2020 Commercial and Industrial Energy Efficiency Solutions and Programs

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1. Introduction

National Grid is focused on a Market Sector Approach for commercial and industrial programs. This approach allows us to address customer needs that are shaped directly by the industry and geographies in which the customers operate, an d on the industry or sectors strategic and commercial pressures. A sector approach allows us to customize solutions that fit the customers' needs and increase participation in energy efficiency. The various initiatives in the program reflect this approach. The following market sectors are included in the 2020 Plan:

- Grocery/Supermarkets
- Municipal & State Buildings
- State SEMP
- Manufacturing/Industrial
- K-12 schools
- Hospitality (Restaurants & Lodging)
- Specialty building including: Farm/Agriculture and Extended Care Facilities
- Hospitals
- Colleges and Universities
- Commercial Real Estate
- Multifamily

Enabling strategies for efficient delivery, better customer experience and participation, in energy efficiency programs, are covered in sections on Finance, Customer Experience and Marketing. Workforce development addressed in the Main Text, covers initiative for training, education and awareness.

Commercial and Industrial customers can participate in energy efficiency through four types of programs.

Four Types of Programs

1. Large C&I New Construction – Focuses on offerings that target ground up new construction, major renovations, tenant fit-outs and end of life replacement equipment.
2. Large C&I Retrofit – Focuses on all services and technologies towards retrofits needed for existing buildings.
3. Small Business/ Direct Install (SMB/DI) – Focuses on providing turn-key solutions to many types of small businesses.
4. Demand Response programs - Focus on reducing peak electric demand and associated costs for large commercial customers. For small commercial customers peak demand reduction will be through direct load control technologies.

The Appendices, located at the end of Attachment 2, provide further details to the four programs mentioned above. Additionally, it should be noted that the offerings for Large C&I New Construction and Retrofit Programs are also available to small business customers.

The following figures and tables are available in the appendix, located at the end of Attachment 2:

1. Sample list of custom measures for New Construction and Retrofit Programs
2. Program logic model for Retrofit Program
3. Program logic model for New Construction Program
4. Goals and incentive description of each of the electric sub-programs
5. Goals and incentive description of gas program measures

2. Commercial and Industrial Energy Efficiency Programs Overview

Depending on the size and usage of the customer within each of the segments, customers can participate in one or more of the four main energy efficiency programs.

- The Large Commercial and Industrial New Construction Program
- The Large Commercial Retrofit Program
- The Small Business Direct Install (SMB/DI) Program
- Demand Response Program (C&I Connected Solutions)

Although there are four energy efficiency programs in the C&I sector, all C&I customers are eligible to participate in the Large Commercial and Industrial New Construction Program and the Large Commercial Retrofit Program. However, the Small Business Direct Install (SMB/DI) Program is restricted to customers who consume less than 1,000,000 kWh per year. Larger and more complicated measures not offered by the SMB/DI vendor go through the New Construction or Retrofit Programs. The following sections describe the various offerings under these four programs. In addition, a logic model describing the C&I programs and how they relate to short and long-term outcomes is provided in Appendix 2 and 3.

For each program, there are initiatives. An initiative is defined as a go to market strategy within a Program that promotes a subset of measures or services within that program and/or targets a certain segment of customers. Examples include the Indoor Agriculture Initiative within the New Construction Program and the EnergySmart Grocer Initiative within the Large Commercial and Industrial Retrofit Program.

In 2020, the Company will continue to focus on demonstrations and assessments. Please refer to the Attachment 8 for definitions, a detailed list and scope for each pilot, demonstration and assessment proposed for the 2020 Energy Efficiency Plan.

In order to streamline PUC, stakeholder, and reader access to the most pertinent program information in the 2020 annual plan, the Company has adopted the following structure for each of the programs:

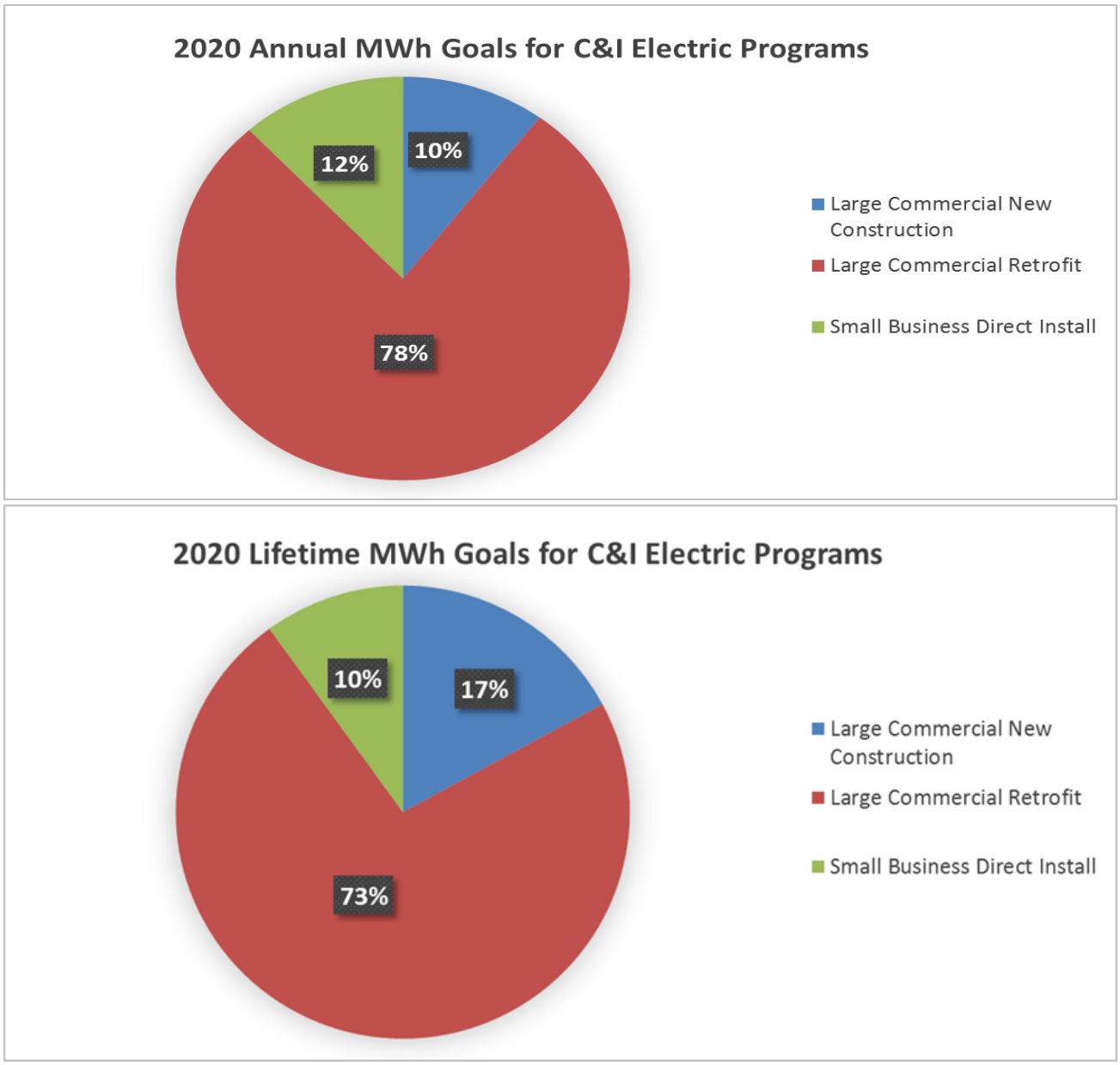
Eligibility Criteria	
Offerings	
Process	
Customer Feedback	
Changes for 2020	
Rationales for Changes	
Upcoming Evaluations	

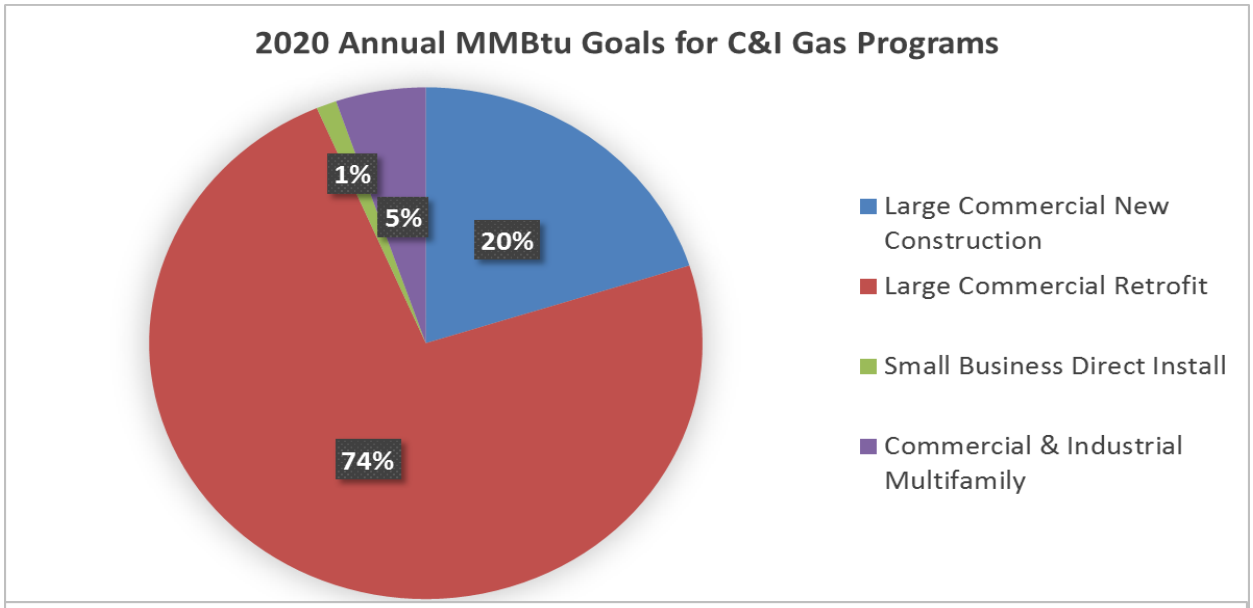
Program - 2020 Goals, Metrics, Budgets, Participation

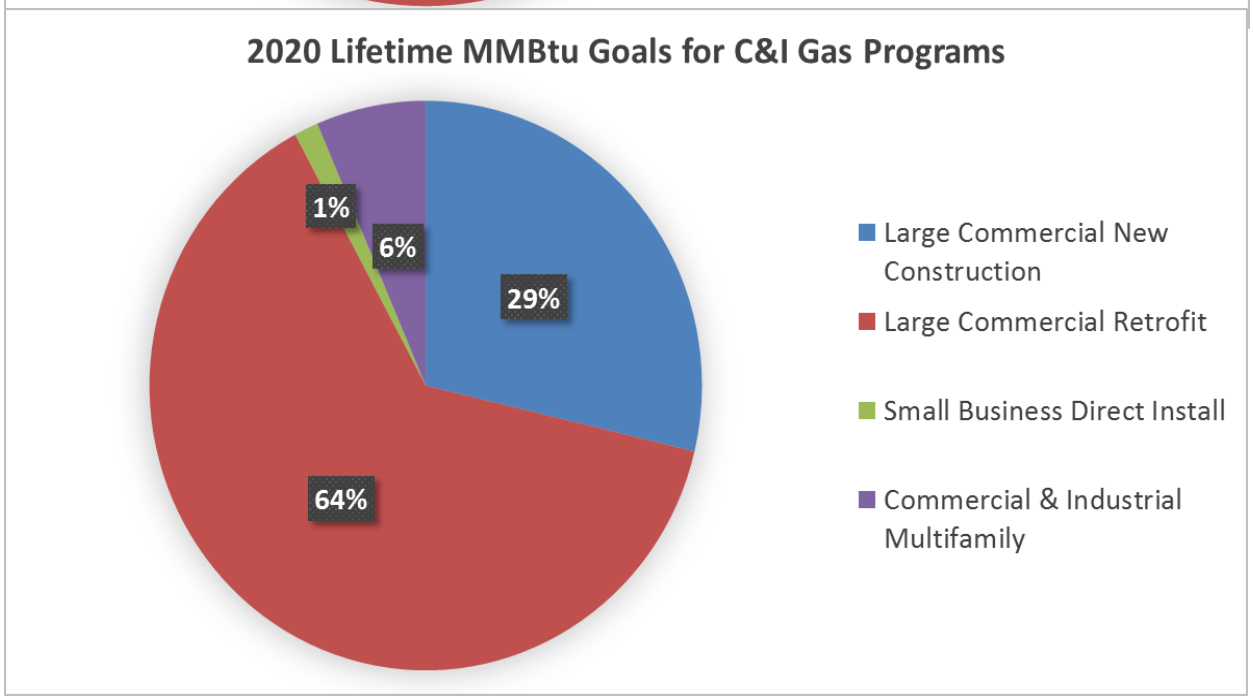
Fuel	Annual MWh (Electric)	Annual kW (Electric)	Annual MMBtu (Gas, Oil, Propane)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Participation

Electric						
Fuel	Annual MMBtu (Gas)	Annual MWh	N/A	Total Net Lifetime MMBtu	Budget ($000)	Participation
Gas						

Figure 1. Commercial and Industrial Electric and Gas Goals by Program




2020 Annual MMBtu Goals for C&I Gas Programs
1%
5%
20%
74%
Large Commercial New Construction
Large Commercial Retrofit
Small Business Direct Install
Commercial & Industrial Multifamily


2020 Lifetime MMBtu Goals for C&I Gas Programs
1%
6%
29%
64%
Large Commercial New Construction
Large Commercial Retrofit
Small Business Direct Install
Commercial & Industrial Multifamily

3. Large Commercial and Industrial New Construction Program

Eligibility Criteria	The New Construction Program is divided into two main categories: 1. **New buildings, major renovations and tenant fit-ups**: This is specifically for those projects that are ground up new construction or major renovations, all of which traditionally involve some level of design and are governed by code. Please reference section, c.i. "New Buildings, major renovations, and tenant fit-ups", for a detailed description. 2. **End of life replacements**: Typically, with this category there is no design component. Customers purchasing new energy-consuming equipment or replacing equipment that has reached end of useful life are incentivized to purchase and install energy efficient equipment. Measures installed are governed by codes and standards in some cases where equipment has reached the end of its life. Customers are encouraged to make efficient choices with every category of equipment purchase. The baseline energy is considered to be the energy code and savings are calculated from the baseline energy. This works the same way as the "systems approach" described below, whether through prescriptive or custom pathways.
Offerings	1. **New Buildings, Additions, Major Renovations and Tenant Fit-Ups** The services and incentives offered are designed to promote and support high performance building design, equipment selection, and building operation. This program offers both technical assistance and financial incentives based on projected energy savings performance to incentivize building beyond the current energy code baselines. Technical assistance ranges from simple plan review and efficiency upgrade recommendations to complete technical reviews of energy models. In addition, the Company is utilizing existing energy efficiency technical assessment studies to provide engineering support to potential applicants for Advanced Gas Technologies (AGT) incentives.

AGT provides an incentive to natural gas C&I customers as part of a demand leveling program. This program provides an incentive for summer load gas projects.

The Large Commercial and Industrial New Construction Program offers two approaches for ground up new construction or major renovation projects:
Systems Approach: The Systems Approach is designed for individual measures and for those projects applying later in the design process and which are generally focused on one or two energy systems to increase efficiency.
Whole Building Approach: The Whole Building Approach considers a comprehensive analysis of all building measures together and requires collaboration between National Grid and the Design Team from the conceptual design phase through project completion. It encompasses consideration of all energy saving opportunities, including shell, fenestration, equipment and system interactions.
Systems Approach for New Construction
There are a few ways a customer can take advantage of the New Construction Program using the "Systems Approach."
i.a. Prescriptive Path: The prescriptive path is the quickest and simplest way to participate in the New Construction Program. This is used for equipment that is commonly replacing less efficient equipment and for which savings data is available due to the length of time the measure has been in the marketplace and the number of installations is large enough for there to be a representative sample. A fixed dollar amount is paid to the customer for replacement of a specific piece of equipment.
i.b. Custom Express Path: The custom express path is used when a measure may be relatively new to market. It is a more streamlined approach than the custom path. Custom Express refers to a suite of calculation tools available for Technical Assistance vendors and partners which utilize pre-approved methodologies, industry standards and engineering best practices. A Custom Express tool is used to determine the project's eligibility for an incentive on a case by case basis. This path can be used in conjunction with the New Construction Program but it is more commonly used for the Retrofit Program applications. The amount of the incentive for a measure going through the custom express path can vary from project to project based on projected savings.
i.c. Custom Path: A custom path is designed for customers who can be incentivized to achieve deeper and broader savings compared to prescriptive offerings. This involves a more complex engineering analysis and is frequently used by customers considering complex HVAC equipment and

	systems. Custom incentives for new construction projects are designed to cover up to 75% of the incremental cost between standard and premium efficiency equipment. The sales team has the flexibility to offer incentives that can be negotiated with customers. The Sales staff determines how to negotiate, based on the customer's financial needs. This approach helps the Company to maintain cost control with program budgets. **Whole Building Approach for New Construction** Under the "**Whole Building Approach**"**,** there are two main pathways for customers to participate with more comprehensive and integrated designs for their projects. **ii.a. Integrated Design Approach** is most applicable for buildings that are greater than 100,000 square feet. Buildings smaller than this size that are not a good fit for the Design Express path. Both owners and design teams are eligible for incentives or projects that perform 20% better than energy code. Customer incentives are based on kWH and Therm savings. Incentives are capped at 75% of the incremental cost of the energy saving measures. A fixed incentive is also offered to design teams for attending a design charrette/workshop that will enable them to incorporate energy efficiency early within the project stages. In addition, design team incentives are awarded for achieving energy savings that are 20% above the energy code savings target. **ii.b. Integrated Design Express:** This pathway is for smaller buildings in the 20,000 to 100,00 square feet range. Both owners and design teams are eligible for incentives on projects that perform 20% better than the energy code. Customer incentives are based on kWH and Therm savings. Incentives are capped at 75% of the incremental cost of the energy saving measures. In addition, design team incentives are awarded for achieving energy savings that are 20% above the energy code savings target. **Operational Verification:** To ensure energy savings projects are installed and operated as designed, the Company will continue to provides operational verification service. This service is served by independent third-party vendors for verification of complex building systems, including HVAC projects involving energy management systems or other controls, ensuring proper installation and operation as designed. National Grid requires all projects which receive an incentive over $100,000 to undergo operational verification. This service is also required for projects where the savings are dependent on control measures or operational improvements. National Grid typically provides these services at no cost.
Process	**Whole Building Approach**: The National Grid Energy Efficiency sales team reaches out to customers, owners and developers regarding new

	construction project opportunities. If the customer decides to participate in energy efficiency programs, the National Grid team engages with the design team and facilitates a design charette to understand customer project goals. Once goals for the project have been identified a TA vendor is engaged and models baseline and "as designed" building project. An application and agreement on the ECM's are signed by the owner and the owner accepts the commitment for the efficiency recommendations and the associated incentives. A Minimum Requirements Document created by the National Grid Tech Rep is created as part of the application process. The National Grid sales team remains engaged during the design development process and construction to ensure energy efficiency measures and solutions are incorporated in the building projects. After completion, the project undergoes a post inspection that includes a visual inspection and review of construction design submittals. If there are any HVAC controls or variable load ECM's, requirements for measurements in the field to verify operation as described in the Minimum Requirements Document created by the National Grid Tech Rep as part of the application process, those are then measured over the prescribed period of time under the prescribed conditions before final incentive payment is made on the savings achieved. **Systems Approach:** The National Grid sales team approaches customers, building owners, owner representatives regarding new construction or major renovation projects. When a customer decides to move forward with a project the customer has a choice to use their vendor of choice to install measures or the customer develops the project with technical assistance from the National Grid team. Once the project is installed, the project undergoes inspection of installed measures and review of design submittals. Incentives are paid out on documented savings form the project to the owner.
Customer Feedback	TBD

Changes for 2020

In 2020, the Company will continue offering custom gas and electric measure options. (Please refer to the appendix at the end of this attachment for a sample of custom measures.)

Rhode Island is currently using the code IECC 2012; the IECC 2015 will go into full effect in Rhode Island on November 1, 2019.

The 2020 C&I New Construction Program will have two significant changes compared to its current program structure. First, there will be different program requirements and incentive structures for small and large buildings. Second, a higher savings target and incentive rate ("Tier 2") has been added to the program's current single incentive rate approach. Thus, the program will provide incentives at the following rates:

Building size		Below 100,000 SF	100,000 SF and above
Tier 1	Savings threshold	10% beyond baseline	15% beyond baseline
	Incentive	$0.35/kWh; $1.70/therm	
Tier 2	Savings threshold	15% beyond baseline	20% beyond baseline
	Incentive	$0.42/kWh; $2.05/therm	

Rationales for Changes

The energy code update and resulting raise in program baseline prompt a change in program participation requirements and incentive structure. To determine appropriate threshold and incentive values given the new baseline, the Company conducted energy modeling analysis to quantify the energy savings potential for various building types. The results of this study indicate that a reduction of the current program participation threshold of 20% savings beyond compared to the baseline to the values indicated above is warranted. However, in order to encourage buildings

	to pursue deeper savings, the Company introduced a second performance tier.
Upcoming Evaluations	TBD

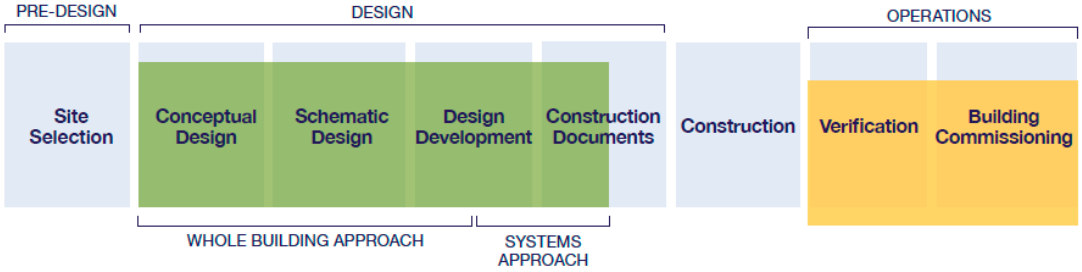
For the 2020 Plan, the Large Commercial and Industrial New Construction Program has the following goals:

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Annual MMBtu (Gas, Oil, Propane)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Partici-pation
Electric	9,520	1,105	2,741	532,534	$5,334.8	108

Fuel	Annual MMBtu (Gas)	Annual MWh	N/A	Total Net Lifetime MMBtu	Budget ($000)	Partici-pation
Gas	45,474	0.4		776,748	$2,569.9	83

Diagram 1: Commercial and Industrial New Construction Program

Diagram 2: New Construction Process



4. Initiatives specific to Large Commercial and Industrial New Construction Program

i. Building Energy Code Compliance Support

Overview

As mentioned in the Main Text, the Code Compliance Enhancement Initiative (CCEI) includes robust stakeholder engagement and industry group outreach, in-person classroom and hands-on trainings, project-specific technical assistance circuit riding, development and dissemination of documentation/compliance tools, and other services.

Delivery

Savings listed below are included in the 2020 Goals listed for Large Commercial and New Industrial Program. Note that these values are the ones established in the 2017 evaluation study[1] and do not reflect the November 2019 state energy code update: the long development timeframe for commercial buildings dictates that the vast majority of new buildings completed during 2020 will have been constructed under the 2012 IECC. The new code baseline (2015 IECC) will be incorporated for the 2021-2023 Plans.

Electric: Energy Savings (Annual MWh)	Gas: Energy Savings (Annual MMBtu)
289	358

[1] NMR. Rhode Island Code Compliance Enhancement Initiative Attribution and Savings Study. Dec 2017. http://rieermc.ri.gov/wp-content/uploads/2018/03/ri-ccei-attribution-and-savings-final-report-12-12-17-clean.pdf

Changes in 2020

Program content will be refreshed reflecting the state's code update.

ii. Energy Efficiency Integration with Solar

Overview

The Company currently aligns its energy efficiency programs with solar offerings in Rhode Island in order to help customers achieve zero-energy buildings. The Company coordinates with the Office of Energy Resources' lead on the state's zero-energy initiatives pursuant to the Zero Energy Building Pathway to 2035 – Whitepaper Report of the Rhode Island Zero Energy Building Task Force (2016). (https://www.nationalgridus.com/media/pronet/ri-ee-task-force/cm6459-ri-zne-white-paper-12_16.pdf

Changes in 2020

In 2020 the Company will coordinate with the Office of Energy Resources and the Division to further the Solar+ Storage initiative under the Re Growth Program so that customers with solar and battery storage can participate demand response program offerings.

iii. Indoor Agriculture

Eligibility criteria	The Indoor Agriculture Initiative is available to indoor production facilities for cannabis. Currently there are three dispensaries for medical marijuana with plans to expand that to nine. At the time of this writing, there are no plans to legalize recreational marijuana within the state.
Offerings	Energy efficient lighting and HVAC are the most typical areas where improvements can be made to indoor agriculture. If other opportunities are found, as long as they meet the program criteria, the customer is eligible to participate. The most likely scenario for participation in this initiative is before the operation is functional. It is not likely that a producer

	would want to stop their delicate operation to install energy efficient equipment once the facility is up and running.
Process	One Strategic Sales representative is responsible for this market sector. Any leads that come into the Company are given to this representative. Although outreach has been done, it is more challenging than reaching most other sectors.
Customer feedback	In Rhode Island, the size of the facility is limited to up to 10,000 square feet.
Changes for 2020	The Strategic Sales team will continue outreach efforts to suppliers of these facilities. The Company will continue to monitor the legislation to legalize recreational marijuana. If there is a change in legislation, the Company will look to address this customer/building vertical at that time with a customized approach. Currently there is no specific energy efficiency offering for indoor agriculture.

iv. Exterior Performance Lighting and Controls

This has been integrated into Performance Lighting Plus (PL+)

5. **Large Commercial Retrofit Program**

The Large Commercial Retrofit Program serves the needs of existing buildings in their pursuit to lower energy consumption.

Market sectors such as grocery and manufacturing/industrial are served by initiatives that focus on specific needs of that customer type. In 2020, the Company will launch new initiatives that focus on national/regional chain restaurants, lodging, and commercial laundries. These are described in more detail starting on page XXX

The Company also serves some of its largest serves customers through Strategic Energy Management Plans (SEMPs). The company has Memorandums of Understanding (MOUs) with these customers that specify savings targets and resources. These are described in more detail on page starting on page XXX.

While the Company has found that sector specific initiatives and SEMPs are helpful in gathering more savings and completing measures beyond lighting they do not cover our entire customer base. Customers not covered by an initiative or a SEMP have many ways to participate in the Retrofit Program. They may –

Complete a prescriptive application though the Rhode Island Digital Application Portal (RIDAP) for a wide variety of more energy efficient products such as lighting, air compressors, or variable speed drives (VSDs). The hyperlink to this portal is https://www.ridap.nationalgridus.com/RIDAP_Start

Purchase qualified products such as luminaires, kitchen equipment, water heating equipment, or more efficient heating and cooling technologies at participating distributors at a discount without needing to submit an application. These are collectively known as the Upstream Initiatives. These are described on more detail starting on page XXX

Work with National Grid Sales Representative or a Project Expeditor (PEX) to complete a custom application any energy improvement that is not covered by Prescriptive or Upstream.

The following areas are also contained in this section of the plan -

Customer Owned Streetlights

Company Owned Streetlights

Equipment & System Performance Optimization

Combined Heat and Power (CHP)

Multifamily

Farms and agriculture

2020 Goals

For the 2020 Plan, Large Commercial Retrofit has the following goals:

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Annual MMBtu (Gas, Oil, Propane)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Participation
Electric	71,936	14,599	(61,209)	2,029,987	$24,190.2	2,668

Fuel	Annual MMBtu (Gas)	Annual MWh	N/A	Total Net Lifetime MMBtu	Budget ($000)	Participation
Gas	162,728	0		1,686,729	$4,901.2	88

In additional to the above-mentioned technologies, various gas technologies are offered under the commercial retrofit custom express path. These technologies include, heat exchanger cleaning, Xeros Polymer Laundry Solutions, On-Premise Laundry, Dry Smart, Greenheck Grease Filters, Removable Insulated Jackets for Big Steam Plants. These technologies are incorporated into various customer initiative offerings like the Restaurant initiative, Industrial Initiative and the Lodging Initiative. Please refer to the Appendix for details on these technologies as well as new gas technologies being developed.

6. Initiatives specific to Retrofit Program

Eligibility criteria	Commercial customers who have less than 1,000,000 kWh in annual usage may participate in the Small Business Direct Install Program. K-12 schools, national and regional chain restaurants, and small grocery stores who consume less than 1,000,000 kWh per year are excluded from this program as they are served through other pathways or initiatives.
Offerings	The Small Business Program begins with a no-cost site assessment conducted by a Small Business Energy Specialist to understand the customer's energy-related needs and goals. The assessment keys in on energy efficiency measures such as lighting systems and controls, cooler/refrigeration control, water saving measures, HVAC controls, motor controls, weatherization/insulation, and custom measures. Turn-key install and OBR is offered to support the adoption of the recommended measures to the customer. A Customer Directed Option (CDO) is also available to customers. In this path customers are able to use their own electrician to install measures while the Small Business program vendor processes and submits all necessary paperwork to National Grid.
Process	A customer begins the process for a Small Business energy assessment by either calling, emailing, or going to an online form to express interest in the program. The customer is connected to a dedicated, internal Small Business program staff to learn more details about the process and the next steps. The assessment is scheduled with the customer, and the Energy Specialist meets the customer at the time defined to be convenient for them. The Energy Specialist performs the assessment, identifies strategies to pursue opportunities, reviews design considerations with the customer, and incorporates this detail into a proposal describing appropriate energy efficiency measures. The proposal reflects the installed costs, the expected energy savings, and the applicable program incentives.

	Once the customer decides to proceed, the Energy Specialist hands off the project to a Project Coordinator who works with the customer to set a convenient installation schedule that will not interrupt their business. After installation, a certificate of install is signed off on by the customer indicating their satisfaction with the work provided. There is a dedicated support staff to address any post-install issues that may arise. This support structure is all designed to smoothly execute projects and allow the customers to remain focused on the daily tasks of attending to their business.
Findings from 2019 program year activity	The cost of acquiring a customer is increasing. Outgoing direct mail and phone outreach have increased in volume and the program vendor is employing more direct canvassing from its field staff to meet its yearly goals. Vendor - The program experiences the "Out of sight, out of mind" response from customers frequently when trying to discuss non-lighting items that may be applicable to their site. RTU controls, boiler controls, VFDs, etc. all fall into this category wherein the customer may say "It seems like it's working fine, why would I want to do that?"
Customer/vendor feedback	Customer - "Cash flow is king. As a small business I want to know that my energy costs after the job are equal or lower than my current energy costs…including repayments." Vendor - Although the Program is technically able to provide Small Business On-Bill Repayment terms up to 60 months, which may be able to support more complex projects, money is rarely lent out beyond 36 months to ensure that all customers have equal access to funds and that funds revolve quickly. Increasing the size of the SMB loan fund may allow equity and depth of savings.
Participation and savings	Please see header table.
Changes for 2020	**Summary of proposed changes** 1. Increased focus on opportunities in local restaurants

	2. Working with community leaders to set appropriate goals for serving Environmental Justice Zones as defined by the EPA 3. Exploring the deployment of heat pump water heaters 4. Explore the door to door direct install and audit scheduling model with areas dense enough to support this effort 5. Exploring using the United States Department of Agriculture's (USDA) Rural Energy Service Program (RESP) loan to secure additional funding for small business customers As part of an effort to increase participation in the Direct Install Small Business Program, in 2020, for the third year, the Company will target businesses as well as residents as part of the Community Initiative. Many residents are also small business owners. By targeting residential customers to learn about the Small Business Direct Install Program, the Company has an opportunity to tap a segment of its customer base that may have been hard to reach in the past. Cities and towns taking part in the Community Initiative have goals for small business as well as residential involvement. In addition, National Grid will build on the connections made with community leaders through the Community Initiative to determine how and when to target certain business types or geographic locations in a city or town. Some ideas include door to door direct install/audit scheduling, as have been done in several areas in the past or holding information sessions in Spanish or Portuguese. To complement the strategy above to reach the small business sector in these targeted communities, National Grid plans continue to work with local Chambers of Commerce and other local small business groups to schedule workshops that address many of these customers' small business needs including energy efficiency and demand response. In 2020, the Company will be working with community leaders and stakeholders to set appropriate goals for serving businesses in areas that have with lower incomes and those in Environmental Justice zones. A number of tools will be used in this effort including

	past participation data and EPA's Environmental Justice Screening and Mapping Tool. Frequently, very small businesses (under 25,000 kWh consumed per year) do not need an energy audit to realize that they can make energy improvements to their spaces. To that end, in 2020, National Grid will be segmented marketing campaigns directed at these customers and local electricians with messaging to let them know of all the Upstream energy efficiency products that they or their electrician can purchase at a discount to decrease energy use in their space. The refrigerator/freezer recycling program offered to residential customers where old working refrigerators and freezers are picked up for $50 each is now open to small business customers. National Grid estimates that approximately 75 of these types of units will be recycled in the 2020 program year.
Rationale for proposed changes	These changes were made based on stakeholder feedback at The Working Group, suggestions made by the Consultants to the EERMC, and vendor feedback.
Upcoming evaluations	There are no scheduled evaluations for this specific initiative. However, the constituent parts of this initiative such as Custom, Lighting, and HVAC are evaluated on a regular basis.
Budget	The total budget for this program, along with more granular costs, can be found in Attachment 5 (Electric) Table E-2 and Attachment 6 (Gas) Table E-2

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Annual MMBtu (Gas, Oil, Propane)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Participa-tion
Electric	11,500	1,347	(9,503)	326,089	$7,210.3	693

Fuel	Annual MMBtu (Gas)	Annual MWh	N/A	Total Net Lifetime MMBtu	Budget ($000)	Participa-tion
Gas	2,523	0.1		17,662	$123.8	59

7. Finance as an Enabling Strategy

i. Overview

It is well documented that many customers face challenges in bringing energy efficiency projects to fruition. These may include structural limitations within a business, information overload, cultural resistance within companies, and access to capital. The Company's plan deals with first three barriers in various ways, but this section of the plan focuses on mechanisms that can help customers afford to carry out energy efficiency upgrades and/or perceive costs differently.

In 2020, the Company will be working diligently on four areas regarding finance and energy efficiency and electrification.

1. The Company will create an iPad based digital tool that allows customers to see the benefits of a using a particular mechanism(s) in real time and early in the sales process.

2. The Company is committed to exploring a USDA RESP loan, through the programs or the Council, to expand the On-Bill Repayment mechanism without the need for future ratepayer injections.

3. National Grid will develop a 5-year financing plan and present it to the Council and The Working Group prior to filing the next three-year plan.
4. National Grid will develop a common reporting platform for the Efficient Buildings Fund (EBF) on which RIIB, OER, National Grid will be able to view and contribute information.

Mechanisms offered

National Grid and its partners have developed 4 primary finance mechanisms over time to help customers afford to energy efficiency upgrades. Each one has unique attributes. Some may only be available or apply to certain customer, building, or ownership types.

a. On Bill Repayment (OBR) - Electric

Customer type	Commercial customers who consume more than 1,000 MWh per year
Loan size	$1,000 to ~$100,000 (may be larger for SEMPs)
Maximum Tenor	5 years for commercial accounts, 7-10 years for State facilities
Loan Volume	Variable, between $5MM to $10MM per year
Benefits to customer	No formal credit check/ rapid approval, on bill repayment, zero interest
Limitations	Maximum tenor too short for many comprehensive upgrades, cannot be used to support upgrades customers may desire such as windows and roofs as they have a B/C ratio less than 1.0

National Grid's revolving loan fund projections for 2019 are illustrated in Attachment 5, Table E-10 and Attachment 6, Table G-10.

Status of Financial Test 1: In the 2017 plan the Company hypothesized that it could use the attractiveness of the OBR mechanism to help reduce incentive costs. Over the past 18 months customers have been given the choice of a "normal incentive" (prescriptive incentive or $/MWh for custom) or a 15% reduction in the "normal incentive" amount with the ability to "finance the remaining project costs through OBR.

Describe participation and savings here – draft three
Overall, National Grid has found this test to be unsuccessful. While some customers were willing to make the trade-off between incentives and OBR funds we found that the amount of savings was small over the 18-month period, achieved savings from more vulnerable customers such as XXXX, and created ill will with customers. The Company plans to terminate this test at the end of 2019.

b. On Bill Repayment (OBR) – Gas

Potential Injection

The company is still considering requesting an injection into this fund. If OBR cannot be supplemented by the USDA RESP loan the Company will need an injection into this area to reach the gas savings National Grid has put forward. In the budget this is listed as $500,000.

c. Efficient Buildings Fund (EBF)

Customer type	State agencies, quasi-state agencies, and municipalities
Max loan size	More than $5MM
Maximum Tenor	Up to 20 years
Loan Volume	Variable, ~$20MM loans outstanding -More detail is available in Table E-10 An end to end accounting of EBF rounds, funds borrowed, and savings claimed are contained in Attachment XX
Benefits to customer	Below market rate interest, long tenor, loan amounts can be large enough to make comprehensive building wide improvements
Limitations	Appropriate customers must file applications and be ranked against other potential loan applicants

The Efficient Buildings Fund (EBF) is a long-term, low cost financing program for local governmental units, including cities, towns and quasi-state entities, to invest in clean energy projects. EBF is administered in partnership with RI OER and the Rhode Island Infrastructure Bank (Infrastructure Bank or RIIB). OER is responsible for determining project eligibility, reviewing project applications and producing a Project Priority List (PPL). The Infrastructure Bank only finances projects that are listed on the PPL. OER, the Infrastructure Bank and the National Grid municipal sales representative work together to originate efficiency projects that meet the requirements of least cost procurement. EBF also provides financing for renewable energy projects and uses other sources of capital to finance those transactions. The Infrastructure Bank does not receive an annual allocation of capital from the State of Rhode Island to support the EBF program.

$X.X million will be provided to EBF for an additional round of EBF financing. This will support XXX therms and XXX MWh. It is estimated that XX% of savings will materialize in 2020 and that the remainder of the savings will be claimed in future years. (This will be finalized in the third draft after RIIB receives more information regarding two municipalities. Placeholder in the budget is still $5.0MM) Based upon available resources and demand, the Infrastructure Bank expects to leverage the provided funds between two to three times. Additionally, to support the Infrastructure Bank's success, National Grid may fund up to $100,000 in technical assistance studies and OER will assist municipalities with automatically updating their Portfolio Manager accounts for EBF building benchmarking and reporting requirements. National Grid will also incentivize the cost-effective efficiency projects for electric and gas retrofits with direct incentives to EBF customers.

Funds allocated to the EBF, including interest earnings, will be used in accordance with least cost procurement law, the EBF enabling act (Chapter 46-12.2), and regulations filed by the Office of Energy Resources and Rhode Island Infrastructure Bank governing the administration of the program. The Bank administers the EBF as a revolving loan fund, making loans from time to time for eligible projects, and tracks the funds awarded under the Plan independently of other sources of funds which provide additional capital for the EBF program. The funds allocated to RIIB and EBF under prior and future Settlement Agreements have been or will be committed to financing energy efficiency projects. As those loans are repaid into the EBF, such repayments will be re-lent for other eligible energy efficiency projects on the OER PPL. To the extent that such repayments have not be re-lent for an eligible energy efficiency project, the repayments will be available to pay debt service in the unlikely event of a default on a RIIB issued EBF bond. Having these loan repayments available to pay debt service in the event of a default on an EBF bond provides significant interest savings for all borrowers of the EBF program.

On June 27, 2019 the Public Utilities Commission issued a set of Post-Decisional Data Requests to National Grid concerning the Efficient Buildings Fund (EBF). The Company provided the final answers to these questions on July 25, 2019.

The Company knows that EBF is a valuable tool and that past transfers have enabled municipal projects to be completed and savings to be claimed. The company now has a clear and transparent mechanism that allows partners and stakeholders to track EBF from the transfer to RIIB to net savings claimed. This will be included in an appendix to this plan

and will cover the time period from the beginning of this mechanism until Q2 2019. It can be found XXXX

RIIB will also provide a detailed description of the process they used estimate the amount required for transfer in 2020. RIIB believes that the way that have estimated demand this year, while still using estimates, is more precise than the estimation methods used in previous years. This can also be found XXXX

The Company, along with its partners, will also provide an end to end accounting of all rounds of EBF, loans made, and savings claimed on a quarterly basis in 2020. National Grid believes that will give all stakeholders a clearer picture of this beneficial but complex mechanism.

In 2020, National Grid and RIIB will promote EBF through the use of case studies in addition to working with state and quasi state agencies such as the Rhode Island Department of Education (RIDE).

More details on the RIDE interaction will be provided in the third draft.

Commercial Property Assessed Energy (C-PACE)

Customer type	Owners of non-residential property
Max loan size	Limited only by the financial health of the building
Maximum Tenor	Average measure life of all upgrades, can exceed 15 years
Loan Volume	Variable
Benefits to customer	Can be structured to be cash flow positive, no personal guarantees, financing can be used to finance a wide variety of improvements related to energy, may be considered an operating expense.
Limitations	Minimum transaction value of ~$50,000, preferred $100,000+

In 2020, National Grid will continue to work with the Rhode Island Infrastructure Bank (RIIB) and its partners to promote C-PACE. Specific examples include a marketing piece and a case study that will be included in packets of RI customers at future events and re-engaging Commerce RI to promote this mechanism to businesses seeking information about moving to or expanding in Rhode Island. There will also be a marketing effort for non-profits who own their space.

d. Ascentium Rental Agreement

Customer type	Owners of non-residential property
Max loan size	No stated limit
Maximum Tenor	Variable
Loan Volume	Variable
Benefits to customer	Rapid preliminary approval, rental product is considered an operating cost
Limitations	Specific terms of the agreement may not work for all customer types

More details on 2020 activities in the third draft.

e. Other financing mechanisms

In 2020, National Grid will be investigating mechanisms and financing structures that allow tenants and landlords to work together towards building improvements including energy efficiency upgrades. This includes, but is not limited to, and investigation of Metered Energy Efficiency Transaction Structure (*MEETS*).

8. Other Enabling Strategies for Customer Engagement

a. Improving Quality and Efficiency in Project Cycle Times

The Company is committed to providing customers with a more expedited project initiation and incentive application (transactional) experience. The Company continues to look for process improvement relative to processing applications, and the building Technical Assistance (TA) review process.

b. Tools for Customers' Management of Energy Usage

The Company intends to help customers access their energy data to allow for greater awareness of energy consumption. The Company will seek to achieve this through the various methods described below:

c. Automated Benchmarking Systems

National Grid has developed a path towards automating data uploads into Energy Star's Portfolio Manager. The Company acknowledges automated usage data transfer to customers as an important tool in the future for building labeling intentions, supporting prior OER commitments to support state/municipal facilities improvements, and as a tool for helping customers better understand their energy usage.

In Rhode Island, properties that have three active accounts or less per commodity (electric and/or gas) are required to submit consent forms for each tenant, in a PDF format. Consent forms are available on the ngrid.com/epm web site. Consent forms should be mailed to : NE.energyefficiency@nationalgrid.com.

In 2019, training was held for Sales and Program Managers as well as Sales Support staff to familiarize them with the Company's automated benchmarking system which can be used as a sales tool in promoting energy efficiency. A representative from the EPA's Boston office also conducted training at that time.

In 2020, customers can automatically upload aggregate, whole building energy usage data, both electric and gas onto the Portfolio Manager and will allow building owners and stakeholders to benchmark energy usage and performance and compare usage to similar buildings nationally. This process will also support the City of Providence's building energy reporting and disclosure ordinance that the City is planning to implement in 2020. The ordinance will require building owners of large and medium sized buildings to report their annual energy use. The goal of this ordinance is to make building owners and operators more aware of their energy usage and help them improve energy efficiency of their buildings. The Company is currently supporting the City's stakeholder process for the co-creation of this ordinance.

The Company will support benchmarking with customer support on automating data uploads as well as provide access to EPA training on Portfolio Manager. Additionally, the Company will send marketing and informational emails to customers to inform them of the automated benchmarking process. Company support is now available to National Grid

customers in RI, MA and NY at 1-855-563-7448. To date, over 5,000 inquiries have been received. Most of these inquiries are in New York but about 30 inquiries have come from Rhode Island and another 30 from Massachusetts.

d. Building Labeling

The Company will continue to work with the Office of Energy Resources (OER) and other stakeholders to identify strategies for building labeling in the commercial and multifamily real estate sectors in Rhode Island. The Company will continue to work closely with OER to support property owner and tenant access to usage data.

9. Connected Solutions (Demand Response)

Eligibility Criteria	Large Commercial and Industrial customers with interval meters
Offerings	The Company implemented an active demand reduction program in 2019 based on demonstrations done in 2017 and 2018. Under this active demand reduction approach customers agree to reduce their electric use during the system peak. Customers participating in the Demand Response Program are free to curtail their energy use by any means in this technology agnostic program. **Targeted Dispatch** – 1 to 8 DR events per summer This option calls on customer to curtail their electricity use or discharge energy from generators relatively few times per summer. Typical technologies or strategies used to curtail load include building management systems to control HVAC systems, lighting control systems, and manual or automated changes to manufacturing processes. The customers performance is calculated using either the utilities electric meter where available (typically G-32 customers) or 3rd party metering (typically for G-02 customers). This initiative uses Curtailment Service Providers ("CSPs") to assess curtailment opportunities at a facility and deliver curtailment services to enrolled customers. CSPs identify curtailment opportunities for deployment under the Company's initiative, as well as demand charge and Installed Capacity ("ICAP") tag[3] management opportunities and present a complete curtailment proposal to the customer. The demand charge and

[3] Installed Capacity Tag is a capacity payment that is set for a customer by using their peak demand during the peak day/hour on the NEPOOL grid

ICAP tag management provide opportunities for direct bill savings to customers.
Customers and CSPs respond to dispatch signals or criteria specified by the Company. Events will be called the day before curtailment is needed. The core model remains focused on reducing demand during summer peak events typically targeting fewer than twenty hours per summer. The program is structured to avoid interfering with the ISO-NE programs or penalizing customers for participating in both programs.
This Plan is being coordinated with the SRP Plan to ensure that the customer offerings are cohesive, and a comprehensive marketing plan is being implemented. The proposed SRP Marketing and Engagement Plan would promote the Portal described in the SRP plan and promote incentives already available through existing Company and State programs. Please refer to the SRP Plan, SRP Marketing Engagement with NWA's section, for details.
Daily Dispatch – 40 to 60 DR events per summer
This option calls on customer to curtail their energy use or discharge energy from generators or batteries relatively many times per summer. Because the option has so many dispatches, customers would typically look for an automated path to participate with a technology that does not disrupt their comfort or business process. The typical example would be battery storage.

Process

Targeted Dispatch – 1 to 8 DR events per summer
Enrollments and performance for 2019 have proceeded as expected so far. Due to this success, the company proposed increasing the goal to 40 MW-performed for 2020.
During the summer of 2019, high system loading occurred on a weekend.

	Historic Numbers		**Estimated Number**	**Proposed Number**
	2017	**2018**	**2019**	**2020**
MW of Curtailment	11	27	32 (vs. 32 planned)	40 (25% increase)

Although this these high loads were not the system peak for the year, they were higher than the Company expects on weekends. This could be due to increased air conditioning loads in the residential sector.

Daily Dispatch – 40 to 60 DR events per summer
The Company was not able to enroll a single customer in the Daily Dispatch option for 2019. The Company expected that the most common

	approach to participating in the option would be for a customer with a solar + storage system. There are many financial incentives that make solar + storage systems more economical than stand-alone storage systems including the federal Investment Tax Credit, combined interconnections process, and shared equipment. Unfortunately, the existing solar Net Metering program does not allow large (>25kW) with solar and storage systems to discharge to the grid during demand response events. This limitation makes the economics of storage more challenging for customers.
Customer Feedback	
Changes for 2020	**Targeted Dispatch** – 1 to 8 DR events per summer The Company plans to adjust the program structure to allow us to call weekend events for commercial and industrial customers who have weekend operations. This will enable us to curtail loads on weekends to prepare for future high weekend loads similar to what happened this summer. **Daily Dispatch** – 40 to 60 DR events per summer The Company is actively working to improve adoption rates for the C&I energy storage incentive program and is evaluating if and how the Net Metering and RE Growth programs could be adapted to allow paired solar + storage facilities greater than 25 kW.
Rationales for Changes	See above
Upcoming Evaluations	TBD

i. Energy Storage Demand Response Initiative

Eligibility Criteria	Commercial, Industrial, Small Business Customers
Offerings	In the 2019 Energy Efficiency Plan the Company Proposed a "Daily Dispatch" option that would incentivize customers for curtailing more often than the traditional demand program. This is analogous to the residential battery demand response program, and the Company expected that mostly commercial sized battery storage would participate in this option. Adoption

	of the C&I storage incentive initiative was limited in 2019 due to cost barriers. Energy storage systems are only cost-effective at the current incentive rates when coupled with solar, as this allows the asset owner to earn the Federal Investment Tax Credit for the energy storage system, however the RI Net Metering and Renewable Energy (RE) Growth programs do not currently allow for paired solar + storage facilities greater than 25 kW. The Company is actively working to improve adoption rates for the C&I energy storage incentive program and is evaluating if and how the Net Metering and RE Growth programs could be adapted to allow paired solar + storage facilities greater than 25 kW.
Process	The Company will incent the performance of customers adopting innovative and emerging demand reduction technologies, like battery storage in the following way, if the changes in Net Metering and RE Growth programs are adapted to allow for Solar + Storage in the future.
Customer Feedback	There is been little show of interest from commercial customers and developers in the market for battery storage.
Changes for 2020	The design of the Energy Storage Demand Response Initiative remains consistent with the program design proposed in 2019. Interaction with Other Company Energy Storage Programs : The Company is developing two Energy Storage Initiatives, as detailed in Docket Nos. 4770/4780 Amended Settlement Agreement: • One behind-the-meter (BTM) system co-located with a DCFC site, which will consist of an approximate 250 kW two hour energy storage system, supporting approximately two to six DCFC ports. • One front-of-the-meter (FTM) storage system, which will consist of an approximate 500 kW three hour

	energy storage system for the primary purpose of realizing distribution system value, with the exact storage size and capacity to be determined by system need and location. The Docket Nos. 4770/4780 demonstrations primarily focused on testing grid-connected systems or to mitigate the load impact associated with EV charging. Whereas, the Energy Storage Initiative in the 2019 Plan is a storage-enabled Demand Response (DR) program that is focused on incentivizing the use of customer-owned behind-the-meter (BTM) storage to shift peak load at traditional end-use customer facilities. The Energy Storage Demand Response Initiatives specifically targeted to facilitating BTM storage to be used for DR and is separate from these other efforts. The Company's intent is to test storage use cases in both FTM and BTM in order to identify all applications that are beneficial to customers and to the grid as a whole. A secondary benefit of testing both categories of storage applications is that it will help spur the development of a robust storage market in Rhode Island, where the contributing parties may differ between large grid connected applications and smaller BTM applications.
Rationales for Changes	The goal of the Company is to stay coordinated with all Company efforts related to storage.
Upcoming Evaluations	TBD

10. Marketing to Commercial and Industrial Customers

i. Overview

In 2019, the Company continued to educate customers about energy efficiency and increase participation in, its energy saving offerings for Rhode Island's business customers. The Company added to its previously attained customer survey research insights by developing customer personas for the business customer through interviews and surveys to improve understanding of the concerns and priorities of its commercial and industrial customers. The Company aims to represent that voice of the customer in

campaign planning beginning late 2019/early 2020 and beyond. Based on the research commercial customer segments are broken out into Lean and green customers, Small and seamless, Seeking solutions, No frills and Big business. We will dive into the characteristics of each segment and adjust messaging and targeting where appropriate. The goal is to enhance targeting and messaging not to eliminate any commercial customer targets.

ii. Delivery

In 2019 the Company is implementing a new campaign theme focused on getting business customers to see more of what energy efficiency upgrades and incentives can do for their business. The "See the possibilities" campaign was developed to serve as an overarching campaign that provides a unified message for Large commercial customers, small business customers and the multifamily customers. This fully integrated strategy leverages digital marketing, paid search and social media marketing, print advertising, email campaigns as well as Public Relations.

The primary campaign message for the "See the possibilities" campaign encourages customers to experience more of what energy efficiency can offer your business by seeing the possibilities of how an energy efficiency upgrade to lead to improved security, customer retention, comfort etc. or how the money you save can enable the business owner to focus on other improvements and growth opportunities for the business. Working with National Grid will help achieve business goals because we will work with you every step of the way for an energy efficiency project and help turn your business dreams into a reality.

In 2019 we began leveraging PR / earned media as a truly integrated part of our marketing campaign. This will include media relations, influencer engagement, event management and partnerships with trade associations.

Earned Media/PR Strategy

NEW FOR ALL: Implement a News Bureau Program which allows us to proactively build awareness of National Grid's incentives to all the key stakeholders in each market and across al business segments & verticals through:

- Media Relations - ongoing, proactive pitching of trade and business media
- Influencer Engagement
- Event Management
  - Speaking opportunities for National Grid SMEs (subject matter experts) at strategic events
  - Focus on trade events for outreach to plumbers, electrician associations, etc.
  - Press kit generation to development background information, fact sheets, press releases, images, etc.
  - Considering over 14 events for NYS 2019
- Partnerships with Trade Associations
- Content development and editorial calendar for social media, case studies and more
  - Tie into seasonal and relevant engagements (i.e. small business week social blitz)
  - Promote key topics like new construction, manufacturing, green building in NYS, etc.
    - Allows us to really dig deeper and provide more relevant content to key focal areas
      - Ex: Specifically for UNY property managers, developing content that drives home ways National Grid can help mitigating risk and tenant complaints, provide financial solutions, and improve tenant retention.
  - Business segment specific research studies (i.e. multi-family landlord/tenant research) to build out additional case studies and renter email campaign

The commercial product marketing team will evaluate the marketing strategy which was implemented in 2019 and use those learnings to inform the 2020 marketing plan.

In addition to these initiatives, the Company's annual Customer & Partner Energy Efficiency Summit (EE Summit) has helped cement its relationships with its largest customers. The EE Summit has been held at Gillette Stadium in Foxboro, MA since 2014. The EE Summit exemplifies the Company's customer focused philosophy, providing solutions that break through its customers' pain points and roadblocks. The summit's goal is to make the energy solutions the Company offers more accessible and easier to implement for customers. It's also an opportunity for the Company to build personal relationships with customers, sales teams and vendors. The Summit includes vendor partners and acclaimed speakers on teamwork, problem solving, sustainability, and innovative energy approaches. The Company's 2019 EE Summit will be held on October 17, 2019. The next Summit will be held in October 2020. This event is promoted to business customers via email blasts, LinkedIn posts, and digital advertising

While National Grid's paid media primarily targets people directly involved in the decision-making process for capital budgets and facility improvements/projects, C-Suite & Facility Managers, Small Business owners, the Company does have some advertising/communications dedicated to its secondary audience of key influencers. These are the people/firms that influence energy project go-forward decisions. They may

have an existing relationship with the customer. Distributors, Project Expeditors, Engineers, Architects, etc.

In 2020 we would begin to target developers and customers to inform them about the energy storage demand response program. We would first develop a landing page on our corporate website that would explain the battery storage initiative. The landing page would include an FAQ document for customers complete with examples of how the program can work and how it would benefit them. We would promote the program and link to the landing page through an email campaign. We would also link to this landing page and provide information about the program on our current campaign landing page ngrid.com/business where we have already been driving thousands of customers to visit and learn about energy efficiency benefits for their businesses. We would leverage the general energy efficiency campaign traffic to inform customers who are ready to do more for their businesses about our energy storage Demand Response initiative.

We would also look to educate customers via email about the CPACE program that will enable them to finance energy efficient upgrades to their building with no up-front costs. The ability to talk to customers about these additional clean energy solutions will enhance our ability to serve as a trusted advisor to our customers and help us to get more of our commercial customers thinking about how to operate their facilities more efficiently for less money and less demand on the power grid.

11. Appendix

a. Commercial Retrofit Program: Gas Technologies

The following technologies are being deployed or are currently being explored for the commercial retrofit program for various market sectors, like lodging, manufacturing, restaurants etc.

i. Xeros Polymer Laundry Solutions

Eligibility criteria	On Premise Laundry (OPL) will be a new initiative in 2020. Commercial laundry facilities, Laundromats as well as colleges and universities will be eligible.

Offerings	There are some on premise laundry solutions to reduce natural gas energy usage including ozone, condensing equipment and a retrofit for dryers. National Grid has experience offering incentives to customers installing this equipment. There is a suite of product offerings associated with this initiative including Xeros polymer laundry solutions. This includes a commercial washing machine that uses 80% less water and lower operating temperature than standard models. Polymer beads replace water. Dry Smart RMC™ (Residual Moisture Control) Due to the high costs associated with replacing commercial dryers, many times the units are repaired rather than replaced. This technology allows installation and monitoring of a moisture sensor retrofit at lower costs than replacement with a new energy efficient commercial dryer. The moisture sensor senses the level of dryness and stops the machine when a load is dry. This reduces gas that would otherwise be wasted. It has received good test results. Dry Smart 2 is coming out with UL listing. It will have an improved dashboard.
Process	Once the target audience is identified, marketing materials will be designed and mailed to that audience. The initial call to action will be to contact your National Grid Sales representative.
Customer feedback	Although the OLP products have been available on the market for several years, the uptake from customers has been minimal. A new approach is needed. This may include training of the Sales team.
Participation and savings	Minimal to date
Changes for 2020	This initiative is still under development at the time of this writing.

ii. Removable Insulated Jackets for Big Steam Plants

For some of National Grid's largest customers, steam turbine insulation jackets improve both efficiency as well as safety in the plant. They are easily removed and replaced by any staff member. Both standard and custom sized jackets are available. One single turbine can save $9,500 in energy in a year. A heat loss reduction of 135 BTUs per square foot per hour can result from using the jackets. Touch temperature can be reduced from 750^0 F to 145^0 F, improving safety. This product also has a five year guarantee. This is a

custom express gas measure that can save customers tens of thousands of therms annually. The measure will be aggressively implemented by the Company's energy efficiency sales teams in RI to all medium to large C&I customers who use steam and high temperature hot water for processes and space heating. It can also be used on all valves, fittings, steam traps, condensate tanks and uninsulated hot water tanks. The jacket has excellent synergies with general mechanical insulation on piping systems, steam system assessments and steam trap surveys. National Grid is providing training for these measures with targeted webinars on gas measures and Steam System Assessments. This has been successful at universities, colleges and hospitals and other large steam users in both Rhode Island and Massachusetts.

iii. Heat Watch

The Company is also facilitating "Heat Watch" for Multifamily, small business and C&I programs. This service includes running boilers in conjunction with controlling and managing the whole boiler and heating systems for a facility. This service will save 10-15% of energy on steam systems by preventing overheating and improving temperature control of spaces, especially during spring and fall. In 2019 16 multi-family buildings were demonstrated in the greater Boston area. The final report has been received and preliminary results look positive. An addendum will soon be available. In 2020, with the help of program managers, vendors and marketing, Heat Watch will be targeted to the small business and multifamily audiences.

Cozy^{TM} Radiator Covers

The Cozy ^{TM} Radiator covers are insulated enclosures with a room temperature sensor controlling a fan that introduces heat to the space when needed. It virtually makes each steam radiator its own controllable HVAC zone. One NY University was able to reduce boiler run times by 41%.[6] Non energy benefits include increased asset value, improved tenant/occupant comfort, reduced emissions, and improved safety. One college in Rhode Island has had good results. This measure is available as a custom project.

iv. Aeroseal

[6] https://www.radiatorlabs.com/wp-content/uploads/2016/08/CaseStudy-ColumbiaUniversity.pdf

Aeroseal is for both heating and cooling. It provides duct sealing to seal up old leaks by blowing in atomized polymers. This measure has been successful at a Rhode Island college.

12. Commercial and Industrial Measures and Incentives

Table 1. Electric Programs

Electric Programs					
Program	**Subprogram**	**Net Annual kWh Tracker by Subprogram**	**Incentive / Net Annual kwh**	**Total Incentives**	**Shared Costs**
Large Commercial New Construction	C&I Codes	289,000	$0.00	$0	
	D2 CAIR	517,300	$0.24	$126,000	
	Upstream HVAC Air Conditioners	386,316	$0.39	$149,322	
	Upstream HVAC Controls	14,041	$0.16	$2,250	
	Upstream HVAC ECM Pump	6,429	$0.46	$2,952	
	Upstream HVAC VRF	387,450	$0.49	$191,479	
	Upstream Heat Pump - Ductless	30,870	$1.24	$38,406	
	Upstream Heat Pump - Packaged	4,860	$1.85	$9,000	
	Upstream Heat Pump - Split	54	$1.85	$100	
	D2 HVAC Prescriptive	237,219	$0.21	$50,000	
	D2 Custom	4,778,960	$0.43	$2,050,000	
	D2 Lights	2,592,116	$0.17	$444,000	
	D2 Upstream Food Service	56,903	$0.67	$38,406	
	Motors and VFD	208,398	$0.26	$54,000	
	Upstream HVAC Refrigeration	9,980	$1.00	$10,000	
	Commercial Demonstrations & Assessments	-	-	-	
	Program Planning & Administration				$185,150
	Marketing				$316,935
	Sales, Technical Assistance & Training				$1,227,885
	Evaluation & Market Research				$438,916
Large Commercial Retrofit	CHP	2,549,576	$0.19	$481,500	
	Custom: SEM	973,352	$0.05	$51,138	
	Custom: General	14,090,786	$0.34	$4,815,000	
	EI HVAC	2,065,860	$0.34	$700,000	
	EI Light: Prescriptive	31,800,971	$0.25	$7,820,000	
	Motors and VFD	2,251,488	$0.23	$528,000	
	Custom: Street Lighting	2,989,100	$0.28	$843,618	
	EI Light: Upstream Linear Luminaires	1,728,339	$0.38	$656,880	
	EI Light: Upstream TLEDs	2,250,525	$0.09	$203,328	
	EI Light: Upstream Retrofit Kits	1,752,049	$0.18	$321,709	
	EI Light: Upstream A-lines and Decoratives	1,319,082	$0.10	$132,980	
	EI Light: Upstream G24, G23, MR Lamps, PA	865,933	$0.20	$175,498	
	EI Light: Upstream Stairwell	20,085	$0.93	$18,709	
	EI Light: Upstream Exterior	1,756,113	$0.04	$62,553	
	EI Light: Upstream High/Low Bay	5,519,761	$0.20	$1,102,298	
	EI Light: Upstream Linear Fixture w/ Controls	2,796	$0.84	$2,356	
	EI Refrigeration and Hot Water	-	-		
	Program Planning & Administration				$722,197
	Marketing				$267,096
	Sales, Technical Assistance & Training				$4,422,909
	Evaluation & Market Research				$727,466

Program	Subprogram	Demand Response kW Goal	Incentive / Net Annual kW	Total Incentives	Shared Costs
Small Business Direct Install	Lighting	10,726,612	$0.50	$5,400,000	
	Lighting controls	214,397	$1.40	$300,000	
	Non-Lighting	558,519	$1.07	$600,000	
	Heat Pumps	-	-		
	Commercial Demonstrations & Assessments			$2,036	
	Program Planning & Administration				$234,934
	Marketing				$276,531
	Sales, Technical Assistance & Training				$300,367
	Evaluation & Market Research				$98,514
Commercial Connected Solutions	Daily DR Resources	0	-	0	
	Peak Shaving DR (MW)	49,000	$35.00	1,715,000	
	Program Planning & Administration				$32,399
	Marketing				$1,917
	Sales, Technical Assistance & Training				$329,128
	Evaluation & Market Research				$0

Table 2 Natural Gas Programs

Gas Programs					
Program	**Measure Groups**	**Net Annual MMBtu Tracker by Subprogram**	**Incentive / Net Annual MMBtu**	**Total Incentives**	**Shared Costs**
Large Commercial New Construction	Boilers	5,399	$46	$250,000	
	Codes And Standards	358	$0	$0	
	Combo Boiler/DHW	1,593	$88	$140,000	
	Non Boiler Heating	266	$47	$12,500	
	Cond Water Heater 94% Min 75-300 And	346	$139	$47,924	
	Cooking-Combo Oven 1	198	$10	$2,000	
	Cooking-Convection Oven 1	46	$109	$5,000	
	Cooking-Conveyor Oven 1	78	$13	$1,000	
	Cooking-Fryer-1000	90	$22	$2,000	
	Cooking-Griddle 1				
	Cooking-Rack Oven 1				
	Cooking-Steamer-1000				
	Cooking-Combo Oven 1 - Upstream	476	$11	$5,280	
	Cooking-Convection Oven 1- Upstream	1,288	$96	$124,080	
	Cooking-Conveyor Oven 1- Upstream	89	$11	$1,000	
	Cooking-Fryer-1000- Upstream	9,495	$24	$232,320	
	Cooking-Griddle 1- Upstream	89	$11	$1,000	
	Cooking-Rack Oven 1- Upstream	89	$11	$1,000	
	Cooking-Steamer-1000- Upstream	89	$11	$1,000	
	Water Heater - Indirect Upstream	325	$70	$22,800	
	Water Heaters 94 And Above	534	$74	$39,610	
	Water Heating Boiler - 94% TE	4,761	$14	$67,817	
	Custom	19,869	Up to 75% of Total Resource Cost	$356,500	
	Program Planning & Administration				$21,327
	Marketing				$161,512
	Sales, Technical Assistance & Training				$779,816
	Evaluation & Market Research				$294,436
Large Commercial Retrofit	Controls	6,487	$12	$80,000	
	Custom: RCx	3,023	$20	$60,000	
	Behavior / Training	2,495	$0	$0	
	DHW	599	$16	$9,500	
	HVAC	15,469	$19	$290,000	
	Prescriptive Steam Traps	79,840	$11	$840,000	
	Custom: General	54,407	$21	$1,160,000	
	Custom: SEM	409	$40	$16,238	
	Program Planning & Administration				$236,868
	Marketing				$268,514
	Sales, Technical Assistance & Training				$1,675,808
	Evaluation & Market Research				$229,237

Gas Programs					
Program	**Measure**	**Net Annual MMBtu Tracker by Subprogram**	**Incentive / Net Annual MMBtu**	**Total Incentives**	**Shared Costs**
Small Business Direct Install	Hot Water	2,523	$20	$50,000	
	Program Planning & Administration				$3,439
	Marketing				$37,904
	Sales, Technical Assistance & Training				$30,068
	Evaluation & Market Research				$2,389
	Air Sealing	304	Average Incentive based on measure mix		
	CUST NON-LGT	5,065			
	Demand Circulator				
	Duct Sealing				
	Faucet Aerator	439			
	Insulation	7			
	Low-Flow Showerhead	194			
	Pipe Wrap (Heating)				
	Pipe Wrap (Water Heating)	3,420			
	Programmable Thermostat	699			
	Thermostatic Shut-off Valve				
	TSV Showerhead	406			
	WiFi thermostat gas	622			
	Participants	1,500	$504	$756,000	
	Program Planning & Administration				$26,376
	Marketing				$23,094
	Sales, Technical Assistance & Training				$119,309
	Evaluation & Market Research				$36,047