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, and 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:

1. Grocery/Supermarkets
2. Municipal & State Buildings
3. State SEMP
4. Manufacturing/Industrial
5. K-12 schools
6. Hospitality (Restaurants & Lodging)
7. Specialty buildings including: Farm/Agriculture and Extended Care Facilities
8. Hospitals
9. Colleges and Universities
10. Commercial Real Estate
11. Multifamily

Commercial and Industrial Program Types

Commercial and Industrial customers can participate in energy efficiency through 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. Active Demand Response programs - Focus on reducing peak electric demand and associated costs for large and small commercial customers.

Locating Additional Information

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 Large C&I Retrofit Programs are also available to small business customers.

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

In addition, 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 sectors, customers can participate in one or more of the four main energy efficiency programs.

1. The Large Commercial and Industrial New Construction Program
2. The Large Commercial Retrofit Program
3. The Small Business Direct Install (SMB/DI) Program
4. 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.

Initiative Overview

Programs have initiatives that provide a targeted to programs. 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 Attachment 8 for definitions, and a detailed scope and list for each pilot, demonstration and assessment proposed for the 2020 Energy Efficiency Plan.

Program Structure

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 and program initiatives:

Eligibility Criteria	This section describes the eligibility criteria for customers or building types as it applies to the program or initiatives.
Offerings	This section describes the customer offering for the program or initiative. It can include technical assistance, incentives, design support, verification services and financial offerings. This section also describes the various pathways by which a customer or building can participate in a program or initiative.
Process	This section describes the process by which the Company engages the customer with energy efficiency programs and offerings.
Customer Feedback	Customer feedback can be received by the Company, in various ways; via an implementation vendor, direct feedback from the customer, via surveys conducted by the Company.
Changes for 2020	The section captures the changes proposed in the year stated.
Rationales for Changes	Captures the rational for the changes proposed in the planning year.
Upcoming Evaluations	Evaluation information can be found in this section at the program level. Evaluations are typically conducted at the subprogram or measure level. Initiatives like the Grocery Initiative or the Industrial Initiative are typically not evaluated. The measures included in these initiatives are evaluated as part of larger evaluations for the programs. Hence at the initiative level tables you will not see this "Upcoming Evaluations" section.
Notes	Additional notes related to the program, customer, offerings etc.

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[1]
Electric						
Fuel	Annual MMBtu (Gas)	Annual MWh	N/A	Total Net Lifetime MMBtu	Budget ($000)	Participation
Gas						

Program Goals: The below figures compare the Commercial and Industrial sector's energy goals when measured in annual MWh savings vs. lifetime MMBtu savings. These pie charts are meant to highlight two key differences in terms of how a program's energy savings can be measured. The first key difference is annual vs. lifetime. Figure 1 shows the proportion of how much energy savings the Commercial and Industrial Electric sector programs will achieve in one year, 2020. In contrast, Figure 2 shows the proportion of how much how much energy savings the Commercial and Industrial Electric sector programs will achieve over the programs' average measure life. The second key difference is MWh vs. MMBtu in the electric and delivered fuels portfolio. A MWh energy savings metric only measures electric related energy savings achieved. In contrast, a MMBtu energy savings metric measure electric related energy savings, as well as deliver fuels energy savings. The MMBtu metric provides a more holistic picture of the total energy savings occurring because of measures being installed in the electric and delivered fuels portfolio.

[1] For information on the metric used to measure participation by program, please reference the Main Text, Section 6.xii.

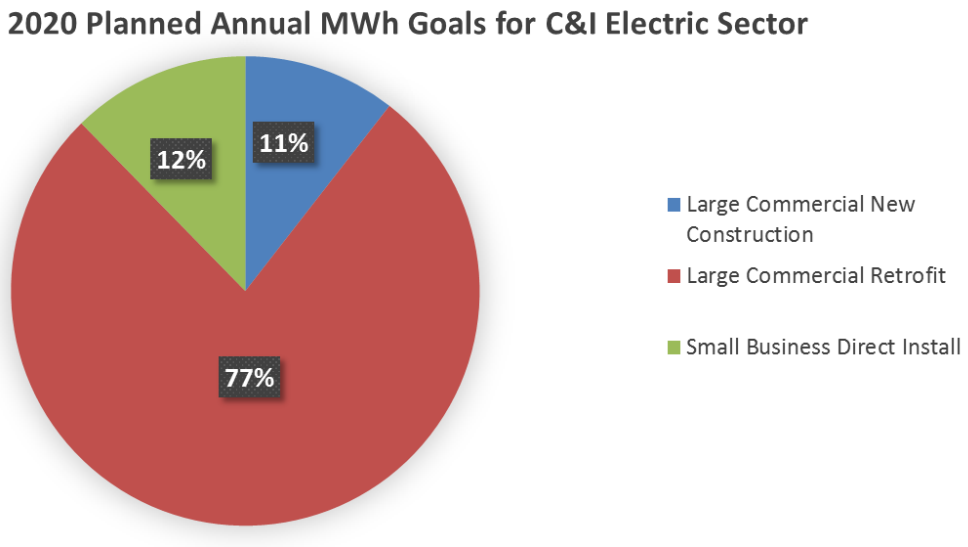

Figure 1: 2020 Planned Annual MWh Goals for C&I Electric Sector

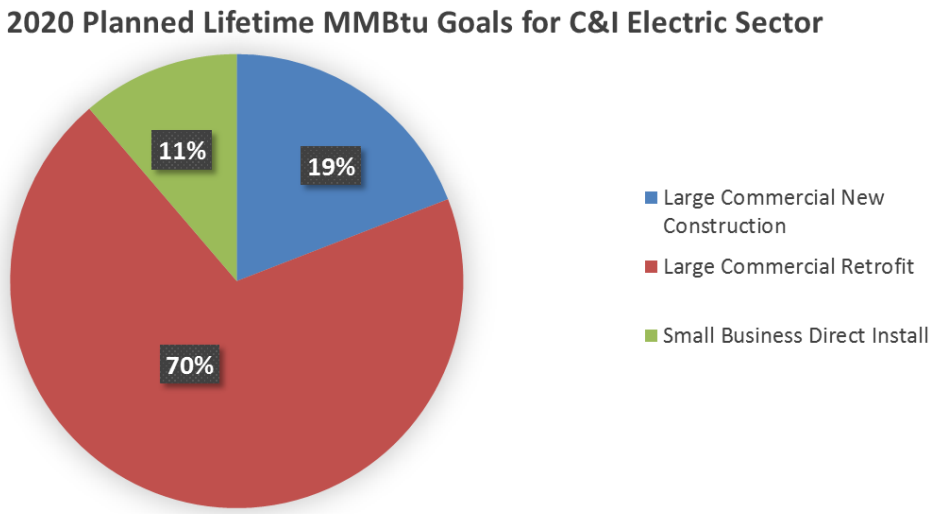

Figure 2: 2020 Planned Lifetime MMBtu Goals for C&I Electric Sector

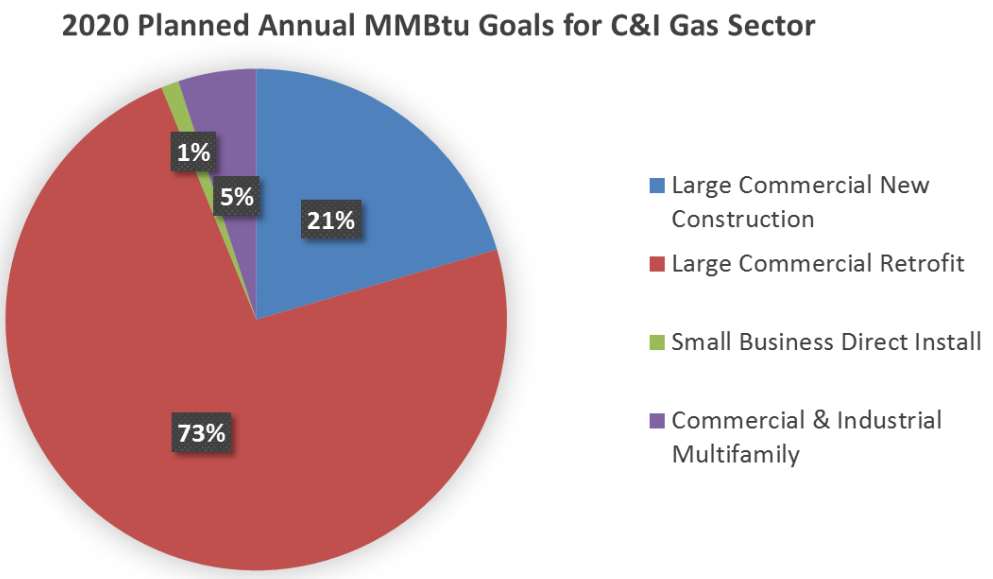

Figure 3: 2020 Planned Annual MMBtu Goals for C&I Gas Sector

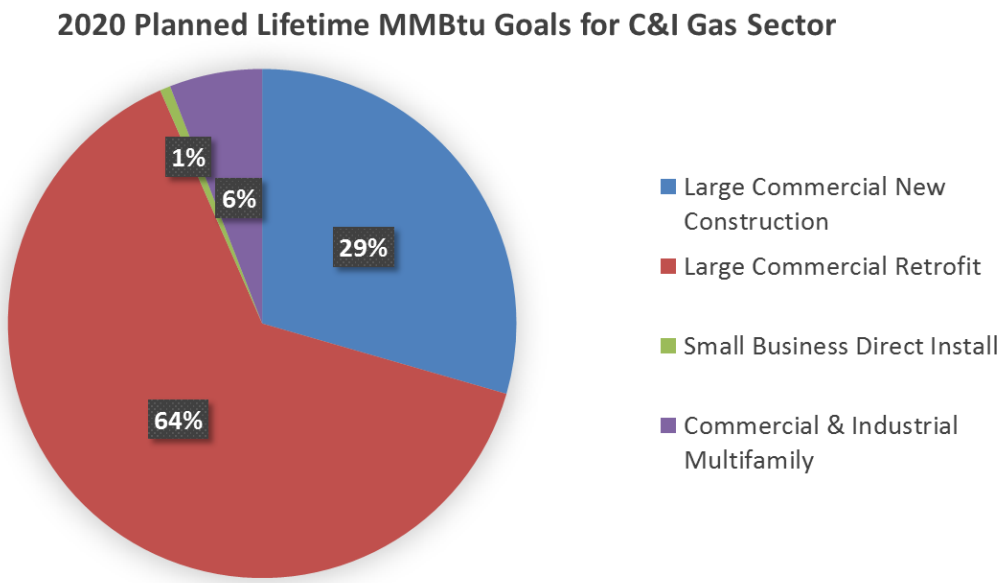

Figure 4: Planned Lifetime MMBtu Goals for C&I Gas Sector

3. Large Commercial and Industrial New Construction Program

Eligibility Criteria	The New Construction Program is divided into two main categories:

	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. **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	**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 (including support for projects pursuing compliance with the R.I. Commercial Stretch Code). 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 project Design Team from 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

Listed below are the ways in which a customer can take advantage of the New Construction Program using the "Systems Approach".

- **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.

- **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. • **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. • **Integrated Design Approach** is most applicable for buildings that are greater than 100,000 square feet. Buildings smaller than this size are not a good fit for the Design Express path. Both owners and design teams are eligible for incentives for projects that perform 15% and 20% better than energy code Please refer to table on "Changes proposed in 2020" in this section, for details.

	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 15% and 20% above the energy code savings target. Please refer to table on "Changes proposed in 2020" in this section, for details. • **Integrated Design Express:** This pathway is for smaller buildings in the 20,000 to 100,000 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 15% and 20% above the energy code savings target. Please refer to table on "Changes proposed in 2020" in this section, for details. **Operational Verification** To ensure energy savings projects are installed and operated as designed, the Company will continue to provide operational verification service. This service is provided 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.

	In addition to the above stated paths for participation in the New Construction program, the company offers specific Initiatives under the New Construction program that target specific market sectors. For example, the Indoor Agriculture initiative is one such offering. Please see details on this initiative in Section 4.a. of this plan.
Process	**Systems Approach** The National Grid sales team approaches customers, building owners, and 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 to develop 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 to the owner on documented savings from the project. **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 customer project design team and facilitates a design charette to understand customer project goals. Once goals for the project have been identified, a technical assistance (TA) vendor is engaged and models baseline project and proposed design project . An application and agreement on the energy conservation measures (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 and construction process 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 that have been incorporated in the project, field measurements are required to verify operation standards, as described in the Minimum Requirements Document, created by the National Grid Tech Rep as part of the application process. The measurement are then monitored over a prescribed period of time and under the prescribed conditions before final incentive payment is made on the savings achieved.
Customer Feedback	At this time no customer feedback is available for this program.
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 requirement threshold 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 & above
Tier 1	Savings threshold	10% beyond baseline	15% beyond baseline`22
	Incentive	$0.35/kWh; $1.70/therm	

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<tr><td rowspan="2">Tier 2</td><td>Savings threshold</td><td>15% beyond baseline</td><td>20% beyond baseline</td></tr>
<tr><td>Incentive</td><td colspan="2">$0.42/kWh; $2.05/therm</td></tr>
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Note that while Commercial Stretch Code projects had been incentivized at the Tier 1 levels noted above, Stretch Code projects permitted starting in 2020 will be eligible for the Tier 2 incentive rate.</td></tr>
<tr><td>Rationales for Changes</td><td>The energy code update and resulting raise in the program baseline prompted 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 analysis indicate that a reduction of the current program participation threshold of 20% savings beyond 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.</td></tr>
<tr><td>Upcoming Evaluations</td><td>Customers participating in this program may be asked to participate in the free ridership and spillover study being done in 2020. For more information, please see Attachment 3, section 3.1.e. Impact evaluations are being done for custom gas and electric for program years 2018 and 2019. Details of these studies can be found in Attachment 3, sections 3.1.a-d. In 2020, there is a planned evaluation for Upstream Lighting. More information can be found in Attachment 3, section 3.1.f. There is also a Gas peak demand study which may involve participants in the New Construction Program. This study is to create load shapes for gas use. Information can be found in Attachment 3, section 3.3.c. There is also a cross-cutting Residential and C&I New Construction and Code Compliance study planned for 2020. More information can be found in Attachment 3, section 3.3.d.</td></tr>
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a. Goals

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

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Partici-pation
Electric	9,828	1,183	553,402	$5,335.5	108
Fuel	Annual MMBtu (Gas)		Total Net Lifetime MMBtu (Gas)	Budget ($000)	Partici-pation
Gas	45,474		776,748	$2,652.5	83

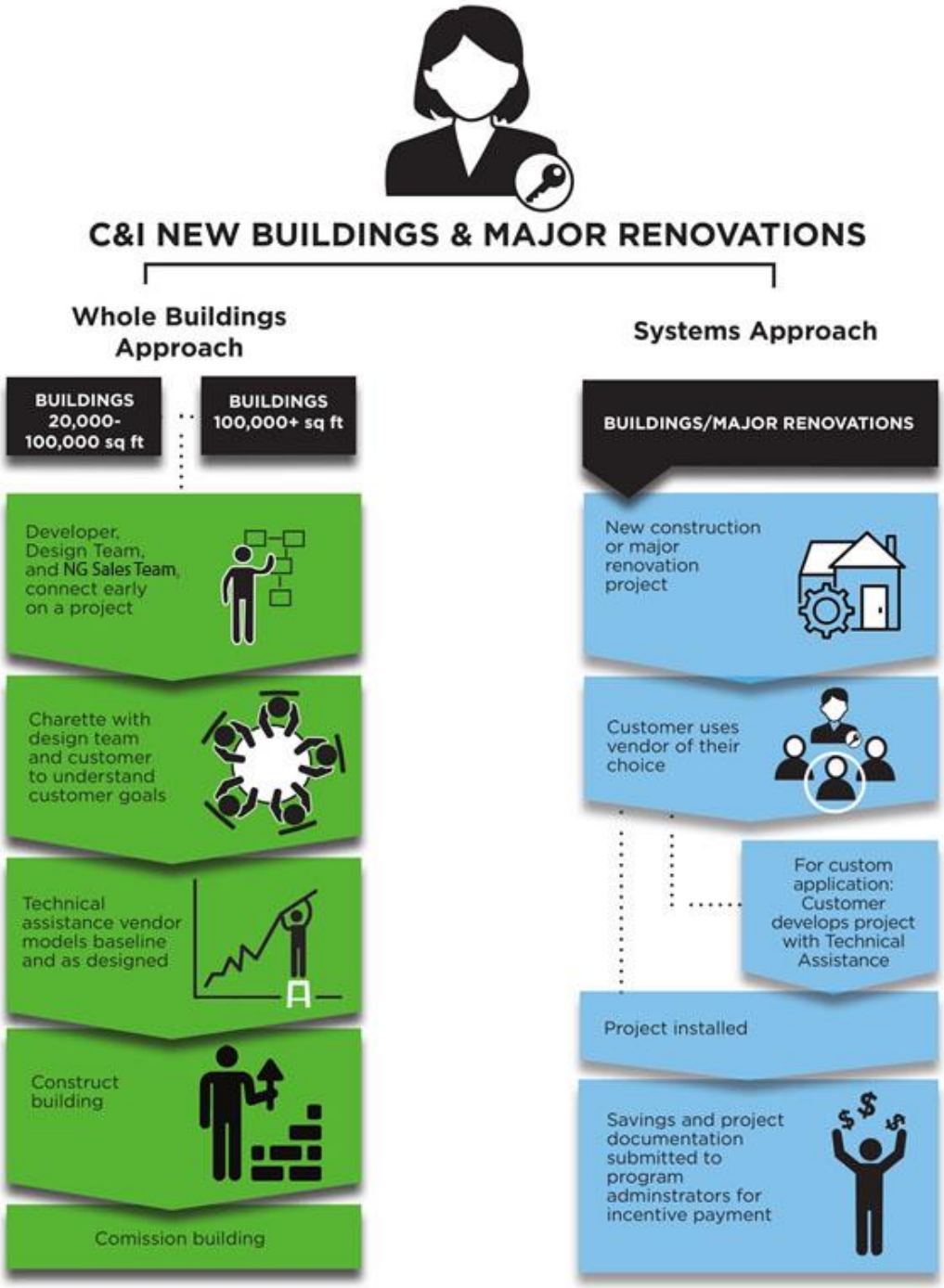

Figure 5: Large Commercial and Industrial New Construction Program

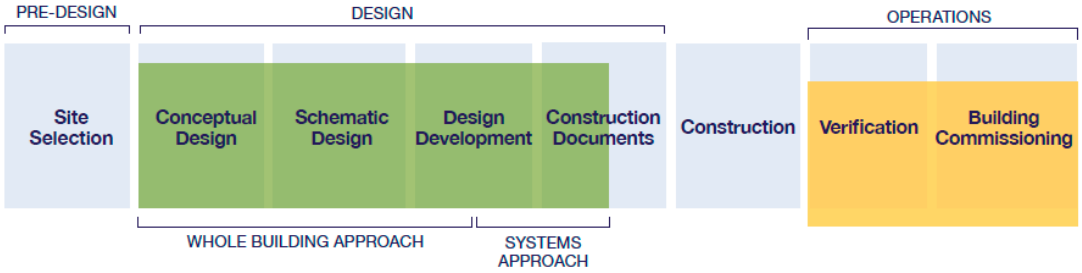

Figure 6: New Construction Process

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

a. Indoor Agriculture

Eligibility criteria	The Indoor Agriculture Initiative is available to indoor production facilities for cannabis and other agriculture. Currently there are three dispensaries for medical marijuana with plans to expand that to nine.[2] 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 facilities. 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 business is operational. 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

[2] https://mjbizdaily.com/rhode-island-budget-proposal-seen-as-setback-to-medical-marijuana-growers/

	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 for cannabis production is limited to up to 10,000 square feet. While LEDs are gaining momentum in the cannabis market, customers have low confidence in the yield provided by LEDs as opposed to traditional HPS. Due to uncertainty in the market, several cannabis customers that have worked with the Company are only partially building out their spaces. At the time of this writing, 14 customers have been identified including five with at least one complete application. Several others have not responded to Sales outreach.
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.
Rationales for Changes	It is important that the Company keeps current with changes in the marketplace, particularly as the ideal time to make an impact on saving is when the facility is being designed.

b. Performance Lighting Plus

Eligibility Criteria	Any customer with a commercial meter is eligible to participate in this initiative. All projects that qualify under this incentive must: • Be a new construction or renovation project that includes the installation or new fixtures and qualifying lighting controls for commercial, industrial, educational, or municipal building(s) • Be a code-dependent project or extensive/substantial renovation

	• Average a minimum of 2,000 hours per year • Provide maintained light levels in accordance with the recommendations of the Illuminating Engineering Society of North America's 10th Edition Lighting Handbook or supporting Design Guides

Offerings	**Incentives**
	Incentives may be offered for reducing the code mandated Lighting Power Density from the IECC baseline. Additionally, design assistance will be made available to customers for the purpose of optimizing lighting design and lighting energy savings. The objective of the design assistance is to influence the lighting project at an early stage and to ensure that energy efficiency is considered and support throughout the implementation of the project.
	
	Tier 1 – Performance Lighting
	• Minimum 10% reduction in Lighting Power Density (watts/sq.ft. and/or watts linear ft.) better than mandated energy code
	• Qualified LED products listed by Energy Star or the Design Lights Consortium must represent 50% or more of the connected load (Exceptions may be approved for alternative fixtures or for Lighting Designer Incentive projects)
	• Code compliant lighting controls required
	
	Tier 2 – Performance Lighting with Smart LED Interior Fixtures with Luminaire Level Controls
	• 80% of the connected load must utilize at least two out of the five required and reported controls capabilities for controlled fixtures
	  ○ Occupancy
	  ○ High-End Trim ≤ 25%
	  ○ Daylighting (with verifiable daylight apertures)
	  ○ Scheduling (beyond operating hours)
	  ○ Personal Control
	• Exterior – 80% of the connected load must utilize at least three out of five required and reported controls capabilities
	  ○ Occupancy Sensing and/or Traffic Sensing
	  ○ High-End Trim ≤ 25%
	  ○ Daylight/Photocell Control
	  ○ Scheduling (beyond operating hours)

	○ Continuous Dimming • Tier 2 lighting controls must be DLC approved room or building level solutions **Tier 3 – Performance Lighting with a Networked Lighting Control System** • 80% of the connected load for the qualified space utilizes a Networked Lighting Control system as defined by the DLC. (Documentation can be found on the DLC website at http://www.designlights.org/content/CALC/SpecificationAndQPL. • Confirm that the DLC qualified Networked Lighting Control system has the "Reported" capabilities of Energy Monitoring. To qualify for PL+ Tier 3 incentives, customers or vendors must commission the controls system and provide an initial 30-days of reported kWh saved and six months of lighting energy use data as reported by the system post-installation. A retainage amount equal to 20% of the approved incentive will be applied until the data is accepted. Required fixture or circuit level energy data reporting should be at least 15-minute intervals. Energy data reporting output can be in Excel or CSV file format. • Tier 3 control systems must have the following capabilities: ○ Energy Monitoring ○ Device Monitoring/Remote Diagnostic ○ Type of Interface ○ Load Shedding ○ External Systems Integration (e.g. BMS, EMS, HVAC, Lighting API) ○ Start-up and Configuration Party • Tier 3 control systems must utilize at least 3 of the 5 required and reported control capabilities for all controlled fixtures ○ Occupancy ○ Task Tuning ≤ 25% ○ Daylighting (with verifiable daylight apertures) ○ Scheduling (beyond operating hours) ○ Personal Controls • Tier 3 control systems for exterior lighting must have the following capabilities

- Networking of Luminaires and Devices
- Daylighting Harvesting/Photocell Control
- High-End Trim
- Luminaire and Device Addressability
- Continuous Dimming
- Energy Monitoring
- Device Monitoring/Remote Diagnostics

- All Tier 3 controls system must employ at least 3 out of 5 required and reported control capabilities for controlled fixtures
  - Occupancy Sensing and/or Traffic Sensing
  - High-End Trim ≤ 25%
  - Zoning
  - Scheduling (beyond operating hours)
  - Start-up and Configuration party

Tiers	**New Construction**		**Retrofit**	
	Interior	**Exterior**	**Interior**	**Exterior**
Tier 1	$1.50	$1.50	$2.00	$2.00
Tier 2	$2.00	$2.00	$3.00	$3.00
Tier 3	$3.00	$3.00	$4.00	$4.00

(Incentives are per watt saved)

Process

Application Forms

- Applications for Performance Lighting Plus incentives are made available through vendors, 3rd party implementers, and Customer Solution Sales Team. However, applications can also be created and submitted online using the Rhode Island Application Portal (RIAP).

Pre-Approval Requirements

- The Customer must submit a copy of the Manufacturer's technical specification sheets ("cut sheets") for each type of eligible equipment to be purchased
- Once pre-approved, a "pre-approved incentive letter" will be issued

Installation and Incentive Requirements

	• Once pre-approved, the customer must purchase and install the qualifying equipment within twelve (12) months of National Grid's pre-approval
	• Next, the Customer must return the following required information to National Grid within 30 days of the installation:
	  ○ A copy of the completed and signed pre-approval application
	  ○ If there is a change in equipment, the customer must submit a new manufacturer's technical specification sheets ("cut sheets") for each type of eligible equipment purchased
	  ○ A copy of the invoice indicating Proof of Purchase must indicate type, size, make, and model number of the equipment and date of purchase and installation
	  ○ At the post-installation verification, the customer must sign the post-installation customer acknowledgement section of the original application
	
	Application Process and Requirement for National Grid Approval
	• The customer shall submit a completed application to National Grid. The customer may be required to provide National Grid with additional information upon request by the National Grid. The customer will, upon request by the National Grid, provide a copy of the as-built drawings and equipment submittals for the facility after energy efficiency measures are installed. To the extent required by the National Grid or by applicable law, regulation or code, this analysis shall be prepared by a Professional Engineer licensed in Rhode Island.
	• To be eligible for performance lighting plus incentives, a customer must have an active electric account.
	• The National Grid reserves the right to reject or modify the customer's application. National Grid may also require the customer to execute additional agreements, or provide other documentation prior to National Grid approval. If National Grid approves the customer's application, National Grid will provide the customer with the Approval Letter.

	• National Grid reserves the right to approve or disapprove of any application or proposed performance lighting plus incentive.
	
	• The criteria listed under Application Process and Requirement for National Grid Approval do not apply in the event that the Program Materials explicitly state that no Approval Letter is required for the Program. In such an event, the customer must submit to National Grid the following:
	  ○ Completed and signed Program rebate form
	  ○ Original date receipts for purchase and installation of energy efficiency measures, and
	  ○ Any other required information or documentation within such time as Program Materials indicate.
	
	Pre- and Post-Installation Verification; Monitoring and Inspection
	• The customer shall provide access to their facility and energy efficiency measures for National Grid's pre-installation and post-installation verifications. Such verifications must be completed to National Grid's satisfaction.
	
	• National Grid may perform monitoring and inspection of the energy efficiency measures for a three-year period following completion of the installation in order to determine the actual demand reduction and energy savings.

Customer Feedback	At this time there is no customer feedback available for this program.
Changes for 2020	The minimum reduction in Lighting Power Density (watts/sq.ft. and/or watts linear ft.) has decreased from 20% to 10% better than mandated energy code
Rationale for Changes	Decreasing the minimum reduction in Lighting Power Density from 20% to 10% better than mandated energy code will promote higher saving thresholds for this program within lighting market.
Notes	Although this program is located in the New Construction section of this plan it may also be utilized in Retrofit applications as well.

5. Large Commercial Retrofit Program

Eligibility Criteria	The Large Commercial Retrofit Program serves the needs of existing buildings in their pursuit to lower energy consumption. All commercial and industrial customers are eligible for the Large Commercial Retrofit Program.
Offerings	The Company has several pathways by which customers can participate in the Large Commercial Retrofit program for energy efficiency in existing buildings. Customers can participate via the Prescriptive application process, working with a National Grid Sales Representative or a Project Expeditor (PEX) to complete a Custom application for any energy improvement that is not covered by the Prescriptive pathway, and customers can also participate via an Upstream program. The retrofit program also has initiatives specific to Market sectors such as grocery and manufacturing/industrial initiatives that focus on specific needs of that customer type. The Company also serves some of its largest 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 starting on page Section 6.e. The Company has found that although sector specific initiatives and SEMPs are helpful in gathering more savings and completing measures beyond lighting they do not cover our entire customer base. The following areas that are specific to a technology or do not address a specific market sector are also included as part of the Large Commercial Retrofit program and are included in this section of the plan: • Customer Owned Streetlights • Company Owned Streetlights

	• Equipment & System Performance Optimization • Combined Heat and Power (CHP)
Process	**Prescriptive Application** Customers complete a prescriptive application through 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 **Upstream** Customers can 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 Section 6.q. **Custom Application** Customers can 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 pathways.
Customer Feedback	Please see Initiatives sections for customer feedback.
Changes for 2020	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 in on page Section 6.c. 6.d. and 6.l. Specific changes to initiatives in 2020 are covered under the various initiative listed below.
Rationales for Changes	Changes in the Large Commercial Retrofit programs will help generate savings, address customer and vendor feedback, and provide more customized solutions and options.

Upcoming Evaluations	Customers participating in this program may be asked to participate in the free ridership and spillover study being done in 2020. See Attachment 3 section 3.1.e. for more information. Impact evaluations are being done for custom gas and electric for program years 2018 and 2019. Attachment 3 sections 3.1.a-d provides more details on these studies. In 2020 there is a gas peak demand study planned which involves creating load shapes for gas use. More information can be found in Attachment 3, section 3.3.c.
Notes	In addition, the Company is utilizing 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.

a. Goals

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

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Partici-pation
Electric	72,871	14,933	2,024,798	$24,037.3	2,665
Fuel	Annual MMBtu (Gas)		Total Net Lifetime MMBtu (Gas)	Budget ($000)	Partici-pation
Gas	163,011	0	1,689,045	$5,034.2	88

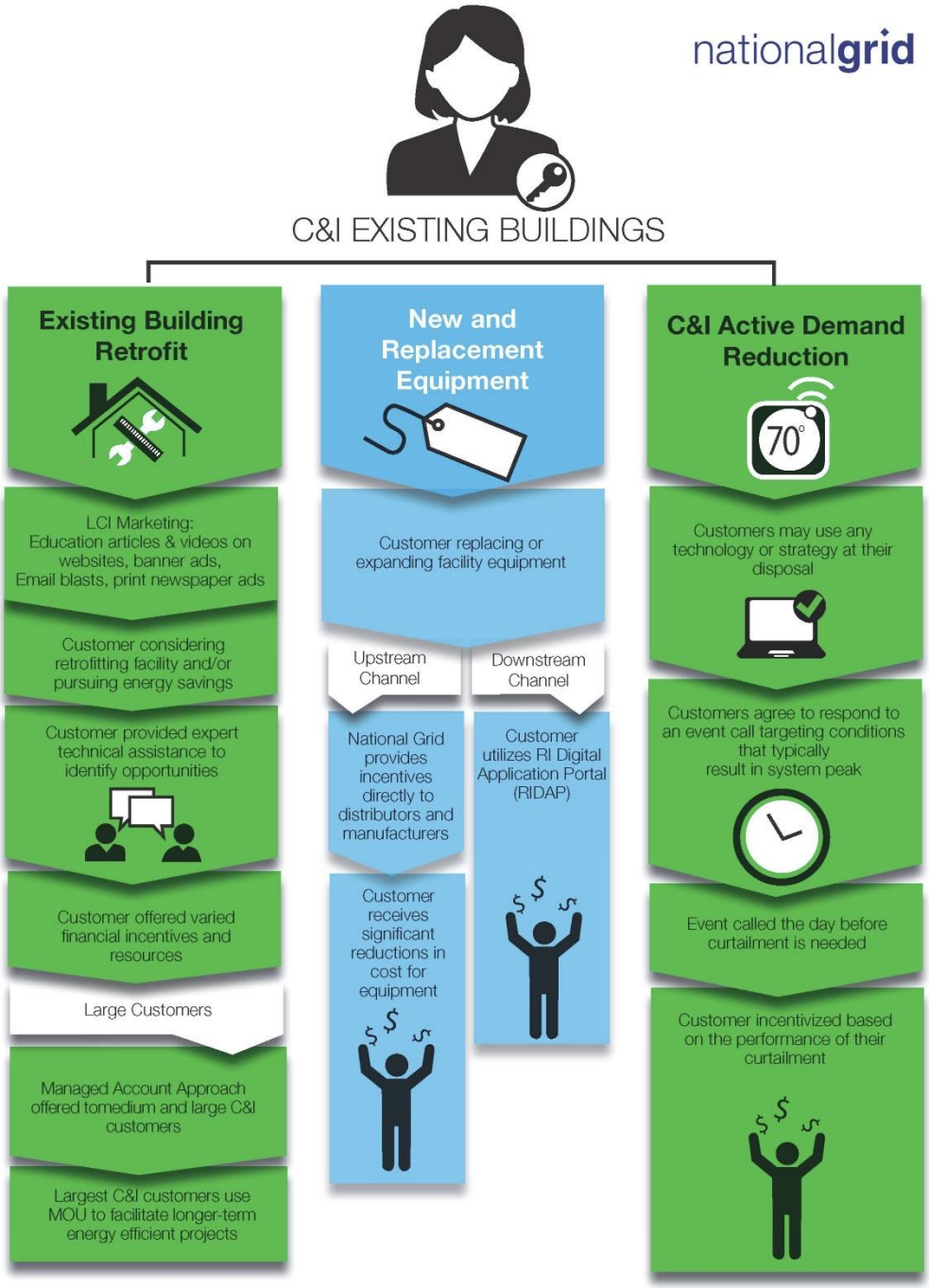

Figure 7: Large Commercial Retrofit Program (Existing Buildings)

6. Initiatives Specific to Large Commercial Retrofit Program

a. Grocery Initiative

Eligibility criteria	EnergySmart Grocer (ESG) is an initiative that serves commercial customers who sell food at the retail or wholesale level.
Offerings	Technical assistance, project management, incentives, installer and customer educations sessions
Process	The Account Managers, of the vendor who administers the program, partner with the National Grid sales team to develop a relationship with the prospective customer. Once the relationship is established EnergySmart Grocer (ESG) offers no-cost audits to the customer. This audit documents and identifies energy efficiency opportunities for the store's refrigeration, lighting, HVAC and kitchen equipment. Once the audit is complete, an Energy Savings Report is generated and presented to the customer. EnergySmart Grocer works with the customer's contractor to obtain a quote for the work. If the customer decides to move forward with the project, EnergySmart Grocer will generate an application, collect all necessary paperwork, and submit to National Grid for pre-approval. Once the project is complete, ESG will collect all invoices and final signatures, and complete a post-inspection verification to ensure the measures are installed as intended. ESG will submit all paperwork to National Grid and notify the customer when the incentive check is in the mail. EnergySmart Grocer's Account Managers maintain relationships with the customer. For smaller independent chains, the program uses an inform-to-invest strategy where the success of the first project is leveraged to pursue deeper and more expensive measures. For the regional and national chains, Account Managers schedule regular check-ins with the customer's Energy Manager to check-in on active projects and learn of future projects.
Customer/ vendor feedback	In this initiative customer feedback flows through the ESG Initiative vendor and sales to internal parties at National Grid.

	Vendor - The program struggles to have mid-size independent grocers move forward with projects primarily due to financing. If more financing options were available that doesn't impact the incentives received by the customer, the program would see a significant increase in projects from this market segment.
Participation and savings	Due to the nature of this initiative participation is difficult to predict. Electric Savings = 4,200 gross MWhGas savings = 18,750 gross therms
Changes for 2020	New measures will be deployed in 2020. They include: • Destratification fans for colder spaces in stores • Variable speed drives on Kitchen Ventilation • Shelf edge infiltration reducers • Door condensation reduction film • High efficiency condenser fan motors with onboard controls • CO2 Transcritical with natural refrigerant chillers • Stand-alone natural refrigerant cases • Thermal storage
Rationale proposed changes	Maintain savings within this sector and provide customers with more options to save energy.

b. Industrial Initiative

Eligibility criteria	The Industrial Initiative focuses on manufacturing and industrial customers.

Offerings	Technical assistance, project management, incentives, installer and customer educations sessions, coordination with Strategic Energy Management (SEM)/Continuous Energy Improvement (CEI) vendor to develop capital measures. Strategic Energy Management or Continuous Energy Improvement is a demonstration that has been offered to industrial and manufacturing customers in 2019 and will continue as a demonstration in 2020. Please refer to Attachment 8 for details on the demonstration. It is being implemented by a separate vendor from the Industrial initiative.
Process	Leads are identified by the National Grid Sales Representative for potential participation in the Industrial Initiative. Additional leads come directly to the Industrial Initiative vendor as a result of their trade ally relationships. Prior to the initial site visit National Grid provides the Industrial Initiative vendor billing and interval data information that typically follows with the analysis of: • Interval data analysis. Peak Day, Average Weekday, Average Weekend and base load. • In some cases, applicability for participating in National Grid's "Daily Dispatch" (storage) program. • A review of electric and gas usage and weather correlations (heating/cooling). A kickoff meeting is scheduled with the National Grid Sales Rep and Customer. The National Grid Technical Representative is also notified and welcome to participate. The kickoff meeting is typically followed by a site tour to identify potential energy efficiency measures. Metering equipment may be deployed to assist with energy efficiency measure development.

	After the initial site visit the Industrial Initiative vendor will provide the customer and National Grid a follow up "One Page Report" on the opportunities identified and next steps. The "One Page Report" is typically reviewed with the customer at the facility. The measures identified are tracked in the Industrial Initiative vendor's Customer Relationship Management (CRM) system. A majority of the customers visited are interested in pursuing the measures identified. The Industrial Initiative will work closely with the customer's vendors/contractors to develop "custom" workbooks that are used as the basis to secure National Grid incentives. A "Tech Check" is submitted to the National Grid Tech Rep and Sales Rep to confirm the proposed custom measure methodology meets National Grid's program requirements before the workbook is developed. National Grid "approves" the custom workbook and communicates the incentive to the customer. The Industrial Initiative Project Manager facilitates the application process right through to the completion of the measures or "project". This process includes formal status meetings with the National Grid Sales Rep and the Industrial Initiative vendor. This process is repeated for additional measures the customer is interested in pursuing. The National Grid Sales Rep and the Industrial Initiative vendor work together to engage the customer on participating in National Grid's program at a comprehensive level. Findings from 2019 program year activity: Additional access to On Bill Repayment (OBR) funds may help facilitate the approval of projects.

Customer/ vendor Feedback	In this initiative customer feedback flows through the Industrial Initiative vendor and sales to internal parties at National Grid. Consider adding business rules that account for level of risk versus exposure (savings accuracy) when approving smaller "custom" projects so that the customer receives an approval quickly without excessive information requests. Consider better transparency throughout the application approval process so that the customer knows what stage of approval the application is in. Consider using a service such as "DocuSign" to facilitate the application approval process.
Participation and savings	The Company expects between 35 and 55 customers to complete projects through this initiative in 2020. Electric savings = 9,000 gross MWh Gas savings = 400,000 gross therms
Changes for 2020	Digital signature process Increased focus on customers in the 200-400kW range
Rationale for proposed changes	Changes were suggested by both customers and vendor to improve initiative delivery.

c. National and Regional Restaurant Initiative

Eligibility criteria	The Serve Up Savings (SUS) initiative will serve regional/ multistate and national restaurant chains not currently engaged with Strategic Energy Management Partnership Agreements (SEMPs). Restaurants with multiple locations within Rhode Island only will be served by the Small Business Program.

Offerings	Technical assistance, project management, incentives, work with franchisors to come up with a package of measures that will work for their franchisees
Process	Serve Up Savings works hard to minimize the effort needed for the customer to participate in the program. The first interaction is a Serve Up Savings Account Manager reaching out to the customer to introduce the program and schedule an audit of their stores. Once the audits are complete, the program puts together an Energy Savings Report which details the energy efficiency upgrade opportunities. The program works with the customer's preferred contractor or recommends three if they don't have one. The program obtains a bid for the work, so the customer can decide to move forward based on their financial metrics. The program will collect all required paperwork and submit to National Grid for pre-approval of incentives. Once pre-approved, the program will send the customer a commitment letter which details the financial incentives. The customer contracts directly with the contractor to complete the work. Once the work is finished, the program completes a post-inspection as well as collects all final paperwork. The program submits all paperwork to National Grid and a check is sent to the customer. The program leverages this check to push installation of the next set of measures to be installed at their stores.
Findings from 2019 program year activity	This is a new initiative for Rhode Island. However, the largest lesson the SUS vendor has learned from the MA contract is that developing relationships with the key stakeholders is essential to motivate restaurant projects to move forward. In particular, it is critical to talk with the Energy Manager of a corporate chain because they are already bought into energy efficiency and also have a large influence on that chain's franchise. Additionally, it is important to establish strong relationship with various contractors, so that if the customer doesn't have a preferred contractor, then the program can recommend several to ensure a motivated customer doesn't lose momentum.

Customer feedback	Chain restaurants experienced frustration that they were not able to use the same vendor across MA and RI.
Participation and savings	The Company expects has planned to achieve 1,100 MWh and 21,000 therms through this initiative. The Company estimates that it will need to complete multi-measure installations at a minimum of 25 locations to meet this goal.
Changes for 2020	Introduction of a new initiative
Rationale for proposed changes	New initiative based on customer feedback.

d. Lodging Initiative – New initiative

Eligibility criteria	The Lodging Initiative (LI) is an initiative that will serve hotels, motels, and resorts.
Offerings	Technical assistance, project management, incentives, installer and customer educations sessions
Process	LI Account Managers partner with the National Grid sales team to develop a relationship with the prospective customer. Once the relationship is established the Lodging Initiative (LI) offers no-cost audits to the customer. This audit documents and identifies energy efficiency opportunities for the hotels refrigeration, lighting and controls, HVAC and controls, and kitchen equipment. Once the audit is complete, an Energy Savings Report is generated and presented to the customer. The LI vendor works with the customer's contractor to obtain a quote for the work. If the customer decides to move forward with the project, the Lodging initiative vendor will generate an application, collect all necessary paperwork, and submit to National Grid for pre-approval. Once the project is complete, the LI vendor will collect all invoices and final signatures, and complete a post-inspection verification to ensure the measures are installed as

	intended. The LI vendor will submit all paperwork to National Grid and notify the customer when the check is in the mail. The Lodging Initiative Account Managers will maintain relationships with the customer. For smaller hotels and motels, the program uses an inform-to-invest strategy where the success of the first project is leveraged to pursue deeper and more expensive measures. Account Managers schedule regular check-ins with the customer's Energy Manager to check-in on active projects and learn of future projects.
Customer feedback	This is a new Initiative
Participation and savings	Participation target = 15 locations Electric savings = 1,200 gross MWh Gas savings = 55,000 gross therms
Changes for 2020	Introduction of new initiative
Rationale for proposed changes	This is a new Initiative

e. Strategic Energy Management Planning (SEMP)

Eligibility criteria	The Strategic Energy Management Plan (SEMP) Initiative is available to the Company's largest C&I customers or chain restaurants who have the potential to go deeper with energy efficiency, have a level of in-house sophistication to make organizational changes to incorporate multi-year energy planning and are motivated by corporate and institutional sustainability goals.
Offerings	SEMP is a customized offering to customers which provides flexibility to address the particular needs of the organization and its facilities in the context of energy efficiency and sustainability. Working with a SEMP gives the customer the opportunity to think long-term about

	their energy needs and equipment resulting in more comprehensive savings compared to the more traditional energy efficiency programs. Where appropriate and valued by the customer, automated benchmarking will be available to help demonstrate the impact installing energy efficiency measures can have on the energy usage of the facilities.
Process	A Memorandum of Understanding (MOU) offers a way to document a commitment between the customer and the Company to work together to achieve mutually stated goals through specific actions that are tailored to the customer's facilities over a multi-year planning horizon. As such, an MOU (though non-binding in this case) can set the stage for achieving deeper and more comprehensive energy efficiency savings and is more likely to succeed than a "one measure" or "one year" approach. Typically, MOUs include participation and a commitment by upper management, the establishment of specific, very aggressive energy efficiency saving targets, and measurement and verification strategies to document savings throughout the target facilities along with an incentive structure that meets the customer's financial criteria. This offering goes far beyond energy efficiency into sustainability and branding support for the customer. The Company is also engaging SEMP customers with non-energy efficiency solutions through its SEMP initiative, such as renewables, storage, electric vehicles, and distributed energy resources and technologies.
Customer feedback	One customer commented that the MOU process is stream lined and easy to work with.
Participation and savings	The Company currently has six SEMP MOUs. Three are large university campuses, the fourth is with a hospital group comprising of RI's five largest hospitals. The fifth is with a large commercial customer. In addition, a State SEMP focused on State facilities has been in place since 2016. Projects and savings vary

	by year. Regarding setting kwh and therm savings goals under SEMP, there are several items that are reviewed: • Customer's total kwh and therm usage on all accounts • Customer's percentage of energy reduction over the last 5 years through EE measures • Customer's capital project plan • High level measure identification by the Company's TA vendor for potential savings over the 3-year SEMP • For an example of the electric savings, the total annual goal for 3 colleges/universities combined is approximately 1,400 mWh. • The total annual gas goal for 2 colleges/universities combined is 117,500 therms
Changes in 2020	In 2020, the Company will ramp up efforts to engage more customers with SEMP initiatives. Potential customers include colleges and universities in Rhode Island not yet engaged with SEMPs, cities, industrial customers, and chain restaurants. In 2020 the educational SEMP customers will have access to specialty services from an energy solutions provider who specializes in campus energy infrastructure from energy efficiency to mechanical/electrical infrastructure needs. **Hospitals** The Company will continue to work with Rhode Island's five largest hospitals (all under one partnership) through the multiyear Strategic Energy Management Planning (SEMP) initiative, which is up for renewal in 2019. The medium sized healthcare facilities will continue to be addressed through the channel sales group. **Colleges and Universities**

	These are currently served through either the Company's large commercial programs with a dedicated sales team or the Company's SEMP initiative. With a master-metered portfolio of buildings within the campus, most universities are tied to sustainability goals and climate action plans to reduce their greenhouse gas emissions. The Company's SEMP initiative allows enrolled university customers to engage in multi-year campus energy planning and assists them in identifying comprehensive and long-term energy efficiency opportunities. The Company has three SEMP agreements in place with colleges and universities and is currently engaged in conversations with three other college campuses in Rhode Island for SEMP agreements. The Company will continue to explore opportunities for further SEMP university customers. The Company continues to provide energy efficiency services to universities in Rhode Island outside the SEMP model for those universities not wishing to participate in a SEMP.
Rationale for proposed changes	The changes proposed for the SEMP initiative will allow for more comprehensive services for customers as well as increase participation in the SEMP initiative.

f. Municipal and State Buildings SEMP

Eligibility Criteria	The Company is currently pursuing another three-year State SEMP. This SEMP will include municipalities, State buildings, Quasi State buildings, water and waste water facilities, State Colleges, State Universities and public K-12 Schools.
Offerings	In June 2016, a joint Memorandum of Understanding (MOU) was signed between the Company, OER, Department of Administration (DOA) and Department of Capital Asset Management and Maintenance (DCAMM). The purpose of this three-year period MOU was to strengthen the State's commitment to economic growth and climate change mitigation, and to Lead by Example through the Governor's Executive Order (EO 15-17) that requires all State facilities to reduce their energy consumption 10% by the end of fiscal year 2019 (June 30, 2019).

	Consistent with this EO, this MOU is designed to integrate strategic energy planning across State and Quasi State facilities to leverage the Company's programs and best practices to achieve a minimum cumulative energy savings of ten percent (10%) below fiscal year 2014 levels by the end of fiscal year 2019. This MOU pertains to building projects (both retrofits and new construction) for State facilities. The ten percent savings goal was achieved by the end of the State's fiscal year 2019 The Company provides specific support to State and Municipal buildings via project management support, implementation support, technical support and financial mechanisms to achieve energy efficiency in State, Quasi-State and municipal buildings, in addition to incentives through the Energy Efficiency programs. • **Project/Energy Management Support:** In 2016, the Rhode Island Infrastructure Bank's (RIIB) Efficient Buildings Fund (EBF) was created to provide capital for comprehensive projects in the municipal and quasi-public agency space. The time and expertise required to identify, develop, and oversee these projects can be beyond the resource capacity of many towns and cities and so the Company provides this support as part of the State and Municipal initiative and via a SEMP. • **Implementation Support:** The Company provides support for energy efficiency project implementation via a vendor that has been successful in the past. Municipalities recognize the value of this type of support as it provides a trusted partner to bring the time and expertise municipalities lack to identify, develop and oversee complex projects. To continue to serve this sector, there are several support mechanisms in place: • URI Energy Fellows will be supporting municipalities as they learn to use Portfolio Manager as well as meet the EBF's energy reporting and energy management plan development requirements. National Grid also has an automated process by

	which customers can authorize upload of utility data onto Portfolio Manager. This system is being used for benchmarking using Portfolio Manager. Please refer to the section on Automated Benchmarking Systems for details. • The Company supports municipal engagement in OER and RIIB programs like vendor selection, engineering support, and implementation of upgrades through the energy efficiency programs. • The Company provides energy audits to select municipal/school/wastewater customers to support their EBF applications. In the past few years the Company has provided approximately 50 energy audits annually. For financing in this sector, the Company will continue to offer On-Bill Repayment for electric and gas measures. The Company and other partners such as OER assist RIIB with municipal projects currently enrolled in the EBF program, and on municipal projects that subscribe. The Company serves on the appropriate committees in order to ensure that customers have access to finance, that the process is easy, and that the Company and RIIB are working with customers in a coordinated way. Schools and municipalities will have access to the same processes that were developed for the State including consulting for procurement and product selection, retro commissioning, incentive calculations, new construction support and other services to ensure successful project installation.
Process	The process of participating in the State SEMP is the same as described above for other SEMPs.
Customer feedback	Some challenges with the schools include funding, timing, and collaboration of multiple stakeholders.
Participation and savings	In 2019, the public schools and municipalities are being added to the State SEMP. The schools portion of the SEMP is intended to ensure energy efficiency is considered as the schools set out to

	repair facilities as a result of the $250 million bond approved in November 2018 as well as continue to support the existing buildings not impacted by bond monies. Schools have the potential for saving up to 30% of their energy usage.
Changes for 2020	The inclusion of schools is new in 2019. The SEMP will target another 10% reduction in energy use, by the above stated facilities by 2022. The Company anticipates 10-20 school renovations in 2020 and 3-5 new construction school buildings per year under this SEMP agreement. In 2020 National Grid plans to assist the state SEMP with: • Continue to identify and prioritize projects from the scoping studies and retro-commissioning reports that have been completed thus far. • The Company worked with agencies and purchasing departments to develop three request qualifications and proposals that were awarded in 2019 for the fiscal year ending June 30, 2019. Multiple buildings included address HVAC, Lighting and Insulation measures. • The Company is also working with multiple State agencies on exterior lighting projects for 2020. In 2020, National Grid will continue to provide scoping studies (energy audits) and commissioning studies with the assistance of consultants, to create Request for Proposal documents coordinated with the agency and State purchasing. At this time, the Company is following multiple approaches to delivering energy efficiency based on building size and building function: • For smaller buildings, multiple measures such as lighting, HVAC and others will be bid out (with assistance from lighting auditors and consultants) and installed in multiple facilities.

	This will provide economy of scale for buildings, typically by agency. • For larger facilities, with similar needs (like lighting), multiple facilities and sites will be audited, specifications written, and an RFP will be developed and installed in multiple buildings. In 2020 the Company will work with RI Department of Education (RIDE), OER, Northeast Energy Efficiency Partnerships (NEEP), RI Infrastructure Bank (RIIB) – Efficient Buildings Fund and other interested parties to promote high performance and sustainability in K-12 public schools. In combination with the Efficient Buildings Fund (EBF) through RIIB and the Company's existing collaboration with municipal customers, the Company forecasts continued momentum in energy efficiency in the municipal sector. Support in 2020 will continue to include reviewing project submittals, supporting city/town Council approvals, implementation planning, reviewing efficiency project proposals, RFP development, and bidder selection. Although the MOU that includes work in the schools will be signed in 2019, a lot of the work will start in 2020. Under the State SEMP agreement, the Company will set goals with school districts with MOU agreements that roadmap comprehensive renovations and new construction projects, alongside energy efficiency improvements and energy goals. These efforts will be integrated with its efforts on EBF with RIIB. Schools are eligible for National Grid's Large C&I programs including services such as benchmarking, audits, technical assistance, design support, incentives for energy efficiency, strategic planning support and with writing RFP's for procurement of design and construction teams (Performance based Procurement: Accelerate Performance Program).

Rationale for proposed Changes	By targeting an additional 10% reduction in energy use by 2022, these facilities will save money that can be used for additional energy efficiency projects in the future. It was determined that adding K-12 public schools to the State SEMP is the most efficient way to work with this sector.
Notes	Building Operator Certification classes sponsored by National Grid in the Rhode Island and Massachusetts service areas are available to schools and many school facility managers have taken advantage of this program and follow up by actively engaging in energy efficiency solutions at their facilities.

g. On Premise Laundry Initiative

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 a lower operating temperature than standard models, where polymer beads replace water and with DrySmart 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 RMC is coming out with a new version of their technology called DrySmart 2, that 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 OPL 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.
Rationales for proposed changes	N/A

h. Equipment & System Performance Optimization

Eligibility criteria	The Equipment & Systems Performance Optimization (ESPO) Initiative is available to all C&I customers and offers three pathways to accommodate different sizes and types of facilities. This initiative falls under the Large Retrofit Program.
Offerings	Retro-commissioning provides an analysis of a building's efficiency level and when needed, allows the facility to be tuned up so as to operate more efficiently. • If a customer's facility has only a few selected changes that would be beneficial to implement, the Low Cost Options Track is probably the best path. This path provides incentives and technical support. Incentives are provided on a flat rate paid for each item identified and corrected. End-uses include HVAC, refrigeration, and steam. These common measures can be implemented by the customer's own staff, maintenance contractors, or retro-commissioning

	agents, and in place of weeks of pre- and post-implementation trend data, straightforward site-specific parameters are collected in order to estimate savings via "custom express" calculation tools. • If a customer's facility has multiple measures within the same system, the Targeted Systems Tuning approach is likely the best choice. HVAC system components tuning includes components such as chillers, cooling towers, economizers, air handlers, pumps, and simultaneous heating and cooling controls. These more traditional retro-commissioning pathways are expected to be implemented by dedicated retro-commissioning agents or customers with more advanced building management capabilities. Up to $12,000 is provided for investigative funding for annual usage of less than 5 million kWh. Up to $30,000 in investigative funding is provided for annual usage of 5 million kWh or greater. Incentives of $0.17 per kWh and $1.20 per therm saved are available. Bonus incentives of an additional $0.03 per kWh and $0.20 per therm are available when 2.75 % of annual electric savings and 1.5% of annual gas savings are achieved. • If a customer's facility is a large consumer of electricity (>5 MWh annual consumption) and could benefit from a comprehensive reassessment of its controls and operations, Whole Building & Process Tuning should be explored. The same investigative funding levels are available as track 2. The per kWh and per therm savings are the same as they are for the Targeted Systems tuning approach. Monitor based commissioning is encouraged. Monitor based commissioning is similar to the whole building approach. The customer installs software package linked to the BMS system. Monitor based commissioning

	software uses AI and advanced analytics to constantly monitor the system. The system identifies areas of improvement over time and alerts facilities personnel to faults in the system.
Process	A customer begins the process for ESPO by contacting their National Grid Sales representative. If it is determined that a retro-commissioning consultant is needed, the consultant will be brought in to provide an investigative report. Once the report is completed, the results will be shared with the customer. During the process, additional capital projects may be identified that increase energy savings and provide additional incentives. As with all custom projects, account and technical representatives will work with the customer and their implementers in order to identify the appropriate pathway in advance of undertaking a retro-commissioning project. In addition, the Company will facilitate transfer of information from the controls vendor to third party retro-commissioning vendors or TA vendors with some expertise in that area. The Rhode Island Products and Growth team will work with Massachusetts counterparts to encourage development of more expertise in this area.
Findings from 2019 program year activity	In 2019, the ESPO Initiative was updated to include the three pathways. Prior to 2019, the Initiative was known as Retro-commissioning/Pay-for Performance. The updated initiative was designed to appeal to more customers while being more user friendly.
Customer feedback	The old way was not working for customers. It took too long from the time they first expressed interest until the time they saw results. The Boiler Tune-up Initiative was challenged by customers often having a contract for maintenance which includes the services of a tune-up and the customer often did not want to get another contractor involved since they were already paying for this service.

Changes for 2020	In 2020, the Boiler Tune-up Initiative will be incorporated into the ESPO Initiative. Prior to 2020 the Boiler Tune-up was a separate initiative targeted to gas customers with large fire tube and water tube boilers.
Rationale for proposed changes	This is an attempt to simplify the offering to customers.

i. Lighting Designer Incentives (LDI)

Eligibility Criteria	LDI is offered to lighting design teams for qualifying New Construction/Major Renovations or Existing Buildings Performance Lighting projects, or projects qualifying under Sustainable Office Design (SOD) program. National Grid maintains a list of qualified Lighting Designers, as well as Engineers and Architects who have demonstrated at least 5 years of lighting design experience. National Grid markets the program to the construction and design community. Lighting designers cannot sell product for the project that they are receiving LDI. Lighting designer must have at least one of the following qualifications: • Lighting Certified (LC) – granted to those who successfully complete the NCQLP (National Council on Qualifications for the Lighting Professions) Lighting Certification Examination. • CLEP – certification from the Association of Energy Engineers (AEE) • IALD – International Association of Lighting Designers Professional Membership status. • CLD – the IALD sponsored Certified Lighting Designer, certification.

Offerings	This incentive goes directly to the lighting design team to fund their efforts to achieve lighting energy savings while maintaining quality lighting design. LDI is a sum equal to 20% of the customer lighting incentive offered for a project, up to a maximum of $15,000 per project that goes directly to the lighting designer.
Process	Lighting designer submits LDI application for a project- LDI will be paid in two installments: National Grid will pay 50% upon pre-approval of the customer application, and 50% upon confirmation of installation, at the same time the National Grid makes the customer incentive payment. National Grid will make the payment to the lighting design team lead. The lighting design lead may choose to split the incentive with additional parties. • For first LDI installment, lighting design team shall submit the attached Lighting Designer Incentive Worksheet and an invoice in the amount of 50% of the total anticipated LDI. Invoice should reference project name. • For second LDI installment, lighting design team shall submit a second invoice again referencing project name.
Customer Feedback	LDI needs marketing to the customer to inform them about the benefits of hiring a lighting designer.
Changes for 2020	Online Performance Lighting PLUS training will continue in 2020 and will target architects and engineers. The objective of the online training is to increase familiarity and participation in the LDI initiative.
Rationales for proposed changes	To increase participation and familiarity with the PL+ program.
Notes	LDI is not available for projects that participate in the RI New Construction Program's Whole Buildings Approach – whether participating in the Large Buildings or Small Buildings incentive path.

	A separate Design Team Incentive is available for project teams of qualifying Whole Building projects.

j. Customer Owned Streetlight Equipment

Eligibility criteria	The customer owned LED streetlighting initiative is available to any city or town in Rhode Island serviced by National Grid for electric service on the Customer Owned Equipment S-05 tariff (Rate S-05), as well as fire districts, municipal water utility boards, Kent County Water Authority, Rhode Island Commerce Corporation, Narragansett Bay Commission and the State of Rhode Island.
Offerings	Incentives of $0.15 per kWh of first-year savings for qualifying LEDs and $0.25 per kWh of first-year savings for qualifying controls associated with either the dimming or part-night run hours as set forth in the streetlighting tariff.
Process	A customer begins the process for purchasing their leased streetlights from National Grid by contacting their National Grid Community & Customer Manager. A suggested first step would be to indicate they are interested in getting an inventory of the streetlights and an estimated purchase price. This inventory is a non-binding opportunity for the customer to begin the decision-making process. If the customer opts to pursue the purchase of the streetlight assets, a notice to purchase is submitted to the Company and to the PUC as required by the legislation. A final value of the assets is calculated, and sale agreements are executed. Once the closing process is complete, the ownership of the assets is transferred from National Grid to the customer. Once the customer owns the streetlights, they can replace the older technology with LED lighting and controls. The municipal energy efficiency sales representative from National Grid will assist the customer in determining the energy savings and amount of incentive they can expect once the process is completed. The customer fills out an application form and once the lights have been installed, contacts National Grid for a post

	inspection. Once the post inspection is satisfactorily completed, the incentive can be mailed to the customer. Notification to the Community & Customer Manager with the completed location listing of the LED conversions is required for the billing system updates to realize any energy consumption savings.
Findings from 2019 program year activity	Nine towns that installed LEDs and received an incentive in 2018 for the streetlights expect to install the controls in 2019.
Participation and savings	To date, 17 towns in Rhode Island and three fire districts have completed the purchase of street lights. Of these towns, 5 have installed and completed the lighting controls installs and deployment. Eleven (11) other towns are in varying stages of controls installation completion. Most of these towns will complete and be paid their incentive for controls in 2019. For 2020, the projected estimate for savings is 3,066 gross mWh.
Changes for 2020	No program changes are anticipated for 2020.
Rationale for proposed changes	N/A
Notes	In addition to the incentives provided by the systems benefit charge mentioned above, OER provides grant funding to communities for LED street lighting. There is a $300,000 cap on the funding to individual cities and towns from OER. Rhode Island Infrastructure Bank's (RIIB) Efficient Buildings Fund (EBF) financing is also available to interested cities and towns.

k. Company Owned Street Light Equipment

Eligibility criteria	Eligibility for the incentive for company owned LED streetlighting is dependent on service on the 3 unmetered streetlight tariffs, S-06, S-10 and S-14 with exchange of an existing roadway or post-top style, Incandescent, Mercury Vapor or High Pressure Sodium Vapor sourced luminaire to one

	of the Company's LED offerings. The tariffs allow LED street or post-top fixtures to be available to all customer groups.
Offerings	Incentives of $0.15 per kWh of first-year savings for qualifying LEDs are available. All company owned street and area lights are operating at a dusk-to-dawn schedule.
Process	The customer contacts their Community and Customer Manager with their interest. The Company returns a billing inventory and estimated cost savings analysis for the customer to review. If the customer opts to move ahead with the lighting exchanges, a letter of intent is sent to the Community and Customer Manager. Accompanying the letter should be the billing inventory with the customer's LED options by location indicated. The Company will issue the replacement orders and install the lights. The energy efficiency sales representative will contact the customer and assist in the incentive application and payment process.
Participation and savings	About one hundred LED streetlights have been installed to date. Of the 21 towns mentioned above under customer owned, 4 of them are also considering the Company Owned option.
Changes for 2020	No program changes are anticipated for 2020.
Rationales for Changes	N/A
Notes	Currently, no energy efficiency incentive is available for the Company-owned controls option as the Company does not offer adjustable controls for billing other schedules such as part-night or dimming. A majority of street lighting customers in Rhode Island have either purchased their own street lights or indicated a preference for purchasing their street lights. Therefore, the volume of company-owned street lighting is on the decline. As a result, the number of company-owned street lights that would be eligible for controls if controls were made available is a small

	number. Additionally, the controls associated with street lighting represents only a small piece of a Company-wide Advanced Metering Infrastructure (AMI) system which would be designed to handle the core business of electric and gas metering. Although the Company is keeping a watchful eye on advancing technologies, the capital investment on the system will be prompted by other customers. However, the Company has a demonstration project in Schenectady NY to evaluate street lighting controls and their viability. Before networked lighting control advances at National Grid, decisions need to be made regarding selection of the control, the network provider, as well as integration into the current and/or future billing system. Like a multifamily building or leased commercial space where the tenant pays the electric bill, as long as the landlord (in this case, National Grid) approves the replacement, the customer leasing the street light will receive the energy efficiency incentive directly.

The table below reflects some of the similarities and differences between the two ownership options available to customers for solid state street lighting.

Distinction	Customer-Owned	Company-Owned
LED Fixture	Customer owns the equipment and is responsible for the purchase, financing, and maintenance	National Grid owns, installs, and maintains the equipment. The customer requests the exchange of existing or installation of new lighting
Energy Efficiency Incentive	Customer receives a one-time incentive payment for the installation of LED equipment (after satisfactory post-inspection by National Grid)	Customer receives a one-time incentive payment for the installation of LED equipment (after satisfactory post-inspection by National Grid.)

Distinction	Customer-Owned	Company-Owned
Purchase/Lease	Customer purchases the equipment	National Grid leases the equipment to the customer
Outreach	League of Cities and Towns, Annual Department of Public Works (DPW) meeting with Company, and various other meetings	League of Cities and Towns, Annual DPW meeting with Company, and various other meetings
Technical Support	Customer is responsible	Customer is responsible

l. Commercial Real Estate and Offices

Eligibility Criteria	Commercial Office Spaces
Offerings	Incentives, automated benchmarking services, promoting awareness of financial tools and "green leasing" resources that may help overcome the Tenant-Landlord Split.
Process	The Company will begin the year with a combination of email and direct mail outreach making sure both tenants, landlords, and property managers are aware of the suite of services we can provide to them to help them improve their spaces. We encourage customers to reach out to a resource who will assess their needs and decide which actions they should take in which sequence.
Customer Feedback	The Company has heard from long term tenants who would like to make EE improvements, but cannot do so in a way that is favorable to them due to lease terms.
Changes for 2020	The Company will ensure that both tenants and landlords statewide are aware of the wide variety of resources available to them though the Green Lease Leaders program, including one on one coaching, from the Institute of Market Transformation (IMT). Marketing pieces and "leave behinds" will be created for National Grid commercial sales professionals, landlords, and vendors. The Company will also work with IMT to host a "green lease" information session.

Rationales for Changes	Please see above in customer feedback

Overview

Commercial Real Estate (CRE) sector has specific challenges and barriers linked to the split incentive between building owners and tenants, and difficulty accessing decision makers. The Company serves this customer segment with specific services to engage customers, like benchmarking and finance tools, as well as specific incentives tied to office performance-based design approach that benefits both building owners and tenants.

Initiative Delivery

Benchmarking: The Company provides automated benchmarking services for commercial office spaces that allows building owners to be aware of their buildings energy use and compare it with that of its peers. After a facility has been benchmarked, National Grid has various resources to help its owners achieve lower energy consumption per square foot.

Commercial Property Assessed Clean Energy (C-PACE): C-PACE is an ideal tool for some commercial real estate owners and developers. It allows them to finance energy and related improvements in a way that is widely considered "off book" and can be passed through to renters in many types of leases. To advance the use of this unique mechanism National Grid works with the Rhode Island Infrastructure Bank (RIIB) and Sustainable Real Estate Solutions (SRS) to bring awareness to commercial building owners.

Sustainable Office Design: The Company markets the "Sustainable Office Design" (SOD) initiative to address Class A type office spaces. The Sustainable Office Design (SOD) initiative promotes high-performance office lighting and controls for quick turnaround tenant fit-outs. This is an easy to use, performance-based design approach that benefits owners or tenants with energy savings depending upon the lease arrangements. A fixed incentive per square foot along with a pre-set design criteria and lighting designer incentives will provide easy participation for the tenant fit-out projects.

Changes in 2020

The Company will continue to refine its automated benchmarking capabilities in 2020. National Grid will work with partners such as the City of Providence, Chambers of Commerce, and other entities to ensure that customers are aware of this tool as well as its benefits.

The Company will ensure that both tenants and landlords statewide are aware of the wide variety of resources available to them though the Green Lease Leaders program, including one on one coaching, from the Institute of Market Transformation (IMT). Marketing pieces and "leave behinds" will be created for National Grid commercial sales professionals, landlords, and vendors.

In 2020, the Company will continue to inform owner occupied buildings and landlords of multi-tenant spaces of the potential of Community Property Assessed Clean Energy (C-PACE) as a mechanism for financing building improvements.

m. Multifamily

Eligibility Criteria	See Attachment 1, Section 3, for information. In addition to what is listed in Attachment 1, Section 3, the multifamily program provides joint residential and commercial energy services to condominiums and apartment complexes for energy efficiency upgrades with no cost audits. The multifamily C&I program also serves customers like non-profits, group homes and houses of worship that traditionally do not fit within the predefined program structure.
Offerings	See Attachment 1, Section 3, for information. In addition to what is listed in Attachment 1, Section 3, The C&I multifamily program specifically offers incentives for master metered gas measures that typically include boiler upgrades, reset controls and insulation and air sealing. The remaining areas are addressed through residential incentives via a common point of contact such as a property manager or building owner to comprehensively service the facility.
Process	See Attachment 1, Section 3, for information.

	In addition to what is listed in Attachment 1, Section 3, note that the program coordinates with the Residential New Construction program, Multifamily electric programs and the Small Business program.
Customer Feedback	See Attachment 1, Section 3, for information.
Changes for 2020	See Attachment 1, Section 3, for information.
Rationale for proposed Changes	See Attachment 1, Section 3, for information.

n. Extended Care Facilities such as Nursing Homes/Assisted Living

Eligibility criteria	The extended care market sector includes nursing homes, assisted living facilities and rehabilitation facilities.
Offerings	Offering for this Initiative include: lighting, HVAC improvements (including heat pumps), envelope improvements, energy management systems, energy efficient laundry systems, and Combined Heat and Power (CHP). Commercial Property Assessed Clean Energy (C-PACE) can be used as a financing tool. C –PACE further defined in the "Affordability and Financing" section below, allows customers access to low cost private capital for terms that greatly exceed most conventional business loans. It also allows the customer to capitalize all costs related to the project. This means that the Company now has a solution to the largest barrier to moving forward with deeper and broader efficiency measures in this segment.
Process	Interested customers contact the Channel Sales representative who handles energy efficiency sales for medium sized businesses.
Customer feedback	The vast majority of these facilities either did not have the resources or did not want to prioritize the resources to

	investigate energy efficiency opportunities, even with a generous cost share, let alone act on them.
Participation and savings	This market segment presents challenges to participate in comprehensive energy efficiency.
Changes for 2020	The messaging to this market sector can now lead with the financial solution, as that has historically been a significant hurdle to implementation.
Rationale for proposed changes	Now that C-PACE is available, it's time to take another look at this market sector for energy efficiency.

o. Farm/Agriculture

Eligibility criteria	The Farm and Agricultural Initiative is available to any farm or agricultural National Grid customers within the state of Rhode Island regardless of energy source including delivered fuels. National Grid will cover electric and natural gas energy efficiency incentives in accordance with Company policies. These upgrades will be done with prior approval of landlord, where appropriate.
Offerings	Lighting, HVAC improvements (including heat pumps), envelope improvements (weatherization, air sealing, insulation), equipment upgrades including refrigeration, pumps and motors, and ventilation. Now Commercial Property Assessed Clean Energy (C-PACE) can be used as a financing tool. C –PACE, further defined in the "Affordability and Financing" section below, allows customers in participating communities access to low cost private capital for terms that greatly exceed most conventional business loans. It also allows the customer to capitalize all costs related to the project. The Company recognizes that financial assistance can help small businesses, including agricultural ones, to move forward with energy efficiency projects and is committed to helping them access affordable options. In addition, farmers may be eligible to participate in USDA REAP

	loans and grants[3] as well as the RI Agricultural Energy Program grant.[4]
Process	Through targeted outreach or website,[5] customers can call the vendor to schedule an energy audit at no cost. The audit report will provide recommended measures tailored to the customer's situation, including equipment focused on agriculture.
Findings from 2019 program year activity	Program awareness in the market is not as high as expected. Those who have utilized incentives have seen significant savings and benefits to their operations.
Customer feedback	Incentives have been critical to get customers to move forward with energy efficiency measures. The process took a long time from audit to installation. Customer awareness could be improved.
Participation and savings	As of September, for the 2019 program year, four customers have had energy audits completed and an additional three customers are in various stages of pre-inspection or installation.
Changes for 2020	Develop an agriculture focused customer list and deliver targeted messaging to farmers. Develop a Farm focused section on the National Grid website to inform customers about the program and incentives, as well as to share other resources. Explore simplifying the initiative for those customers who have multiple meter types including a mix of residential and commercial accounts.
Rationale for proposed changes	The agriculture segment of the market has not embraced participation at the same levels as others and so targeted outreach and additional online resources will increase participation. Increasing participation will ensure equitable

[3] https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency
[4] http://www.rifarmenergy.org/ri-ag-ep.htm
[5] http://www.energy.ri.gov/policies-programs/programs-incentives/feep.php

	access to programs and incentives, which is a goal for the Company and stakeholders.

p. Combined Heat and Power Initiative

Eligibility criteria	To qualify for a CHP energy efficiency incentive, a proposed project, no matter the size, must meet the following conditions:
	• Host customers must be in the franchise service area of the Company.
	• Proposed systems must either be (i) thermal leading and sized so the recoverable heat can be used to offset other facility thermal loads and generate electricity as a by-product, or (ii) using waste energy or waste heat to generate electricity.
	• Both new construction and retrofit installations are eligible; in either case, the baseline system must be documented.
	• The overall minimum total system efficiency of the proposed CHP units must be 55% or greater.[6] System efficiency is calculated as Annual Useful Energy/Annual Natural Gas Input where
	  ○ Annual useful energy = Net Annual kWh*3,413/100,000 + utilized thermal output (therms)
	  ○ Annual natural gas input = CHP gas input in therms (HHV)
	• The equipment to generate electricity may be an internal combustion engine, gas turbine engine, steam turbine, back

[6] The RI DEM's Air Quality Regulations (http://www.dem.ri.gov/pubs/regs/regs/air/air43_12.pdf; Page 11) set a minimum system design efficiency of 55% for CHP to be eligible to apply for Emission Credits. As noted in the incentive levels section below, a higher energy efficiency incentive is available for systems with efficiencies of 60% or greater.

	pressure turbine, or fuel cell and the facility will capture waste heat for use in the facility. Any size wasted energy systems and back pressure or extraction turbines can qualify. For these facilities to qualify the following conditions must be met: • Host customers must be in the franchise service area of the Company, • All thermal and electric output of the CHP facility should be used on site, • While it is expected that most of these applications will be retrofit, both new construction and retrofit installations are eligible; in either case, baseline system must be carefully documented, • The project must pass cost effectiveness screening. These systems are designed to take advantage of existing on-site wasted energy or inefficient processes. Therefore, there is no minimum total system efficiency requirement.
Offerings	If a project has been shown to be cost effective, presents no capacity or reliability concerns, and has met the required eligibility criteria, it will be eligible for non-variable incentive. An additional incentive tier will be available to CHP projects where the host customer also commits to implementing energy efficiency measures representing at least 5% of the site energy use or the maximum load reduction identified in the Technical Assistance Study, whichever is less.[7] A customer may be treated as having made this commitment to energy efficiency if they have made investments to achieve similar load reductions through energy efficiency within the previous five years.

[7] If CHP facility sizing is determined by electric load (or not constrained by either electric or thermal load), the requirement will be 5% of electric usage; if the facility sizing is determined by thermal load, the requirement will be 5% of thermal energy usage. The energy efficiency measures will themselves be eligible for incentives, and are not part of the CHP incentive package cap described.

Please use the table below to determine the non-variable incentive levels available for CHP project.

Wasted energy, back pressure turbines, and extraction turbines	$900 per net kW
CHP with total system efficiency ≥55% - <60%	$900 per net kW
CHP with total system efficiency ≥55% - <60% with customer implementing energy efficiency measure equal to 5% of site energy or maximum load reduction	$1,125 per net kW
CHP with total system efficiency ≥60%	$1000 per net kW
CHP with total system efficiency ≥60% with customer implementing energy efficiency measure equal to 5% of site energy or maximum load reduction	$1,250 per net kW

- The CHP system costs must include: all system, auxiliary, and interconnection costs, and CHP maintenance. If the CHP system is receiving a tax credit or other financial arrangement that reduces the cost of the CHP project to the customer without distributing that cost reduction as an additional cost to other electric or gas ratepayers, it may be treated as a credit against the cost of the CHP project.

- The CHP incentive package cap from the Company will be 70% of the total project cost inclusive of the installation incentive, incentives related to gas service, present value of any performance incentive, system reliability procurement incentive, and any other incentives related to the transaction. For new construction installations, the

	incentive cap will be 70% of the incremental cost difference between the cost of what would have been done absent the CHP project and the cost of the CHP project. In the event the incentive is greater than 70% of the total project cost, the incentive amount will be reduced to an amount equal to or less than 70%. • A minimum of 20% of the energy efficiency incentive payment will be held until commissioning is completed. • An additional optimal operations and maintenance energy efficiency incentive, capped at $20/kW-year ($1.66/kW-month) for a period of up to ten years, will be offered as part of the incentive package for any project with a net output greater than 1 MW. No payments will be made until the unit is in operation and provides demonstrated load reduction, and will be made semiannually based on actual metered load reduction. Load reduction performance will be based on the net daily metered kW output of the system during ISO-New England's on-peak periods averaged over each six-month period. o The optimal operations and maintenance energy efficiency incentive provides the customer with a post-commissioning incentive for maintaining or increasing the total system efficiency of the CHP system. This helps ensure the system is operating efficiently and that the system's capacity savings are in-line with those bid in to the ISO-NE Forward Capacity Market. • The customer will repay a portion of the incentive to the Company if the project is abandoned, removed from the premises, sold, or otherwise no longer utilized as the primary source of heat and electricity by the customer, within 10 years from the date of final incentive payment authorization. The repayment will be the energy efficiency

	installation incentive times the number of years remaining until the required ten years of service divided by ten. • In 2020, the Company will look to establish a prescriptive measure for small CHP systems, e.g. fewer than 35 kW.
Process	**Identification and Recruitment of Qualified CHP Projects** The Company currently works with vendors and customers to identify CHP opportunities at customer locations. The Company promotes CHP systems and outlines the process for qualification and implementation of CHP facilities through the Company's energy efficiency programs. The Company has sales and technical staff that are the primary points of contact for customers and vendors with potential CHP projects. The Company will continue to communicate criteria for CHP assessment and will communicate to vendors so that their presentations to customers will be more consistent with Company technical assistance requirements. **Targeted Outreach and Support for Potential CHP Customers** The Company believes that significant savings can be generated with this technology in the coming years. The Company is focused on developing a pipeline of projects for small, medium and large customers. The Company has a CHP program manager who helps customers navigate the technical and procedural aspects of bringing a CHP unit online. The Company also works with a TA vendor that provides assistance in identifying and executing CHP projects. In addition, the Company works with CHP vendors to offer RI customers smaller CHP units where installation and operations are turn-key. Furthermore, in 2016, the Company introduced a CHP manual to assist customers who are deciding if CHP is an option for their facilities. Other strategies that will enhance CHP acceptance will also be considered, such as: preparing and distributing case studies, providing plant operator

	training, and providing easier customer access to CHP unit performance data. Link to the manual: http://ngrid.com/ri-chp Installation of Incremental or Additional Energy Efficiency Measures for Customers who have Previously Installed CHP The Company will individually review the installation of proposed incremental energy efficiency measures for customers who have previously installed CHP on site or who are adding additional energy efficiency equipment that might affect the performance of an existing CHP unit. The Company will carefully categorize and protect the benefits attributed to previously installed CHP projects, while at the same time foster any additional cost-effective energy efficiency measures that further reduce total energy use. There are two types of project categories. The first category is "CHP Optimization" and involves measures which are installed with the purpose of increasing the output or operating efficiency of the existing CHP or other distributed generation (DG) unit; for example: the addition of combustion air precooling on a gas turbine CHP unit. In order to maintain compliance with ISO-NE's FCM rules, such projects will be tracked in the FCM, if applicable, as incremental output of the associated DG facilities. The second category is "Incremental EE", which includes "traditional" energy efficiency measures installed with the intent of reducing energy consumption in sites that have previously installed CHP. These measures may or may not affect CHP performance and output. For locations where an existing CHP unit covers a large percentage of the total load at the facility, additional energy efficiency savings measures installed may result in lowering the output of the CHP system instead of a load reduction on the Company's electric grid. Therefore, to assess savings that can be claimed by the energy efficiency programs, hourly load mapping may be required to accurately assess the net savings on the Company's electric and gas distribution systems, which will be assessed at the Company's electric and/or gas revenue meters at

	the customer's site. In cases where a typically electric measure (like lighting) reduces the electric load enough to require reducing the CHP output, gas savings may result from a normally electrical energy efficiency measure and could be claimed in the Gas utility DSM programs **Scoping Study/Qualification** The Company will offer technical assistance on CHP projects beginning with a preliminary scoping of a potential site. This scoping will be based on an evaluation of: • Monthly (or hourly, where available) electric, gas, and other fuel usage • All site-specific forms of thermal energy end uses • Coincidence of electric and thermal loads • Proposed project cost • A high-level analysis of the fuel resources needed for the project and any actual or anticipated fuel capacity constraints and/or actual or anticipated fuel reliability issues This scoping will determine if further study of the site appears favorable, i.e., provides CHP operating hours and load factors that would be an appropriate application of CHP. **Technical Assistance Study** Assuming a favorable screening during preliminary scoping, National Grid will offer to co-fund a TA study of CHP with the customer. The TA study will be performed by an independent, qualified engineering firm. This study will assess thermal and electric loads, propose an appropriate CHP size and technology, compile a budget cost estimate, and identify potential barriers to the technology, etc. National Grid typically funds 50% of the cost of any TA study conducted by a preferred vendor selected by the Company, and up to 50% of the TA for other qualifying independent engineering firms. Any TA study by a CHP vendor or its representative which fulfills the CHP TA requirements may be accepted, though no co-funding will be provided. The TA study must be completed, submitted, and approved by the Company

	prior to implementation. The TA study must include an assessment of the likely on-peak kW reduction from the CHP given the proposed nameplate rating, the net CHP output after subtracting parasitic loads associated with the CHP, projected availability based on anticipated site-specific operating characteristics, performance data on other similar units, and a greenhouse gas analysis that estimates the change in greenhouse gas emissions expected from the project and a statement that informs the customer of the state goal to reduce greenhouse gas emissions by 80% below the 1990 levels, by 2050. (On-peak kW reduction = Net Output x Availability x % Loaded.) This kW load reduction should be used in the benefit-cost screening. As indicated in the offering section, a larger incentive is available for CHP projects that include the implementation of energy efficiency measures at the host facility. If the customer wants to meet a higher tiered incentive and did not previously qualify for that higher tier, the company could include another review. This review would propose measures to fulfill that requirement with new energy efficiency opportunities. These opportunities themselves will be eligible for energy efficiency incentives and will help make sure that the CHP facility is correctly sized for the facility's needs and will avoid creating a disincentive for future load reduction at the site. **Cost Effectiveness** [National Grid note: While the company believes that it has an agreement in principle on the following 'Cost Effectiveness' paragraph with key stakeholders, specific language is still being reviewed and could be subject to change in the final version of Plan text] The screening for cost effectiveness specific to CHP is included in the Rhode Island Test included as Attachment 4. The Company will provide two applications of the benefit cost screening for CHP

	systems with a net output greater than 1MW, one test that includes the Rhode Island Test and one application that excludes the economic benefits. If the application of the screening test for the project would not pass without the economic benefits included, the Company will provide a written and well-supported justification explaining why the economic benefits are reasonably likely to be obtained. **Other Contract Terms and Guidelines** In order to ensure proper operation of the CHP facility and persistence of energy savings, the following terms and guidelines will be required: • Minimum requirements document. As part of the TA study, a minimum requirements document ("MRD") will be developed. This MRD will contain engineering hardware and operational specifications that directly affect the savings estimates developed in the TA study. Compliance with the MRD will be necessary to receive rebate payments. • All systems greater than 1MW will require electric, thermal and gas metering for commissioning and monitoring of system efficiencies. • The project must be commissioned. Commissioning is a process following installation whereby a third party verifies that the project is installed and operating as detailed in the TA study and MRD. • The customer must sign and produce a contract for O&M services through the first planned major overhaul of the CHP unit after post installation commissioning. On-going O&M contracts for a minimum of ten (10) years from project commissioning are recommended. • The customer must apply for interconnection service as soon as practical and not operate the unit until they receive the authorization to interconnect from the Company. • As noted in section 5.a.i. of the Plan, kW-demand savings achieved via the electric energy efficiency programs,

	including CHP, will continue to be reported by the Company to ISO-NE as Other Demand Resources ("ODR") and the revenue generated will be used to fund future energy efficiency projects through the Company's programs. **Delivery Service Tariffs Applicable to CHP Installations** Customers receiving an incentive payment for installation of CHP will be billed for delivery service charges on the appropriate general service tariff. The Company's general service tariffs, Rates G-02, G-32 and G-62, include a CHP Minimum Demand Provision for those CHP installations that receive an energy efficiency incentive pursuant to this Plan. For Customers subject to this CHP Minimum Demand Provision, the monthly Demand will be the greater of a) the Demand as normally defined under the tariff provisions; or b) the Minimum Demand, which shall be 50% of the greatest fifteen-minute reading from the Customer's generation meter(s) as measured in kilowatts during the month. The Customer Charge, Transmission Demand Charge, all per kWh charges and any other applicable charges and credits will be in addition to the Minimum Demand Charge. This rate treatment is designed to mitigate the cross-subsidies from other customers in the same rate class. The Company believes it is very important to ensure that a customer who is receiving incentives through the energy efficiency program continues to pay a fair share of the costs of the distribution system upon which the customer will continue to rely when the CHP unit is off-line. **Qualification** The cost of the project will be provided by a design/build or general contractor experienced with CHP projects and revised as necessary. **Options for CHP proposal that fails cost effectiveness testing** If a CHP project does not pass the benefit-cost test, the Company will work with the customer to develop other solutions that may

still support the CHP facility. Such other solutions may include one or all of the following:

- Re-analyzing the optimal size of the CHP unit, or the number of generators. A different sized CHP unit might provide better efficiencies and pass the benefit cost test.

Identifying other load reduction opportunities at the facility. Benefits can be garnered from load reduction in lieu of achieving that load reduction through CHP.

Attribution of CHP Energy Savings to the Company (National Grid)

For CHP projects 1 MW or greater in size that meet the eligibility criteria, 100% of the project savings shall be attributed to the energy efficiency programs. For CHP projects smaller than 35 kW, the Company shall use the latest net to gross adjustments determined by impact evaluations conducted on the RI CHP programs. These evaluations shall be conducted at least once every five years.

Notification Process

The Company shall inform the DPUC, OER, and EERMC of any CHP project with a net output of 1 MW or greater (where net is the nameplate MW output minus CHP auxiliary kW). The notification shall occur after the cost benefit screening and before the offer letter is presented to the customer. For CHP projects with a net output of 1 MW or greater, the Company shall submit the following documents for review by the Division:

- Documentation demonstrating that the project would not move forward without energy efficiency technical assistance and/or incentives. The documentation shall justify its finding with the following evidence:
    - A letter signed by a senior executive or site operations manager stating that the project

	would not move forward without the energy efficiency technical assistance and incentive; ○ Documentation from the customer on all relevant leases, agreements or commitments related to the CHP system or incentive offer; ○ Estimated project budget. • A complete benefit cost analysis for the CHP project using the Rhode Island Test, as well as application of this test applying sensitivities related to the removal of economic benefits • A report including a natural gas capacity analysis that addresses the impact of the proposed project on gas reliability; the potential cost of any necessary incremental gas capacity and distribution system reinforcements; and the possible acceleration of the date by which new pipeline capacity would be needed for the relevant area. For any proposed CHP project greater than 1 MW: • The Company will submit a project description to the Division, providing all the pertinent details relating to the project. • The Division may submit information requests to the Company at any time after receipt of the project description. The Division may also submit follow up data requests, as needed. • The Company shall respond to all information requests as soon as reasonably possible, but no later than fourteen days from receipt of information requests, unless the Division grants an extension. • The Division will make all reasonable efforts to communicate decisions around the provision of a

	notification of support within thirty days of the receipt of the last set of information request responses received from the Company. • To the extent that additional review time is required, the Division will provide notification to the Company. • If at the end of fifty days from the date the Company provided the project description to the Division, the Division has not provided to the Company its opinion of support or opposition to the project, the Company retains the right to make a filing with the Commission seeking approval of the CHP incentive. The Division retains its right to take any position on the project it deems appropriate and shall not be prejudiced by the fact that it did not provide an opinion to the Company within the fifty day period. • Even if the Division provides its opinion to the Commission that the Division supports the CHP project, the Company must file a notification with the Commission, setting forth the pertinent facts relating to the project. If (i) the Commission takes no action within thirty days and (ii) the Division or any other party has not objected to the proposed project, the project will be deemed approved. If the Division or any other party objects, the Commission will set the matter for hearing.
Customer/ vendor feedback	In 2019, two vendors provided feedback. Both vendors sought prescriptive measures for smaller systems and asked to make the process easier to navigate.
Participation and savings	For 2020, the Company will continue to offer a CHP incentive. In 2020, the Company's emphasis will be on increasing the support for qualifying efficient CHP projects through the energy efficiency programs, as intended by the legislation. Due to the high capital cost and technical requirements of installing CHP, there is a very long lead time for a successful installation. With small numbers of projects and wide ranges of possible project sizes, the Company anticipates substantial variability in MW realized in any given

year. For 2020, the Company is proposing a target of 630kW of installed capacity that is expected to correspond to approximately 4,089 MWh of savings. As of September 2019, the Company has knowledge of the following, estimated, pipeline of CHP projects in Rhode Island which have initiated a Technical Assistance Study and are expected to leverage energy efficiency incentives.

Customer Name or Company Name*	Approximate Size of CHP (MW and annual MWh)	Location Information			Current Status (Scoping, Study, Under Construction, Post-Inspection or Commissioning)	Estimated Year(s) in which the Company will claim energy savings
		Feeder	Substation	Gas Line ID		
N/A	630kW 4,089 Annual MWh	59-53-20F1	Phillipsdale Substation	153-Providence, RI	Under Construction	2020

*Customers and/or Companies may opt-out of disclosing their names in this table. If a customer or company has opted-out their names have been redacted in the table above. The Company will provide a confidential pipeline table without redacted names to the PUC, DPUC, and/or OER, if requested.

The Company commits to updating this pipeline table in each annual Energy Efficiency Plan and reconciliation filing to the PUC going forward. Direct notification shall be sent to the Division of Public Utilities & Carries, the Office of Energy Resources, and the Energy Efficiency and Resource Management Council via email whenever a CHP project with a net output of 1 MW or greater is added, removed, or updated after the Technical Assistance Study has been initiated.

Changes for 2020	In 2020, a notification process will be required for CHP systems with a net output greater than 1 MW. The notification process is detailed in the CHP Process section, under Notification Process.

	The Company has changed the incentive values to non-variable tiers that are determined by system type, total system efficiency percentage, and whether the customer has made/or will make a commitment to energy efficiency. The Company will also provide an estimated pipeline of CHP projects to the Annual Plan. Additionally, the Company will include in the Technical Assistance Study a greenhouse gas analysis that estimates the change in greenhouse gas emissions expected from the project.
Rationale for proposed changes	The proposed changes to the 2020 CHP program are intended to provide more transparency and to ensure that natural gas constraints are appropriately considered when developing a CHP project

q. Products Offered Through "Upstream"

When the Company refers to an "Upstream" initiative it is referring to the practice of offering an incentive directly to a manufacturer or distributor (mainly distributors in Company initiatives) of efficient equipment instead of offering an incentive to the customer through an application form after the sales transaction has been made. This allows them to sell the product for less and make it more appealing to a potential customer. It also allows the customer to acquire this more efficient equipment without the burden of paperwork and waiting for reimbursement. It is also often a more cost-efficient way to deliver savings to the program.

i. Upstream Lighting

Eligibility criteria	The Upstream Lighting initiative is available to all commercial customers.
Offerings	Discounted luminaires, luminaires with controls, lamps, and controls at the point of sale at qualified distributors.
Process	Please see diagram below
Customer feedback	No direct customer feedback
Participation and savings	15,215 Net MWh (144,201 approx. units. They include lamps, retrofit kits, controls, luminaires, and luminaires with controls)
Changes for 2020	This initiative will add new lamps and luminare types in 2020. These include – • 3' and 8' TLEDs

	• Parking Garage and Canopy Fixtures Once incentive levels and savings are determined by National Grid and its MA Program Administrator (PA) partners it is likely that the luminaires and controls below will be added to this initiative. They are – • Occupancy and wall sensor controls • High bays with controls
Rationale for proposed changes	Increased customer choices

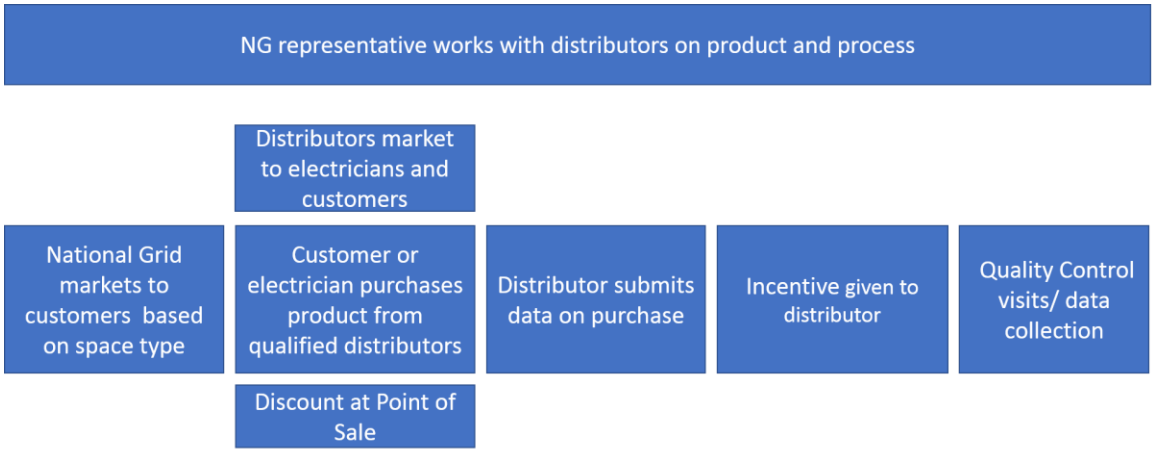

Figure 8: Upstream Lighting Process

ii. Upstream HVAC

Eligibility criteria	The Upstream HVAC initiative is available to all commercial customers.
Offerings	Discounted premium efficiency HVAC equipment and controls at the point of sale at qualified distributors including air-cooled air conditioning and heap pumps systems, water-cooled air conditioning and heat pump systems, ductless mini and multi split systems, variable refrigerant flow systems, as well as dual enthalpy economizer controls and electronically commutated motor (ECM) circulator pumps for hydronic heating or service hot water applications.

Process	Similar to lighting. Please refer to Figure 8
Customer feedback	No direct customer feedback
Participation and savings	830 MWh (134 units)
Changes for 2020	In 2020, National Grid's goal will be to strengthen the marketing and training to end use customers and installation contractors. Customer outreach methods, tested in 2019, including social media and direct mail, will be used to help promote the initiative in 2020. This initiative will add two new measures for 2020. They are: • Upstream HVAC Clean Water Pump • High Efficiency Condensing Units
Rationale for proposed changes	Additional savings and increased customer choice.
Notes	The savings from of the upstream HVAC products will be calculated from new construction baselines, not retrofit.

iii. Upstream Gas

Eligibility criteria	The Upstream HVAC initiative is available to all commercial customers.
Offerings	Discounted premium efficiency water heating equipment at the point of sale at qualified distributors. The 2020 offering will be – WATER HEATER – INDIRECT WATER HEATER - ON-DEMAND 94 Water Heating Boiler - 94% TE COND WATER HEATER 94%MIN 75-300
Process	Similar to lighting

Customer feedback	No direct customer feedback
Participation and savings	59,660 Therms, 2000 units
Changes for 2020	The following measures will be eliminated in 2020 - WATER HEATER - ON-DEMAND 82 WATER HEATER - ON-DEMAND 90 WATER HEATER TANK 0.67 EF Water Heating Boiler - 85% TE CONDENSING WATER HEATER 90% MIN 75-800
Rationale for proposed changes	Eliminating some lower efficiency measures to help transform the market.
Notes	In 2020, the Company will continue working closely with its partner Energy Solutions to increase unit throughput and distributor participation. Energy Solutions, will continue to sign up new distributors, train them on the initiative, provide return on investment sales training to sales staff, and promote the initiative out in the industry and throughout the state. The savings from the upstream gas equipment product will be calculated from new construction baselines, not retrofit.

iv. Upstream Kitchen Equipment (Electric and Gas)

Eligibility criteria	The Upstream Kitchen Equipment initiative is available to all commercial customers.
Offerings	Discounted premium efficiency electric and gas kitchen equipment at the point of sale at qualified distributors. National Grid currently offers more than 9 different types of energy efficient cooking equipment across both fuels.
Process	Similar to lighting. Please refer to Figure 8

Customer feedback	No direct customer feedback
Participation and savings	77 MWh and 110,600 Therms (422 units)
Changes for 2020	The following refrigeration products will be added in 2020 – Refrigerator, Glass Door, <15 ft3, Electric Refrigerator, Glass Door, 15-29.9 ft3, Electric Refrigerator, Glass Door, 30-49.9 ft3, Electric Refrigerator, Glass Door, ≥50 ft3, Electric Refrigerator, Solid Door, <15 ft3, Electric Refrigerator, Solid Door, 15-29.9 ft3, Electric Refrigerator, Solid Door, 30-49.9 ft3, Electric Refrigerator, Solid Door, ≥50 ft3, Electric Freezer, Glass Door, <15 ft3, Electric Freezer, Glass Door, 15-29.9 ft3, Electric Freezer, Glass Door, 30-49.9 ft3, Electric Freezer, Glass Door, ≥50 ft3, Electric Freezer, Solid Door, <15 ft3, Electric Freezer, Solid Door, 15-29.9 ft3, Electric Freezer, Solid Door, 30-49.9 ft3, Electric Freezer, Solid Door, ≥50 ft3, Electric
Rationale for proposed changes	Increased savings and customer choice

7. Small Business Direct Install 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 scheduled time. 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. The tool the Company and its partners will be using can be found here - https://www.epa.gov/ejscreen 3. Exploring the deployment of heat pump water heaters 4. Explore the door to door direct install and audit scheduling model where potential savings are substantial enough to support this effort. This will require the Company to cross reference Upstream participation data and previous SMB participation data.

	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 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 run 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 Technical Working Group, suggestions made by the Consultants to the EERMC, and vendor feedback.
Upcoming evaluations	There are no scheduled evaluations for this specific program. However, the constituent parts of this program such as Custom, Lighting, and HVAC are evaluated on a regular basis. Customers participating in this program may be tapped to participate in the free ridership and spillover study being done in 2020. See Attachment 3, section 3.1.e. In 2020 there are plans for a gas peak demand study which will look at creating load shapes of gas use by end use. See Attachment 3, section 3.3.c. for more information. There is a cross-cutting heat pump market assessment study planned for 2020 which includes this program. See Attachment 3, section 3.3.a. for more information.
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

a. Goals

Fuel	Annual MWh (Electric)	Annual kW (Electric)	Total Net Lifetime MMBtu (Electric Gas, Oil, Propane)	Budget ($000)	Partici-pation
Electric	11,500	1,347	326,089	$7,88.1	693

Fuel	Annual MMBtu (Gas)		Total Net Lifetime MMBtu (Gas)	Budget ($000)	Partici-pation
Gas	2,523	0	17,662	$125.0	59

8. Finance as an Enabling Strategy

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 the 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.

- 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.
- The Company is committed to exploring a United States Department of Agriculture (USDA) Rural Energy Services Program (RESP) loan, through the programs or the Council, to expand the On-Bill Repayment mechanism without the need for future ratepayer injections.
- National Grid will develop a 5-year financing plan and present it to the Council and The Technical Working Group prior to filing the next three-year plan.
- National Grid will develop a common reporting platform for the Efficient Buildings Fund (EBF) on which RIIB, OER, and 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 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
More information	National Grid's revolving loan fund projections for 2019 are illustrated in Attachment 5, Table E-10 and Attachment 6, Table G-10.
Relevant notes	**Status of Financial Test 1:** The Company hypothesized that it could use the attractiveness of the OBR mechanism to help reduce incentive costs. National Grid reserved approximately one third of its EBF funds for this purpose. 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 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 the Company found that the amount of savings was small over the 18-month period, $91,290, achieved savings from customers such as schools and public buildings, and created ill will with customers. The Company plans to terminate this test at the end of 2019.

b. On Bill Repayment (OBR) – Gas

Customer type	All commercial gas customers

Max loan size	$1,000 to ~$100,000 (may be larger for SEMPs or special projects)
Maximum Tenor	3 years for commercial accounts, 5 years for State facilities
Loan Volume	Variable, between $1MM and 1.5MM 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
Notes	Potential Injection The company is still considering requesting an injection into this fund. If OBR cannot be supplemented by the United States Department of Agriculture (USDA) Rural Energy Services Plan (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. In 2019, the Company has committed $600,000 for a boiler plant upgrade at a private university. This combined with estimated loans of $2MM in 2020 leave the Gas OBR fund with a negative $300,000 balance toward the later part of 2020.

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, ~$18MM loans outstanding to date - more detail is available in Table E-10

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
Description	The Efficient Buildings Fund (EBF) is a long-term, low-cost financing option for municipalities and quasi-public agencies to complete energy efficiency and renewable energy projects. Specifically, EBF offers loans no less than 20% below the borrower's market rate of financing. EBF is administered in partnership with RI OER and the Rhode Island Infrastructure Bank (The 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. National Grid provides technical and logistical support to customers, principally municipalities, in the following areas - 1. National Grid arranges and incentivizes scoping studies at 100% of cost. The Company also assists customers with paying for more advanced engineering reports that provide more precise savings and cost information necessary to execute an upgrade with confidence. National Grid typically covers 50% of the cost of this report. The Company refers to these reports as Technical Assistance (TA) studies. 2. National Grid also assists municipalities by helping them issue and evaluate Requests for Proposals (RFPs). This includes, but is not limited to, developing an appropriate scope of work, developing technical requirements, supporting coordination between vendors and the

	municipality, and helping to review submitted bids. This is a vital service as municipalities do not have the resources to do this on their own. 3. National Grid funds and manages a University of Rhode Island (URI) fellow who has been a critical element in getting Rhode Island schools benchmarked on the Environmental Protection Agency's (EPA) Portfolio Manager platform. This benchmarking gives schools and municipalities insight into where they might want to prioritize energy efficiency upgrades. 4. National Grid's municipal sales representative works closely with OER and RIIB though virtually every step of the process from the promotion of EBF to post inspection of installed measures. Leads on potential projects may start with National Grid or OER or RIIB. **Program outcomes** EBF provides upfront loans rather than reimbursable incentives given upon project completion. (Customers who borrow money through EBF still receive incentives from the Company if they are eligible to do so.) In EBF, finance agreements are entered into prior to the construction work commencing, typically after procurement. EBF ensures that the municipality will have capital available to invest in the project and not have to self-finance a project while waiting for a reimbursement. EBF loans are often large and EBF projects can have long construction timelines. Potential timing delays include long municipal approval timelines, construction related delays and other delays due to project intricacies. However, the complex projects in this program unlock deeper energy retrofits than would otherwise be possible. An upfront loan structure greatly enables projects that would otherwise face financing barriers. The drawbacks to an upfront loan structure include 1) the potential for lag between when financing closes and when the project begins and 2) accounting difficulties concerning when funding is allocated and when energy savings are realized. However, EBF attempts to mitigate the chance of construction delay by prioritizing shovel ready projects, and accounting difficulties can be overcome through careful

program administration. In general, for this program the benefits of upfront financing are thought to outweigh the drawbacks.

Table 1: Program Outcomes through End of 2019

Contributed Capital	$ 21,870,447.00	
System Benefit Charge		$ 16,870,447.00
RGGI funds		$ 5,000,000.00
Expected Loans Issued	$ 38,563,000.00	
Total Loans Issued		$ 31,263,000.00
Anticipated '19 Loans		$ 7,300,000.00
Program Leverage Ratio	1.76x	

Table 1 shows a summary of outcomes over the life of the program since inception in 2016. Through the end of 2019, the Bank will have lent over $38 MM to EBF projects. The loans anticipated to close before the end of 2019 are all energy efficiency projects.

Program status

The first EBF loan was issued in 2016. Since that time, additional loans have been issued, funds have been disbursed, and principle has been repaid. In total, six loans have fully disbursed while the remaining loans are being actively drawn upon. Table 2 describes the status of the program accounts and the amount of loans made for energy efficiency projects (EE) and renewable energy projects (RE). No renewable energy projects have been funded with energy efficiency rate payer funds.

Table 2: EBF Program Status as of August 27, 2019

Total Loans Made	$ 31,263,000
EE Loans	$18,100,003
RE Loans	$13,162,997
Funds Disbursed	$ 23,604,080
Principle Repaid	$ 1,576,570

	Borrowers set their disbursement schedule to match when funds are needed for their project. EBF loans typically do not enter repayment until one year after financing is issued. The principle that has been repaid is recycled and made available for issuing new loans. As the program matures and more loans begin principle repayment, the amount of recycled funds is expected to grow significantly. The Bank and its partners expect the remaining funds for closed loans to be fully disbursed in 2019 and 2020 and are working with program borrowers to ensure a timely construction schedule.
Pipeline forecasting and 2020 transfer request	EBF does not have a dedicated revenue stream such as the Bank's other revolving loan funds and is supported from electric / gas ratepayer funds (Energy Efficiency) and Regional Greenhouse Gas Initiative funds (Renewables) that allow it to operate. These funds are leveraged in the bond market to result in a pool of funds that is approximately 2x larger than the amount transferred. The funding pool is then used to issue loans to municipalities and quasi-public agencies. As the borrowers repay their loans over the financing term, the funds are returned to the pool and can be recycled to issue new loans. The first loans were issued in 2016 with terms of 15-years and the amount recycled on an annual basis is small. While recycled funds are being invested into new loans coming into the EBF portfolio, until the EBF portfolio grows to a significant size new capital allocation to the program is required. A top-down perspective was historically used to estimate the program's pipeline and growth potential. The Bank, in partnership with the Office of Energy Resources and National Grid, considered several factors including: 1) the amount of bonding authority available to municipalities, 2) macro-level historical trends of energy efficiency needs in municipal capital plans including those detailed in the Rhode Island Schoolhouse 2017 Jacobs Recommendations, and 3) the Bank's ability to leverage ratepayer funds. With greater program maturity, including greater customer knowledge of the program and more reliable indications of interest, the EBF pipeline can now be determined on a project-by-project basis in a bottom-up approach. The Bank and its partners have developed and implemented a more granular method for estimating the program pipeline and therefore the transfer amount needed. The program partners assess specific clients who

have indicated interest in the program and assign "likelihood" percentages to each project.

Likelihood weighing factors were applied to projects following the following framework:

> 0.75: These projects have a completed scope of work and town officials have confirmed that they will apply to the program and plan to borrow.
>
> 0.50: Town officials are interested in applying and the Company and the Bank are undergoing project scoping efforts with the town.
>
> 0.25: Initial project conversations are underway, and the Bank expects to receive a decision to finance within one year.

By taking the weighted average of expected projects (specifically, multiplying the expected project funding need by the likelihood of the project moving forward in FY2020, and summing for all projects), an estimated $15,650,000 in project pipeline is expected in 2020.

Table 3: Forecasted 2020 Pipeline

Project	Estimated Loan Amount	Likelihood Weighing Factor	Weighted Average Loan Amount	Completion Estimate	Savings Estimate - MWh	Savings Estimate - therms
1	$1,200,000	0.75	$900,000	2020	1,000	-
2	$1,000,000	0.75	$750,000	2020	500	10,000
3	$15,000,000	0.5	$7,500,000	2020-2021	500	5,000
4	$1,000,000	0.5	$500,000	2020	500	10,000
5	$3,000,000	0.5	$1,500,000	2020-2021	500	5,000
6	$10,000,000	0.25	$2,500,000	2020-2021	250	2,500
7	$8,000,000	0.25	$2,000,000	2020-2021	250	2,500
Total	**$39,200,000**		**$15,650,000**			

Table 3 above shows the expected pipeline in 2020. This includes projects that were listed on the Project Priority List but have not yet been financed as well as new projects that need to submit applications during the upcoming October application period. The forecasted 2020 pipeline consists entirely of energy efficiency projects. There are no renewable energy projects in the 2020 pipeline.

Transfer request determination

The Bank and its partners can forecast how much additional capital will be needed in 2020 by using the estimated pipeline and leverage ratio that the Bank expects. The leverage ratio is expected to significantly increase over time as recycled dollars increasingly enter the program through principle repayments. In the medium term, a leverage ratio between 2x and 4x is expected depending on what the Bank can raise on the bond market and how much principle has been returned to be recycled. For determining the 2020 transfer need a value in the middle of that range, 3x, has been used. The exact leverage ratio of the program cannot be determined until additional EBF bonds are issued.

The amount of ratepayer funds needed in 2020 is $5,216,666. This is shown in Table 4 below.

Table 4: Transfer Request Based on Forecasted Pipeline

Estimated Pipeline	Expected Leverage Ratio	Transfer Request
$15,650,000	3x	$5,216,666

If all pipeline projects come through, EBF would be funding constrained within 2020. However, projects are not guaranteed and may face delays, changes to their requested loan amount or outright cancelations. Therefore, to maximize program outcomes, the Bank has used the weighted average approach. A transfer request that is too small will over-leverage the program and result in higher financing costs to the end borrower or an inability for EBF to issue new loans. A request that is too large will result in unspent funds, or under-leveraged funds, which would increase the cost to ratepayers. Unspent funds would be used in future years of the program. The Bank and its partners feel that the current transfer request is the correct amount considering the projected pipeline and estimated likelihood of projects moving forward.

The transfer request for 2020 is broadly similar to the amount requested in previous years. Over time, increased program maturity has allowed for increased precision in pipeline estimation. However, the transfer request has not varied significantly.

As the program matures over time, the leverage will be achieved with an increasing proportion of recycled dollars and a decreasing proportion of

	transfer funds. For 2020, the fifth year of the program, a high proportion of transfer funds are needed to support new loans.
Transfer Accountability	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. Additional documentation displays this in an end-to-end format at the end of end of this attachment.
2020 Actions	In 2020, National Grid and RIIB will promote EBF through the use of case studies. The Bank and National Grid have also been working with school districts and identified many possible energy efficiency measures to school building retrofits and new construction that would be eligible for financing through the EBF program. The Bank is working with Rhode Island Department of Education and the school districts to determine what portion of school needs falls under Housing Aid and what portion fits better in the EBF program to enable the lowest total cost of financing for the borrower. Determining how portions of a school project should be financed, considering multiple available financing sources and financing organizations, can be complex. The Bank and its partners are building a model that can be applied to other school districts to enable an efficient and standardized funding process for new and retrofit school buildings. This new model will streamline the process for schools and should result in future pipeline growth, particularly considering the recent Rhode Island school bond.
Relevant Notes	**Use of funds** 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 the Bank 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.

d. 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+
2020 Actions	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.

e. 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

f. 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*). Information regarding the Companies activities regarding "green leasing" can found in the commercial real estate section.

9. 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. Customer Profile

In the Fall of 2019, the Company will begin to explore how we can utilize DNVGL's Customer Profile Dashboard to facilitate decision-making processes via customer profiling and segmentation. The dashboard has the potential to increase data accessibility and provide detailed information regarding customer consumption size, participation, project size, project classification, customer and project location.

c. 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:

i. 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 emailed 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 Portfolio Manager which 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 they are 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 efforts 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.

Additionally, the Company will continue to support the White House and DOE Green Button initiative. The Green Button initiative allows customers to securely download their own digital energy usage with a simple click of a literal "Green Button" on electric utilities' websites. This initiative is available to both electric and gas customers.

ii. 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.

d. Building Energy Code Compliance Support

As explained in the Main Text (6.viii.2), 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. CCEI focuses primarily on the commercial and residential new construction market but also supports compliance with energy code requirements for existing buildings.

Savings indicated in the table below are included in the 2020 Goals listed for Large Commercial and New Industrial Program. As in past years, these values are established in the 2017 evaluation study[8]. Note that these values do not reflect the State's November 2019 state energy code update to 2015 IECC. The typical multi-year timeline from

[8] 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

permitting to occupancy for commercial buildings dictates that the vast majority of new buildings completed during 2020 will have been constructed under the 2012 IECC. The impact of the energy code update on the CCEI program will be incorporated for the 2021-2023 Plans.

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

e. Enabling Technologies

i. 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. A heat loss reduction of 135 BTUs per square foot per hour can result from using the jackets and one single turbine can save $9,500 in energy in a year. Touch temperature of the turbine 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.

ii. 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 part of a demonstration in the greater Boston area. The final report has been

completed 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.

iii. CozyTM Radiator Covers

The Cozy ™ 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%.[9] 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

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.

10. Connected Solutions (Active 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

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

	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). Please refer to the program materials available on the Targeted Dispatch page of the Company website for a detailed explanation of the baseline method used and examples. 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[10] management opportunities and present a complete curtailment proposal to the customer. The demand charge and 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, not duplicative, and a comprehensive marketing plan is being implemented. This coordination between SRP, NWAs, and DR is detailed in the 2020 SRP Report sections on NWAs in System Planning and on Coordination with Energy Efficiency. The proposed SRP Outreach and Engagement Plan would promote the Portal as

[10] 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

	described in the SRP plan. Please refer to the SRP Plan and its SRP Market Engagement section and corresponding appendices for details on the SRP Outreach and Engagement Plan. **Daily Dispatch** – 40 to 60 DR events per summer This option calls on customer to curtail their energy use or discharge energy many more 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 or thermal storage. Energy Storage Demand Response: 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 active 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	**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

	Historic Numbers		**Estimated Number**	**Propo Numb**
	2017	**2018**	**2019**	**2020**
Average MW of Curtailment over all events	11	27	32 (vs. 32 planned)	40 (25% increase)

weekend. 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.

Please refer to the program materials available on the Targeted Dispatch page of the Company website for a detailed explanation of the baseline method used and examples.
Customers have the option to receive their incentives directly from the Company, or have the Company send the incentive to the customer's curtailment service provider. Please see the program materials and the customer application available on the Targeted Dispatch page of the Company website for more details.

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) solar

	and storage systems to discharge to the grid during demand response events. This limitation makes the economics of storage more challenging for customers. The program will face challenges until this issue is resolved. Energy Storage Demand Response: The Company will incent the performance of customers adopting innovative and emerging active 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	At the time this document was created, no consequential customer feedback is available for the summer 2019 demand response performance season. Energy Storage Demand Response: The Company spoke with several developers and customers in Rhode Island about participating in the Daily Dispatch program. Risk of losing Net Metering credits due to the 25kW cap was the most common reason given for not participating.
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. This effort does not exclude small or medium sized business. Energy Storage Demand Response: 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.
Rationale for proposed Changes	The goal of the Company is to stay coordinated with all Company efforts related to storage.

11. Marketing to Commercial and Industrial Customers

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 the following segments: Lean and green customers, Small and seamless, Seeking solutions, No frills and Big business.

The Company will utilize commercial customer persona research to inform our key messages and marketing channel selection. For example, larger businesses are interested in energy saving advice, so the Company would provide more educational content related to the benefits of energy savings. Larger customers may also want a personal interaction and expect more education and engagement. A customer in a medium sized business that is part of the "Seeking Solutions" segment may want to hear more about financing options than a "Lean & Green" customer or a "Big Business" customer. The Company can develop a plan that addresses the types of products each segment wants to hear about as well as the channel through which we should deliver that message.

Lean & Green	Small & Seamless	Seeking Solutions
• Smallest customers based on usage • Most environmentally conscious, interested in green-related products • Among the most open to purchasing from NG	• Small customers • Interested in tools to manage accounts • Skew to Real Estate • The least open to purchasing from NG	• Medium customers • Interested in bill and usage information, financing options • Skews to Retail/Food • The most open to purchasing from NG

No Frills	Big Business
• Medium customers • Most interested in the basics of customer service and emergency response • Among least open to purchasing from NG	• Largest customers • More interested in advice, tools to track usage and savings • Lowest level of barriers to energy improvements • Skews to Industrial, Public Sector

Figure 9 Commercial Customer Persona Research

The Company 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.

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 can 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.

Figure 10: Earned Media/PR Strategy

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, and 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, for example, Distributors, Project Expeditors, Engineers, Architects, etc.-- They may have an existing relationship with the customer.

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 C-PACE 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.

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, P	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