, single family and multifamily projects in the Northeast are getting to zero with smart design and an integrated approach. Attendees included Architects, builders, owners, engineers and policy makers.



Zero Energy Forum, Tiverton Library

Demonstrations

Strategic Energy Management (SEM/CEI): (Large Commercial Retrofit)

- The Rhode Island cohort consist of seven customers who work with Cascade Energy (the implementation vendor) on numerous activities such as energy treasure hunts to discover energy efficiency opportunities. In the 4th quarter of 2019, five customers claimed electric energy savings after completing over 90 energy projects.
- As of the fourth quarter, 65 projects remained in progress.



Project idea list following a Cascade energy treasure hunt.

Evaluation

- All evaluation studies are conducted by 3rd party contractors and vetted and reviewed by the EERMC consulting team. All final evaluation executive summaries are made available on the EERMC's website.
- **Impact Evaluation of PY2016 Custom Gas Installations.** Through site visits, metering, and analysis, this study determined that custom gas projects completed in 2016 had a realization rate of 85%. This study included sites from both Rhode Island and Massachusetts across all gas end uses. This realization rate will be applied to custom gas projects completed beginning in 2020.
- Annual year end quality assurance checks are ongoing across all programs and may result in energy savings adjustments prior to filing final results in the 2019 Year End Report.

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND

Table 1: Summary of Electric 2019 Target and Preliminary 4th Quarter Results

ELECTRIC PROGRAMS Sector and Program	(1) (2) (3) Demand Reduction (Annual)			(4) (5) (6) Energy Savings (Annual MWh)			(7) (8) (9) Customer Participation			(10) (11) (12) Expenses (\$ 000)			(13) (14) (15) Energy Savings (Lifetime MWh)			(17) (16) \$/Lifetime kWh	
	Year To Target	Date	Pct Achieved	Year To Target	Date	Pct Achieved	Year To Target	Date	Pct Achieved	Budget	Year To Date	Pct Achieved	Planned	Year to Date	Pct Achieved	Planned \$/kWh	Year to Date
Commercial and Industrial																	
Large Commercial New Construction	1,409	1,964	139.4%	10,863	12,921	118.9%	84	135	160.5%	\$ 5,036.1	\$ 6,487.9	128.8%	170,856	196,868	115.2%	\$ 0.029	\$ 0.033
Large Commercial Retrofit	12,558	10,297	82.0%	73,013	65,149	89.2%	2,610	3,391	129.9%	\$ 21,356.5	\$ 27,310.2	127.9%	873,890	753,633	86.2%	\$ 0.024	\$ 0.036
Small Business Direct Install	1,213	1,811	149.3%	12,163	12,167	100.0%	617	635	102.9%	\$ 8,712.8	\$ 7,929.6	91.0%	145,953	148,871	102.0%	\$ 0.060	\$ 0.053
Commercial Connected Solutions										\$ 2,024.1	\$ 1,862.8	92.0%					
Commercial Pilots										\$ 197.9	\$ 40.1	20.3%					
Community Based Initiatives - C&I										\$ 40.1	\$ 15.7	39.2%					
Finance Costs										\$ 5,000.0	\$ 5,000.0	100.0%					
SUBTOTAL	15,180	14,072	92.7%	96,038	90,237	94.0%	3,311	4,161	125.7%	\$ 42,367.7	\$ 48,646.4	114.8%	1,190,669	1,099,371	92.3%	\$ 0.036	\$ 0.044
Income Eligible Residential																	
Single Family - Income Eligible Services	815	924	113.3%	3,742	2,923	78.1%	3,000	4,089	136.3%	\$ 11,694.7	\$ 9,629.6	82.3%	42,940	34,370	80.0%	\$ 0.272	\$ 0.280
Income Eligible Multifamily	223	306	136.9%	3,219	2,559	79.5%	5,000	2,140	42.8%	\$ 3,382.9	\$ 2,965.5	87.7%	30,589	34,460	112.7%	\$ 0.111	\$ 0.086
SUBTOTAL	1,039	1,230	118.4%	6,961	5,482	78.7%	8,000	6,229	77.9%	\$ 15,077.6	\$ 12,595.1	83.5%	73,530	68,829	93.6%	\$ 0.205	\$ 0.183
Non-Income Eligible Residential																	
Residential New Construction	112	104	93.1%	756	873	115.4%	550	639	116.2%	\$ 858.6	\$ 880.5	102.5%	12,935	15,640	120.9%	\$ 0.066	\$ 0.056
ENERGY STAR® HVAC	590	539	91.3%	2,710	2,407	88.8%	2,187	5,754	263.1%	\$ 2,724.0	\$ 4,125.5	151.5%	39,365	36,597	93.0%	\$ 0.069	\$ 0.113
EnergyWise	1,287	1,726	134.2%	8,182	7,996	97.7%	10,250	13,839	135.0%	\$ 15,777.5	\$ 16,070.9	101.9%	39,100	40,520	103.6%	\$ 0.404	\$ 0.397
EnergyWise Multifamily	283	73	26.0%	3,593	1,216	33.8%	4,000	2,971	74.3%	\$ 3,064.9	\$ 1,213.2	39.6%	28,707	9,924	34.6%	\$ 0.107	\$ 0.122
ENERGY STAR® Lighting	6,681	7,074	105.9%	48,381	51,665	106.8%	236,810	314,682	132.9%	\$ 14,968.2	\$ 13,607.7	90.9%	256,916	287,212	111.8%	\$ 0.058	\$ 0.047
Residential Consumer Products	668	1,121	167.8%	3,925	5,180	132.0%	13,359	31,651	236.9%	\$ 2,124.5	\$ 2,478.2	116.6%	28,812	36,110	125.3%	\$ 0.074	\$ 0.069
Home Energy Reports	4,278	3,823	89.4%	24,130	24,938	103.4%	291,149	288,495	99.1%	\$ 2,641.2	\$ 2,562.5	97.0%	24,130	24,938	103.4%	\$ 0.109	\$ 0.103
Residential Connected Solutions										\$ 283.1	\$ 170.8	60.3%					
Energy Efficiency Education Programs										\$ 40.0	\$ 40.0	100.0%					
Residential Pilots										\$ 222.7	\$ 2.1	1.0%					
Community Based Initiatives - Residential										\$ 121.5	\$ 118.3	97.4%					
Comprehensive Marketing - Residential										\$ 556.5	\$ 197.3	35.4%					
SUBTOTAL	13,898	14,461	104.1%	91,677	94,274	102.8%	558,305	658,030	117.9%	\$ 43,382.8	\$ 41,466.9	95.6%	429,965	450,941	104.9%	\$ 0.101	\$ 0.092
Regulatory																	
EERMC										\$ 783.6	\$ 783.6	100.0%					
OER										\$ 989.8	\$ 990.3	100.0%					
SUBTOTAL										\$ 1,773.4	\$ 1,773.9	100.0%					
TOTAL	30,117	29,763	98.8%	194,677	189,993	97.6%	569,615	668,420	117.3%	\$ 102,601.5	\$ 104,482.3	101.8%	1,694,164	1,619,141	95.6%	\$ 0.061	\$ 0.065
Municipal LED Street Lights										\$ 950.0	\$ 82.0	8.6%					
System Reliability Procurement										\$ 84.0	\$ 45.5	54.2%					

NOTES
(1)(4)(7) Targets from Docket 4888 - Attachment 5, Table E-7 (electric)
(3) Pct Achieved is Column (2)/ Column (1).
(6) Pct Achieved is Column (5)/ Column (4).
(7) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.
(9) Pct Achieved is Column (8)/ Column (7).
(10) Approved Implementation Budget from Docket 4888, Attachment 5 Table E-3 (electric).
(11) Year To Date Expenses include Implementation expenses.
(12) Pct Achieved is Column (11)/ Column (10).
(14) \$/lifetime kWh = Column (11)/Column (13)
(15) The Rhode Island Infrastructure Bank (RIIB) received a one time payment of \$5,000,000 in 2019. National Grid amortizes this payment and it is recorded quarterly as \$1,250,000.
(16) Planned \$/lifetime MWh from Docket 4888 - Attachment 5, Table E-5 (electric) - adjusted to reflect format of quarterly report. Program Implementation Expenses/lifetime kWh.
System Reliability Procurement targets from Docket 4888 - Attachment 5, Table E-2 (electric), not included in Expenses Total
(17) \$350,000 of RGGI funding was transferred from the Office of Energy Resources to National Grid for Municipal LED Street Lights in the second quarter. \$600,000 of RGGI funding was transferred from the Office of Energy Resources to National Grid for Municipal LED Street Lights in the fourth quarter.
(18) Values in quarterly reports are preliminary and subject to change. Data is finalized in the Year-End Report.

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table 2: Summary of Gas 2019 Target and Preliminary 4th Quarter Results

GAS PROGRAMS Sector and Program	(1) (2) (3) Energy Savings (MMBtu)			(4) (5) (6) Customer Participation			(7) (8) (9) Expenses (\$ 000)			(10) (11) (12) Energy Savings (Lifetime MMBtu)			(14) (13) \$/Lifetime MMBtu	
	Target	Year To Date	Pct Achieved	Target	Year To Date	Pct Achieved	Budget	Year To Date	Pct Achieved	Planned	Year To Date	Pct Achieved	Planned	Year to Date
Commercial and Industrial														
Large Commercial New Construction	42,536	47,339	111.3%	187	63	33.5%	\$ 2,389.2	\$ 2,823.9	118.2%	708,462	764,317	107.9%	\$ 3.37	\$ 3.69
Large Commercial Retrofit	155,049	161,814	104.4%	70	94	134.9%	\$ 4,214.0	\$ 4,890.1	116.0%	1,385,654	1,312,385	94.7%	\$ 3.04	\$ 3.73
Small Business Direct Install	2,559	2,938	114.8%	65	106	162.2%	\$ 124.4	\$ 93.7	75.3%	21,163	33,233	157.0%	\$ 5.88	\$ 2.82
Commercial & Industrial Multifamily	10,829	10,979	101.4%	2,289	1,530	66.8%	\$ 918.4	\$ 997.0	108.6%	155,667	169,025	108.6%	\$ 5.90	\$ 5.90
Commercial Pilots							\$ 381.1	\$ 52.3	13.7%					
Community Based Initiatives - C&I							\$ 13.0	\$ 3.8	29.0%					
SUBTOTAL	210,974	223,070	105.7%	2,611	1,793	68.6%	\$ 8,040.1	\$ 8,860.6	110.2%	2,270,945	2,278,960	100.4%	\$ 3.54	\$ 3.89
Income Eligible Residential														
Single Family - Income Eligible Services	9,178	7,212	78.6%	820	596	72.7%	\$ 5,012.8	\$ 3,765.0	75.1%	183,560	144,244	78.6%	\$ 27.31	\$ 26.10
Income Eligible Multifamily	20,487	23,719	115.8%	3,500	2,298	65.7%	\$ 2,932.7	\$ 3,154.9	107.6%	359,611	360,850	100.3%	\$ 8.16	\$ 8.74
SUBTOTAL	29,665	30,931	104.3%	4,320	2,894	67.0%	\$ 7,945.5	\$ 6,919.9	87.1%	543,171	505,094	93.0%	\$ 14.63	\$ 13.70
Non-Income Eligible Residential														
EnergyWise	27,806	32,197	115.8%	2,300	4,495	195.4%	\$ 8,466.3	\$ 9,291.8	109.8%	668,615	744,361	111.3%	\$ 12.66	\$ 12.48
Energy Star® HVAC	27,960	33,853	121.1%	1,830	3,306	180.6%	\$ 2,164.9	\$ 2,397.8	110.8%	476,141	553,442	116.2%	\$ 4.55	\$ 4.33
EnergyWise Multifamily	16,043	16,630	103.7%	4,000	1,008	25.2%	\$ 1,677.5	\$ 1,022.1	60.9%	255,276	262,873	103.0%	\$ 6.57	\$ 3.89
Home Energy Reports	115,520	111,117	96.2%	107,414	138,129	128.6%	\$ 447.9	\$ 420.1	93.8%	115,520	111,117	96.2%	\$ 3.88	\$ 3.78
Residential New Construction	4,741	3,499	73.8%	313	240	76.7%	\$ 737.6	\$ 610.0	82.7%	96,976	68,112	70.2%	\$ 7.61	\$ 8.96
Comprehensive Marketing - Residential							\$ 73.7	\$ 43.9	59.5%					
Community Based Initiatives - Residential							\$ 39.0	\$ 35.5	91.1%					
SUBTOTAL	192,069	197,296	102.7%	115,858	147,178	127.0%	\$ 13,606.8	\$ 13,821.2	101.6%	1,612,528	1,739,905	107.9%	\$ 8.44	\$ 7.94
Regulatory														
EERMC							\$ 235.5	\$ 235.5	100.0%					
DER							\$ 304.2	\$ 304.6	100.1%					
SUBTOTAL							\$ 539.7	\$ 540.0	100.1%					
TOTAL	432,708	451,297	104.3%	122,789	151,864	123.7%	\$ 30,132.2	\$ 30,141.7	100.0%	4,426,644	4,523,960	102.2%	\$ 6.81	\$ 6.66

NOTES
(1)(4) Targets from Docket 4888 - Attachment 6, Table G-7 (gas).
(3) Pct Achieved is Column (2)/ Column (1).
(4) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.
(6) Pct Achieved is Column (5)/ Column (4).
(7) Approved Implementation Budget from Docket 4755, Attachment 6 Table G-3 (gas).
(8) Year To Date Expenses include Implementation expenses.
(9) Pct Achieved is Column (8)/ Column (7).
(11) \$/lifetime MMBtu = Column (8)*1000/Column (10)
(12) Planned \$/lifetime MMBtu from Docket 4888 - Attachment 6, Table G-5 (gas) - adjusted to reflect format of quarterly report. Program Implementation Expenses/lifetime MMBtu.
(13) Values in quarterly reports are preliminary and subject to change. Data is finalized in the Year-End Report.

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table 3: National Grid 2019 Revolving Loan Funds

Large C&I Electric Revolving Loan Fund

Small Business Electric Revolving Loan Fund

<u>Income Statement</u>		<u>Income Statement</u>	
(1) 2019 Funds Available	\$10,018,017	(1) 2019 Funds Available	\$1,919,057
(2) 2019 Loan budget	\$10,000,000	(2) 2019 Loan Budget	\$3,000,000
(3) Committed	\$2,342,333	(3) Committed	\$0
(4) Paid	\$6,424,194	(4) Paid	\$1,514,725
(5) <u>Repayments</u>	<u>\$5,771,920</u>	(5) <u>Repayments</u>	<u>\$2,152,331</u>
(6) <u>Available 12/31/19</u>	<u>\$7,023,410</u>	(6) <u>Available 12/31/19</u>	<u>\$2,556,663</u>
(7) Outstanding loan volume	\$8,161,431	(7) Outstanding loan volume	\$1,184,581
(8) Loan defaults during period (\$)	\$0	(8) Loan defaults during period (\$)	\$0
(9) Arrears over 120 days at period end (\$)	\$7,815	(9) Arrears over 120 days at period end (\$)	\$52,904
<u>Program Impact</u>		<u>Program Impact</u>	
(10) Number of loans	68	(10b) Participants	635
(10b) Participants	47	(11) Annual Savings (Gross MWh)	12,185
(11) Annual Savings (Gross MWh)	12,083	(12) Annual Savings (Net MWh)	12,167
(12) Annual Savings (Net MWh)	9,253	(13) Lifetime Savings (Gross MWh)	148,271
(13) Lifetime Savings (Gross MWh)	145,272	(14) Lifetime Savings (Net MWh)	148,871
(14) Lifetime Savings (Net MWh)	114,599	(15) Annual Savings (Gross kW)	1,967
(15) Annual Savings (Gross kW)	1,118	(16) Annual Saving (Net kW)	1,811
(16) Annual Saving (Net kW)	1,573	(17) Total associated incentive volume (\$)	\$7,139,203
(17) Total associated incentive volume (\$)	\$3,206,008	(18) Total annual estimated energy cost savings (\$)	\$1,619,819
(18) Total annual estimated energy cost savings (\$)	\$1,933,703		

Rhode Island Public Energy Partnership (RI PEP)

<u>Income Statement</u>	
(1) 2019 Funds Available	\$66,060
(2) 2019 Budget	\$0
(3) Committed	\$0
(4) Paid	\$0
(4a) Funds Returned to OER	\$0
(5) <u>Repayments</u>	<u>\$255,589</u>
(6) <u>Available 12/31/19</u>	<u>\$321,649</u>
(7) Outstanding loan volume	\$194,821
(8) Loan defaults during period (\$)	0
(9) Arrears over 120 days at period end (\$)	0
<u>Program Impact</u>	
(10) Number of loans	0
(10b) Participants	0
(11) Annual Savings (Gross MWh)	0
(12) Annual Savings (Net MWh)	0
(13) Lifetime Savings (Gross MWh)	0
(14) Lifetime Savings (Net MWh)	0
(15) Annual Savings (Gross kW)	0
(16) Annual Saving (Net kW)	0
(17) Total associated incentive volume (\$)	\$0
(18) Total annual estimated energy cost savings (\$)	\$0

Notes

- 1 Amount available as of January 1, 2019.
- 2 Budget adopted by Sales Team for 2019 operations. Budget includes projections of repayments made during 2019.
- 3 As of December 31, 2019.
- 4 As of December 31, 2019. This includes all projects paid through December 31, 2019 and the OBR associated with those projects. OBR payment are processed once the associated incentive has been paid usually in batches.
- 4a Funds returned to RI OER.
- 5 As of December 31, 2019
- 6 Fund balance as of December 31, 2019. Committed funds are subtracted from this amount.
- 7 Total outstanding loan balance. Loans lent out that still need to be paid back. This includes loans from previous years.
- 8 Total loan value in default during period.
- 9 Total loan value in arrears for over 120 days as of December 31, 2019.
- 10 As of December 31, 2019
- 10b Unique customer names for large business (one customer name can have multiple sub accounts as is in the case of a franchise). Customer accounts used for small business (not adjusted for net-to-gross).
- 11 As of December 31, 2019
- 12 As of December 31, 2019
- 13 As of December 31, 2019
- 14 As of December 31, 2019
- 15 As of December 31, 2019
- 16 As of December 31, 2019
- 17 Incentives paid out with loans.
- 18 Estimated energy cost savings to loan fund participants.

NATIONAL GRID GAS ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table 4: National Grid 2019 Revolving Loan Funds

Large C&I Gas Revolving Loan Fund

<u>Income Statement</u>		
(1)	2019 Funds Available	\$1,195,976
(2)	2019 Loan budget	\$1,100,000
(3)	Committed	\$718,692
(4)	Paid	\$913,037
(5)	Repayments	\$739,958
(6)	<u>Available 12/31/19</u>	<u>\$304,205</u>
(7)	Outstanding loan volume	\$1,698,477
(8)	Loan defaults during period (\$)	\$0
(9)	Arrears over 120 days at period end (\$)	\$1,806
<u>Program Impact</u>		
(10)	Number of loans	16
(10b)	Participants	12
(11)	Annual Savings (Gross MMBtu)	28,398
(12)	Annual Savings (Net MMBtu)	25,328
(13)	Lifetime Savings (Gross MMBtu)	318,700
(14)	Lifetime Savings (Net MMBtu)	295,678
(17)	Total associated incentive volume (\$)	\$441,578
(18)	Total annual estimated energy cost savings (\$)	\$658,145

Notes

- 1 Amount available as of January 1, 2019.
- 2 Budget adopted by Sales Team for 2019 operations. Budget includes projections of repayments made during 2019.
- 3 As of December 31, 2019. Committed in 2019 but to be paid in 2020. Savings not included in 2019.
- 4 As of December 31, 2019. This includes all project paid in 2019 and the OBR associated with those projects. OBR payment are processed once the associated incentive has been paid usually in batches.
- 5 As of December 31, 2019
- 6 Fund balance as of December 31, 2019. Committed funds are subtracted from this amount.
- 7 Total outstanding loan balance. Loans lent out that still need to be paid back. This includes loans from previous years.
- 8 Total loan value in default during period.
- 9 Total loan value in arrears for over 120 days as of December 31, 2019.
- 10 As of December 31, 2019
- 10b Unique customer names for large business (one customer name can have multiple sub accounts as is in the case of a franchise).
- 11 As of December 31, 2019
- 12 As of December 31, 2019
- 13 As of December 31, 2019
- 14 As of December 31, 2019
- 15 As of December 31, 2019
- 16 As of December 31, 2019
- 17 Incentives paid out with loans.
- 18 Estimated energy cost savings to loan fund participants.

**Table 5
National Grid
2019 Test Metrics**

2019 Plan Goal		2019 Q4		
ASHP Units	CO2e (Net Tons CO2e)	Q4 Units (YTD)	CO2e (Net Tons CO2e) ¹	% Goal
75	19.90	313	84.71	426%

Customer Satisfaction²
92.3%

NOTES

¹This metric is tracked using CO2e (carbon dioxide equivalents)

²The Customer Satisfaction metric is based on an average across the EnergyWise, Single Family Income Eligible Services, and Residential Consumer Products Programs. The metric is based off customer responses to the following questions: Would you recommend this service to friend or family? How satisfied are you with the energy efficiency services you received?

Efficient Buildings Fund
Rhode Island Infrastructure Bank / Office of Energy Resources
January 1, 2019 to December 31, 2019 Report

Financing Program Income Statement (1)

Funds Available (1/1/19)	\$1,674,000
SBC fund contribution	\$5,000,000
Loans Repayments (principal only) (2)	\$765,000
Loans Defaults	\$0
Funds committed (3)	\$4,225,000
Funds Available (12/31/19)	\$ 3,214,000
Outstanding Closed Loan Value (contracted balance as of 12/31/19) (4)	\$9,047,000

Financing Program Impacts (5)

<i>Participation</i>	
Number of Loans (# - since inception)	14
Number of Participants (# - since inception)	12
<i>Projects</i>	
Total Loan Volume (\$ - since inception)	\$31,322,570
Total Associated Incentive Volume (\$ - since inception)	\$1,080,090
<i>Savings (2019) ^{Note (1)}</i>	
Net Annual Electricity Savings Supported (MWh)	1,858
Net Annual Capacity Reductions Supported (kW) (6)	7
Net Annual Thermal Energy Saving Supported (therms)	1,263
Net Lifetime Energy Savings Supported (MMBTU)	87,887
Total Annual Estimated Cost Savings (\$)	\$187,089

Note (1): Financing program income statement reflects exclusively EBF projects funded with SBC.

Note (2): In 2018, reported loan repayments included EBF projects funded with sources other than SBC. EBF loan repayments from all funding sources in 2019 are \$2,132,000.

Note (3): Funds committed represents funds committed to loans that have not yet closed. These funds are unavailable to be lent to other projects.

Note (4): Outstanding loan value represents contracted balance committed to loans. Principle balance for the program overall is \$21,102,431.70 as not all loans are fully disbursed.

Note (5): Financing program impacts reflects full program outcomes, including projects funded with sources other than SBC.

Note (6): Savings values only represent savings from projects that have been completed in 2019.