National Grid 2019 Residential Energy Efficiency Solutions and Programs

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1. Introduction

Rhode Island residential customers rely on – and place trust in – National Grid to keep their homes comfortable, their lights on, be there in moments of crisis, and continue to innovate with consumer technologies.

As such, the Company continues to implement its nationally recognized energy efficiency program with a focus on developing new services that give customers control of their energy, help reduce their bills, ensure financial well-being, and provide equity for all. In 2019, energy efficiency will be coordinating with the Company's Customer Service so offers are promoted when appropriate. More direct and ongoing communications between program managers and customer contact centers will ensure that programs are promoted when customers contact the Company.

National Grid's Residential Energy Efficiency portfolio of solutions provides customers with incentives and support for their every-day energy choices. For the customer building a new home, the Company will model and test the home for energy efficiency. For the tech-savvy customer, the Company will work with retail and wholesale channels that sell the "latest and greatest", as well as the "tried and true" energy saving products to integrate new technologies into their existing residence. For the customer working two jobs to put their children through school, the Company can help to reduce energy bills and increase comfort in the home through its retrofit programs. ~~, many times at no cost at all.~~

The following sections cover these residential energy solutions, the energy saving goals the Company has set for 2019, and how the Company plans to achieve these goals in an ever-changing energy landscape.

For 2019, the Company will build on the transformations identified in the 2018-2020 Three-Year plan and programs implemented beginning in last year's 2018 Annual Plan. Smarter products will increasingly continue to make their way into the programs, products will be offered mid-stream or upstream, program designs overall will begin a shift towards increasingly customer-centric models (e.g. Revising Multifamily participation guidelines and processes to serve more customers), and new ideas will continue to be tested to better understand how customers interact with their products and energy. As the energy efficiency market continues to evolve, the Company will pursue workforce related studies related to such changes. These studies will be developed in coordination with the Jobs Study and Potential Study as outlined in the

"2019 Evaluation, Measurement and Verification Plan" section. The Company will also communicate other efficiency or energy savings opportunities provided by the Company or external parties that benefit the customer.

The 2018-2020 Three-Year Plan details four central principles that encompass an advanced and innovative approach to serving all residential customers. The Company finds that these four principles are apparent in all aspects of the 2019 Plan and incorporates the planning process, which included many brainstorming sessions from internal teams to external stakeholders. In addition, each of the Company's strategies, programs, and initiatives are focused on meeting the needs of customers, the environment, and preparing for the future. Below are the four key priorities the Company has identified for the 2018-2020 Plan.

Customers - Deliver comprehensive services encompassing all market segments and customers. Such services will enable customers to control their energy use, reduce their bills, and help support their financial well-being.

Least Cost - Deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Continuing to deliver cost effective energy saving under Least Cost Procurement will create cost savings to all customers, while creating economic benefits that create and maintain local jobs and businesses. Demand Response efforts will also contribute to cost savings to all customers.

Environment - Provide solutions that minimize greenhouse gas emissions and contribute to Rhode Island's clean energy policy goals, including the Resilient Rhode Island Act.

Future – Innovate to capture savings from new technologies and strategies to position energy efficiency programs for the future, including the integration of energy efficiency with demand response, renewable energy, and smart grid technologies. This includes incorporating outcomes from the Rhode Island Power Sector Transformation Initiative and Docket 4600.

a. Solutions and Programs Featured in Attachment 1

1. Table 1: Solutions, Programs - New for 2019

Solutions	Programs Highlighted	New for 2019
Whole Home Programs	**Single Family** and **Multifamily retrofit** programs where customers experience no-cost assessments and comprehensive upgrades. Also included are the **Residential New Construction** program, and the **Income Eligible Services** program.	Increased participation goals Revised Multifamily participation guidelines to remove barriers and serve more customers Expanded Single-Family and Multifamily cold climate heat pump installations Parity of delivered fuel incentives Path to ~~zero~~ Zero ~~energy~~ Energy ~~ready~~ Ready ~~homes~~Homes – an enhancement to the RNC project to incentivize zero energy ready homes~~.~~ Online scheduling of EnergyWise assessments 100% landlord incentive for market rate, single family residences
Behavior and Products Programs	**Home Energy Reports**, **ENERGY STAR Lighting**, **Residential Consumer Products**, and **HVAC** programs.	More personalized HER behavior tips and product promotions Beneficial electrification demonstration within HVAC Program and offered across

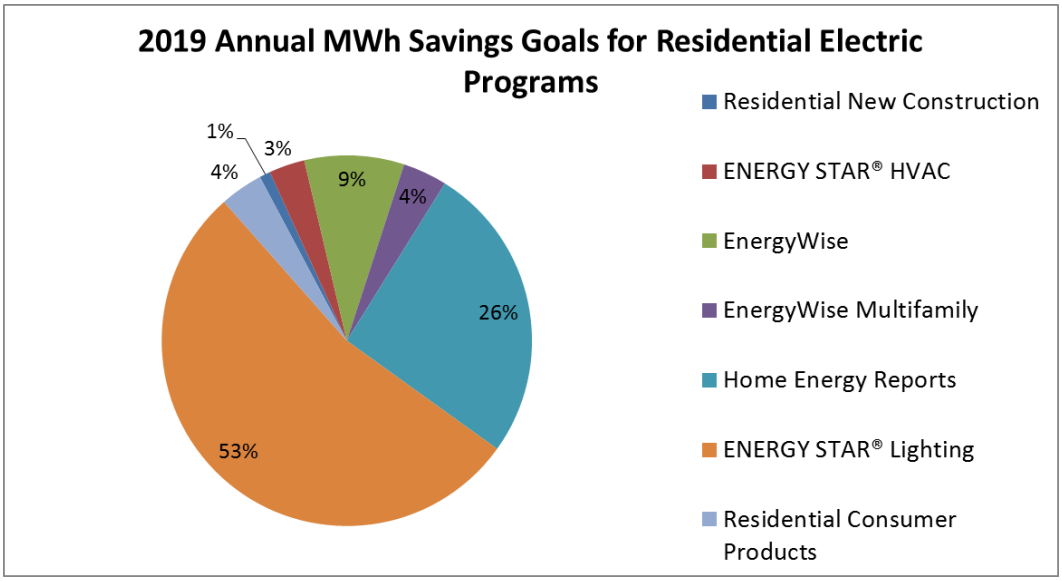
		Residential portfolio. Upstream Heat Pump Water Heater incentive Low-e storm windows
Initiatives	The **Community-Based Energy Efficiency initiative** to educate customers and increase program participation.	New Website landing page for community recruitment Expanding new goal-based program model to four communities Including workforce trainings and new metrics such as demand response participation
~~**Marketing**~~	~~Efforts to build awareness, educate customers, and drive participation in the Company's efficiency offerings and services.~~	

2. Table 2: Non-Income Eligible Electric and Gas Goals by Program

Program	Demand Reduction (Annual kW)	Energy Savings (Annual MWh)	Electric Customer Participation	Gas Savings (Annual MMBtu)	Gas Customer Participation
Energy Star Lighting	6,681	48,381	214,022	N/A	N/A
Home Energy Reports	4,278	24,130	291,149	115,520	107,414
EnergyWise	1,287	8,182	10,250	27,806	2,300

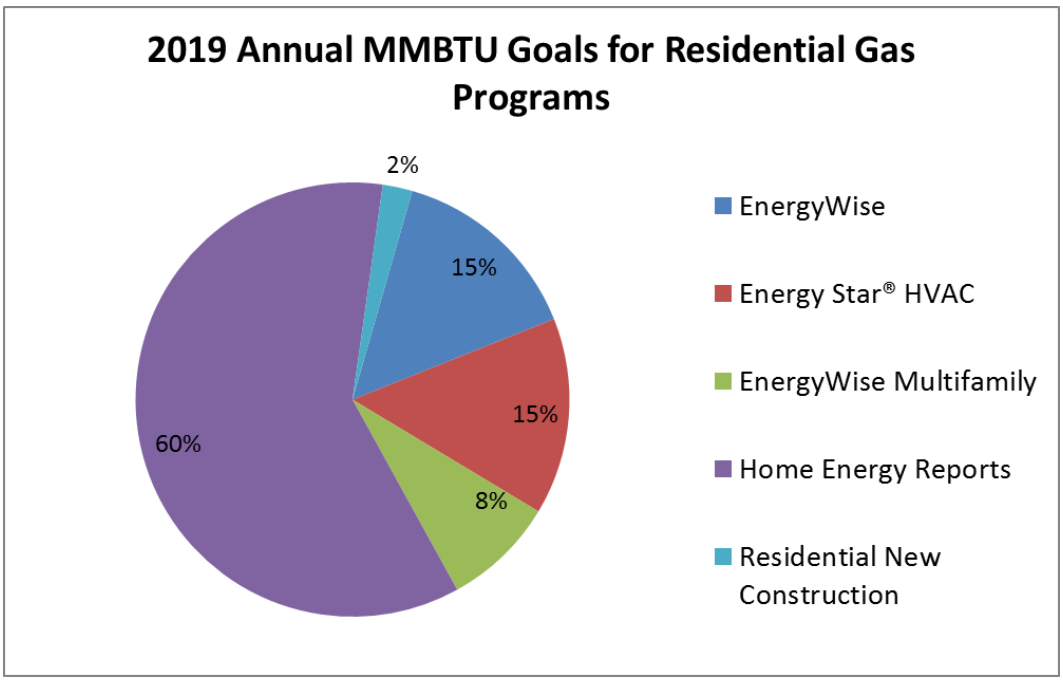
EnergyWise Multifamily	283	3,593	4,000	16,043	4,000
Residential Consumer Products	668	3,925	11,997	N/A	N/A
Energy Star HVAC	590	2,710	2,176	27,960	1,830
Residential New Construction	112	756	550	4,741	313
Residential Codes[1]	N/A	202	N/A	1,176	N/A

Figure 1: MWh Savings Goals for Residential Sector



[1] Included in the Residential New Construction goals listed above in Table 2

Figure 2: MMBTU Savings Goals for Residential Sector



3. Table 3: Income Eligible Electric and Gas Goals by Program

Program	Demand Reduction (Annual kW)	Energy Savings (Annual MWh)	Electric Customer Participation	Gas Savings (Annual MMBtu)	Gas Customer Participation
Income Eligible Services – Single Family	815	3,742	3,000	9,178	820
Income Eligible Multifamily	223	3,219	5,000	20,487	3,500

Figure 3: MWh Savings Goals for Income Eligible Sector

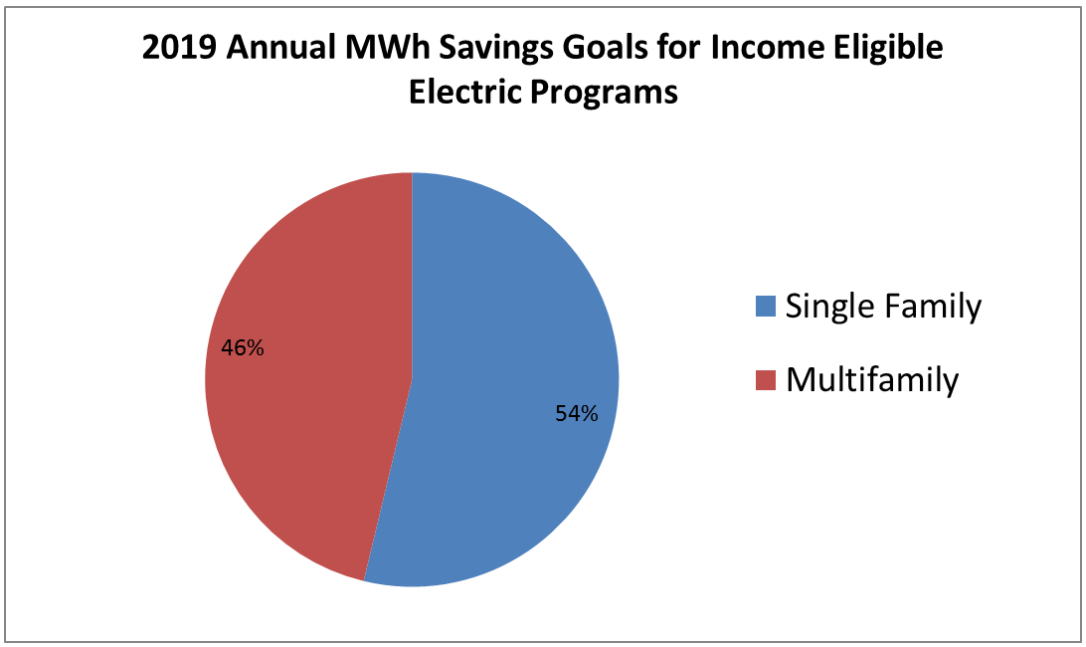
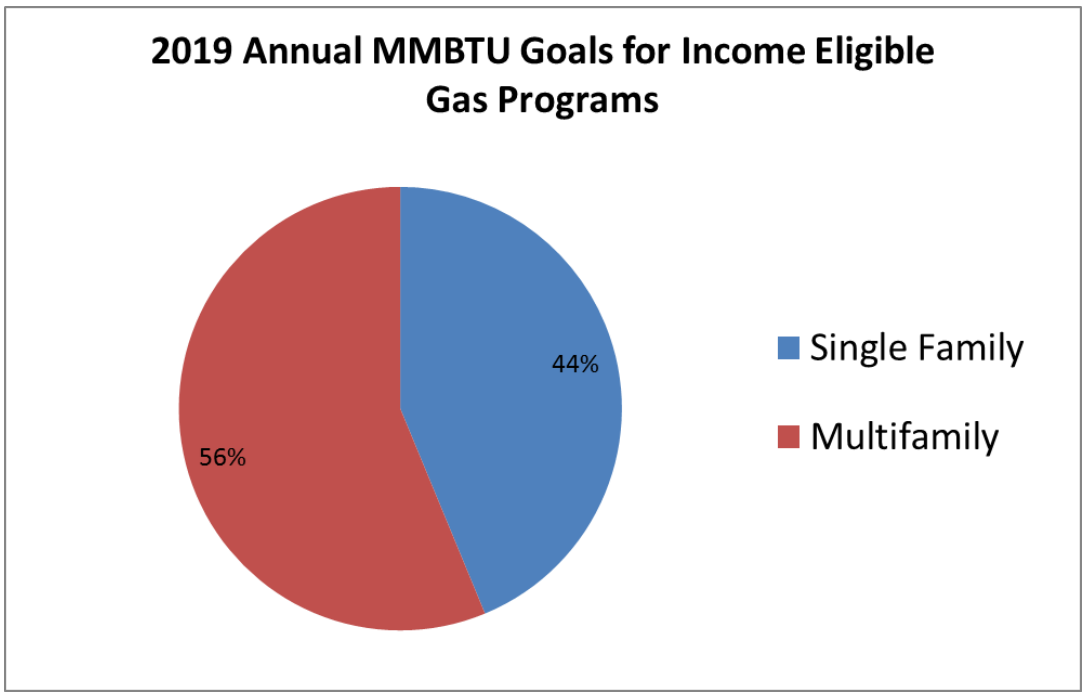


Figure 4: MMBTU Savings Goals for Income Eligible Sector



~~2.~~4. Whole Home Programs and Solutions

Whole Home Solutions provide the most comprehensive level of energy and cost savings for both single family and multifamily customers. For existing homes, the home energy assessment is the first step to identify how much energy the home uses as well as any structural or mechanical problems, that when corrected, save significant amounts of money over time.

The home energy assessment for a single family customer connects energy specialists at a customer's residence to both educate the resident on where the home may be losing energy through air leaks and inefficient energy systems, and to also provide solutions that reduce the energy losses. These solutions require a commitment by the customer in both time and money and may require multiple visits by an energy specialist to the home. The end result of implementing all the energy solutions will be a home that is more comfortable and energy efficient.

An initial home energy assessment can take several hours, starting with an energy specialist acquiring information from the homeowner about heating, cooling, and ventilation concerns. Next, the energy specialist conducts a diagnostic assessment of the attic, walls, basement, doors, windows, mechanical systems and appliances to assess existing levels of insulation and air sealing and equipment safety and efficiency. During the initial visit the energy specialist will install no-cost instant savings measures (ISMs) energy saving upgrades including lighting upgrades, pipe insulation, water aerators, and advanced power strips for electronic systems.

If the customer decides to move forward with recommended energy efficiency solutions identified in the above-described assessment (e.g. insulation, sealing air leaks or heating/cooling system or appliance replacement) additional savings will be realized. Energy efficiency solutions require subsequent visits from a respective home performance contracting service or product provider, and could take several days to complete. While the home energy assessment and instant savings measures ("ISMs") are at no-cost to the customer, the subsequent ~~visits~~ energy savings measures may require a financial investment by the home owner. The ~~company~~ Company provides financing opportunities and ~~healthy~~ substantial incentives to help the customer move forward with these higher cost measures.

For those customers who reside in multifamily facilities the no-cost assessment experience is still comprehensive, yet the process is a bit different. The Company's

Multifamily Coordinator will work directly with property managers, facility owners and/or condominium associations to coordinate the audit and subsequent upgrades. The first on-site assessment ~~will~~ is a comprehensive review of common areas, offices, mechanical systems, and a representative sample of dwelling units to build a plan for retrofit opportunities. The owners and/or tenants are then provided with a list of measures that could be installed in their units and common areas. Incentives are available for weatherization (air sealing, insulation), heating and domestic hot water, cooling, lighting, and appliances.

Residential New Construction offers both technical services and incentives to help customers design and construct new energy-efficient homes. Beginning with a review of plans, the Company's lead vendor can advise a customer how changes in the design can improve efficiency. During construction, the lead vendor works directly with the builder to provide on-site technical support for incorporating best practices and techniques. The program provides the Home Energy Rating System (HERs) rating of the home to determine the energy efficiency upon completion of the project. Incentives for the project are provided based on the HERs rating as well as additional incentives for high-efficiency heating, cooling and hot water systems.

With a wide variety of customer and site-specific needs, National Grid approaches the whole house solutions market through channels that address the housing structure by number of housing units in the building as well as by income eligibility to ensure as many customers as possible can participate in the program and receive the benefits of energy savings at discounted, low or no cost.

Whole Home Programs and Solutions provide an important entry point into the customer's home and introduction to energy management. Steps taken during the initial visit will ideally lead to additional, ongoing interactions with the customer for future home improvements when needed. Information to upgrade to efficient heating systems, including cold climate heat pumps, will be provided if a system is near end-of-live or if it is cost effective to upgrade.

The Company will continue to collaborate on marketing efforts with complimentary programs, including renewable energy and electrification programs that support energy efficiency. ~~The whole house programs will continue to seek ways to integrate renewable technology in ways that support energy efficiency.~~ Currently the Renewable Energy Growth (RE Growth) Solar Marketplace provides cross-marketing and encourages customers to do an energy assessment prior to adding solar. The RI Office of Energy

Resources and CommerceRI's Renewable Energy Fund (REF) program requires an energy assessment in order to receive the REF solar incentive. The strategic electrification initiative, displacing/replacing delivered fuel heat with CCMSHPs or replacement of electric resistance heat replacement with ccMSHPs, will also align with the whole home programs to provide customers with a heating/cooling solution that reduces carbon emissions and increases energy efficiency. ~~The Company will continue to collaborate with both programs and will discuss possible marketing enhancements through digital engagement channels including web, social media, and email to a general residential customer audience.~~

~~3.~~5. Energy*Wise* Single Family (Electric and Gas)

a. Overview

EnergyWise consistently captures energy savings at customer homes (1-4 units in one building) while educating them about all energy management opportunities. In 2018, EnergyWise was awarded the ENERGY STAR Partner of the Year Sustained Excellence in Energy Efficiency Program Delivery. This honor is presented by the United States~~S~~ Environmental Protection Agency and Department of Energy recognizing continued excellence in program delivery to customers. The Rhode Island Energy*Wise* program in 2017 installed over twenty-five lighting products during home energy assessments. These savings support continued delivery of no-cost first visits to the customer. The combination of instant savings and a no-cost initial visit is a very powerful tool to engage customers in whole home services.

Since 2009, the Company has provided home energy assessments to over 15% of single family, market rate customers in Rhode Island. Customers that have participated in the program learn how their home functions from an energy perspective and are provided solutions to improve energy performance when opportunities exist. EnergyWise leverages customer touch points to present solutions that make sense for the household. As more offerings are available, they will also be bundled in and presented with the program offerings.

An evaluation completed in 2018 supports the continued success of zero-percent financing through the HEAT loan in facilitating program adoption. The financing reduces the upfront customer cost associated with upgrades to home's insulation levels, heating system, or water heating systems. At the August customer listening forum as well as the energy expo, residential customers expressed an interest in financing solar

improvements as well as upgraded windows. In 2019, National Grid will investigate financing options available to residential customers and look for ways to reduce costs.

b. New in 2019

In 2019 Energy*Wise* will focus on the following strategies to achieve the aggressive targets:

i. Customer engagement and convenience

Energy*Wise* will implement an online assessment to educate customers on where household opportunities for greater comfort and energy savings exist. This component will allow customers to learn about energy management offerings at their own convenience and receive information about specific improvements and available incentives. For customers interested in an in-person home energy assessment, online scheduling will be available in 2019 allowing for transparent scheduling at a convenient time for the customer.

ii. Deeper savings and overcoming barriers

There are numerous in-home attributes that can prevent installation of weatherization due to health and safety concerns. The presence of asbestos, vermiculite, knob-and-tube wiring, heating systems not drafting flue gasses correctly, and a home that is "too tight", meaning not enough air exchanges per hour for optimal health, are examples of health and safety issues that will result in a recommendation to resolve the issue before weatherization can proceed. This program has been testing a method to reduce the cost of the "too tight" issue by putting in mechanical ventilation meeting the American Society of Heating, Refrigerating and Air-Conditioning Engineers residential ventilation standard (ASHRAE 62.2) that controls the exchange of air while using minimal energy. By outlining a procedure to use a few standard configurations for mechanical ventilation, the program can minimize costs to the customer while optimizing the success of the installation. The mechanical ventilation also removes the barrier so that weatherization and air sealing can proceed.

The program will also be testing a duct sealing initiative in 2019. Leaky ducts can result in a loss of 20% of the heating and cooling system efficiency. While large leaks can be addressed with exterior duct sealing tapes and paste, many smaller gaps can be more difficult to address from the exterior of the ducts. A new initiative will investigate the success of airborne, spray sealants that can be applied within the duct work that can reduce overall system leakage.

The Company will also complete the implementation of and assess the results from its 150 customer ~~pilot~~ initiative of the Department of Energy's Home Energy Score, which began in 2018.

iii. Serving all customers

Making sure that all Rhode Islanders are participating in the energy efficiency offerings is of growing ~~interest~~ concern for many energy efficiency stakeholders. One area that has brought increasing interest is with customers with an average median income (AMI) of 60% - 100%. Looking at participation information from 2014 – 2017, the Company finds that for customers where income can be determined, those falling into the 60% - 100% AMI range have completed weatherization after receiving home energy assessments at a slightly higher rate than customers whose income are above 100% AMI. The number of customers in the 60-100% AMI range participating in EnergyWise home energy assessments is proportional to the number of households in that income bracket within RI. This data demonstrates that the program is attractive to a range of customers across all income levels and for moderate income customers, they are both participating and taking advantage of weatherization services at or above their population within the state.

In 2019, the program is redesigning the approach to serve renters and landlords in single-family (1-4 unit) homes that participate in the program. In order to encourage landlord participation in the weatherization component of the program, the Company will remove the customer co-pay portion of the program, up to the program maximum of $4,000. This redesign will remove the classic "split incentive" where investments in upgrading the insulation levels of the home may not be returned to the landlord, but may in fact go to the tenants that pay the heating bills. The split incentive has been one component that may deter an investment in rental property, as renters are frequently unable to change the building structure without landlord permission.

Another area of stakeholder interest has been in the area of deliverable fuels. Customers that heat their homes with deliverable fuels have participated in the no-cost home energy assessment portion of the program, but have continued to undergo weatherization installations at a lower rate than customers that heat with electricity or natural gas. ~~While incentives for deliverable fuel homeowners has continued to rise, the~~The program has ~~been testing parity in~~increased incentive levels for deliverable fuel customers to the same level as other heating fuels since Q3 of 2018 and ~~will strive~~is planning to continue ~~this~~ these levels ~~parity~~ through 2019.

~~4.~~6. Multifamily (Electric and Gas)

a. Overview

The Rhode Island Market Rate and Income Eligible Multifamily programs continue to innovate and refine techniques to serve more customers with more measures. The 2018 program saw the introduction of cold climate mini-split heat ~~pumps for~~pumps for customers with electric resistance heat, the use of a condo website portal, and the creation of new relationships to offer more finance opportunities to customers. For 2019, the company looks to grow these efforts, with a special emphasis on the deployment of cold climate mini-split heat pumps, and remains committed to offering a comprehensive program that is both cost effective yet thorough in treating this diverse segment of the population. The Rhode Island Multifamily program has a single lead vendor that utilizes a network of Rhode Island sub-contractors to serve all customers, including income eligible.

Eligible Multifamily program participants are defined as the following:[2]

- Buildings with 5 or more units
- Properties consisting of four or more 1-4 unit buildings that meet both of the following requirements:
    - Are within a reasonable geographical distance[3] from each other, or to a 5+ unit building, and
    - Are owned by the same individual or firm.

Both market-rate and income-eligible multifamily properties are subject to the above-outlined multifamily eligibility requirements for coordinated services. For the income-eligible properties, co-payments for energy efficiency services and measures may be waived.

The income-eligible multifamily sector is defined by properties that meet one of the following criteria:

[2] Stand-alone 1-4 unit buildings that do not meet these requirements are considered "single-family" and are served traditionally through *EnergyWise* Single Family or Income Eligible Services Single Family programs, as appropriate.

[3] "Reasonable geographical distance" is determined at the discretion of the vendor. The prior program guidelines required buildings to be neighboring each other. This revised guideline will allow the vendor to treat more units for a single owner where those units may be located down the street from each other.

- Owned by public housing authorities or community development corporations
- Receive affordable housing tax credits or any type of low-income funds/subsides from the state or federal government
- Consist of building units where a majority of customers qualify as income-eligible customers (receive utility service on the A-60 Low-Income rate and/or have a household income of less than 60% of the Area Median Income)

Furthermore, a multifamily property may be eligible for services and incentives under both residential and commercial programs. As an example, a building with 20 units that is electrically sub-metered (20 residential accounts) with a commercial electric account for common areas and one commercial gas account serving a central heating/hot water system will likely qualify for incentives through both Multifamily and the Commercial & Industrial Multifamily programs. While this adds a layer of complexity for the Company, it is critical that the Company maintain accounting via these various program budgets in order to ensure equity for all customers funding energy efficiency through the energy efficiency program charge. In contrast, the customer will not need to deal with this added layer of complexity, and will instead receive a consolidated incentive for all efficiency work completed at the site[4]

b. New for 2019

i. Removing barriers to participation through refined program design

A key theme for the 2019 multifamily retrofit program is to remove barriers that prevent customers from participating in the programs. In order to do so, the Company will make several changes to the program in order to ~~unlock value for~~serve more customers. Beginning in January, the Company's lead vendor for the multifamily retrofit program will begin serving individual condo-unit owners and utilize the time on-site as an opportunity for face-to-face recruitment of the other units at the facility. This not only has the benefit of ensuring each customer who wants to participate is served, but also helps increase condo unit participation which has traditionally been challenging. Further, the Company will target facilities that did not move forward with retrofits in years past due to low on-site participation. ~~and~~ The Company ~~will~~ may also remove the 5-year waiting period between assessments where savings potential is identified during

[4] For the past four years National Grid has offered a Multifamily Coordinator for RI customers looking to participate in the multifamily program to reduce any confusion and ensure a smooth enrollment process.

the intake phone interview. This will allow individual customers to participate at a site where the prior tenant may not have taken advantage of the offer during the prior site assessment and will make available to customers new technologies that have been added to the program within the last few years.~~.~~

For the customer who may not know what program best suits their needs, the Residential New Construction, Multifamily Retrofit, and the Small Business Direct Install programs have built channels of communication for 2019 to streamline customer intake processes and serve sites that did not fit into one of the traditional program structures. For example, a non-profit group home that serves at-risk children may now be served by the income eligible multifamily retrofit program if the offerings within that program are better suited to the needs of the customer. In all cases, the experience should be seamless.

ii. Continued Focus on Finance Opportunities

During 2018 the Company's lead vendor for multifamily services partnered with Ascentium to offer financing to cover the customer co-payment portion of larger multifamily market-rate projects. As in years past, the Company will work with partners such as the Rhode Island Infrastructure Bank (RIIB), RI Housing, and other key stakeholders to explore new sources of capital and potential financial products and mechanisms such as on-bill repayment for residential customers. Additionally, the company will coordinate with housing authorities and developers as they undergo 15-year refinance cycles to ensure that energy efficiency upgrades and program incentives are considered during this important time.

~~5.~~7. Income Eligible Services (Electric and Gas)

a. Overview

National Grid's Income Eligible Services Program (IES) assists low-income customers in addressing energy affordability burdens by providing energy education, home energy assessments, insulation, air sealing, and replacement of inefficient heating systems, appliances, and lighting to reduce household energy burdens and improve overall comfort for occupants.

IES is a fuel neutral program (electric, gas, oil and propane) and is available for customers who live in 1-4 unit residences and ~~qualify for the Low Income Home Energy~~

~~Assistance Program (LIHEAP)[5], also known as "fuel assistance," or~~ who qualify for the National Grid discount utility rates (A-60 and or 1301 rates).[6]

The success of the Program can be attributed to several key elements of the program design:

- Streamlined contracting process between the Lead Vendor and the RI Community Action Programs ("CAPs")
- Processes for leveraging funds, providing ongoing contractor training, and engaging with the six RI CAPs quarterly to ensure consistent implementation of best practices.
- On-going customer feedback and communication.

IES is administered through a Lead Vendor that ~~manages the day to day operations of the Program and works directly with~~is responsible for managing the implementation of IES work through ~~-~~the six Rhode Island geographically ~~territorial~~ based CAPs ~~to deliver IES~~. The CAPs ~~manage~~ provide ~~the~~ customer intake/eligibility qualification services, ~~the~~ energy assessments, direct installation measures, ~~and the~~ coordination of home performance contractors that install all weatherization measures and quality assurance/quality control. ~~to provide services.~~

The program benefits from leveraging complimentary~~ed~~ funds managed by the State of Rhode Island Department of Human Services (DHS) Weatherization Assistance Program (WAP)[7] and the Low Income Home Energy Assistance Program (LIHEAP)[8]. These leveraged funds amount to approximately 35% of total customer incentive benefits for weatherization and heating system replacements. These funds also allow customers to receive non-energy related health and safety improvements that would not be ~~available~~ possible with rate payer dollars only. See Figure 5 below for an illustrative example representing **2018** funding.

~~[5] The federal government has set an income level, tied to the median income of each state, which defines the uppermost income boundary for LIHEAP participation. Individual states have some flexibility in defining income eligibility as long as it is not set above the federally defined maximum. Eligibility in this program will track the eligibility for LIHEAP set by the State of Rhode Island.~~

[6] These eligibility requirements are subject to change as a result of any regulatory directives, or as deemed necessary by the Company to enhance participation and/or savings.

7 overseen by the ~~federal~~ U.S. Department of Energy

8 overseen by the ~~federal~~ U.S. Department of Health and Human Services

Figure 5: Funding Sources that Provide EE Services for the Single Family Income Eligible Market

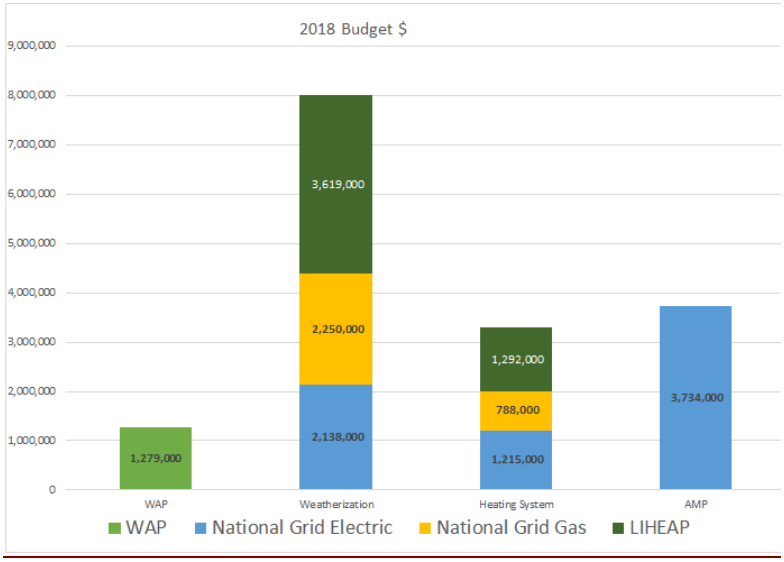


Table 4: Services Provided – IES Program and WAP/LIHEAP

Income Eligible Services (IES) Program*	Federally-funded Weatherization Assistance Program (WAP)*
• Conduct whole house Energy Assessment and provide customer education ○ Lighting and appliance ○ Heating and weatherization ○ Comprehensive • Review utility bills • Replace incandescent and halogen light bulbs with LED light bulbs • Install smart power strips and domestic hot water measures • Talk with homeowner about opportunities to save energy and money through weatherization and upgrading appliances and mechanical equipment. • Install weatherization measures if needed	• Conduct whole house audit/ energy efficiency evaluation (not appliances) • Install weatherization measures (insulation, air sealing, duct sealing) • Replace inefficient heating equipment if deemed inefficient or unsafe • Improve minor health and safety issues that are barriers to energy efficiency measures~~in the home.~~ • Conduct field inspections and testing (quality assurance/quality control)

• Replace eligible appliances and heating, cooling and hot water systems (HPWH) • Conduct field inspections and testing	

*Both the IES and the WAP/LIHEAP offer all services and products at no-cost to the customer.

In 2018, the IES Program added clothes washers and dehumidifiers to the list of no-cost measures. These products have been very well received and will continue in 2019.

b. New for 2019

Researching the feasibility to add new measures including:

i. Cold climate mini-split heat pumps for electric resistance and delivered fuel heat customers ~~with existing a/c~~

~~As t~~The main objective of the IES Program is to provide comprehensive energy efficiency solutions that help to reduce energy costs and ~~improve a home's~~ consumption and improve thermal comfort. As such, National Grid will install approximately ten ~~small number of~~ cold-climate mini-split heat pumps through the IES Program with the goal of gaining clarity on customer acceptance, ease of use, added electric load (customers with/without a/c) as well as the up-front installation costs.~~in hopes to provide clarity on up-front "installed cost" as well as customer satisfaction and ease of use.~~

Eligibility criteria to take advantage of this offering are as follows:

- Completion of IES energy assessment and weatherization
- Existing electric resistance heat or delivered fuels~~and window a/c~~
  - Generally paired with a/c to reduce the increase in load.
  - Eligibility of customers without existing a/c will be reviewed in 2019

This program will be implemented in coordination with the HVAC Electric program offering. HVAC contractors working solely on the IES will need to complete the HVAC Electric Program's "Quality Installation Verification" training process to ensure that cold climate mini-split heat pump systems are sized and installed in accordance with manufacturer specifications, and that customers will be properly ~~informed~~ educated about appropriate use of the systems.

ii. Increasing participation through coordination of multiple Income Eligible touch points

In 2019, the IES Program will work with the Company's call center to provide targeted information to help Income Eligible customers to quickly understand the opportunity to participate in the IES program. The Company's call center is the customer service center that responds to inquiries about bills, services, energy efficiency, and other energy related questions. In 2019, ~~For example~~, call center representatives will answer a customer's initial question and then be able to see if a customer is on an income eligible rate and would be able to notify customers of upgrades that would be relevant to their specific situation (e.g. promoting cold climate mini split heat pumps to customers heating with oil heat and electric resistance heat).

In addition, the IES Program will work with low-income organizations including RI Housing Authorities, the Community Development Corporations, and cities and towns to continue to increase participation in this program.

iii. Exploring Mutual Benefits for Improved Health~~care~~ and Utility-Run Energy Efficiency

In 2019, the company will engage with local and national stakeholders and thought-leaders to discuss the interplay of benefits between the healthcare and energy industries. Recently, there has been increased focus across the country by thought leaders, such as the ACEEE, on the health benefits associated with certain housing energy retrofit and rehabilitation measures that are offered through utility-run energy efficiency programs, with a special emphasis on opportunities within the income eligible population. The company will work with local and national stakeholders such as the Office of Energy Resources (OER), Department of Health, income eligible advocates and health care providers ~~to look into~~to consider issues such as, the monetary value of health benefits from energy efficiency measures, delivery models for measures that drive both health and energy savings, and possible co-funding opportunities where appropriate.

~~6.~~8. Residential New Construction (Electric and Gas)

a. Overview

The RNC Program utilizes the following resources to assist builders, developers, and owners to design and build energy-efficient single family and multifamily homes with lower operating costs and increased durability, comfort and safety:

- Code compliance and technical trainings
- Energy modeling and design assistance
- In-field inspections
- HERS Rating
- Optional ENERGY STAR® Homes verification for projects seeking the EPA label
- Complimentary ENERGY STAR bulbs and WaterSense® showerheads
- Financial incentives based on the level of the energy efficiency of the structure[9] and equipment.

In 2018 the RNC program continued to see strong enrollment, higher levels of energy efficiency, more electrically heated homes, and more multifamily developments. The Company also engaged the building community via a Zero Energy Marketing Forum, a Passive House Design Forum and an Energy Efficiency Listening Forum to assess the needs for building professionals to design and build zero energy and Passive House certified projects.

In 2019, the Company will incorporate the feedback from the three forums and will continue to offer technical training and envelope and equipment incentives and will add program elements and incentives to help the building community build zero energy or Passive House projects. In addition the RNC program will continue to seek adaptive reuse projects such as mill conversions. The Company will continue to work closely with the Rhode Island Builders Association to further refine program offering and promote program developments to the RI building community.

[9] Compared to the energy baseline of the average energy performance of a home built in RI, referred to as the 2017 User Defined Reference Home (UDRH).

b. New for 2019

The RNC program's baseline for efficiency is derived from the average energy performance of a home built in RI, referred to as the User Defined Reference Home (UDRH). The RNC program has a tiered energy-efficiency incentive structure that compares a home's energy performance against the UDRH. In 2017, the RI UDRH was updated based on current industry practice, which resulted in a substantial increase in the efficiency level of this baseline. In 2018, the new UDRH presented a challenge for developers and builders to achieve incremental improvements above the RNC program baseline. As a result the RNC Tiers have been modified to accommodate the challenges while continuing to incentivize the projects that achieve very high energy efficiency.

The 2019 tiered incentive structure will be as follows:

Tier Level	**2017** % More Energy Efficient Than 2011 Baseline*	**2018** % More Energy Efficient Than 2017 Baseline**	**2018** % More Energy Efficient Than 2017 Baseline**
Tier I	15% - 30%	15% - 30%	15-24%
Tier II	31% - 44%	31% - 44%	25-34%
Tier III	45% or more	45% or more	35-44%
Tier IV			45%+

i. Path to Zero Energy Ready

The building community, the Rhode Island Residential Stretch Code, the "Zero Energy Building Pathway to 2035, Whitepaper Report of the Rhode Island", and the "Energy 2035: Rhode Island State Energy Plan" have helped to influence the need for – and development of – an ~~new~~ energy efficiency incentive ~~mechanism~~ called the "Path to Zero Energy Ready" demonstration project that was launched in 2018 and will be ~~offered~~ continued in 2019 under the Residential New Construction Program (see Attachment 8, "Pilots" . This new path for incentives will use the existing tiered energy efficiency performance levels offered in RNC (with the new adjusted tiers) as a

prerequisite and will include additional incentives, that are offered through the Zero Energy Pilot Program, for reaching the following goals:

- All electric homes
- PV ready and EV ready + building certification (DOE Zero Energy Ready Homes, the Passivhaus Institut (PHI) / Passive House Institute U.S. (PHIUS), LEED-H, and Living Building Challenge or ENERGY STAR Certified Home as a minimum)
- Compliance with the Rhode Island Residential Stretch Code[10]
- Other considerations for this pathway: demand response, smart home technologies, battery storage and energy monitoring systems.

The Path to Zero Energy Ready will also include education and awareness, training, professional certification, project certification and marketing and a model home that will be used as a demonstration for a set period of time.

The Company will continue working with Rhode Island Housing (RIH) and Rhode Island Office of Energy Resources (OER) on issuing an RFP to solicit a team to design and construct a Zero Energy Building (ZEB) housing unit(s) to serve moderate income/income eligible residents in Rhode Island. The project will be required to employ solar PV and air-source or ground source cold climate heat pump technologies to achieve ZEB status which will be funded by OER. In 2019 the Company and OER may pursue a similar demonstration project, but targeted at the market-rate community.

ii. Shifting toward all electric homes

A significant number of projects that are already in the RNC pipeline for both single family and multifamily have electric heat pump heat and hot water and more are expected to enroll in 2019. This shift will require the need for more up-front design and technical assistance for project-teams, for contractors to be properly trained to accurately size the equipment and homeowners to be educated on the use and performance of the equipment.

iii. Open Home Energy Rater Market

National Grid will continue to support the expansion of the ~~larger~~ local network of trained energy efficiency professionals by~~,~~ providing ~~promote workforce~~ HERS training ~~and development,~~ and encouraging certified HERS trainers to participate in the RNC

[10] http://www.energy.ri.gov/policies-programs/lead-by-example/rhode-island-stretch-codes.php

Program. The goals is to have ~~and facilitate the successful transition to~~ a model in which Rhode Island HERS Raters ~~ers~~ can compete effectively with ~~experienced~~ other HERS Raters from surrounding states.

c. Codes and Standards

Since there remains an opportunity to ~~elevate all projects to~~realize energy savings through increased code compliance, the RNC program continues to support code trainings ~~to educate~~and engage ~~contractors~~stakeholders. The 2017 residential baseline study showed that, while ~~increasing~~ compliance rates have ~~reduced the remaining savings from energy code support~~increased since the start of this initiative, ~~some~~ many ~~homes~~ projects ~~are~~ still fail~~built to levels below~~ to meet all aspects of the state's building energy code. ~~Since there remains an opportunity to elevate all projects to increased code compliance, the RNC program continues to support code trainings to educate contractors.~~ ~~Additional~~ Since there remains an opportunity to elevate all projects to increased code compliance, the RNC program continues to support code trainings to educate contractors. The savings potential of this program ~~energy code savings potential would become~~would increase ~~available~~ in 2019 and beyond ~~in the event that~~if the state were to complete its delayed energy code update~~s its energy code~~.

See the Commercial & Industrial plan filing for additional detail regarding the Company's Energy Codes and Appliance Standards support initiative.

~~7.~~9. Behavior and Products Programs

Behavior and Products Programs serve customers in a different way and at a different point-in-time than Whole Home Solutions. With the Whole Home Solutions, a customer may not be familiar with all aspects of energy efficiency but can rest assured they are learning more about their home from trusted energy professionals. Products Programs generally work with the customer during the point-of-purchase either in a retail environment or by energy professionals assessing heating and water heating systems whereas behavior programs target and influence "how" a customer interacts with those products.

For example, a customer may replace a household energy item upon failure and may not have spent much time researching varying options since the last time a similar product was purchased. Replacing ~~simple~~ light bulbs twenty-years ago required considering size and overall wattage. With today's lighting purchase, a customer could consider how bright they would like the light to be (lumens ~~per watt~~), the wattage, type

of color, the number of lifetime hours, and the integration of smart technologies. Moreover, while switching to an efficient product is a great step, customers who leave lights running all day, or wash clothes on the hottest setting, are not fully realizing the benefits of living an efficient lifestyle.

The above example highlights the need to educate customers about efficient products prior to the purchase period and the need to continue working with customers on how they interact with these products through the years. The education process can be a complicated endeavor since the challenge is to engage customers when they are not in the market for a new item, when a bad usage habit has already formed, and National Grid's messaging is competing against other life demands. In 2019, to reach a wider range of customers, the Company will consider how it could present efficiency solutions alongside renewable energy measures a customer may be considering.

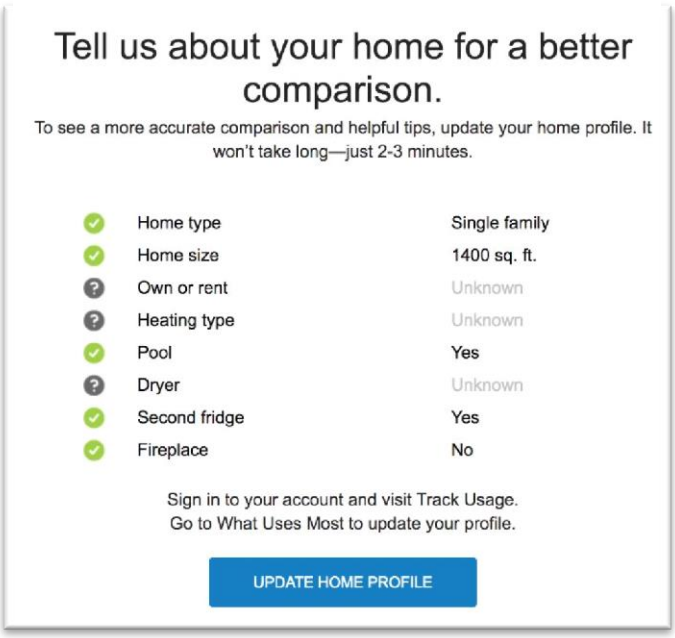
~~8.~~10. Home Energy Reports (Electric and Gas)

a. Overview

The Home Energy Reports (HER) program is the Company's key program to achieve energy savings through changes in customer behavior. This is achieved by presenting personalized energy usage data and encouraging desired behaviors to reduce energy consumption. Globally, over 15 million homes receive HERs from more than 100 utilities serviced by the Company's vendor. Since its launch in Rhode Island in April 2013, the HER program has helped the Company to achieve portfolio-wide savings goals while also maintaining cost efficiency.

The HER program is a ~~statewide~~ territory-wide energy efficiency program that provides benefits for all Rhode Island residential customers. While over 288,000 customers receive HERs (i.e., the treatment group) by way of direct mail and/or e-mail, all account holders have access to insight into their energy consumption via the web tools located on the National Grid website. The program has evolved since 2013 from offering only mailed insights to now being integrated into the Company's website with online assessment tools, sending Non-Advanced Metering Infrastructure (AMI) High Usage Alerts, and utilizing segmentation to target different populations with relevant messaging.

Figure 6: Invitation email for home profile update



Program savings are derived from sending hardcopy or electronic HERs (eHER) with personalized energy insights, normative messages, efficiency tips and recommendations, and promotional messages for efficiency programs in the Company's wider portfolio. The program measures energy savings by comparing on-bill energy usage between a treatment group (customers who receive the HER) and control group (customers who do not receive the HER), using both pre and post-treatment data (i.e. A Randomized Control Trial or RCT).

Since the country's first HER programs began in 2008, there have been numerous evaluations that validate the savings generated from these behavioral programs. Furthermore, while customers may move forward with taking an action such as changing their lighting to LED or purchasing a new piece of energy efficient equipment, the simple act of receiving the report alone may create habitual energy saving behaviors that account for the majority of savings attributed to the program[11]. The frequency or persistence of these habitual actions, such as turning off lights or adjusting the thermostat, is directly correlated to the cadence and even medium (i.e. print or digital version) of the reports.

The program is administered by a Lead Vendor that developed and launched the first HERs in the country. Since 2013, the Company has employed the Lead Vendor to implement the HERs in all three of its jurisdictions (Massachusetts, New York, and Rhode Island). The Lead Vendor is responsible for maintaining HER distribution groups, tracking data, managing the Web Portal, and documenting energy savings. The Lead Vendor works with the Company to craft the messaging and delivery of the HERs, and

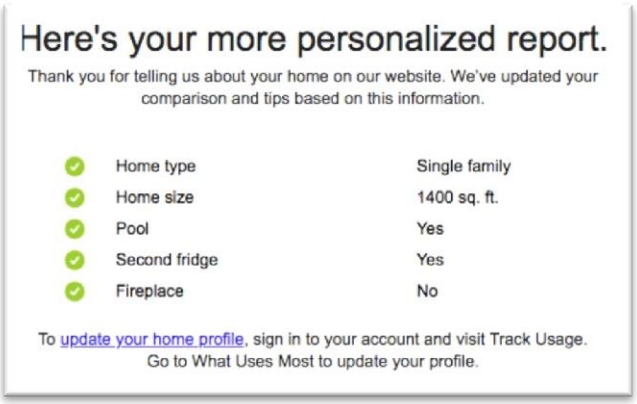
[11] Khawaja, M. Sami and J. Stewart 2014. "Long-Run Savings and Cost-Effectiveness of Home Energy Reports Programs" Cadmus Group Inc. Winter 2014/15

also works with the Company to introduce additional program enhancements, aligning with the Company's state-wide comprehensive marketing efforts.

b. New for 2019

i. Improved Tip Targeting and Personalization

Figure 7: Applied profile updates with personalized report



Improvements to the tip targeting algorithm will be a focus of the 2019 program in order to include better "cross-channel smartness", which avoids sending the same tip too often to customers, and an expanded set of recommendations with the most current technologies, like virtual assistant devices. Using device detection algorithms, customer input from the Home Energy Analysis survey online, and utility-sourced data, electric vehicle and solar tips can be targeted towards customers that are most likely to benefit from and participate in these programs.

Email Home Energy Reports will begin to include annual or bill-level disaggregation pie charts of customers' individual energy usage, helping them identify drivers of high bills. The reports will also pair these insights with specific tips to address the high-use categories. Additionally, customers who are consistently using more than their neighbors will receive an experience that tracks their progress towards reaching an attainable "neighbor rank goal".

Further, the team in 2019 is committed to identifying more customer attributes such as those who are disengaged, would benefit from income eligible offerings, or have the potential for solar or other renewable energy installations etc. The company will then send highly personalized reports based on the customers most important attributes.

~~9.~~11. ENERGY STAR® Lighting (Electric)

a. Overview

National Grid has offered residential lighting incentives since the mid 1990's and the savings from this program has consistently contributed to the overall residential portfolio. During the intervening decades, lighting technologies have changed for the better and combined with supporting legislation (Energy Independence and Security Act or EISA), a nearly, full market transformation of residential lighting is anticipated by the end of this decade. An energy efficient light bulb has become so synonymous with energy efficiency that it is frequently used to represent the "green" concept and N~~n~~ational and R~~r~~egional campaigns have revolved around challenging consumers to take the first step with installing an energy efficient lamp. Another nice aspect of lighting leading the efficiency charge was the low purchase cost and simplicity of installation and operation.

National Grid has been a leader in lighting market transformation through the early application of upstream and midstream lighting incentives thereby influencing more lighting products at retail shelves and encouraging retailers to stock more ENERGY STAR lighting products. This continuous program influence still impacts the overall marketplace today when compared to program states that have discontinued direct lighting support. A lighting evaluation completed this year in RI confirms the contributing impact that the program has achieved in transforming the market. Another key strategy that has made the lighting program successful and created consumer engagement is quick, online flash sales. Customer response over the past several years to these short-term offerings has been robust. Finally, the use of a pop-up retailer that communicates the benefits of efficient lighting while selling the product at non-traditional retail locations supports education as well as energy savings.

b. New for 2019

In 2019, the ENERGY STAR Lighting program will continue its market transformation including working with retailers to plan for the lighting market when LEDs are the standard for lighting. The most recent program year has concluded with the program exceeding the planned goal which limited some program activity. This year there will be a concerted effort to provide a robust budget and reach new retailers that have not yet participated in the program. A few external drivers that present uncertainty to the program include tariffs applied to Chinese made products, where the majority of light

emitting diode lamps (LED) are manufactured. There is also some discussion about rolling back the Energy Independence and Security Act (EISA) of 2007 in Washington D.C. which continues to increase lighting baselines through 2020. Both of these external factors have the potential to increase the prices of LEDs which will reinforce the value of the ENERGY STAR Lighting program.

~~10.~~12. Residential Consumer Products (Electric)

a. Overview

Residential Consumer Products incorporates both the federal Department of Energy and Environmental Protection Agency ENERGY STAR categories of consumer appliances and electronics as well as some energy savings items not included by the federal agencies. The largest savings element of the Consumer Products program comes from recycling older refrigerators, freezers, dehumidifiers, and low emissivity (low-e) storm windows. By removing these energy inefficient products from use, consumers can reduce household energy bills. The program also supports a combination of upstream and midstream incentives as well as post purchase consumer incentives. The upstream and midstream incentives encourage retailers and manufacturers to support ENERGY STAR with production and availability of products. Consumer incentives are designed to bring efficient products costs in line with less efficient equipment, thereby encouraging the adoption of the more efficient item.

In 2019, the program will support dehumidifiers, dehumidifier recycling, dryers, including heat pump dryers, refrigerator and freezer recycling, room air cleaners, room air conditioners, advanced power strips, ~~and~~ efficient shower heads, and low-emissivity storm windows. Historically, the program has been most successful when there is continuity in product lines as well as incentive levels to reduce both retailer and consumer confusion. The rapidly evolving consumer marketplace has made continuous support challenging due to overall improvement of appliance and consumer electronics standards.

b. New for 2019

In RI there are still numerous homes with single-pane glass windows. By installing lower cost storm windows, a homeowner can find increased comfort and energy savings. The low-e storm windows are priced at 20% over a clear storm window while providing an additional 50% of energy savings. The low-e storm window initiative will be designed and tested in 2019. Considerations include the trade-off between reaching the largest

number of purchasers versus getting specific information about the heating fuels used where windows are installed.

National Grid will also be looking for opportunities to incorporate new items as well as continuing to support consumer products that are cost effective.

~~11.~~13. High-Efficiency Heating, Cooling and Hot Water (Electric and Gas)

a. Overview

The electric and gas High-Efficiency Heating, Ventilation, Air Conditioning and Hot Water Programs (HVAC Programs) promote and incentivize the installation of high efficiency equipment through customer rebates and contractor incentives. Contractors are provided training opportunities and incentives to improve accuracy of equipment sizing, installation verification and distribution system improvements.

In the fall of 2018 the HVAC Electric Program added heat pump water heaters in a mid-stream delivery model in collaboration with Home Depot ~~Lowe's~~ in Rhode Island. This model is designed to provide an instant rebate at point ~~-~~ of ~~-~~ purchase thus eliminating the time a customer waits for a rebate check. If this model is successful, the Program will see a significant increase ~~of~~ in the quantities of products and corresponding budgets, and it could open the door to other products being offered in a mid-stream model and other points of sale in addition to Home Depot. At the time of writing this 2019 EEPP, this initiative has not been launched, therefore it is unknown how the 2019 offer will be received in the market. However in 2019, the Company anticipates an increase in the purchase of HPWH due to the mid-stream model.

~~Also in~~In ~~-~~ the fall of 2018, an electric heat program will be launched. The program will provide incentives for ~~a small~~ 45~~number of~~ cold climate mini-split heat pump~~s~~ (ccMSHP) projects ~~were added as a measure~~ to ~~displace~~ replace electric resistance heating systems ~~and~~ or displace/replace delivered fuel heating systems. At the time of writing this 2019 EEPP, this initiative has not been launched, therefore it is unknown how the offer will be received in the market. However, with support from stakeholders and regulators, in 2019 the quantity of ccMSHP projects will nearly double in the HVAC program to support RI's greenhouse gas emissions reduction goals and Power Sector Transformation goals. ~~In response to assessing the market potential and input from stakeholders and regulators,the quantity of MSHP estimated for 2019 will significantly~~

~~increase in the HVAC program.~~ If customers demonstrate strong participation in the electric heat program, the program will be considered for any underspent funds that may become available when budgets are realigned during the year. The electric heat program ~~the quantity of MSHP estimated for 2019 will significantly increase in the HVAC program. MSHP~~ will be promoted via targeted marketing to customers who have completed their home energy assessment and weatherization, multifamily energy assessments, income eligible energy assessments, contractor training, and ~~Home Energy Assessments,~~ community outreach~~, new construction and income eligible services~~.

A c~~C~~ombination ~~Furnace~~ furnace (Combi-Furnace) also called Natural Gas Furnace w/electronically commutated motor (ECM) and On-Demand Domestic Hot Water was added to the HVAC Gas Program in response to customer and contractor request.

In 2019, the Program will work with stakeholders to focus on opportunities to add quality/verified installation programs. Such program will focus on providing superior duct sealing incentives, correcting airflow and charge and using technology to monitor system performance.

In 2019, the Company will continue coordination between the High Efficiency Gas Program and the Gas Sales Program to promote high efficiency heating systems during the gas conversion process. This seamless integration will provide the maximum value for the customer at the time of conversion – when energy efficiency improvements make the most sense.

b. New for 2019

i. ~~Cold Climate Mini-Split Heat Pumps~~ Electric Heat

~~Building off of the 2018 roll out of electric heat pumps in the HVAC program and, in-depth conversations with RI stakeholders the Company proposed an increase in the planned number of heat pumps for 2019.~~ At the Open Meeting on August 3, 2018 regarding Docket Nos. 4770/4780, the PUC directed the Company to include the heat pump rebates proposed in these dockets to be funded through the Company's energy efficiency programs.

In accordance with this directive, and in-depth conversations with RI stakeholders, the Company has further increased the planned heat pump installations in this~~e~~ Plan, expanding the program scope significantly in 2019. ~~and regulators during the Power Sector Transfomation Docket, the program will grow in scope significantly in 2019.~~ The HVAC electric program will include:

- ~~increase~~ Nearly double the quantity~~ies~~ of electric heat~~MSHP~~ projects offered in 2019 compared to 2018.

Electric Heat Opportunity	2018	2019
Oil/propane displacement	15	40
Oil/propane replace on failure (ROF)	5	5
Electric resistance	25	40

- Oil/propane dealer training and technical support
- Community challenge to complete electric heat installations in four communities.

Eligible customers will need to have ~~based on customers who have previously~~ completed their energy assessment and weatherization. ~~–~~The Energy*Wise*, Multi-Family and Income Eligible Services Programs will promote the electric ~~beneficial~~ heat~~ing~~ program through their respective retrofit programs. And the new construction program will work with project teams to develop all-electric homes.

The overall ~~beneficial~~ electric heat program ~~electrification program~~ will be run through the HVAC electric program and will entail the following:

- Assessing and refining equipment incentives for market rate and income eligible customers
  - The Company seeks to ~~standardize~~ reduce and standardize installation costs and will work with stakeholders to establish equitable costs and incentives.~~nsure equitable costs.~~
- Community-based marketing
  - The four towns that will be part of the 2019 Community Initiative will have ~~MSHP~~ electric heat as one of the performance metrics in their program. The Company will work with the towns to provide marketing materials and education about the program. Programs such as the MA HeatSmart program will be considered as a possible model.

- Oil/propane dealer and HVAC contractor training and support for the installation of MSHPs. The training program will work with heat pump manufacturers and other stakeholders to support accurate sizing, installation and sales training for oil dealers and HVAC contractors. The training will align with the MassSave program in order to encourage consistency. The program team will engage stakeholders including the EERMC Consultant team to develop and implement any needed contractor installation guidelines, consumer education and materials.

The HVAC ~~Electric~~ electric heat program team will participate in regional cold climate heat pump /strategic electrification working groups such as NEEPs Cold Climate Air Source Heat Pump Working Group. Other NEEP engagement will include contributing to a study that is aimed at demonstrating integrated control strategies to maximize usage of ductless mini-split heat pumps and identify additional savings. In addition, the Team will work closely with OER, the Collaborative, EERMC, contractors and customers to obtain feedback for implementing and/or improving the program.

ii. Central Air Conditioners

Because central air conditioners (CAC) place a large demand on the grid, the HVAC Electric program will launch an Early Retirement HVAC program in 2019. The HVAC Electric team will work closely with the RI Energy*Wise* team and RI HVAC contractors to identify customers that could be eligible for early replacement of their CAC. In addition the Company will review possibility of pairing with solar PV promotion to offset coincident demand.

iii. Gas Equipment and Marketplace

In 2019, the Gas Program will re-introduce the Indirect Hot Water Heater to provide customers another high efficiency water heating option. In addition, the Online Marketplace will be updated to provide customers online access to instant incentives on programmable and wireless thermostats and other small measures that align with customer self-install products such as showerheads.

~~12.~~14. Community-Based Initiatives

a. Overview

The Rhode Island Community-Based Initiative is the Company's energy efficiency awareness campaign that drives program participation by deep municipal engagement

through the advocacy of local officials and town residents. The Company provides goals for efficiency measure increases and small business program projects to municipalities. These municipalities, in turn, work to achieve the goals with the help of volunteers and promotions at local events. Small businesses are invited to workshops organized in conjunction with the local chamber of commerce or other local business organizations. These workshops will inform customers about the National Grid Small Business Direct Install Program, C-PACE financing, and demand response.

Start-up funding is provided, along with comprehensive marketing toolkits and training to have a discussion about energy efficiency with their residents and small businesses. Frequent check-in calls allow the communities to speak with the Company regarding progress and share tactics and ideas with other participating municipalities. At the end of the year, municipalities earn grant monies directly correlated to the increase in volume of the identified goal. These funds are then utilized for energy saving projects on a municipal property, or on educational energy programs for community members.

b. New for 2019

In the first quarter of the year, the Company will recruit[12] four (4) Rhode Island municipalities based on past program participation and possible demand response opportunities. The ~~Company~~ initiative will coordinate with the SRP team to determine if ~~use~~ the RI System Data Portal (Portal) ~~-~~which was developed in ~~2018~~2018 could be a valuable tool for the use of educating towns. The Company will provide goals to these municipalities based on increases in energy efficiency measure adoption, demand response program enrollment, small business projects, and more.

A major focus for 2019 will be the promotion of new technologies within the communities such as cold climate mini-split heat pumps, Wi-Fi Thermostats, and demand response offerings. The Company will also create case studies highlighting the efforts of the municipality and the energy saving projects that were installed as a result of the program, thus informing all residents of the contribution they made to the betterment of their community.

In 2019 the Community Initiative will expand to include large commercial and industrial customers as well as the municipal buildings themselves. By bringing awareness and

[12] In addition to the company actively recruiting participants, a new landing page on the Company website is currently being created through which all interested communities or residents may contact the program manager and express interest in participation.

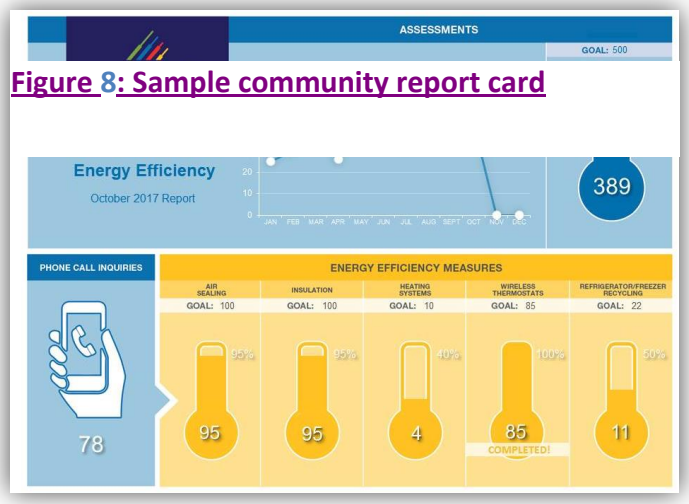


Figure 8: Sample community report card

recognition of energy efficiency efforts at the corporate and municipal levels to employees, the Company can broaden its reach to these sectors.

Additionally, the Company commits to promoting workforce development through the creation of customized materials which municipalities may distribute as part of the program. Where appropriate, the Company will also promote the hosting of workforce and code trainings within the communities.

~~13.~~15. Residential Connected Solutions

National Grid will implement an active demand reduction program based on the recent evaluated demonstration efforts. National Grid ran residential active demand reduction demonstrations in the summers of 2016, 2017, and 2018 targeting summer cooling loads. The Company believes the modifications made to the demand response program due to lessons learned during the demonstration will allow the program to reach scale and operate cost-effectively.

In 2019, the core model remains focused on reducing cooling demand during summer peak events, typically targeting twenty hours per summer. ~~The Program Administrators~~National Grid may have to consider more hours to ensure the peak hour(s) achieve demand reduction. The design is a bring-your-own-device (BYOD) model, starting first with communicating thermostats (typically Wi-Fi) controlling central air units. Additional eligible connected/communicating devices may include batteries, lighting, water heaters, pool pumps, electric vehicles, and other devices. Incorporation of additional devices will depend on device saturation, manufacturer concentration, and the costs associated with integrating and enabling load control on each type of device. Customers with eligible technology will be offered the opportunity to enroll in the active demand offering and given financial incentives to participate in demand reduction during summer peak events. Connected Solutions will seek to enroll both customers

with devices already installed and customers installing devices through the energy efficiency delivery pathways.

Eligible customers' devices will be connected to a platform through an application programming interface (API), a mechanism that allows two different electronic systems to exchange core data and interact in a common language. Program Administrators will send a signal to the device during an event that causes the controller to reduce the demand of the connected device. Events will be called in advance, primarily in the months of June, July, August, and September.

~~14.~~16. Marketing

a. Overview

The goals of the Company's marketing efforts are to build awareness, educate customers, provide a positive customer experience, and drive participation in the Company's efficiency offerings and services. The Company uses an integrated approach with general awareness tactics (i.e. print ads and radio) as well as digital and direct one-to-one tactics (such as e-mail and direct mail) at the program level to generate interest, in addition to face-to-face interactions at events to educate customers at a personal level.

b. Delivery and 2018 Success

Rhode Island continues to see strong residential customer familiarity levels of energy efficiency, up nearly 5 percentage-points year-to-date (as of July, 2018). In support of growing familiarity with energy efficiency programs, the Company launched a broad-based, offline energy efficiency awareness campaign inclusive of broadcast and cable TV, radio, and print. This combination of offline channels has shown significant impact on online metrics, tying broad-based, high-frequency awareness channels to consumer interest and intent to participate. Year to date, the Company has seen a 10% increase in website visits, and 71% increase in on-site conversion related actions.

In addition, the Company set several key strategic marketing approaches to meet 2018 goals. These approaches were included as part of an overarching strategic marketing plan and were developed based on residential customer research, propensity modeling, media habits research and understanding behavior data. One key strategy incorporated in 2018 was to re-orient the marketing approach to better support ~~the~~ customers during their decision journey. Recognizing that consumer purchasing behaviors are continually

changing, the 2018 B2C marketing effort sought to adapt to these habits, shifting the strategic approach to be more considerate of the customers experience in their daily lives. ~~during micro-moments.~~ Four stages of the customer journey were identified as key insertion points to connect to the consumer: Awareness, Desire, Consideration, and Conversion.~~customer during micro-moments.~~

~~Recognizing that consumer purchasing behaviors are continually changing, the 2018 B2C marketing effort sought to adapt to these habits, shifting the strategic approach to be more considerate of the global customer experience. Four stages of the customer journey were identified as key insertion points to connect to the consumer: Awareness, Desire, Consideration, and Conversion.~~

B2C programs and products were grouped into two categories (Whole Home Solutions & Home Products) to better align with the customer behavior. Whole Home Solutions products and programs were classified as those that required a more long-term decision-making process, research, planning, and greater monetary investment (ex. a heating system replacement). Home Products were classified as a purchase driven by need or promotion with a lower cost investment (ex. LED bulbs).

Whole Home Solutions and Home Products each supported specific stages of the customer journey with corresponding media tactics to align with micro-moments within the customer journey. For Whole Home Solutions, large canvas channels such as native and print as well as digital channels across devices were utilized. Home Products were supported in large part by the ecommerce promotions with special offers as well as Facebook and Paid Search to drive online sales.

~~[Need to insert paragraph on websites visits, conversions and product sales on ecommerce site]~~

c. Energy Innovation Hub

~~In t~~The Rhode Island Energy Innovation Hub ("Hub"), located in the southwest corner of the Dunkin' Donuts Center, Providence, RI, is a community engagement destination designed to expand customer education and outreach and enrich the customer's understanding of energy. The space and exhibits ~~will~~ reflect energy solutions accessible to all customers, innovative solutions for system reliability and ~~will~~ provide visitors with a vision of a sustainable future. Exhibits ~~will~~ present technologies available to create smart, energy-efficient homes, information about demand response programs, examples of renewable technologies, information on electric vehicles, storm

management and core utility services. The exhibits are designed to encourage customers to take action and sign up for the many services and incentives offered to help reduce energy consumption. The Hub ~~will~~ also serves as a convening space for gatherings to discuss, and elevate, energy-related issues.

The three main goals of the Hub are to educate customers about energy topics, empower customers to take action to sign up for ways to reduce their energy consumption, and to provide a convening space for organizations to discuss the clean energy future.

The Hub is available on Thursdays for organizations to hold private meetings and events.~~will be reserved on Thursdays for organizations to hold meetings in the space.~~ The Company ~~will~~ continues to ~~proactively~~ reach out to organizations that have a role in the RI energy market ~~the following categories of organizations~~ to encourage them to visit the Hub. as well as reserve the space for meetings:

- State and local government
- Non-Profit organizations
- Businesses (owners, developers, tenants)
- Residents
- Energy Thought Leaders
- Universities and Colleges, Technical/Vocational Schools, Schools K – 12
- Trades
- Employees and Executives

By partnering with local colleges and universities the Company ~~National Grid~~ envisions the Hub as a multi-faceted nexus thriving with innovation, excitement and passion. The Company ~~intends to empower~~employs local college students to work as interns and encourages the students to invite ~~and~~ faculty and classmates to translate their traditional course work in ways that could benefit the energy market. We hope that by engaging many levels of expertise that the Hub will serve as a platform to bring the topic of energy to everyday studies and elevate the conversation around creating clean energy solutions for the future. ~~join us by integrating their disciplines in areas such as energy, engineering, hospitality, policy, marketing and community service. By including educational partners in the development of the Hub, National Grid will create stewards for the energy future of tomorrow.~~

~~15.~~17. Residential Measures and Incentives

The following tables list the groups of measures offered in the residential programs, their planned quantities and incentives. Each group may be comprised of many measures.

	Electric Programs		
Program	Measure	Units	Incentive
EnergyWise Single Family	ACTIMER1	13	Average Incentive based on measure mix
	AERATOR - Duel Fuel Only	12	
	Air Sealing Kit (Oil)	83	
	LED Bulbs	205,000	
	LED Outdoor Fixture	3,481	
	Pre-Wx	513	
	Refrig rebate	91	
	Refrigerator Brush	8,486	
	SHOWERHEAD	237	
	Smart Strip	15,375	
	THERMOSTAT - Elec Heat only	864	
	THERMOSTAT - Oil Only	55	
	LED TORCHIERE1	2	
	VENTILATION - OTHER	41,072	
	WiFi Thermostat	372	
	Wx - GAS	2,049	
	Wx - OIL	1,538	
	Wx Elec - Elec Heat only	392	
	Pipe Insulation	1,978	
	Participant	10,250	
EnergyWise Multifamily	Participant	4,000	Average Incentive based on measure mix
	AERATOR	500	
	AERATOR Oil	40	
	AIR SEALING ELEC WITH AC	1,461	
	AIR SEALING OIL	51	
	Common Ext LED Fixture	1,200	
	Common Ext Reflector	200	
	Common Int LED Fixture	2,000	
	Common Int Reflector	400	
	Dwelling Ext LED Fixture	50	
	Dwelling Ext Reflector	3	
	Dwelling Int EISA Exempt	2,500	
	Dwelling Int Reflector	2,630	
	INSULATION ELEC WITH AC	1,100	
	INSULATION OIL	117	
	Pipe Wrap DHW Oil	65	
	Pipe Wrap Heating Oil	14	
	Refrig rebate	19	
	SHOWERHEAD Elec	220	
	SHOWERHEAD Oil	66	
	Smart Strip	4,000	
	THERMOSTAT Elec with AC	1,600	
	THERMOSTAT OIL	37	
	TSV Showerhead Elec	65	
	TSV Showerhead Oil	39	
	Common Ext LED Bulbs	1,310	
	Common Int LED Bulbs	4,370	
	Dwelling Int LED Bulbs	15,850	
	Custom	17	
	Vending Miser	9	

Residential New Construction	CODES AND STANDARDS	1	Average Incentive based on measure mix
	CP Home	30	
	CWASHER	60	
	DISHWASH	495	
	FIXTURES	300	
	LED Bulbs	2,000	
	Renovation Rehab CP	50	
	Refrig rebate	614	
	Renovation Rehab Tier 1 Home	30	
	Renovation Rehab Tier 2 Home	5	
	Renovation Rehab Tier 3 Home	1	
	Renovation Rehab Tier 4 Home	7	
	SHOWERHEAD	10	
	Tier 1 Home	65	
	Tier 2 Home	35	
	Tier 3 Home	7	
	Tier 4 Home	7	
	Adaptive Reuse	225	
ENERGY STAR® HVAC	ACQIVES	65	$ 175
	ACS16SEER13EER	385	$ 250
	DOWNSIZE	49	$ 250
	DUCTSEAL1	5	$ 100
	Early Replacement AC - SEER 16 (EE)	12	$ -
	Early Replacement AC - SEER 16 (Retire)	12	$ 750
	Early Replacement HP - SEER 16 (EE)	3	$ 750
	Early Replacement HP - SEER 16 (Retire)	3	$ -
	Early Replacement HP - SEER 18 (EE)	3	$ 1,000
	Early Replacement HP - SEER 18 (Retire)	3	$ -
	ECM Pumps	5,000	$ 100
	HP Mini-split QIV	75	$ 175
	HPS16SEER8.5HSPF	24	$ 250
	HPS18SEER9.6HSPF	15	$ 300
	HPS18SEER9HSPF Mini-Split	385	$ 250
	HPS20SEER11HSPF Mini-split	501	$ 500
	WiFi Thermostat - cooling and oil htg	121	$ 75
	WiFi Thermostat - cooling and gas htg	1,140	$ 75
	Oil Fuel Switching	40	$ 2,400
	Oil Fuel Switching ROF	5	$ 2,400
	Electric Resistance Fuel Switching	40	$ 2,400
	Water Heater, Heat Pump <55 gallon	800	$ 750
	Water Heater, Heat Pump >55 gallon, UEF 2.70	15	$ 150
ENERGY STAR® Products	Dehumidifier Rebate	1,093	$ 30
	Dehumidifier Recycling	516	$ 30
	Energy Star Dryer	792	$ 50
	Freezer Recycling	518	$ 50
	Ladybug Electric	60	$ -
	Ladybug Gas	5	$ -
	Ladybug Other	5	$ -
	Pool Pump - variable	250	$ 500
	REFRIG RECYCLING	2,435	$ 50
	Refrigerator Recycling (Primary)	2,258	$ 50
	Roadrunner Gas	7	$ 15
	Roadrunner II Electric	72	$ 15
	Room Air Cleaners	300	$ 40
	Smart Strip	7,411	$ 10
	Tier 2 APS	4,294	$ 35
	Room Air Conditioners	346	$ 40
	Storm Windows	100	$ 25
	Storm Windows Electric	100	$ 25
	Storm Windows Others	100	$ 25

ENERGY STAR® Lighting	LED Bulb	1,195,100	$ 2.60
	LED Bulb (Specialty)	237,987	$ 3.40
	LED Bulb (Hard to Reach)	547,700	$ 3.50
	LED Bulb (Food Pantries)	120,000	$ 6.00
	LED Bulb (School Fundraiser)	8,183	$ 6.00
	LED Bulb (Reflectors)	411,778	$ 5.00
	LED Bulb (Fixture)	518,593	$ 9.00
Home Energy Reports	New Mover electric	27,705	$ 8.68
	New movers dual fuel	16,065	$ 8.68
	Opt-out dual fuel	100,468	$ 8.68
	Opt-Out electric	146,911	$ 8.68
Single Family - Income Eligible Services	ACREPLACE	1,290	Average Incentive based on measure mix
	APREMOV	5	
	Dehumidifier Rebate	600	
	Early Retirement CW Elec DHW & Elec Dryer	168	
	Early Retirement CW Gas DHW & Elec Dryer	468	
	Early Retirement CW Elec DHW & Gas Dryer	11	
	Early Retirement CW Oil DHW & Elec Dryer	372	
	Early Retirement CW Gas DHW & Gas Dryer	168	
	Early Retirement CW Propane DHW & Elec Dryer	9	
	DHWELEC	20	
	DHWGAS	20	
	DHWOIL	20	
	EDUC - TLC	3,000	
	FREEZER	210	
	HEATSYSTEM	360	
	LED Bulbs	60,000	
	Programmable Thermostat, Gas	10	
	Programmable Thermostat, Oil	10	
	Programmable Thermostat, Other	10	
	Refrig rebate	1,950	
	Smart Strip	3,900	
	WATERBED	3	
	Wx DelFuel	510	
	Wx Elec	24	
	Minisplit Heat Pumps - Electric Resistance	15	
	Minisplit Heat Pumps - Oil Fuel Switching	15	
EnergyWise Income Eligible Multifamily Retrofit	AERATOR Oil	400	Average Incentive based on measure mix
	AIR SEALING OIL	196	
	Common Ext LED Fixture	1,100	
	Common Ext Reflector	66	
	Common Int LED Fixture	8,740	
	Common Int Reflector	57	
	Custom	40	
	Dwelling Ext LED Fixture	6	
	Dwelling Int LED Fixture	1,700	
	INSULATION OIL	25	
	Participant (NEB)	5,000	
	Pipe Wrap DHW Oil	100	
	Refrig rebate	23	
	SHOWERHEAD Elec	300	
	Smart Strip	1,200	
	THERMOSTAT OIL	50	
	Common Int EISA Exempt	360	
	Dwelling Int Reflector	100	
	Vending Miser	4	

Residential ConnectedSolutions	Thermostats New	805	$ 45.00
	Thermostats Existing	1,674	$ 25.00
	Battery Daily (number of unit)	50	$ 1,600.00
	Evs Peak (customers)	37	$ 100.00
	Water Heater Daily (units)	10	$ 25.00
	Behavioral Peak (customers)	286,703	$ -

Gas Programs			
Program	**Measure**	**Units**	**Incentive**
EnergyStar® HVAC	BOILER RESET	20	$ 100
	Boiler90	200	$ 450
	Boiler95	325	$ 800
	COMBO CONDENSING	85	$ 600
	COMBO CONDENSING 95	700	$ 1,200
	COND WATER HEATER 0.80 UEF	5	$ 250
	Furnace95ECM	345	$ 300
	Furnace97ECM	40	$ 500
	HEAT RECOVERY VENT	5	$ 250
	WATER HEATER .64 UEF (med draw)	40	$ 100
	WATER HEATER .68 UEF (high draw)	40	$ 100
	ON DEMAND WATER HEATER 0.87 UEF	350	$ 600
	WiFi Thermostat - cooling and htg	250	$ 75
	WiFi Thermostat - gas ht only	750	$ 75
	Programmable Thermostat	60	$ 25
	Combo Furnace	90	$ 700
EnergyWise	Aerator	160	Average incentive based on measure mix
	Weatherization	2,300	
	Air Sealing Kit (Gas)	500	
	Showerhead	300	
	Pipe Wrap	5,000	
	THERMOSTAT	410	
	WiFi THERMOSTAT	200	
EnergyWise Multifamily	Air Sealing	3,900	Average incentive based on measure mix
	Custom Non-Lighting	58	
	Participant	4,000	
	Duct Sealing	10	
	Faucet Aerator	1,866	
	Insulation	3,200	
	Pipe Wrap (Water Heating)	882	
	Programmable Thermostat	833	
	Thermostatic Shut-off Valve	300	
	TSV Showerhead	519	
	WiFi thermostat gas	500	
Home Energy Reports	New movers dual fuel	14,520	$ 3.86
	Opt-out dual fuel	75,803	$ 3.86
	Opt-out gas only	17,091	$ 3.86

Gas Programs			
Program	**Measure**	**Units**	**Incentive**
Residential New Construciton	CODES AND STANDARDS	1	Average incentive based on measure mix
	CP	35	
	CP-DHW	35	
	RR CP	30	
	RR CP-DHW	30	
	RR Tier 1	48	
	RR Tier 1 - DHW	48	
	RR Tier 2	20	
	RR Tier 2 - DHW	20	
	RR Tier 3	1	
	RR Tier 3 - DHW	1	
	SHOWERHEAD	50	
	Tier 1	73	
	Tier 1 - DHW	73	
	Tier 2	70	
	Tier 2 - DHW	70	
	Tier 3	26	
	Tier 3 - DHW	26	
	Tier 4	10	
	Tier 4 - DHW	10	
	Adaptive Reuse	75	
Single Family - Income Eligible	Heating System Replacement	220	Average incentive based on measure
	Weatherization	600	
Income Eligible Multifamily	Air Sealing_LI	1,554	Average incentive based on measure mix
	BOILER Commercial_LI	32	
	BOILER_LI	15	
	CUST NON-LGT_LI	50	
	Faucet Aerator_LI	4,800	
	Insulatioin_LI	1,884	
	Low-Flow Showerhead_LI	1,100	
	Participant (NEB)_LI	3,500	
	Pipe Wrap (Water Heating)_LI	700	
	Programmable Thermostat_LI	350	