



**Energy Efficiency and
Renewable Energy Program Plan Filing
For Fiscal Year 2017**

(7/1/2016 through 6/30/2017)

REVIEW DRAFT

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Introduction and Executive Summary

This FY17 Compliance Filing presents the program plans, budgets, and anticipated savings of the Residential, Local Government, and Commercial and Industrial initiatives of *New Jersey's Clean Energy Program™* (NJCEP).¹ Administered through the Office of Clean Energy, NJCEP is a signature initiative of the New Jersey Board of Public Utilities (BPU), which provides financial incentives and support for energy efficiency technologies, distributed energy resources, and solar renewable energy. Collectively, the FY17 programs will save nearly nine million lifetime MWh of electricity and over 137 million lifetime therms of natural gas for New Jersey's utility customers.

FY17 marks the first full year in which the programs will be implemented by the AEG Team, representing a shift from the previous Market Manager implementation model to a single Program Administrator model that will provide a unified, well-coordinated delivery team in service to New Jersey's energy efficiency markets.

This single-year Compliance Filing describes the AEG Team's plans for continuing the successful implementation of NJCEP's current portfolio while beginning to implement improvements reflective of the maturation of New Jersey's energy efficiency markets. Programs will be available to all sectors of commercial and industrial customers, from the largest industrials, to municipalities and institutions, to mom and pop businesses. There will also be residentially focused programs that will provide incentives and instant rebates for LED lighting and appliances, as well as incentives and pick-up services for customers to retire old, inefficient refrigerators, freezers, dehumidifiers, and room air conditioners. Both multifamily (MF) and single family existing homes will continue to be eligible to receive technical assistance and incentives for comprehensive home energy upgrades, and new homes that will be built in FY17 will be eligible for incentives for achieving high levels of efficiency that exceed the new IECC 2015 energy code. NJCEP will also offer a streamlined Distributed Energy Resources (DER) program to support Combined Heat and Power (CHP) installations, as well as renewable electric storage projects. Lastly, NJCEP will continue to implement the Solar Renewable Energy Certificate Registration Program in support of New Jersey's robust solar energy market.

The plans, budgets, and savings presented herein will maintain program reliability and stability for New Jersey's utility customers, program vendors and contractors for FY17, during which time the AEG Team will develop a new, comprehensive strategic plan for FY 2018-FY 2021 in close coordination with the BPU. The strategic planning process will reflect BPU priorities for NJCEP programs, will incorporate updated New Jersey energy efficiency market data, will consider best practices from other jurisdictions, and importantly will include significant opportunities for input from stakeholders.

Program efforts have resulted in considerable progress in increasing the prevalence of energy efficiency in New Jersey, yet significant new opportunities continue to develop as technologies change and new product categories are identified. For example, NJCEP generated significant savings for New Jersey families and businesses by raising awareness and providing financial

¹ This Compliance Filing only addresses the programs that are implemented by AEG. Comfort Partners is a NJCEP program that is implemented by the utilities. NJCEP funds are also directed to other state energy programs that are not implemented by AEG and that are not addressed in this filing.

support for compact fluorescent (CFL) lighting products, however the efficient lighting market is now rapidly moving away from CFLs in favor of LED products with longer working lives and better performance attributes. To help consumers reap the benefits of these technological improvements NJCEP will provide information to consumers on the savings available from LED products and on how to select products that will perform satisfactorily. The program will also provide financial support in the form of instant price reductions to make higher quality products affordable to average families. Even with the increased awareness that past support for CFLs provided, consumers still tend to buy products that cost the least, which in the case of retail lighting will be more energy-intensive halogen products. NJCEP will provide information and incentives to steer consumers toward higher-quality LEDs that will meet expectations for light quality and longevity.

This FY17 Compliance Filing also reflects the findings of the *Process Evaluation Study prepared for The New Jersey Clean Energy Program* (Process Evaluation).² The Process Evaluation identified numerous recommendations for improvements to program implementation, many of which are already under development in advance of FY17. Among these are:

- Update the IMS and improve tracking and reporting of energy savings goals and other metrics;
- Ensure that evaluations are used to effect program changes;
- Design and implement an online portal for customers and contractors to submit applications;
- Review the minimum eligibility requirements for custom C&I projects;
- Simplify the CHP program structure, and;
- Develop a targeted outreach and trade ally engagement plan that includes increasing marketing expenditures to approximately seven percent of program budgets, consistent with industry best practices;

These and other recommendations from the Process Evaluation will be addressed in FY17 and in the comprehensive strategic planning process that will take place throughout FY17 to develop next year's FY18- FY21 Compliance Filing.

FY17 Budgets

In FY17 approximately eighty percent of the total NJCEP budget, or roughly \$250 million, will be invested in energy efficiency, while roughly another \$63 million will be invested in Distributed Energy Resources and \$2 million will be invested in Renewable Energy. Thirty-six percent of the energy efficiency budget will go towards residential programs and sixty-four percent will go to C&I programs. Budget information for the FY17 programs that will be implemented by the AEG Team can be found in Appendix F: FY17 Program Budgets.

FY17 Savings Goals

Distributed Energy Resources account for approximately twenty percent of the portfolio lifetime electric savings. The remaining lifetime electric savings are roughly split between residential

² energy resource and solutions (ers), Process Evaluation Study prepared for New Jersey's Clean Energy Program, January 2016.

energy efficiency and C&I energy efficiency. Approximately sixty percent of the lifetime natural gas savings result from residential energy efficiency, and the remaining forty percent are from C&I energy efficiency. Energy savings projections for the FY17 programs that will be implemented by the AEG Team can be found in Appendix G: FY17 Program Goals and Performance Metrics.

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Residential Energy Efficiency Programs

General Overview

New Jersey's Clean Energy Program (NJCEP) offers a broad range of opportunities for New Jersey's homeowners and tenants living in single family and multifamily homes to save money by making their homes more energy efficient. NJCEP ensures that reasonably priced efficient lighting and appliance choices are available when new products are being purchased. The program works with homebuilders to support the incorporation of energy efficiency into the design and construction of new homes. In addition, the program builds market capacity and capability for safely and effectively upgrading the efficiency of existing homes through Home Performance with ENERGY STAR®. This Compliance Filing provides program descriptions, goals, and budgets for the four residential energy efficiency programs that will be implemented by the AEG Team³ in Fiscal Year (FY) 2017:

- Residential New Construction (New Jersey ENERGY STAR Homes) Program
- Residential Gas & Electric HVAC (*COOLAdvantage* and *WARMAdvantage*) Program
- Energy Efficient Products Program
- Existing Homes Program (Home Performance with ENERGY STAR)

Detailed information regarding each of these programs follows.

³ Comfort Partners, the fifth NJCEP residential program, which targets low-income customers, is implemented by Atlantic City Electric, JCP&L, New Jersey Natural Gas, Elizabethtown Gas, PSE&G and South Jersey Gas and is not addressed in this Compliance Filing. See the document titled "FY17 Program Descriptions and Budgets for the Utility Residential Low-Income Comfort Partners Program."

Residential New Construction Program

Program Purpose and Strategy Overview

The Residential New Construction (RNC) Program is designed to increase the energy efficiency and environmental performance of residential new construction buildings (single and multifamily) in New Jersey. The Program has the long-term objective of transforming the market to one in which a majority of residential new construction in the state is “net zero-energy,” i.e. extremely efficient buildings whose low energy needs can be met by renewable energy generation.

The program strategy is to establish technical standards for energy efficient new construction in New Jersey based on national platforms including IECC 2015, EPA ENERGY STAR® Certified New Homes Program, EPA ENERGY STAR Multifamily High-Rise Program, and the DOE Zero Energy Ready Home Program. The program then provides technical support and incentives to home energy raters, builders and homebuyers to enable them to build and purchase homes that comply with these standards.

Using an account management approach, the Program recruits new and supports existing participating raters who oversee the energy efficiency work completed by participating builders. The Program also provides the necessary training to raters and builders to ensure they understand the program rules/requirements and have the skill set to meet the higher-than-code program standards and build homes that contribute to New Jersey’s energy reduction efforts. Incentives are offered both to partially offset the construction costs associated with building higher efficiency homes and to generate interest and enthusiasm for the program among builders and homeowners whose attention is already fully occupied by the myriad other details associated with building and purchasing homes.

Program Description

The RNC Program is market-based and relies on builders and raters to build to national platform standards, which are defined by core efficiency measures, energy modeling, rater and builder oversight and check lists to ensure quality installation. While the national programs provide structure and guidelines, New Jersey uses the platforms to create different pathways to provide flexibility to the New Jersey market in improving the efficiency of baseline construction practices in the state.

In order to participate in this program and as part of the program requirements, program participating raters must use the REMRate modeling software⁴ to model savings and determine the HERS index. The Residential Energy Services Network (RESNET) is a not-for-profit organization responsible for creating the national training and certification standards for HERS Raters and Home Energy Survey Professionals, both of which are recognized by federal

⁴ RESNET is undergoing software standards modifications that may affect the RNC Program in FY17. REMRate, and other HERS modeling software modifications to comply with ANSI/RESNET Standard 301-2014 are pending. This change will impact the HERS index of modeled homes. The REMRate software update is currently being beta tested and under review by RESNET for certification, which is currently expected to be July 1, 2016. RESNET is also pursuing a move to a single-source HERS Index tool—the timeframe for implementation is unknown.

government agencies such as the U.S. Department of Energy, the U.S. Environmental Protection Agency and the U.S. mortgage industry.

There are a number of market barriers to efficiency investments in new construction in New Jersey. Key among these are:

1. The housing market has shown to be recovering from the impacts of the economic downturn and this is expected to continue to improve in FY17, however, housing starts are still lower than during peak of the market;
2. Builders do not always see the value of the additional administrative procedures and associated costs of ENERGY STAR;
3. Builders and designers are not familiar with the newly adopted IECC 2015 code requirements that they now need to exceed;
4. Conflicting design criteria (i.e. builders who make design, procurement, and construction decisions do not pay the homeowners' operating costs associated with those decisions);
5. Lack of market awareness regarding the benefits of efficiency and environmental performance on the part of consumers, builders, lenders, appraisers, realtors and others;
6. Limited technical skills on the part of some builders and their subcontractors to address key elements of efficiency;
7. Lack of consumer marketing on the benefits of owning a Program home to drive demand;
8. Limited awareness of the Zero Energy Ready Home requirements and incentives that are available to support that market segment; and
9. Inability of consumers, lenders, appraisers and others to differentiate between efficient and standard homes.

This program employs several key strategies to overcome these barriers including:

- Direct financial incentives to builders of homes that meet program standards.
- Multiple pathways that allows participation across efficiency levels, entice new builders to the program, support the NJ construction market for the adoption of IECC 2015, and promote increased efficiency and quality-assurance with higher incentives.
- Coop-marketing incentives and assistance to builders to promote the energy and environmental benefits of homes that participate in the RNC Program.
- Utilization of EPA ENERGY STAR and DOE Zero Energy Ready Home website to help promote residential energy programs.
- Technical assistance to inform builders and their subcontractors on details of the program pathways and how to comply with the rigorous performance requirements.
- ENERGY STAR certification, inspections and testing through third-party rating companies that compete in an open market for services.

The FY17 program will continue to offer multiple pathways for participation with applicable incentives. With the adoption of IECC2015 on September 21, 2015 by the New Jersey Department of Community Affairs and the enforcement of the new code for homes that receive permits on or after March 21, 2016, the RNC program implemented changes to support incentives for above code construction. These changes were approved by the Board of Public Utilities in March 2016. The following changes have been made:

- Tier 1 ENERGY Efficient home has been eliminated.

- Tier 2, now called ENERGY STAR Home, has changed from the requirements of ENERGY STAR Certified Homes Version 3.0 to Version 3.1.
- Tier 3, now called Zero Energy Ready Homes (ZERH) and Tier 3 plus, now called Zero Energy Home + RE (ZERH + RE), will use ENERGY STAR Certified Homes version 3.1 as a baseline instead of version 3.0 for homes permitted after March 21, 2016.
- A new incentive is available for projects that also demonstrate compliance with the Energy Rating Index (ERI) Pathway (Section R406 of the IECC 2015). This incentive will be offered as a standalone, entry-level pathway into the program, or as an adder to the ENERGY STAR and Zero Energy Ready Home pathways.

ENERGY STAR Multifamily High Rise will align with EPA guidance to allow multiple baseline codes with corresponding percent above code requirements, based on permit date.

Program Enrollment Procedures and Requirements

1. Raters must utilize an online portal, which was launched in March 2016, to submit electronic applications and all required program documents for more efficient processing.
2. Publicly funded projects will receive an Enrollment Letter and funds will be committed to each project. These projects will expire according to building type:
 - a. Single Family projects expire in one year;
 - b. All other building types (Multi-Single, Low-Rise Multifamily, and Multifamily High-Rise) will expire in two years.
3. All applicants must submit a valid permit and permitted set of plans with the enrollment application. In instances where an applicant is pursuing code compliance through the RNC Program an Acknowledgement Letter will be issued with the understanding that the applicant must upload into the online portal the permit and permitted set of plans once the permit is granted.
4. During FY16, non-publicly funded projects received an Enrollment Letter and no funds were committed to projects submitted between September 1, 2015 and June 30, 2016. In FY17, the Program intends to resume committing funds to non-publicly funded projects when all the enrollment requirements are met. Projects that were enrolled during the above mentioned period and did not receive a commitment will now be eligible to be granted a commitment based on their initial enrollment date provided they submitted a valid permit with the application. Below is the expiration schedule according to building type:
 - a. Single Family project commitments expire in one year;
 - b. All other building types (Multi-Single, Low-Rise Multifamily, and Multifamily High-Rise) will expire in two years.
 - a. Single Family projects must complete a Pre-Drywall Inspection within 60 days of enrollment date. Projects missing this deadline will be eligible for a one-time 60-day extension if Program is notified of the extension request, prior to the expiration of the original enrollment. Should these requirements not be met in the above mentioned timeframes, the project's commitment amount may be re-allocated for other projects.
 - b. Low-Rise Multifamily and Multifamily High-Rise may be granted one extension of its enrollment or commitment for a period equivalent to its original enrollment or commitment if it demonstrates that its Pre-Drywall Inspections have been successfully completed by the time of its enrollment or commitment expiration date. Should these

requirements not be met in the above mentioned timeframes, the project's commitment amount may be re-allocated for other projects.

Program Participation Pathways

The following participation pathways provide New Jersey's builders and homeowners with a range of participation options to suit builders at different levels of experience with energy efficient construction techniques and homebuyers with varying budgets. All are based on the presumption that the recently adopted IECC 2015 energy code sets the minimum energy performance requirement for newly constructed homes, and as such they all result in energy performance that is better than that required by IECC 2015.

IECC2015 ERI

Homes built using the IECC 2015 ERI performance path will result in a higher level of performance than homes built using the prescriptive path that do not perform field testing. The Program will offer a flat \$750 incentive for any homes that demonstrate compliance with the IECC ERI performance path. This incentive is offered as a standalone, entry level pathway into the program or as an adder to the ENERGY STAR and Zero Energy Ready Home pathways.

ENERGY STAR Home

Builders that enroll in this pathway will satisfy the requirements for ENERGY STAR Version 3.1 utilizing the Performance Path, including full inspection checklist requirements. Homes that meet these requirements will be ENERGY STAR certified. The incentive structure within this segment will be performance based with higher incentives for higher performance using the HERS index as the indicator.

Zero Energy Ready Home (ZERH)

This pathway recognizes the highest energy efficiency achievement in new homes. It is an example of New Jersey's national leadership in residential new construction, and has been showcased at several energy efficiency industry conferences as an example for other programs to follow. Program requirements include meeting or exceeding all DOE Zero Energy Ready Homes technical standards including compliance with the ENERGY STAR Homes Program and all checklists, meet 2015 IECC insulation levels and certify to EPA's Indoor airPLUS Program. The incentive structure within this pathway will be performance based with higher incentives for higher performance using the HERS index as the indicator.

Zero Energy Home +RE (ZERH+)

This pathway has all of the same requirements as the ZERH pathway with the additional requirement that 100% the building's modeled energy usage is met by renewable energy systems installed at the time of completion of the home. The incentive structure within this pathway will be performance based with higher incentives for higher performance using the HERS index as the indicator. Incentives will be paid based upon the HERS index before the addition of renewables.

ENERGY STAR Multifamily High Rise

In FY17 the Program Manager will develop a unified approach to serving multifamily projects to assure that all multifamily properties are eligible to receive energy efficiency services suited to

their particular needs. In the meantime, multifamily buildings at 4 to 6 floors are eligible for ENERGY STAR Multifamily High-Rise (MFHR Program). The incentive structure within this program is variable based upon building performance and the baseline code used to calculate savings.

Target Market and Eligibility

Newly constructed single family, multi-single (“townhome”), low-rise and high-rise multifamily buildings (up to six stories) are eligible for RNC Program benefits if the home will use natural gas and/or electricity supplied by a New Jersey public utility and if each unit has its own gas or electric heating and/or central air conditioning system and its own domestic hot water system. The target markets for this program are homebuilders and energy raters.

Multifamily buildings can either be considered low-rise (which participate in the first four pathways described above) or high-rise (which participate in MFHR Program) depending on several factors including number of stories, heating and cooling systems and square footage of commercial space in the building. RNC Program uses the NJ Multifamily New Construction Program Decision Tree (the “Decision Tree”, found in Appendix D: Multifamily Decision Tree) to determine RNC Program eligibility.

The RNC Program will also enroll any existing home undergoing substantial (“gut”) renovation or remodeling that meets the above criteria.

New homes are not eligible for participation or incentives under the Residential HVAC program (*COOLAdvantage/WARMAdvantage*).

Program Technical Requirements

To qualify for the FY17 Program, a home must meet IECC2015 ERI, ENERGY STAR Home, Zero Energy Ready Home (ZERH, Zero Energy Home + RE (ZERH+), or ENERGY STAR Multifamily High Rise requirements.

The technical details presented below represent the majority of the program requirements. The full technical specifications for RNC program compliance is available upon request. The ENERGY STAR Certified Homes and Zero Energy Ready Home program requirements (e.g. checklists, standards and modeling inputs) are periodically updated and supersede technical requirements listed in this Compliance Filing.

Code compliance through ERI pathway requirements

For projects with valid permit dated after March 18, 2016:

1. Meet all IECC 2015 code requirements from section R406 with the following NJ targets:

Climate Zone 4	54
Climate Zone 5	55

2. RNC Program participating rater must submit a 2015 Energy Rating Index (ERI) Report from REMRate modeling software.

3. Participating rater must submit verification from code official that code compliance was achieved using the ERI path.

ENERGY STAR Certified Homes version 3.1 requirements

Meet all EPA ENERGY STAR Certified Homes version 3.1 Performance Path standards⁵ including:

- Meet or exceed the ENERGY STAR Certified Homes version 3.1 HERS Index Target
- Comply with all ENERGY STAR Certified Homes version 3.1 mandated requirements and checklists

Additional RNC Program Requirements:

- Construction documents required (R103.2)

Zero Energy Ready Home Requirements

Meet or exceed all DOE Zero Energy Ready Home Performance Path technical standards⁶ including:

- Comply with ENERGY STAR Certified Homes Version 3.1 Program requirements and all checklists
- Meet 2015 IECC mandatory envelope levels
- Certify to EPA's Indoor airPLUS Program
- Hot water delivery systems shall meet efficient design requirements

Additional RNC Program Requirements:

- Maximum HERS index of 50

Zero Energy Home 100% Renewable Requirements

Meet or exceed all ZERH requirements as described above.

Additional RNC Program Requirements:

- 100% of the building's modeled electric site energy usage be met by renewable energy systems installed onsite at the time of completion of the home

ENERGY STAR Multifamily High-Rise Requirements

Meet or exceed EPA ENERGY STAR Multifamily High Rise (MFHR) Program standards⁷ including:

- Follow Performance Path which utilizes ASHRAE approved energy modeling software to determine energy savings of a customized set of measures

⁵ ENERGY STAR New Homes Standards: <http://www.energystar.gov>

⁶ Zero Energy Home Standards: <http://energy.gov>

⁷Multifamily High-rise Standards: <http://www.energystar.gov>

- Align with EPA guidance to allow multiple baseline codes with corresponding percent above code requirements per Table 4, below.

NJCEP will require the application of a specific baseline within six months of EPA imposing such a requirement.

Incentives

Residential New Construction program incentive tables can be found in Appendix A.

Marketing

A cooperative marketing offer for participating builders is proposed to help drive homebuyer demand for qualifying energy efficient homes. This co-op marketing offer will supplement a Residential New Construction component within the NJCEP overall marketing campaign in order to further raise consumer demand. These efforts will work together with the EPA's plans for an aggressive national campaign to promote the new ENERGY STAR standard and will facilitate the program's efforts to maintain builder participation in the face of the broader economic downturn and increased requirements.

Financial Incentives for Legacy Climate Choice Homes

Effective July 1, 2014 the Market Manager ceased to provide rating services for Climate Choice Homes (CCH) units in anticipation of the transition of Tier 3 to the open rater marketplace. To provide builders with these legacy ratings processes for CCH units enrolled prior to the implementation of the new Zero Energy Ready Home (ZERH), the program will provide an additional incentive of \$1,600 for each completed legacy CCH unit. The Program team will work with raters involved in these projects to develop a plan to completion.

Financial Incentives for Legacy Projects

Single and Multi-Single projects (Legacy Projects) enrolled prior to September 1, 2015 will have one year from project registration date to complete the program under the prior program criteria. Incentives will be paid according to the structure in place on the date the project was registered. Projects will have one year from the project registration date to complete, otherwise, they will be deactivated in the system.

MF and MFHR will now be assigned an enrollment date of July 1, 2016 with a two year (June 30, 2018) commitment before expiration, according to the expiration schedule for these building types as described in the Program Enrollment Procedures and Requirements. These projects may also be eligible for a one-time extension period equivalent to the length of their original commitment, but only if they demonstrate that their Pre-Drywall Inspections have been successfully completed by the time of their enrollment or commitment expiration date, as described in the Program Enrollment Procedures and Requirements section, u

Continue to Support Previous Commitments

The RNC Program will continue to support previous commitments to homes that were certified under the standards that were in effect at the time the commitment was made. The RNC Program is unique relative to other NJCEP offerings because of the level of carryover from year to year.

The “permit application date” triggers the new construction building code with which new homes must comply.

Planned Program Implementation Activities for FY17

The following program implementation activities will be undertaken in FY17:

- Continue to review and issue Enrollment Letters indicating commitment amount for projects submitted by raters.
- Continue to process incentives for completed projects meeting program requirements.
- Provide technical trainings to help raters and builders become more familiar with the newly adopted IECC 2015 code, ENERGY STAR v3.1 requirements as well as H-QUITO, Net Zero Homes workshops and others.
- Develop a new User Defined Reference Home (UDRH) based on IECC 2015 code. The new UDRH will be used as the baseline to calculate savings for projects completed under IECC2015 code. Building component values used in the new UDRH will be added to the NJ Protocols.
- Actively engage with DOE, raters and builders to identify challenges of participating in the Zero Energy Ready Home pathway.
- Actively engage with EPA, raters and builders to support participation in the Multifamily High-Rise program and streamline the processes.

Quality Control Provisions

Market-based delivery of rating services and certifications requires an effective set of standards for quality assurance. The responsibility of builder quality and ENERGY STAR Certifications rests with Raters, Raters Providers and RESNET. It is incumbent upon the program to assure that a robust system for identifying and communicating quality issues exists to manage the credibility of the savings and incentives offered.

To maintain a robust rating marketplace, the Program Administrator Team will perform inspections and conduct oversight processes on raters. Quality Assurance activities will continue to be performed by the Program, in proportion to the track records of raters measured through program inspections. Errors and/or inappropriate rating procedures identified by the Program Administrator Team through QA inspections will subject rating companies to actions as defined in the contractor remediation process.

In addition to data reviews for completeness of forms and applications, on-site inspections and technical review of buildings and rater files will be required in proportion to the demonstrated proficiency of the builders and raters. Inspection requirements will be adjusted based upon the track record of the program participants. Initial inspection rates for new builders and rating companies will be higher and will decrease as they demonstrate proficiency in proper building techniques and the qualifying requirements of the Program.

Residential Gas & Electric HVAC Program

“New Jersey WARMAdvantage & COOLAdvantage”

Program Purpose and Strategy Overview

The purpose of the New Jersey Residential Gas & Electric Heating, Ventilation, and Air Conditioning (HVAC) Program is to increase the selection and quality installation of high efficiency residential HVAC equipment in the New Jersey market through the use of incentives, supply chain support, and customer outreach and education. In addition, the team will work with the HVAC supply chain to generate increased recognition of the business opportunities that exist for New Jersey’s HVAC contractors to expand their services into the “whole-house” residential retrofit market (see Home Performance with ENERGY STAR section). Effectively making significant reductions in the amount of energy used in homes requires a comprehensive approach that addresses HVAC equipment and the insulation and air leakage characteristics of the building shell, in addition to lighting and plug loads. HVAC contractors have historically only focused their businesses on the equipment—and opportunities exist to expand HVAC business practices to include building shell improvements and to support partnerships between HVAC and building shell contractors that will result in comprehensive home energy savings for New Jersey’s residents.

To build towards these more comprehensive approaches the Residential Gas & Electric HVAC Program will work in close coordination with the Home Performance with ENERGY STAR Program to deliver services under similar technical standards to customers who may not be ready to undertake comprehensive improvements all at once but who may be open to a phased, step by step approach to improving the energy efficiency of their homes.

Program Description

The *WARMAdvantage* and *COOLAdvantage* Programs incentivize customers to purchase high efficiency HVAC equipment. The Programs are designed to make the quality installation of high efficiency residential HVAC equipment an easy choice in the New Jersey market. HVAC contractors are the primary vehicles for promoting the program and with the aid of the program incentives, complete the sale, and subsequently deliver quality installations of high-efficiency equipment.

As with other market areas, efficient HVAC options continue to evolve as technology advances. As HVAC equipment becomes even more efficient through this evolution the program must continue to address market barriers to achieve its goals. While the barriers listed below may seem to stay the same, it is important to note that the efficiency of the systems is increasing:

- High upfront cost of new efficient systems compared to repair of older equipment and to new inefficient systems;
- Consumers’ inability to differentiate, and therefore value, the difference between good and poor quality HVAC installation, and the resultant challenge faced by contractors who are trying to sell higher-cost quality installations;
- Consumers’ lack of information and awareness on the benefits (both energy and non-energy) of efficient equipment and quality installations, particularly during repair, renovation and remodeling;

- HVAC contractor perception of low value and/or sense of difficulty about program participation;
- HVAC contractor unwillingness to voluntarily participate in the program and fulfill program's requirements for successful application submission due to lack of consumer demand, and;
- On-going training needs for HVAC contractors on key installation issues including proper installation methodologies, proper unit sizing and utilization and health and safety issues including proper venting of equipment.

The program employs several key strategies to address these barriers:

- Financial incentives for the purchase of gas heating and energy-efficient water heating equipment meeting or exceeding the performance criteria of national and regional standards such as ENERGY STAR and CEE specification tiers;
- Financial incentives for the purchase of high efficiency electric cooling and heating equipment, products and controls;
- Financial incentives and program support for HVAC equipment installation that optimizes operating efficiency at time of installation, including Manual J load calculations (including use of software applications) and Manual S equipment selection for cooling equipment;
- Proposed co-operative marketing assistance to trade allies in the direct promotion of high efficiency HVAC equipment;
- Information aimed at consumers to help them make better energy saving purchasing decisions;
- AEG submitted a proposed Outreach Plan to Staff that is awaiting approval;
- Sales training for contractors (i.e. how to sell efficiency);
- Technical training for HVAC contractors on the proper sizing, selection and installation of HVAC equipment and health and safety concerns regarding orphaned gas appliances;
- Promotion of HVAC technician certification in coordination with nationally recognized technical associations to help raise the knowledge base of NJ contractors on the proper installation of HVAC equipment; and
- Collaboration with regional and national efforts to amplify program influence with support for market-wide initiatives (such as emerging technologies & specification revisions) that advance the interests of the program.

New Jersey's Clean Energy Program will continue to support efforts, where technically and economically justifiable, to upgrade federal appliance efficiency standards. The Program also provides, when necessary, technical support for the development of such upgrades, tracking and monitoring developments, and review and modification of program designs to integrate changes to the standards and codes.

Target Market and Eligibility

*COOL*Advantage promotes the installation of new, energy efficient, residential electric air conditioners and heat pumps. The program covers conventional, centrally ducted air conditioning systems and ductless "mini-split" systems. The program also covers both air-source heat pumps, and ground-source (geothermal) heat pumps. This comprehensive offering enables the program to accelerate market adoption of recent technology improvements such as inverter-driven

compressors and advanced controls that enable significantly greater heating and cooling performance by heat pumps.

*WARM*Advantage promotes energy efficient natural gas-fired furnaces, boilers, water heaters and associated equipment for use in residential buildings. The *WARM*Advantage program specifically addresses water heating units that are not planned to be replaced when a furnace is replaced, which can pose a combustion appliance safety issue for the customer, by offering additional incentives for combination space and water heating equipment and to participants that change both heating and water heating units at the same time. This is an industry-leading program design that safeguards customers and delivers greater energy savings through the program.

In FY17, the solar domestic water heating initiative will continue to be offered to both residential electric and gas water heating customers.

Program Requirements

As of March 1, 2016, an online portal is available for contractors to electronically submit applications and check the status of applications in process. A webinar training recording and the online portal are located at: www.NJCleanEnergy.com/HVACPORTAL. An online portal is also available for customers to electronically submit applications and check the status of an application in process at the same location. Contractors and customers are encouraged to submit electronic applications via the portal for more efficient processing.

The Program currently requires that documentation be provided to support each incentive application. In FY17, the Program Team proposes modifications to the technical documentation requirements to improve alignment with other Residential Programs. These modifications include:

- Require Manual J load calculations for heating systems as well as selecting equipment in accordance with the Air Conditioning Contractors of America Association (ACCA) Manual S for systems installed under the *WARM*Advantage Program to harmonize installation standards with the *COOL*Advantage, NJNG SaveGreen, and Residential New Construction Programs, as well as Home Performance with ENERGY STAR.
- Collect Permit Number or a copy of the Permit Application for all HVAC Program projects. This aligns the HVAC program requirement with the Home Performance with ENERGY STAR program and was also a recommendation of the New Jersey chapter of ACCA in their submitted comments regarding changes to the Home Performance with ENERGY STAR program in FY16.
- Collect copy of the AHRI certificate rating sheet for *WARM*Advantage projects. This will align the submittal of supporting documentation with the *COOL*Advantage, Residential New Construction, and Home Performance with ENERGY STAR programs.

Offerings and Incentives

***COOL*Advantage**

In FY17, the Program will offer incentives for super-efficient Central Air Conditioners, mini-split units, and heat pumps. Two tiers of incentives for central systems and support for ductless units

provides comprehensive coverage for market influence.⁸ By supporting equipment that performs efficiently at times of peak electric demand the program's rebates help minimize the costs associated with meeting that demand. Performance levels are aimed to align with the levels established by national and regional specification-setting organizations such as ENERGY STAR and CEE, as appropriate for the New Jersey market. If new program requirements, procedures and/or incentives are proposed at any time, they will take effect after a notification period to program participants (i.e. contractors, etc.) and posting at njcleanenergy.com. Any completed applications received after the notification period will be subject to new program rules. Rebate applications for cooling system equipment purchased prior to the end of the notification period will continue to be processed. Contractor and customer outreach and education on the benefits of efficient HVAC equipment will continue to be supported. For FY17, the Program proposes to increase the Mini-Split rebate to appropriately incentivize this equipment's incremental cost and the savings benefits that it provides. There is a great market potential in New Jersey for the mini-split systems. Incentives offered through the *COOLAdvantage* Program can be found in Appendix A.

WARMAdvantage

Continuing in FY17, *WARMAdvantage* will offer incentives for efficient furnaces, boilers and hot water heaters. However, the Program will cease to provide incentives for steam boilers since the minimum efficiency available in the market is 82% for an oil steam boiler and 81% for a gas steam boiler. This measure brings minimal savings to the program compared to other measures. The rebate for domestic water heaters will also be reduced to bring it in line with their incremental purchase cost. The program will continue to offer an incentive to promote the combined upgrade of qualifying space and water heating equipment as well as combination equipment with the goal of achieving greater savings and facilitating the appropriate treatment of any potential combustion appliance safety issues. The rebate for combination furnace/boiler and domestic water heater will be slightly reduced as well to reflect the change in the domestic water heater rebate. Incentive levels offered through the *WARMAdvantage* Program can be found in Appendix A.

Any incentives available for HVAC State Energy Program (SEP) participants will be identical to those provided by NJCEP for similar equipment when funds are available. *COOLAdvantage* and *WARMAdvantage* incentives will be paid directly to homeowners, or with written consent, assignable to contractors.

Planned Program Implementation Activities for FY17

The following program implementation activities will be undertaken in FY17:

- Continue processing incentives for heating, water heating, and cooling equipment.
- Continue processing solar water heating incentives as a *WARMAdvantage* program measure.

⁸ The inclusion of lower tier central equipment and revisions to qualifying criteria for ductless equipment is in keeping with the HVAC recommendation for assuring appropriate measure support from the 2015 ERS report entitled, "Review and Benchmarking of the New Jersey Clean Energy Program."

- Provide monetary incentives and education to participants to simultaneously replace both heating and water heating systems with high efficiency equipment to safeguard against potential combustion appliance safety issues.
- Support the training of HVAC contractors and technicians on the proper calculation of heating and cooling loads, system design, installation techniques, and consumer benefits of high efficiency gas heating and cooling equipment and/or any other substantial form of training that is directly related to the promotion of energy efficiency and quality equipment installation. The Program will also support training in the recognition and proper techniques to deal with atmospherically drafted furnace and boiler replacements that result in a stand-alone water heater.
- Coordinate with utilities to ensure program offerings complement each other with the intent to harmonize incentives offered by all parties.
- Work with NJIT to develop an online HVAC Orientation training to introduce the Home Performance with ENERGY STAR Program to HVAC contractors. This online training will be offered to all NJ HVAC contractors interested in growing their business beyond HVAC work.
- Provide co-operative marketing incentives to support approved trade ally promotions of high efficiency space heating, cooling, and water heating equipment. The program will also pursue opportunities for enhancing cross-marketing with other programs, particularly the utility approved enhanced incentive and on-bill repayment programs.

Quality Control Provisions

The Program Manager maintains documented policies to ensure consistency in the processing and quality control for all incentive program participants. All applications are reviewed for verification of the qualifying equipment efficiency rating, proper sizing and proper installation. Qualifying equipment efficiency levels are verified with the AHRI, AHRI/CEE directory of air conditioning and heat pump equipment, eligible products list from ENERGY STAR, or compared against the performance criteria listed in each appliance category. Each application and its information are entered into a database which checks for duplicate applicants through an equipment serial number comparison.

On an ongoing basis, units from both electric and gas rebate applications are selected for an in-depth quality control review and inspection. Quality Control includes a paperwork review of the application and a field inspection to verify qualifying equipment installations and proper installation. A field inspection report is prepared for each inspection.

Energy Efficient Products Program

Program Purpose and Strategy Overview

The Energy Efficient Products (EEP) Program promotes the sale and purchase of ENERGY STAR certified and other energy efficient products including lighting, appliances and consumer electronics, while also supporting the “early retirement” and recycling of existing inefficient appliances in New Jersey households. Aligned and complementary to the Residential HVAC, New Construction, and Home Performance programs, the EEP is focused on the reduction of plug load and lighting energy usage in New Jersey homes. The Program strategy focuses on providing participants with knowledge and motivation so that they want to make efficient purchases, and on offsetting the initial price of higher efficiency products so that they can do so affordably.

Providing relevant information to consumers most typically occurs through retail partners, and the EEP strategically invests in assuring that participating retailers have the information they need so that the floor staff—the knowledgeable sales people who consumers rely on—can speak to the benefits of energy efficient purchase options. The Program also provides in-store Point of Purchase (POP) materials and signage to clearly identify promoted products and steer consumers towards them. The EEP seeks to capture the greatest amount of savings possible at the lowest cost, while also making sure that opportunities are available through a wide range of retail channels and through creative promotions aimed at historically hard-to-reach customers. The FY17 EEP program is also designed to be nimble, especially with respect to the rapidly advancing lighting market, so that midstream adjustments to the product mix can be made as necessary to assure continued savings.

The FY17 EEP program will also increase its use of midstream promotions of appliances and consumer electronics that have not historically been well-served by coupon approaches. This is expected to influence the stocking decisions of major retailers so that more ENERGY STAR products are available to customers, and in the long-run is a model that will reduce the cost of promoting efficient appliances.

Program Description

The Energy Efficient Products Program provides targeted rebates and messaging to consumers, community partners, manufacturers, and retailers for the sale and purchase of selected energy efficient products. Rebates are intended to reduce the initial purchase price of energy efficient lighting and appliances so that their typically higher costs do not deter consumers from choosing them over less efficient alternatives. Messaging raises awareness of efficient options and of the benefits they can provide, and rebate support provided by the program makes these products more affordable.

The program employs several key approaches to deliver energy savings to New Jersey residents including:

- Educating consumers on the role that energy efficiency can play in reducing home energy consumption;
- Supporting the availability of a range of affordably-priced energy efficient product choices for consumers through rebates and midstream/upstream buydowns and markdowns;

- Offering marketing and training support for retailers, manufacturers and contractors selling energy efficient products to ensure that they can speak to the consumer benefits provided by these products;
- Sponsoring event-based initiatives and other innovative approaches to bring energy efficient technologies to hard-to-reach populations that have not historically participated in retail-based program approaches;
- Working with national government agencies, manufacturers, and retailers to help develop and introduce new energy efficiency offerings such as ENERGY STAR's Retail Products Platform;
- Supporting and informing consumers regarding product recycling and disposal to address potential environmental impacts;
- Leveraging national energy efficiency programs, promotions, marketing materials, and advertising to support New Jersey initiatives; and
- Coordinating with NJ utility sponsored programs to co-brand and leverage customer participation and savings.

The program continues to transition towards greater upstream and midstream initiatives that leverage manufacturer, distributor and retailer incentives and marketing dollars. These approaches have high potential to increase the sales volumes of efficient products when compared with rebate programs that require consumers to fill out a form for each purchase. In FY17, the program will expand the upstream/midstream approach beyond lighting products to support specific efficient appliances. The program will also offer marketing and training support to new retailers, manufacturers, contractors, and other organizations while continuing to maintain existing partner relationships.

Target Market and Eligibility

The target market for the EEP program is all New Jersey consumers who purchase lighting, appliances, and other energy consuming devices in retail stores across the state. The appliance recycling program also targets all New Jersey residents who have older working refrigerators and freezers that typically consume considerably more electricity than comparable newer efficient models.

Offerings and Incentives

In FY17, the EEP Program will continue to offer promotions and incentives in three different product categories:

- Lighting
- Appliances and Consumer Electronics
- Appliance Recycling

Lighting

The Lighting Program will continue to offer retail price incentives through upstream markdown and Creative Markdown promotions for qualified lighting products. Lighting products will be limited to Light Emitting Diodes (LEDs). While LED lamps are more expensive than the CFLs currently in the program, and require a higher rebate initially, the technology continues to advance and the price continues to drop. There are already ENERGY STAR LED lamps available for under

\$5 and Value LEDs (as defined below) for under \$3 replacing traditional 40W and 60W incandescent lamps. In light of these trends manufacturers have indicated that they will reduce or stop CFL production entirely. The Program will discontinue incentives for CFLs as they are phased out of the retail markets. LEDs will become the dominant efficient lighting option, competing directly with halogens.

In response to shifting market conditions and the need to be price-competitive, many manufacturers have started producing A-line LEDs known as “Value” LEDs that are defined as bulbs with a lifetime greater than or equal to 10,000 hours that meet some, but not all of the ENERGY STAR V2.0 certification criteria. Value LEDs have begun to squeeze ENERGY STAR certified CFLs and LEDs off the shelves, which may lead to customers making quick purchasing decisions that favor Value LEDs over ENERGY STAR compliant LEDs. There are currently four different tiers of A-line, or Standard, LEDs as seen in Table 1 below.

Table 1: Classifications of A-line LEDs

LED Bulb Tier Effective Date	Bulb Lifetime	Availability in Stores
ENERGY STAR (ES) LEDs V1.1 - eff. 9/30/14	25,000+ hours	Currently in stores
ES LEDs V2.0 – specification released 12/31/15; eff. 1/1/17	15,000+ hours	In stores starting June/July 2016
Value LEDs	10,000+ hours	Currently in stores
Low value LEDs	Less than 10k hour	Currently in stores

To enable NJCEP to continue to transform the market and move customers away from less efficient halogen bulbs, NJCEP is recommending the option of including Value LEDs in the portfolio. The program will still focus on promoting ENERGY STAR products, and will allow Value LEDs into the program only if necessary to respond to rapid market changes that might otherwise prevent the program from meeting goals. If it becomes apparent that Value LEDs are dominating the market NJCEP recommends that the program strategically add markdown incentives to Value LEDs that meet performance criteria designed to assure acceptable levels of quality and customer satisfaction. Incentives would be only offered to Value LEDs that meet criteria shown in Table 15 in Appendix A: Residential Incentives.

Through an RFP process, incentives will be provided for eligible products (up to a negotiated volume) sold by selected New Jersey retailers during promotional periods. Incentives will vary by type of product and/or distribution channel, based on negotiations with manufacturers and/or retailers. Based on experience with the earlier initiatives and regional promotions, the FY17 mark down incentives will be as shown in Table 2 below:

Table 2: FY17 Lighting Program Incentives

Product Type	Subtype	Maximum Per Bulb/Fixture Incentive
Value LED	Standard Omni A-Line	\$1.00
Standard LED	Standard Omni A-Line	\$3.00
Specialty LED	BR, Globe, PAR, R, Torpedo, Flame Tip, Other Decorative, 3-way	\$5.00
LED Fixture	Retrofit Kit, Portable, Hardwire	\$8.00

In addition to the retail markdowns described above, the Lighting Program will continue to support Creative Outreach and Education Promotions, the goals of which are to:

- Create awareness through events that attract consumers and provide opportunities to disseminate program information and interact with consumers to answer questions;
- Educate consumers on the benefits of energy efficient lighting and appliances;
- Encourage consumers to move beyond the “first step” of using energy efficient lighting products and to take the next step to adopt more significant energy efficiency measures;
- Create awareness of no/low cost methods of reducing energy consumption (such as addressing standby loads, the use of advanced power strips etc.); and
- Focus on hard-to-reach residential market channels that have not been well-served through the markdown lighting initiative.

Appliance and Consumer Electronics

In FY17, the Program will participate in the ENERGY STAR Retail Products Platform (RPP). This program uses a midstream promotion model for appliances and consumer electronics that will allow NJCEP to maintain a viable long-term, cost-effective products program and leverage a national platform for greater engagement with retailers to accelerate the stocking and sales of certain ENERGY STAR product categories. The RPP is a nationally coordinated midstream program that is being developed by a group of utilities and retailers with facilitation by EPA. The heart of the effort is to help evolve traditional program design, delivery, and evaluation approaches to retail-based energy efficiency programs to reflect the changing nature of the residential products market and capture remaining, hard-to-reach energy savings through market transformation. What makes the ENERGY STAR RPP unique is the consistency of the program design and implementation and the scalability that comes with consistent program design—including product categories, specifications, data requirements, and midstream delivery. This consistency drives down administrative costs and complexity for retailers, creating a strong value proposition for participation and motivating retailers to make changes in stocking, promotion, and pricing practices.

The program involves partnerships with several larger retail channels, whereby the program Implementation Team would agree to specific incentive levels on qualified products and pay those incentives directly to the retailer. Rather than incentivizing the customer to buy the product, this midstream model incentivizes the store to stock and sell the product. This allows every unit sold

to be captured by the program rather than depend on the customer to submit a rebate. The RPP proposal currently includes ENERGY STAR certified clothes dryers, air cleaners, freezers, entertainment system sound bars, and room air conditioners. Since NJCEP already offers a rebate on clothes dryers, that would not be included in the initial RPP participation. Piloting RPP with air cleaners, freezers, sound bars, and room air conditioners would allow the Implementation Team to test out the midstream incentive structure while not disrupting the current program offerings. The current RPP measure list will likely be expanded in 2017, which may create new cost-effective this promotion throughout the year, assuming they would not create conflicts with measures in the current mail-in rebate program.

The Appliance and Consumer Electronics Program will continue to offer downstream mail-in rebates on clothes washers, clothes dryers and refrigerators purchased by NJ customers. Customers are able to apply via a traditional paper application or through an online application. The program will also offer midstream rebates on appliances and advanced power strips with retail partners based on market opportunities. These incentives will be supported with a variety of promotional approaches, including leveraging the Environmental Protection Agency's (EPA) national ENERGY STAR campaigns.

The FY17 program will offer mail-in (or online form) and midstream point-of-sale incentives in partnership with New Jersey retailers for promotion of higher performance ENERGY STAR clothes washers, clothes dryers, refrigerators, and advanced power strips. In all four product types, incentives for two tiers of performance will be offered to promote higher efficiency levels to New Jersey residents.

The Program performance criteria for clothes washers in FY17 will align with the ENERGY STAR V7.1 specification. The higher tier incentive for washers will align with the current CEE Tier 2 specification to support increased market share of the highest efficiency models.

For refrigerators, the Program performance criteria in FY17 will align with the ENERGY STAR V5.0 specification. Similar to washers, the higher tier incentive for refrigerators will align with the current CEE Tier 2 specification to support increased market share of the highest efficiency models.

For clothes dryers, the program performance criteria in FY17 will align with the ENERGY STAR V1.0. The higher tier incentive will align with the criteria for the 2014 ENERGY STAR Emerging Tech Award.

In addition, the program will offer consumers the ability to submit rebates in two forms: submitted online or by mail for clothes washers, refrigerators and dryers to support customers of those retailers unable to participate through the midstream promotion process.

The program will continue to provide midstream point-of-sale incentives for advanced power strips in a tiered structure similar to the appliances. A Tier 1 unit will qualify for a \$15 rebate and a Tier 2 unit, which is designated by its ability to provide active power management, will qualify for a \$40 rebate. These will either be offered through participating retailers or through partners in the Creative Markdown Promotions.

The FY17 Appliance and Consumer Electronics Program proposes the removal of Set-Top-Boxes from the portfolio.

The appliance and consumer electronics incentive table can be found in Appendix A.

Appliance Recycling

The Appliance Recycling Program offers residential customers the opportunity to recycle their old, inefficient refrigerators and freezers in exchange for a “bounty” incentive payment. In FY17, NJCEP will add the option of customers receiving an additional rebate for room air conditioners and dehumidifiers when a refrigerator or freezer is already being picked up for a household. Customers can call or go online to schedule a pick-up appointment. NJCEP uses a third party vendor to provide turnkey program implementation. The vendor manages the appointment scheduling, confirms customer and unit eligibility, conducts the pick-ups, transports the units to a recycling facility, and oversees their decommissioning.

NJCEP will become an EPA Responsible Appliance Disposal (RAD) partner, which signifies that all units are recycled in a manner that meets EPA standards. Not only does this guarantee that the unit is recycled in an environmentally friendly manner, but also ensures that the unit is completely removed from the grid.

In FY17, the Program will promote and facilitate the early retirement of inefficient, working appliances. Implementation will include:

- In-house appliance pickup and direct access to participants to promote other NJCEP referrals;
- Tracking of individual units and recording of the recovery and destruction of all hazardous materials in compliance with the EPA’s Responsible Appliance Disposal (RAD) guidelines; and
- Evaluating retail partnerships that support removal and recycling of refrigerators and freezers at the time of new product purchase.

In FY17, the Program will continue to offer a \$50 incentive to New Jersey residents for turning in their working old, inefficient primary and secondary refrigerators and freezers for recycling. The offer will also expand to small commercial/businesses that meet the unit requirements and eligibility requirements.

As stated above, the program will add room air conditioners and dehumidifiers to the list of eligible measures. These measures would be secondary units, so a customer could only recycle them in conjunction with a larger unit (refrigerator/freezer). In other words, the recycling vendor would not schedule a pick-up at a customer’s home just for a room air conditioner or dehumidifier. The customer would need to be recycling a larger unit in order to recycle the smaller one and receive a rebate. These units are not cost-effective when picked up as the primary unit but offering the recycling option to customers provides increased customer satisfaction and allows for greater savings to be claimed through the program. As with refrigerators and freezers the refrigerant will be captured and the units will be recycled in a manner that meets EPA standards.

The planned program incentives are shown in Table 3:

Table 3: FY17 Appliance Recycling Incentives

Product Type	Terms	FY17 Incentive
Refrigerator/Freezer	Limit 2 TOTAL per year	\$50
Room Air Conditioner (RAC)/Dehumidifier	Limit 2 of each per year	\$25

For FY17 the program also proposes to allow small commercial customers to participate if they meet all other eligibility requirements.

General Activities

The Implementation Team will maintain the existing retailer base and recruit new retailers as needed. In FY17, the Program will continue to leverage retailer participation in developing and distributing collateral and “point of purchase” (POP) materials for product groups and in providing retail associate training and generating consumer awareness at the point of product display. The Implementation Team will also continue to promote the Program at NJCEP sponsored events.

National ENERGY STAR Promotions

Change The World - Start With ENERGY STAR Tour

The Program will continue to support ENERGY STAR’s Change The World Tour. This promotion combines education about ENERGY STAR products with a community service component. NJCEP will partner with local organizations to plan community events, highlight one or more ENERGY STAR products, incorporate a service component, and then pass the “torch” to the next “stop” on the tour. The stops will be advertised in advance and promoted on both the NJCEP and the ENERGY STAR websites. This event will take place in October.

“Flip Your Fridge”

Since NJCEP offers both a rebate on a new ENERGY STAR refrigerator purchase and the recycling of an older refrigerator, the Program will continue to support the EPA’s “Flip Your Fridge” campaign. NJCEP will advertise the campaign on the NJCEP website by leveraging materials developed by the EPA for “Flip Your Fridge” participants.

National Meetings

Program staff will attend the National ENERGY STAR Lighting, Appliance and Consumer Electronics Partners Meetings to showcase New Jersey’s innovative work on efficient products, to learn new best practices to incorporate with the program, and to meet with national manufacturers and retailers to discuss New Jersey promotions.

Quality Control Provisions

For promotions featuring customer rebates, documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all rebate program

participants. All applications are reviewed as they are processed for verification of the documentation that the equipment meets program requirements.

Each application and its information are entered into a database that allows checking for duplicate applicants through an equipment serial number comparison. In addition to the above, the Energy Efficient Product Program field representatives visit the participating storefronts to verify that Program products have been received and have been displayed properly according to program requirements. If necessary, they will help unpack the products, and put them on display with the required program materials, as well as train sales staff about Program rebates and the energy savings a customer might expect from purchasing a Program product. Performance reports are provided to the program managers to assist in developing future promotions and selecting the most effective proposals.

Existing Homes Program

NJ Home Performance with ENERGY STAR

Program Purpose and Strategy Overview

Homes use a variety of energy sources—including electricity, natural gas, fuel oil, propane, and wood most commonly—for a variety of uses. Looking at homes comprehensively, across all of these energy sources and end uses provides the greatest opportunity to save the most energy. But doing so is complex, and well beyond the expertise of home improvement contractors who have not received specialized training. Similarly, the average homeowner may want to reduce energy costs, but simply does not have the information to be able to figure out how to save significantly without assistance.

Home Performance with ENERGY STAR (HPwES) is a national home efficiency improvement program developed by the Environmental Protection Agency (EPA) and the Department of Energy (DOE). The Program supports the development of a qualified and robust contractor network, contributing to local job growth and boosting local economies. The Program encourages contractors (primarily insulation contractors, HVAC contractors, and remodelers) to pursue an integrated, “whole house approach” to energy efficiency and home improvement, while providing customers comfort and making their homes healthier and safer. Participating contractors must meet Building Performance Institute (BPI) GoldStar Contractor Program requirements. BPI certifications are based on national standards that ensure that home assessors have the skills required to identify and realize savings opportunities and that best practices are met. As such, it is a market transformation program aimed at raising the technical standards for trade allies working in the home improvement market. It also offers interested customers the opportunity to undertake comprehensive energy efficiency projects by working with a group of certified contractors to maximize savings—providing the information and expertise that they do not have themselves.

Because the Program’s purpose is primarily long-term market transformation, it is challenged to meet standard cost-effectiveness criteria used for programs that are designed only to achieve near-term savings. Its value both in creating the expertise and infrastructure to achieve comprehensive home savings and in the direct benefits it provides to homeowners who participate is not well-measured using these cost benefit tests, but is never the less significant.

Program Description

Over the past several years, the New Jersey Home Performance with ENERGY STAR program (Program) has provided information, education, and incentives directly to participants to encourage them to make energy efficiency improvements to their homes. The Program also has provided contractors with the training and the BPI GoldStar Contractor Program qualifications necessary to consistently achieve comprehensive energy savings. The Program has successfully trained and approved over 200 BPI accredited / GoldStar qualified contractors. Yet market barriers to achievement of greater numbers of comprehensive home retrofits persist, the following among them:

- High upfront cost of implementing a comprehensive retrofit package;
- Consumers’ inability to differentiate, and therefore value, the difference between good and poor quality HVAC installation;

- Consumers' lack of information and awareness on the benefits (both energy and non-energy) of a “whole-house” approach to saving energy, resolving health and safety issues, and improving home comfort;
- Home improvement industry’s negative perception of the HPwES program, including requirement for performance of comprehensive work; lack of confidence in multi-year program funding; and slow payment timelines that lead to contractor cash flow issues, and;
- Limited availability of trade allies with qualified skilled employees who are invested in the HPwES program.

During FY17, the Program will continue to serve homes and multifamily units in the Program through a combination of:

- Offering robust, performance-based incentives for energy efficiency improvements to both participants and contractors.
- Offering zero percent interest loans to qualified participants through participating NJ utilities or directly through the Program.
- Working closely with trade allies to bridge the gap between the HVAC and HPwES Programs by starting to align the technical standards of both programs.
- Continuing to offer contractor training on program and technical topics, and providing partial reimbursement for annual BPI GoldStar Contractor Program fees.
- Continuing to conduct Quality Assurance inspections and ensure that participants receive contracted energy efficiency services based on BPI national standards, and
- Continuing to effectively partner with NJ’s investor owned utilities to leverage additional resources and offers.

To initiate participation in the Program, a customer requests an assessment performed by a NJ HPwES participating and BPI GoldStar contractor. Contractors also market the program directly to customers, and encourage customers replacing heating and air conditioning equipment to undertake comprehensive efficiency improvements at the same time. The assessment includes recommendations for appropriate energy efficiency improvements relevant to the home, and in addition checks for health and safety issues. Contractors are trained to promote the installation of comprehensive energy efficiency improvement measures, which may be eligible for Program incentives and financing incentives based upon the total energy savings (TES) estimated for the recommended work scope.

Participating contractors must employ properly trained staff, and must allow inspection of work performed by the Program to ensure that all measures are properly installed and safety precautions are observed. Only contractor firms which are GoldStar Qualified by BPI may participate in the program. The BPI GoldStar requirements regarding contracting company qualifications and individual employee certifications provide assurance to both participants and the Program that workers are competent, that all cost-effective savings opportunities have been identified, and that any health and safety considerations are also included in the report of recommended actions. Participating contractors must guarantee all work, and abide by BPI standards governing health and safety, work quality, insurance coverage, customer service, and complaint resolution.

Target Market and Eligibility

The Program is designed to serve existing New Jersey households across all income categories, but particularly targets the broad market not eligible for low-income program services. The Program targets customers served by an investor-owned utility that reside in existing one, two, three and four-family homes; either attached or detached, and multifamily buildings which are three stories or less.

Multifamily Buildings

In FY17, the Program Manager will develop a unified approach to serving multifamily projects to assure that all multifamily properties are eligible to receive energy efficiency services suited to their particular needs. In the meantime, small multifamily (MF) building developments may participate in HPwES. The program defines eligibility as buildings that:

- Are no more than three stories high;
- Have single ownership;
- Can provide total building energy usage accessible through individual metering of the units within the multifamily structure, or a master meter at the building (as opposed to sites with multiple buildings heated by a central heating plant); and
- Are made up of five or more units in a single building, or multiple buildings (each with five or more units), within a single geographic boundary and with a single property management structure.

Multifamily facilities that do not meet these criteria may receive services through C&I Programs.

The total incentive amount for a multifamily project must not exceed 50% of the total costs of approved measures. If the total multifamily project incentive based on the above structure yields an amount greater than 50% of the costs of approved measures, the incentive amount offered will be lowered to the 50% maximum.

The program work scope **must** consider a whole building approach to be approved. Individual units within a multifamily structure or development are not eligible for the program unless the whole building is served; however, they may take advantage of other NJCEP offerings, such as the *WARM* and *COOLAdvantage* programs.

Townhouses, as defined by the New Jersey Residential Code⁹, are considered single-family homes, and as such, the same incentive levels given to single-family homes will apply.

The Program works with the contractors of multifamily projects to ensure proper project assessment and approval processes. Multifamily buildings are addressed in accordance with the BPI Multifamily Building Standards. The Program only approves such projects for contractors that have at least one staff member holding BPI Multifamily certification.

⁹ NJ IRC R202: Townhouse: A single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with open space on at least two sides

Program Incentives

Two types of incentives are offered by the program:

- Customer incentives and loans to make home retrofit projects more affordable and encourage customer participation and energy savings; and
- Incentives to encourage contractor participation and deliver projects that provide energy savings and comfort, as well as healthy and safe homes.

Further, incentives are structured to promote comprehensive savings with the highest incentive offered for the greatest energy savings, as well as to accommodate those who participate in other NJ energy efficiency programs. For example, it is possible for a customer to install properly sized, efficient HVAC equipment and receive *WARM* and/or *COOL*Advantage and utility equipment rebates, and then at a later date install Tier 2 thermal envelope measures (such as air sealing and insulation) through the HPwES Program, or vice versa. Participants are free to choose from among the comprehensive work scope recommendations provided by the participating program contractor, so the incentive structure is intended to reward participants who pursue the highest possible savings. Similarly, contractors are rewarded for promoting a comprehensive set of recommendations.

In FY17, the Program's tiered incentive structure has been maintained. The TES estimates will be determined by use of the Program's software tool. BPI GoldStar Contractor Program requirements will be enforced, including prohibiting air sealing without first addressing relevant health/safety issues such as failing spillage/back draft testing, and requiring mechanical ventilation to ensure adequate indoor air quality to meet ASHRAE and BPI ventilation requirements.

The incentive tables for the Existing Homes program can be found in Appendix A.

Planned Program Implementation Activities for FY17

The following program implementation activities will be undertaken in FY17:

- The Program will continue providing customer and contractor incentives for HPwES projects as described above.
- The Program will continue to work with the NJ utilities to offer 0% interest loans or on-bill repayment, and to leverage these and any other applicable utility incentives in FY17. As mentioned in the HVAC section, coordinate with the utilities to ensure programs offer complementary incentives to increase overall participation.
- The Program will continue to work with the current lending providers to offer 0% loan options. These loan options for HPwES are offered to any program participant where a utility loan or on-bill repayment program is not available.
- The Program will continue implementation of automated processes that reduce administrative costs and simplify the Program for contractors and participants.
- The Program will offer New Jersey BPI annual GoldStar Contractor Program reimbursements for all participating GoldStar contractors who have completed at least 10 projects during FY17. The New Jersey BPI GoldStar Contractor Program fee reimbursement will be 25% of the annual New Jersey BPI fee and will be processed upon presentation of the contractor's paid invoice showing the full amount of the GoldStar annual fee.

- The Program will support the training of HPwES contractors by providing sales trainings to help contractors learn how to best sell HPwES features and benefits to homeowners, and technical trainings to improve contractors' technical skills and support them in meeting the continuing education requirements for BPI certification.
- The Program will continue to evaluate new technologies and installation practices.
- The Program will also explore strategies to more effectively engage with potential partners and stakeholders, including insulation contractors, remodelers, and real estate industry professionals, Sustainable Jersey, distributors, suppliers to increase program awareness and participation.
- The Program will work with NJIT to develop an online “residential journey” which will take a customer through a decision tree, helping them identify energy savings opportunities, determine their priorities and navigate through the suite of residential programs offered by NJCEP.

Quality Control Provisions

The Program will conduct Quality Assurance Inspections of at least 10% of all jobs completed. Typically, there is a 100% inspection rate for the first 10 jobs that each contractor performs, with the percentage dropping for subsequent jobs in inverse proportion to the level of contractor performance. These inspections assure that contractors maintain the high quality standards expected of them and guard against misuse of Program funds. If a job, or an important aspect of the job, fails to meet program requirements, a Quality Assurance Inspection Report will be given to the contractor which details the necessary corrective action that must be taken. Once the corrective work is done, a Quality Assurance Inspection Report must be signed by the contractor and customer and sent to the Program, which may schedule a re-inspection to ensure compliance. Contractors that are not meeting Program standards will be subject to the Contractor Remediation Procedures,¹⁰ which can include denial of access to the Program’s software tool, removal from the Auto Proceed process, and ultimately termination from the program. The Program Team will continue to work with contractors to resolve inspection failures as quickly and reasonably as possible.

The integration of these procedures, along with contractor incentives reductions for failed QA inspections, is expected to lower the overall percentage of projects that must receive an inspection from the Program, recognize and reward high performing contractors, and significantly reduce overall Program administration costs.

¹⁰ For more information see:

http://www.njcleanenergy.com/files/file/program_updates/NJCEP%20Remediation%20Board%20Order.pdf

Multifamily Homes

Historically, NJCEP has provided energy efficiency to multifamily projects through either the Home Performance with ENERGY STAR program, the RNC program, or through the appropriate C&I programs depending on the size and construction details of the multifamily housing in question and on the energy efficiency opportunities present. While this approach has resulted in energy efficiency improvements for many multifamily homes, it has not been a transparent approach to multifamily property owners and managers, with the result that there may be some multifamily property types that are falling through the cracks. In these cases, property managers are either unaware of the program opportunities available to them, or the programs are not well suited to the opportunities that exist. In FY17, the AEG team will develop a stand-alone multifamily energy efficiency program that addresses all of the many different types of multifamily housing that exist and are being built in New Jersey.

The specific approaches and incentives for this unified multifamily program approach will be determined based on the results of the baseline study to be conducted in FY17, a stakeholder process to gather input from multifamily market actors, and a review of industry best-practices for multifamily energy efficiency programs. Clearly, among the attributes of the consolidated multifamily program there must be a streamlined participation process that does not require potential participants to sort through a variety of program offerings to determine what is best-suited to their needs. Rather the program will go to market with an offering that focuses on understanding the customer's needs and matching them to the best-suited energy efficiency options, regardless of whether the project is individually-metered, master-metered, or a combination of both; whether it is served by residential or commercial rates; and whether it is served primarily by gas or electric energy.

Commercial and Industrial Energy Efficiency Programs

General Overview

New Jersey's Commercial & Industrial (C&I) Energy Efficiency Programs are designed to help New Jersey's businesses use electricity and natural gas more efficiently so that they can be competitive and successful in their industries while retaining and creating jobs and improving the environment. The C&I suite of programs includes eight individual programs targeting the commercial and industrial market segments: 1) New Construction, 2) Retrofit, 3) Pay for Performance (P4P) New Construction, 4) Pay for Performance, 5) Local Government Energy Audit (LGEA), 6) Direct Install, 7) Large Energy Users Program, 8) SBC Credit Program.

The Programs are designed to:

- Provide information on how to meet and exceed current energy code requirements so that buildings operate efficiently, thereby minimizing operating costs;
- Encourage customers to choose high efficiency options when undertaking construction or equipment upgrades (i.e., when customers normally construct buildings or purchase building systems equipment);
- Support market transformation by providing information and incentives to help customers and designers make energy efficient equipment specification, building/system design, lighting design, and commissioning part of standard business practices;
- Stimulate commercial and industrial customer investments in energy efficiency that will support the growth of the industries that provide these products and services.

The Programs address the key market barriers that make it challenging for developers, designers, engineers, and contractors to routinely incorporate energy efficient practices in their projects including:

- Unfamiliarity or uncertainty with energy efficient building technologies and designs;
- Bias toward lower first cost and lack of procedures for considering lifetime building operating costs during decision-making;
- Compressed time schedules for design and construction;
- Aversion to perceived risk-taking involved with specifying technologies less familiar to the local design community, despite the proven reliability of efficient technologies and designs; and,
- Incentive structures and priorities for engineers, designers and contractors, which often do not align with energy efficiency considerations.

The Programs employ a comprehensive set of offerings and strategies to address these market barriers noted above, and to achieve market transformation in equipment specification, building/system design and lighting design. These include:

- Program emphasis on customer-initiated construction and equipment replacement events that are a normal part of their business practice.
- Coordinated and consistent outreach to commercial and industrial customers, especially large and centralized players, such as national/regional accounts, major developers, etc.

- Consistent efficiency and incentive levels for efficient electric and gas equipment and design practices to permanently raise efficiency levels.
- Prescriptive incentives for pre-identified energy-efficient equipment and custom measure incentives for more complex and aggressive measures to permanently raise the efficiency levels of standard equipment.
- P4P offerings that emphasize building operation and performance in addition to the efficiency of installed equipment.
- Provide information and technical support to customers and designers to make energy efficient equipment specification, building/system design, lighting design, and commissioning part of standard business practices.
- Provide information and technical support to customers and designers to facilitate compliance with New Jersey's new commercial energy code as well as future upgrades to that code.
- Offer a wide range of programs designed to meet the needs of a diverse set of customers including nonprofit entities, local governments, small and large business.

Unless specifically stated in the following program descriptions, customers eligible for incentives under New Jersey's Commercial & Industrial Energy Efficiency Program are defined as non-residential electric and/or gas customers of one of New Jersey's regulated electric or gas utilities who contribute to the Societal Benefits Charge fund. With the exception of new construction, applicants to any of the NJCEP C&I Programs must be contributors to the Societal Benefits Charge fund within the previous 12 months.

Construction projects are subject to prevailing wage requirements pursuant to P.L. 2009, c. 203, which amends P.L. 2009, c. 89, as well as the prevailing wage regulations promulgated by the New Jersey Department of Labor and Workforce Development pursuant to P.L. 1963 c. 150 as amended, and N.J.A.C. 17:27-1.1 et seq. and Affirmative Action rules. The prevailing wage rate shall be paid to workers employed in the performance of any construction undertaken in connection with Board of Public Utilities financial assistance programs. This law applies to contracts greater than \$15,444. Unless otherwise stated, by submitting an application to the program and receiving program incentives, customers self-certify that they are complying with prevailing wage requirements.

C&I New Construction and Retrofit Programs

Program Purpose and Strategy Overview

The C&I New Construction and Retrofit Programs (a.k.a. SmartStart) are part of the original suite of commercial & industrial programs. These programs are offered to eligible customers that contribute to the Societal Benefits Charge and, prior to the implementation of the Program Administrator Team contract in 2007, was administered by New Jersey's investor owned utilities. All customer sizes and types may be served by this program.

The program's primary goals are to induce C&I customers to choose high efficiency equipment rather than standard efficiency equipment when they are making purchase decisions, and to replace aging standard equipment in existing buildings. This is accomplished by providing incentives and information on a wide range of types of high efficiency alternatives. "Prescriptive incentives"—incentives where dollar amounts are fixed for specific categories of equipment—are offered where one-for-one, business as usual replacements are typical. The prescriptive applications are labeled by technology, such as lighting and HVAC, and defined as equipment most commonly recommended for energy efficient projects with well-established energy savings. Custom incentives are offered for non-standard equipment, complex systems, and specialized technologies that are not easily addressed through prescriptive offerings. Customers are provided a discrete yet flexible application process with the ability to submit one or multiple applications for any size project. The transparency of incentives aids customers in making informed decisions while assisting energy efficiency professionals to better solicit a prospective energy efficiency project.

Routinely, the program adds, removes or modifies prescriptive incentives for various energy efficiency equipment based on national and local market trends, the development of new technologies, and changes in efficiency baselines.

Program Description

The C&I New Construction and C&I Retrofit Programs (a.k.a. SmartStart) offer both prescriptive custom incentives for the broad range of C&I customers who are in the market to purchase energy efficiency measures. On 9/21/2015, the State of NJ adopted the ASHRAE 90.1-2013 energy code for all commercial and industrial buildings. For FY17, New Jersey's Clean Energy Program will utilize this code in determining performance requirements and incentive eligibility.

The Programs will include the following offerings:

- **Prescriptive Efficiency Measure Incentives** that provide fixed incentives for energy efficiency measures. Incentives are based on incremental costs (i.e., the additional cost above baseline equipment), in consideration of market barriers, changes in baselines over time and market transformation objectives. Eligible measures include:
 - Electric Chillers
 - Natural Gas Chillers
 - Unitary HVAC (Heating, Ventilating, Air Conditioning) Systems
 - Ground Source Heat Pumps (Geothermal)
 - Gas Fired Boilers
 - Gas Furnaces
 - Variable Frequency Drives

- Gas Fired Water Heating
 - Gas Fired Water Booster Heating
 - Tankless Water Heaters
 - Select Premium Efficiency Motors
 - Prescriptive Lighting & Lighting Controls
 - Performance Based Lighting
 - Kitchen Hood Variable Frequency Drives
 - Low Intensity Infrared Heaters
 - Boiler/AC Economizing Controls
 - Refrigeration Controls
 - Refrigerated Doors/Covers
 - Food Service Equipment
 - Custom Measures
- ***Custom Measure Incentives*** for more complex and aggressive efficiency measures. The process for calculating custom measure incentives is performance-based which may include a commissioning component. Incentives are evaluated and determined via an incremental cost and energy savings analysis to be provided by the customer or customer's authorized representative (vendor/contractor). Determination of the appropriate baseline (existing conditions and/or industry standard) will be reviewed on a case-by-case basis subject to program review and approval. The Program Manager has the discretion to determine the reasonableness of project costs for proposed technologies based on industry standards and other market research. Eligible electric and gas measures include lighting systems, HVAC systems, motor systems, large boiler systems, gas-engine driven chillers and other non-prescriptive measures proposed by the customer. Technologies not explicitly listed as custom (per the filing and/or Program Guide) will be reviewed for eligibility and are subject to approval at the discretion of the Program Manager. More details regarding this process can be found later in this document in the section entitled "C&I Construction Program Incentives".

Customers must submit an application for the type of equipment they have chosen to install. The application should be accompanied by a related worksheet, where applicable, a manufacturer's specification sheet for the selected equipment and one month of the most recent electric/natural gas utility bill for a prescriptive application or twelve months for a custom application. To qualify for incentives, customers must be contributors to the SBC fund for the type of incentive being applied for—electric or natural gas. For example: customers applying for prescriptive lighting incentives must provide an IOU electric bill identifying SBC fund contribution. Similarly, an IOU gas bill identifying SBC fund contribution is required for natural gas saving measures such as gas heating. Program representatives will then review the application package and approve it, reject it, and/or advise of additional upgrades to equipment that will save energy costs.

Target Markets and Eligibility

The C&I New Construction and C&I Retrofit Programs target commercial, educational, governmental/institutional, industrial, and agricultural customers engaged in customer-initiated construction events including public schools construction, other new building construction, renovations, remodeling, equipment replacement, and manufacturing process improvements. The

Program offers incentives and technical support for both existing buildings and new construction. In addition, the Program may be used to address economic development opportunities and transmission and distribution system constraints. The Program is primarily geared towards the mainstream C&I market, as opposed to programs that target specialized markets such as the Large Energy Users Program, the Local Government Energy Audit Program, and the Direct Install Program. Applicants to the Program must be contributors to the Societal Benefits Charge (SBC) fund.

Incentives

The tables in Appendix B: Commercial and Industrial Incentives list the proposed FY17 statewide incentives for the C&I New Construction, and C&I Retrofit program components. The incentives vary by size, technology and efficiency level and will be paid based on specific eligibility requirements. The program offers both prescriptive incentives and custom measure incentives.

Custom Measure Incentive Guidelines

The Program utilizes a performance-based approach to determine incentives for custom equipment. Established incentive caps for the program are the lesser of:

- \$0.16/kWh and/or \$1.60/therm based on estimated annual savings
- 50% of total installed project cost
- buy down to a one-year payback

Eligible projects must have a minimum first year energy savings of 75,000 kWh for custom electric projects or 1,500 therms for custom gas projects. This requirement may be waived by the Program Manager on a case-by-case basis if project savings are within 10% of these minimum requirements. Projects with both electric and gas savings may be considered for incentives if either of the minimum savings requirements are met.

Multiple applications for separate, individual facilities may not be grouped to meet minimum savings requirements. The program will allow a single facility with multiple utility accounts to submit a proposed custom project under one application. A customized set of Microsoft Excel-based forms is required for all projects. These forms summarize the critical components of the custom measure including a detailed description of the technology, installed cost, and projected savings. Upon project completion, additional documentation is required to confirm that the measures were installed as proposed and that any changes during construction are reflected in the final savings values. As is clearly described in the Program forms, certain measures may require post-installation metering, trending analysis, and/or the installing contractor's Statement of Substantial Completion. Baseline for custom retrofit projects are existing conditions, however the custom measure must exceed ASHRAE 90.1-2013 standards by at least 2% where specific guidelines exist. In cases where ASHRAE guidelines do not apply, the Program will require that custom measures exceed industry standards per the Consortium for Energy Efficiency (CEE), EPA ENERGY STAR, or using such resources as: current New Jersey baseline studies and other market research; the program experience of the Commercial/Industrial Program Manager; experience of the New Jersey utilities or utility/public program experience from other comparable jurisdictions. New construction/gut-rehab projects will use ASHRAE 90.1-2013 as the baseline for estimating energy savings. The Program Manager will provide contractors with Program spreadsheets that include standard formats for reporting Program savings as well as standard incentive calculations.

The Program can limit the number of custom applications accepted for the same technology in order to evaluate if a prescriptive incentive can be developed. For most technologies, three (3) applications will be the limit. During the prescriptive evaluation period no new custom applications for the same technology will be accepted. Customers applying to the program will be formally notified that any applications received over the limit will not be accepted by the Program. The customer will not be able to resubmit an application until the technology has been evaluated and/or a prescriptive incentive has been developed.

C&I New Construction and Retrofit Programs Pre-Approval Guidelines

Pre-approval by the Program Manager is required for the following project types:

- Prescriptive Lighting;
- Prescriptive Lighting Controls;
- Performance Lighting (for existing buildings only); and
- Custom measures

Pre-approval is not required for all other SmartStart application types, however, to be eligible for incentives, the application must be submitted to the Program Manager within 12 months of equipment purchase. Sufficient documentation must be provided to the Program Manager confirming date of equipment purchase (material invoice, purchase order, etc.). Customers implementing projects prior to program approval do so at the risk of being deemed ineligible to receive incentives.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all C&I program participants. All applications are reviewed upon receipt to verify adherence to eligibility requirements. In addition, all technical information submitted is reviewed to confirm measure qualification and to verify the incentive calculation.

A program representative selects a sample percentage of applications for pre-inspection and/or post-inspection inspections. The specific percentages by program are outlined in the individual program guideline documents.

Delivery Methods

All of New Jersey's Commercial & Industrial Clean Energy Programs will be managed by the AEG Team. The Programs will be offered on a consistent program design and implementation basis to ensure consistency across the state.

As new technologies are introduced and prices for measures change, sometimes in response to program offerings, program managers will continuously monitor technologies and costs and adjust program incentives accordingly. The Program Manager will propose adjustments to program offerings based on program experience, the results of any evaluations, program and market studies as well as other state/regional market research, and current pilot/demonstration projects.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all C&I program participants. All applications are reviewed

upon receipt to verify adherence to eligibility requirements. In addition, all technical information submitted in support of the application is reviewed to confirm measure qualification and to verify the incentive calculation. Applicant supplied information and Program Manager performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence.

A minimum of 10% of all incentive applications are selected for pre-installation and/or post-installation inspection by a Program Administrator inspector. Inspections include a site visit to verify customer eligibility and energy efficient measure technical specifications that result in a verification of the incentive calculation. A field inspection report is prepared and maintained in the project file for future verification.

Local Government Energy Audit Program

Program Purpose and Strategy Overview

The Local Government Energy Audit Program (LGEA) program was launched as part of New Jersey's Clean Energy Program (NJCEP) portfolio in 2008 to provide financial incentives to cover the cost of having an energy audit performed on eligible facilities owned by municipalities, school districts, 501(c)(3) nonprofits, and other local and state government entities (Applicants).

The goal of the energy audit is to provide Applicants with information on how their facilities use energy, identify energy conservation measures (ECMs) that can reduce energy use, and put Applicants in a position to implement these ECMs. The energy audit also guides Applicants towards appropriate NJCEP equipment incentive programs in order to receive financial incentives for implementing the ECMs.

The program is also used as a means of qualifying applicants for other relevant initiatives, most notably the Energy Savings Improvement Program (ESIP), Energy Resilience Bank (ERB), Sustainable Jersey's municipal and school programs, and GreenFaith. Collaboration with these programs can provide cost-effective benefits to these publicly funded facilities while helping to achieve mutual goals.

The initial program process relied heavily on the applicants' time and resources. The recently implemented new program process, as outlined below, will reduce program costs and streamline both the application and auditing processes to help alleviate some of the applicants' administrative burden. This should increase participation in the program.

Program Description

This program is implemented as follows:

- The Applicant will submit an application to the program identifying the energy audit option that best addresses their needs, as well as building type, square footage, utility account information and associated bills, and other applicable energy usage information for each building to be audited.
- When an Applicant is enrolled in LGEA and participating in any NJCEP equipment incentive programs at the same time for the same facility(ies), the Program Manager will assess the impact that the work may have on the energy audit and require the applicant take one of the following actions, depending on the level of impact:
 - Proceed with energy audit and equipment upgrades (minimal impact)
 - Complete equipment upgrades prior to proceeding with energy audit process or vice versa (moderate impact)
 - Cancel energy audit application (significant impact)
- If the initial program eligibility and application requirements have been met and the Applicant is approved to have an energy audit performed under this program the Program Manager will issue an Approval Letter/Notice to Proceed to the Applicant.

- The energy audit scope of work is based on Section 3.8.1 of RFP 16-X-23938, dated April 21, 2015, and is consistent with ASHRAE Level II¹¹ audit, except for lighting which follows ASHRAE Level III. Audit scope may vary depending on the specific needs and circumstances of the Applicant within limitations of the RFP. ASHRAE Level I audits are not included in the program, but the Program Manager will conduct a high level assessment of on-site generation potential.¹²
- In order to provide compatibility with the Energy Savings Improvement Program (ESIP) and Energy Resilience Bank (ERB) initiatives, the energy audit scope will include an evaluation of energy related water conservation measures, demand response potential, and estimated greenhouse gas reduction for each recommended measure.
- The Program Manager will perform the audit, prepare an audit report, and notify the Applicant when the final audit report is completed and all program requirements have been met. In addition, the Program Manager will meet with the Applicant to discuss audit findings and next steps for implementing measures recommend in the report.

The LGEA will provide audits up to a value of \$100,000 per program year, per Applicant. For larger Applicants, if the audit cost exceeds or is expected to exceed \$100,000, the Program Manager will work with Board Staff to determine and authorize a larger cost cap, not to exceed \$300,000. Approval of a higher cost cap will be contingent on a commitment from the Applicant to pursue ESIP (by selecting intent to pursue ESIP on the application).

Services offered under LGEA do not count towards the fiscal year incentive cap (see *Program-Wide Entity Caps*).

¹¹ From the ASHRAE Handbook:

Level I – Walk-through Assessment – Assess a building’s energy cost and efficiency by analyzing energy bills and conducting a brief survey of the building. A Level I energy analysis will identify and provide a savings and cost analysis of low-cost/no-cost measures. It will also provide a listing of potential capital improvements that merit further consideration, along with an initial judgment of potential costs and savings.

Level II – Energy Survey and Analysis – This includes a more detailed building survey and energy analysis. A breakdown of energy use within the building is provided. A Level II energy analysis identifies and provides the savings and cost analysis of all practical measures that meet the owner’s constraints and economic criteria, along with a discussion of any effect on operation and maintenance procedures. It also provides a listing of potential capital-intensive improvements that require more thorough data collections and analysis, along with an initial judgment of potential costs and savings. This level of analysis will be adequate for most buildings and measures.

Level III – Detailed Analysis of Capital-Intensive Modifications – This level of analysis focuses on potential capital-intensive projects identified during Level II and involves more detailed field data gathering and engineering analysis. It provides detailed project cost and savings information with a high level of confidence sufficient for major capital investment decisions.

¹² ASHRAE Level 1 audits, modified scopes to address specific needs (e.g. feasibility of combined heat and power, renewable energy, etc.), and refresh of audits previously completed will be evaluated for inclusion in the program at a later time subject to pricing approval by the BPU.

Target Markets and Eligibility

LGEA is open to the following eligible entities that contribute to the Societal Benefits Charge fund through either their gas and/or electric utilities:

- “State contracting agency” as defined by N.J.S.A. 52:34-35
- “Public agency” as defined by N.J.S.A. 52:35A-1
- Local governments per Local Public Contracts Law (N.J.S.A. 40A:11-1)
- Local governments per Public School Contracts Law (N.J.S.A. 18A:18A-1)
- County colleges per County College Contracts Law (N.J.S.A. 18A:64A-25.1)
- NJ State Colleges or State Universities per State College Contracts Law (N.J.S.A. 18A:64-52)
- Nonprofit charitable organizations per Section 501(c)(3) of the Internal Revenue Code

Applicants may apply for an energy audit for buildings that they own, although a building may still be eligible if the Applicant leases the building and provides supporting documentation from the building owner authorizing the energy audit before it is performed.

Buildings must demonstrate a peak demand of 200kW or greater in the most recent 12 months of electric utility bills (inclusive of all accounts in the building) in order to qualify to participate in LGEA. Buildings that do not meet this requirement will be recommended to apply for the Direct Install program. The Program Manager will have the ability to grant exceptions to the kW requirement, on a per building basis, if the Applicant can demonstrate they meet at least one of the following criteria:

- ESIP is an anticipated source of funding
- ERB is an anticipated source of financing
- Master or campus metering arrangement on-site, where demand of any one building is unknown
- The building(s) already participated in Direct Install
- Demonstrates an interest in measures that are not available under the Direct Install program, such as building shell measures (e.g. insulation, windows, etc.)

LGEA is available to buildings never previously audited under the program, as well as buildings that have received an audit no less than three (3) years earlier (measured from the audit report approval date). All program requirements must be met in order for an entity to qualify for a second energy audit.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all LGEA participants. All applications are reviewed upon receipt to verify adherence to eligibility requirements and technical information. Applicant-supplied information is entered into the database and electronic files are created for all documents, including project correspondence. The Program Manager will perform internal quality assurance reviews on audit reports.

On an annual basis program quality assurance staff will accompany each LGEA auditor on a visit to a randomly selected LGEA applicant’s facility to verify that the audit is conducted in accordance

with proper protocols and to ensure the accuracy of the audit in documenting the facility's detailed building survey. Quality assurance staff will also regularly conduct technical reviews of full audit reports; the selection of projects will be based on a pre-determined, random sampling percentage. File reviews on a sampling of applications prior to incentive payments will also be conducted. Finally, audit pricing will be reviewed for consistency and compared to LGEA historical data, referencing similar facilities for comparison.

Direct Install Program

Program Purpose and Strategy Overview

The Direct Install Program was established in 2009 to address the unique barriers experienced by the small business sector that resulted in a historical reluctance or inability to pursue energy efficiency improvements, even when they would yield significant economic benefits. Small businesses in New Jersey, as elsewhere, frequently lack the ability to source funding for capital improvements, and almost universally lack the in-house expertise to identify economically advantageous energy efficiency projects in which to invest. Perhaps even more critically, small business owners tend to be spread thin, so that even if projects could be identified, and even if funding could be obtained, the decision-makers simply do not have time to prioritize them—the time and energy required simply exceed what is available.

The Direct Install program is a turnkey offering that provides small business customers with a single source for financial incentives, information, and technical assistance. Designed specifically with these customers in mind, the program works through a set of approved contractors who are empowered to promote, enroll, audit, and then install energy efficient measures. The use of fully trained and qualified contractors to provide customers with energy efficiency assessments, effective measure recommendations and installation, and access to incentives that cover up to 70% of the total project costs creates a powerful engine to transform this sector of the C&I market that has historically been unable to participate in the NJCEP programs at desired levels.

In addition to small businesses, this program is used by local government entities and non-profit organizations.

Background

Under the Direct Install Program, the unique needs of New Jersey's small business community will be addressed. The program had been offered previously, but was suspended due to lack of authorized funds. At its April 27, 2016 agenda meeting the Board approved certain changes to the DI program. AEG/TRC anticipates issuing RFPs to engage implementation contractors in May and that the program will re-open in June 2016.

Program Description

The Direct Install Program offers eligible small business customers the opportunity to retrofit existing inefficient equipment with more energy efficient systems. Municipal and other local government agencies that have successfully participated in the Local Government Energy Audit Program are also be eligible. The Program provides turn-key services including technical assistance, financial incentives and education to encourage the early replacement of existing equipment with high efficiency alternatives, as well as the installation of new equipment. A variety of electric and natural gas energy using systems are eligible for improvements including lighting and lighting controls, refrigeration, HVAC and HVAC controls, motors, and variable speed drives and water conservation measures. The Program strives to include a comprehensive package of cost-effective energy efficiency improvements in each customer's project.

Target Market and Eligibility

The Direct Install Program is open to all eligible commercial and industrial customers whose peak demand did not exceed 200 kW in any of the preceding twelve months. The small business sector targeted by the Program tends to have a historical reluctance or inability to fund energy efficiency improvements. In addition, their small size tends to exclude them as beneficiaries of services from other energy service providers.

Program Offerings and Incentives

The Direct Install Program provides turn-key services and offers customers a consistent source of technical assistance, installation services and financial incentives. The Program will be delivered across the state by the Program Manager in association with multiple regional contractors (contractors) who will be selected via a Request for Proposal (RFP) process to deliver installation and related services. Contractors will work in conjunction with material suppliers (vendors), who will be selected under a separate competitive RFP process.

All contracts with vendors and contractors will be negotiated to establish consistent, statewide pricing. All equipment proposed must be cost effective per Program rules and, depending on the project, certain equipment may not be considered cost effective. Eligible equipment categories include but may not be limited to:

- Energy efficiency T8 & T5 lamps, ballast and fixtures
- ENERGY STAR approved LED lamps
- Compact Fluorescent Lamps
- Design Lights Consortium (DLC) Qualified LED Fixtures
- HVAC & HW controls
- LED Exit Signs
- Occupancy Sensors
- VFDs
- ENERGY STAR Programmable Thermostats
- ENERGY STAR/High Efficiency Boilers (up to 1,500,000 Btuh)¹³
- ENERGY STAR Furnaces (up to 140,000 Btuh)¹⁴
- Oil to Natural Gas Conversions allowed for existing furnaces and boilers
- High Efficiency Cooling Systems
- ENERGY STAR Products
- Refrigeration Measures
- Other measures may be added after evaluation by the Program such as investigating the potential of implementing retro-commissioning measures which may include rooftop

¹³ In cases where the existing boiler is oversized, the existing larger boiler may be evaluated and considered for replacement as long as the replacement unit does not exceed 1,500,000 Btuh.

¹⁴ In cases where the existing furnace is oversized, the existing larger furnace may be evaluated and considered for replacement as long as the replacement unit does not exceed 140,000 Btuh.

HVAC tune-ups, refrigerant charges, filter replacements, controls adjustment, and optimization.

In K-12 public and private schools where the facility has an existing boiler that does not exceed 3,000 kBtuh in output heating capacity, the contractor will have the ability to propose a new system that comprises multiple/modular boilers in series as an appropriate replacement, based on the total output heating capacity and efficiency of the existing boiler. A minimum efficiency level of 93% will be enforced.

Contractors will be solely responsible for boiler project design, providing proper training to the applicant, and developing and providing load calculations to the applicant and the Program Manager supporting the proposed system. Further, the contractor will be required to work with township officials to ensure the installation meets all current local and state codes and standards.

Customer incentives are offered to reduce the cost of installing energy efficient equipment and are based on the total installed cost of the retrofits. Qualifying C&I customers are eligible for incentives up to 70% of the installed cost of cost-effective, approved measures with a project incentive cap of \$125,000. Direct Install participants will also be held to a fiscal year entity cap of \$250,000 per entity. Incentives are paid to the installation contractor and the contractor will invoice the customer for the remaining balance of the installation.

The Program Manager will investigate additional/enhanced incentives for distressed communities such as Urban Enterprise Zones (UEZ) and work with Board Staff to determine if additional incentives are appropriate.

Religious facilities¹⁵ which are metered residentially will be permitted to participate in the Direct Install Program. The Program Manager will handle these applications on a case by case basis through the appeals process. Applicants will be required to meet all other program requirements.

Open Program for Contractor Participation

If an applicant wishes to utilize their own contractor, rather than the pre-selected regional contractor for their area, the Program Manager will work with the applicant's contractor to confirm that the contractor:

1. Meets all of the Program's bid requirements.
2. Agrees to the Program's set pricing.
3. Participates in program training provided by the Program Manager.
4. Signs the Direct Install Program Sub-Contractor Agreement.

If all requirements are met, the contractor will be allowed to participate in the program. If the applicant's contractor is unable to meet these requirements, the applicant will be given the option to proceed in the Direct Install Program utilizing an approved contractor for that specified

¹⁵ Refers to buildings that are used as places of worship. This includes churches, temples, mosques, synagogues, meetinghouses, or any other buildings that primarily function as a place of religious worship. Also applies to buildings that may be associated with a religious organization, such as schools, or buildings used primarily for other community activities but excludes religious residential facilities such as convents, etc.

geographic area, or continue with their contractor outside of the Program with the option to access other available NJCEP programs.

Program Financing

Some, but not all of the local utilities have provided 0% interest, on-bill repayment for Direct Install projects in their service territories. This has reportedly been extremely effective in making it easier for business to participate. The Program Manager will continue to work with the BPU to explore the potential to expand the availability of financing for Direct Install projects statewide, either through on-bill repayment or other financing options.

Direct Install Team Responsibilities

The Program Manager will be responsible for the following program components:

- Review and approval of all project Scopes of Work before installation to confirm Program eligibility and cost effectiveness.
- Final review and approval of all projects which have been completed through the execution of the Program's Measure Acceptance Form for incentive finalization.

Direct Install Participating Vendors will be responsible for the following program components:

- Providing offered program equipment required for installation statewide for all approved Direct Install projects.
- Ensuring all provided equipment meets or exceeds the program's minimum efficiency requirements and program guidelines.
- Packaging and shipping of all procured program equipment to the specific project site or Contractor.
- Providing all manufacturer's specifications/certifications and equipment warranties for all installed program equipment to the installation contractor.

Direct Install Participating Contractors are responsible for the following program components:

- Completing Direct Install Program training provided by the Program Manager.
- Program marketing within their assigned program territories.
- Educating the applicant on the Direct Install program, completing the program application, gathering utility information, and pre-qualifying an applicant.
- Performing site visits and collecting existing equipment inventory and energy usage data, analyzing information and identifying opportunities for efficiency improvements, and making preliminary recommendations.
- Submitting completed energy assessment, using the Program's Energy Assessment Tool (EAT), to the Program Manager for review and approval.
- Presenting finalized comprehensive recommendations to the customer, including costs and savings estimates, obtaining customer agreement to proceed with installation, and the collection of the balance of projects costs owed by the program applicant (30%). The customer agreement will be a standard agreement approved by the Program.
- Submission of completed and executed scope of work (SOW), including pre-implementation report to the Program Manager for review and approval. All measures

identified in the Direct Install Scope of Work are subject to the Program's total resource cost test which is utilized to screen out all measures which are not cost-effective.

- Procurement of all approved program equipment from the program's selected equipment vendor for lighting and refrigeration. Contractor is responsible for providing all HVAC and mechanical equipment associated with the program. Contractor is also responsible for procurement of all ancillary equipment required for complete installation.
- Installation of eligible measures per the SOW, including obtaining all appropriate permits.
- Submission of post-implementation report, including payment request. The Program Manager will review all post-implementation reports and either forward the incentive (70%) as approved for payment or send back to the contractor with questions or issues for resolution.
- Providing program applicant with all installed equipment technical manuals, manufacturer's specification/certification sheets, and warranties for all equipment and labor.
- Providing a one-year warranty on all labor and equipment.
- Tracking and reporting on program activity as requested by the Program Manager, including, but not limited to:
 - Inventory of equipment replaced, including quantity, type, location, hours of use
 - Estimates of energy (kWh &/or therms) and demand (kW) savings and total project costs
 - Installation schedules
 - Coordinating the proper disposal of all removed equipment.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all Direct Install Program participants. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficient measure qualification and incentive calculation. Applicant supplied information and program manager performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence.

Delivery Methods

The Direct Install Program will be managed by the Program Manager and will be delivered by a competitively selected pool of subcontractors and equipment suppliers (vendors). The program will be available to eligible commercial and industrial customers statewide.

For material pricing (vendors), the Program Manager will reserve the right to renegotiate and/or rebid pricing annually. For installation pricing (contractors), the Program Manager will provide a one-year contract with an optional one-year extension, and will reserve the right to renegotiate pricing at these trigger points, or rebid for these services.

Contractors will be informed when program changes are anticipated based on changes in market conditions and/or the strategic direction of the program and adjustments will be made as needed during the term of their contract.

Pay for Performance – Existing Buildings

Program Purpose and Strategy Overview

The Pay for Performance – Existing Buildings Program (P4P EB) was launched in 2009 as a market transformation initiative with a comprehensive, whole-building approach to energy efficiency in existing commercial and industrial buildings. It is intended to encourage contractors and building owners to look for ways to lower their total energy consumption from a whole-building perspective in order to achieve deeper levels of savings than are typically achieved through one-for-one equipment change-outs. Instead of simply providing incentives to replace existing equipment with high-efficiency equipment, P4P EB seeks to transform the way in which contractors and design professionals consider energy use. The program does this by requiring the use of standardized energy simulation software to estimate initial savings, and then encourages building owners and their designated contractors to continue to measure their facility's energy consumption and savings year after year. The program adds focus to the impact that building operation practices have on energy use by paying a portion of the incentive based on a measurement and verification (M&V) component to determine whether estimated savings levels are actually achieved.

Program Description

This market-based program relies on a network of contractors (“Partners”), selected through a Request for Qualifications process. Once approved, Partners may provide technical services to program participants. Partners work under contract to building owners, acting as their “energy expert”, but are never the less required to strictly follow program requirements. Partners are required to develop an Energy Reduction Plan (ERP) for each project, including a whole-building technical analysis, a financial plan for funding the energy efficiency improvements, and a construction schedule for installation. The ERP must include a package of energy efficiency measures that achieve the minimum Energy Target of 15% energy reduction of total building source energy consumption, based on an approved whole-building energy simulation. The achievement of the Energy Target is verified using post-retrofit billing data and EPA Portfolio Manager methodology.

Additionally, the ERP must include a comprehensive mix of measures and include at least two unique measures (e.g. lighting and HVAC improvements). Lighting specifically cannot make up more than 50% of the total projected savings. Lighting savings up to 70% of total projected savings can be considered but the minimum Energy Target will increase proportionately as demonstrated in Table 4 below. Recommended measures must meet or exceed ASHRAE 90.1-2013 requirements or Program minimum efficiency requirements, whichever is more stringent. The incentive structure remains the same as detailed further in this document. All other Pay for Performance program rules apply.

Table 4: Minimum Energy Target for Lighting

Lighting Savings	Minimum Source Energy Target
51%	16%
52%	17%
53%	18%
54%	19%
55%	20%
56%	21%
57%	22%
58%	23%
59%	24%
60%	25%
61%	26%
62%	27%
63%	28%
64%	29%
65%	30%
66%	31%
67%	32%
68%	33%
69%	34%
70%	35%

An alternative savings threshold is offered to customers whose annual energy consumption is heavily weighted to manufacturing and process loads. This approach will be reviewed on a case-by-case basis. In order to be considered for an alternative savings threshold (i.e., other than a 15% reduction in total building source energy consumption), the project must involve:

- A manufacturing facility (including such industries as plastics and packaging, chemicals, petrochemicals, metals, paper and pulp, transportation, biotechnology, pharmaceutical, food and beverage, mining and mineral processing, general manufacturing, and equipment manufacturers), data centers, and hospitals.
- Manufacturing and/or process-related loads, including data center consumption, consume 50% or more of total facility energy consumption. For hospitals, 50% or more of the gross floor area must be used for general medical and surgical services and 50% or more of the licensed beds must provide acute care services.
- The Energy Target for projects meeting the above criteria will be 4% reduction of total building source energy consumption.

Savings projections will be calculated using calibrated energy simulation. The approach involves the following steps:

1. Develop whole building energy simulation using approved simulation tools. The list of approved tools will be based on the software requirements outlined in ASHRAE 90.1 Section 11 or Appendix G, or as approved by the Program Manager.
2. Calibrate simulation to match pre-retrofit utility bills.
3. Model proposed improvements to obtain projected energy savings.
4. Calculate percent energy reduction to demonstrate achievement of Energy Target.

Modeling methodology is in general compliance with national programs such as LEED and EPAct Federal Tax Deductions for Commercial Buildings.

Pre-approval of the ERP, which may include a site inspection, is required for all projects. An ERP must be approved by the program and an approval letter sent to the participant and Partner in order for incentives to be committed. Upon receipt of an ERP, all project facilities must be pre-inspected. Measures installed prior to pre-inspection of the facility shall not be included as part of the ERP scope of work and will not be eligible for incentives. Measure installation undertaken prior to ERP approval, but after pre-inspection, is done at the customer's own risk. In the event that an ERP is rejected by the program, the customer will not receive any incentives.

Projects that cannot identify efficiency improvements that meet the above requirements will be referred to the appropriate C&I Buildings Program(s).

Target Market and Eligibility

The P4P EB program is open to existing commercial and industrial buildings with peak demand of 200 kW or greater in any of the preceding twelve months. This participation threshold is 100 kW for eligible multifamily facilities. The Program Manager has the discretion to approve projects that are within 10% of the minimum 200 kW threshold (100 kW for multifamily facilities). In addition, any multifamily facility which does not meet the eligibility requirements of the Home Performance with ENERGY STAR Program is eligible to participate in the P4P program. Due to the comprehensive design of this program, projects may not apply for incentives in other NJCEP programs while enrolled in P4P for the same facility(ies). All eligible measures must be considered in P4P, with the exception of on-site generation (e.g. CHP program). Additional exceptions may be considered by the Program Manager on a case-by-case basis.

The P4P EB program defines a project as a single, detached commercial, industrial, or multifamily building. The entire building must be analyzed under the Program and meet program requirements. Exceptions apply as follows:

Campuses/Multiple Buildings: A campus-style facility is one where ALL the following conditions apply:

- There are two or more P4P-eligible buildings that are located on adjacent properties
- Buildings are owned by a single entity
- AND one of the following:
 - Buildings are master-metered
 - Buildings are served by a common heating and/or cooling plant.
 - Buildings share walls and/or are connected via a physical structure.

In this instance, the entire campus is treated as a single project under the program. The 200 kW participation threshold will be met through an aggregation of all buildings. The Energy Target (as well as all other program requirements) will be achieved in aggregate as well. Only one set of incentives will be paid per project, and all incentive caps apply.¹⁶

¹⁶ For the purpose of tracking technical reviews and site inspections each building addressed within a multi-building ERP may be considered a separate project. This is necessary because although a single ERP will include all of the necessary project information, the review of each of the building simulation models will require individual attention.

Multifamily Buildings: In FY17, the Program Manager will develop a unified approach to serving multifamily projects to assure that all multifamily properties are eligible to receive energy efficiency services suited to their particular needs. In the meantime, the P4P program will continue to accommodate certain types of multifamily buildings. Specifically, multifamily customers that fit the following description will be able to participate in the program:

- ***High-rise/Mid-rise buildings***
 - High-rise/Mid-rise apartment complexes are apartments, cooperative, and/or condominiums structures that are four stories or more above ground.
- ***Low-rise, garden-style buildings with central heating and/or cooling or master meters***
 - Garden-style apartment complexes consisting of multiple low-rise apartments, cooperatives, condominiums and/or townhouses that are three stories or less, surrounded by landscaped grounds.
 - Central heating and/or cooling means that each individual unit does not contain its own heating or cooling systems. The building must contain a central heating and/or cooling plant that serves multiple buildings and/or units.
 - Master meters means electric and/or gas meters that serve multiple buildings (rather than individual units or a single building).

Low-rise (and mid-rise where appropriate) garden-style complexes will be treated as one project under the P4P program. In other words, if there are ten garden-style buildings that are part of one multifamily community, all ten will be aggregated into one P4P application. The 100 kW participation threshold will be met through this aggregation (including common area and in-unit billing). The Energy Target and all other program requirements will be achieved in aggregate as well. Only one set of incentives will be paid per project, and all incentive caps apply. Exceptions to this rule may be considered by the Program Manager on a case-by-case basis where financial constraints prevent the entire complex from participating at once.

Please see the logic tree in Appendix D for guidance on multifamily program eligibility. While a unified multifamily program approach is being developed in FY17 the Program Manager will continue to use this logic tree to make sure that multifamily customers are properly served.

Multifamily complexes and campus-style facilities are viewed as a single entity that is eligible for P4P incentives subject to the annual incentive caps of \$1 million per electric account and \$1 million per gas account to the campus, not to exceed \$2 million per project.

Partner Network

The Pay for Performance Program has developed a network of Partners who can provide the technical, financial, and construction-related services necessary for participation in this program. One of the goals of this program is to expand the network of energy efficiency firms that can

Similarly, site inspections will take considerably longer for multi-building projects as each building will require an inspection. Where applicable, administrative tracking will be associated with any approved sampling of building simulation models (i.e., if a single model is developed to represent several similar buildings).

provide these services in order to make this program accessible for all eligible commercial and industrial customers. This market-based approach is a key component of market transformation by creating “green collar” jobs and helping to develop the workforce necessary to achieve ambitious long-term energy savings targets. New Partnership Applications are accepted on a rolling basis, subject to review and approval by the Program Manager and completion of program orientation webinar. Certain entities who have their own in-house professional engineering expertise can become a Partner for their own facility(ies)¹⁷. The Program Manager also holds monthly Partner Conference Calls to present program updates, technical topics, and discuss any issues that Partners may be encountering.

Program Offerings and Incentives

The P4P EB program’s incentive structure was conceived to encourage the design and achievement of comprehensive energy savings, and as such are released in phases upon satisfactory completion of each of three program milestones, which are:

1. Submittal and approval of a complete Energy Reduction Plan
2. Installation of all recommended measures per the Energy Reduction Plan
3. Completion of Post Construction Benchmarking Report demonstrating achieved energy savings.

Incentive #1 – Energy Reduction Plan – This incentive has been developed to offset the cost of services associated with the development of the Energy Reduction Plan (ERP). This incentive is based on the square footage of the building(s) and is paid at \$0.10/sq. ft. with a maximum incentive of \$50,000 and minimum of \$5,000. This incentive is capped at 50% of annual energy cost, which assists in limiting incentives for facilities with large square footage but very low energy intensity (e.g. warehouses).

Please note, for customers who have successfully participated in the Local Government Energy Audit Program (LGEA), Incentive #1 related to the ERP will be reduced by 50% to \$0.05 per square foot up to \$25,000 to recognize the value of the audit provided through the LGEA Program.

The Incentive #1 is contingent upon moving forward with the installation of measures identified in the ERP and must be supported by a signed Installation Agreement. The Program Manager, in coordination with the Office of Clean Energy, may waive this requirement due to extenuating circumstances. If a project is cancelled after the receipt of Incentive #1 and the Incentive #1 payment is not returned to NJCEP, the customer/Partner may reapply to the Program in the future but will not be eligible for another Incentive #1 payment for the same facility.

Incentive #2 – Installation of Recommended Measures – This incentive is based on the projected energy savings as estimated in the approved ERP. The performance-based incentives to be paid at completion of construction are as follows (designed to be roughly 50% of the total performance-based Incentive #2 plus Incentive #3):

¹⁷ This option is geared toward larger customers. This opportunity will be evaluated on a case-by-case basis by the Program Manager. All other Program requirements will be in effect.

- Projected first year electric savings from \$0.09/kWh for the minimum 15% (or 4% when applicable) savings up to \$0.11/kWh, based on \$0.005/kWh per additional 1% savings.
- Projected first year natural gas savings from \$0.90/therm for the minimum 15% savings (or 4% when applicable) up to \$1.25/therm based on \$0.05/therm per additional 1 % savings.

Incentive #3 – Post Construction Benchmarking Report – Upon submittal of a Post Construction Benchmarking Report that verifies that the level of savings actually achieved by the installed measures meets or exceeds the minimum Energy Target, the remainder of the performance-based incentive will be released. The performance-based incentives are as follows (designed to be roughly 50% of the total performance-based Incentive #2 plus Incentive #3):

- Actual first year electric savings from \$0.09/kWh for the minimum 15% savings (or 4% when applicable) up to \$0.11/kWh, based on \$0.005/kWh per additional 1% savings.
- Actual first year natural gas savings from \$.90/therm for the minimum 15% savings (or 4% when applicable) up to \$1.25/therm based on \$0.05/therm per additional 1 % savings.

Incentives # 2 and #3 are intended to act as a single performance incentive that is paid in two installments in order to provide up-front financial assistance in implementing the project. The Post Construction Benchmarking Report's main purpose is to “true-up” this performance incentive in the post-retrofit period by adjusting Incentive #3 so that the total performance incentive (i.e. Incentive #2 and #3) is in compliance with the program’s incentive structure. Failure to meet the 15% minimum threshold (or 4% where applicable) for energy savings by any margin will result in no awarded performance Incentive #3. Overpayment of Incentive #2, based on actual savings, may also result in no payment of Incentive #3.

The Post Construction Benchmarking Report must demonstrate savings over at least one year of post-construction consumption. Program Manager may grant up to an additional twelve (12) month extension for extenuating circumstances where projected savings levels were not reached based on the initial one-year post-construction consumption.

Incentives#2 and #3 combined will be capped not to exceed 50% of the total project cost, and Incentives#1, #2, and #3 combined will not exceed \$2 million per project if both electric and gas measures are implemented; or \$1 million if only electric or only gas measures are implemented, whichever is less. Entity caps also apply.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all P4P program projects. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of measure qualification and incentive calculation. Applicant supplied information and project technical data are entered into the database. Electronic files are created for all documents and for ongoing project correspondence. The Program Manager performs 100% internal Quality Control review of all submitted Energy Reduction Plans.

The Program Administrator quality assurance staff will perform 100% pre and post-construction inspections, will regularly conduct pre-approval technical reviews of Energy Reduction Plans, and

will perform file reviews on a sampling of applications prior to incentive payments. The selection of ERP reviews will be based on a pre-determined, random sampling percentage.

Pay for Performance New Construction

Program Purpose and Strategy Overview

The Pay for Performance – New Construction program (P4P NC) was originally launched in 2009 to incentivize comprehensive projects designed to perform better than ASHRAE 90.1-2004 code compliant designs. With New Jersey's recent adoption of ASHRAE 90.1-2013 the P4P NC program has been re-designed for FY17 with minimum performance targets that will assure that program participants achieve better than current state code.

The new code requirements are more aggressive than the previous state energy code (i.e. ASHRAE 90.1-2007), and the resultant program requirements are significantly more stringent than they were before the new code was adopted. This is expected to cause a short-term reduction in participation levels. In an effort to mitigate this, the new program design aims to simplify modeling requirements, reduce review time, emphasize actual achieved performance of buildings after construction, and align the program with other rating authorities such as LEED, ENERGY STAR, and ASHRAE Building Energy Quotient. As with P4P EB, a portion of project incentives is tied to actual building performance to emphasize to building owners the critical value of addressing operational practices.

Program Description

The P4P NC program takes a comprehensive, whole building approach to energy efficiency in the design and operation of new commercial and industrial buildings, as well as in major renovations. The program provides tiered incentive levels correlated to the modeled energy cost savings as demonstrated in the proposed design, and includes a performance component to reflect the value that effective building operation has in determining energy use. This market based-program relies on a network of Partners, selected through a Request for Qualifications process. Once approved, Partners may provide technical services to program participants. Partners work under contract to building owners, acting as their “energy expert”, but are never the less required to strictly follow program requirements. Partners will be required to develop a Proposed Energy Reduction Plan (ERP) for each project. The Proposed ERP details a set of recommended measures that will achieve the minimum performance target. Partners will then provide an As-Built ERP, along with a Commissioning Report to demonstrate that recommended measures are installed and functioning. Finally, the Partner will benchmark the building following one year of operation to document how well the building is operating relative to the As-Built ERP.

Participants will be required to work with an approved Partner to develop the Proposed ERP and facilitate the incorporation of the recommended energy efficiency measures. The submitted Proposed ERP must include a package of energy efficiency measures that achieve the minimum performance target of 5% savings for commercial and industrial buildings and 15% for multifamily buildings compared to ASHRAE 90.1-2013. The minimum performance target will be measured in terms of energy cost, which is consistent with ASHRAE 90.1, Appendix G, EPAct Federal Tax Deductions, and LEED NC. Program Guidelines will outline equivalent savings values depending on the modeling compliance path chosen.

Partners are required to develop whole building energy simulations using approved simulation tools. The list of approved tools will be based on the software requirements outlined in ASHRAE 90.1 Section 11 or Appendix G, or as approved by the Program Manager. The program will offer two modeling compliance paths to demonstrate that the proposed design meets or exceeds the minimum performance target:

Path 1: ASHRAE Building Energy Quotient (bEQ) As-Designed Path

Under this path, the Partner will develop a single energy model representing the proposed project design using prescribed modeling assumptions that follow *ASHRAE Building Energy Quotient (bEQ) As-Designed*¹⁸ simulation requirements. Proposed design simulation results, including Energy Use Intensity (EUI_{standard}), will be measured against the median EUI for the building type (EUI_{median}) to evaluate the Performance Score.

$$\text{Performance Score} = (\text{EUI}_{\text{standard}} / \text{EUI}_{\text{median}}) \times 100.$$

Measures must be modeled within the same proposed design energy model, but as parametric runs or alternatives downgraded to code compliant parameters.

Path 2: ASHRAE 90.1-2013 Appendix G Path

Under this path the Partner will model a baseline and proposed building using ASHRAE 90.1-2013 Appendix G modified by Addendum BM. Addendum BM sets a common baseline building approach that will remain the same for ASHRAE 90.1-2013 and all future iterations of ASHRAE 90.1, and is roughly equivalent to ASHRAE 90.1-2004. To comply with ASHRAE 90.1-2013, a proposed building has to have energy cost savings of 11-40% from the Addendum BM baseline, depending on the building type and climate zone. Measures must be modeled as interactive improvements to the ASHRAE 90.1-2013 Appendix G baseline with Addendum BM accepted.

Each project, regardless of compliance path selected, must have at least one measure addressing *each* of the following building systems: envelope, heating, cooling, and lighting (e.g. increased insulation, improved HVAC efficiency, lighting power density below code requirements, etc.). Buildings that are not heated (e.g. refrigerated warehouse) or not cooled (e.g. warehouse) will not be required to have a measure addressing the missing building system. Measures are defined as components that exceed ASHRAE 90.1-2013 requirements.

Core and Shell vs. Tenant Fit-Out Considerations

Generally, P4P NC projects are required to evaluate the whole building design. Further, if a P4P NC Application is submitted to the program, that same building(s) cannot also submit applications to other programs. An exception to this rule may apply to eligible projects

¹⁸ <http://buildingenergyquotient.org/asdesigned.html>

pursuing Core & Shell separate from Tenant fit-out improvements, which may fall into one of two scenarios below.

Scenario 1: Core & Shell and Tenant Fit-out are combined - In this scenario, all aspects of the design (whole building) must be included under a single P4P NC Application and treated as a single project following all Program Guidelines as typical. This may apply where:

- Developer is funding and constructing both Core & Shell and Tenant fit-out.
- High performance systems are specified and funded for the Tenant space separate from Core & Shell, but the building owner and tenant come to an agreement to include both scopes of work under a single project.

Scenario 2: Core & Shell Separate from Tenant Fit-out - This scenario applies when the Core & Shell work is known but the tenant space development is unknown and/or is funded separately. Therefore, the Core & Shell is treated as a separate project from the Tenant fit-out. In this case, a building may apply for P4P NC for either Core & Shell or Tenant fit-out(s), not both. The determining factor depends on which scope will include design and construction of the central HVAC system, in which case:

- P4P NC incentives will apply to all conditioned square footage of the building serviced by the central HVAC in the project's scope of work.
- The project scope applying for P4P NC (e.g. Core & Shell OR Tenant Fit-out) must be able to meet all requirements for P4P NC on its own.
- Any Tenant fit-out OR Core & Shell work not included in P4P NC, (and connected to a non-residential electric/gas account paying into the SBC), may seek incentives through the C&I Prescriptive or Custom Measure programs for eligible equipment.

A project may apply to the program at any point during the design phase. Projects that have begun construction may still apply so long as measures have not been purchased prior to receipt of Program Application. Any measures installed prior to approval of Proposed ERP are done so at the project's risk. In the event that the equipment selected does not qualify for an incentive, it will be removed from the Proposed ERP. Projects that cannot identify efficiency improvements that meet the above requirements will be referred to the appropriate C&I Buildings Program(s).

See Program Guidelines at www.njcleanenergy.com for additional modeling considerations.

Target Market and Eligibility

The C&I Pay for Performance Program is open to new commercial and industrial construction projects with 50,000 square feet or more of conditioned space. The Program Manager has the discretion to approve projects that are within 10% of the minimum 50,000 square foot threshold. Projects may include a single building meeting square footage requirements, or multiple buildings as long as those buildings are owned by the same entity, are located on adjacent properties, and are designed and constructed within the same time

period.¹⁹ Due to the comprehensive design of this program, projects may not apply for incentives in other NJCEP programs while enrolled in Pay for Performance for the same facility(ies). All eligible measures must be considered in Pay for Performance. Exceptions apply to Core & Shell and/or Tenant Fit-out projects— see details as provided above. Additional exceptions may be considered by the Program Manager on a case-by-case basis.

Multifamily Buildings

In FY17 the Program Manager will develop a unified approach to serving multifamily projects to assure that all multifamily properties are eligible to receive energy efficiency services suited to their particular needs. In the meantime, the P4P New Construction Program will continue to accommodate certain types of multifamily buildings. Specifically, multifamily projects that are being designed and constructed to fit the following descriptions will be able to participate in the Pay for Performance program:

- High-rise buildings: 7 stories or greater
- Mid-rise buildings (4-6 stories) and Low-rise complexes (3 stories and under) that do not otherwise qualify for the Residential New Construction programs (reference logic tree at end of P4P Existing Buildings section).

Low-rise (and mid-rise where appropriate), garden-style complexes will be treated as one project under the Pay for Performance program. In other words, if there are 10 garden-style buildings that are part of one multifamily community, all 10 will be aggregated into one P4P application. The 50,000 square foot participation threshold will be met through this aggregation (including common area and in-unit). The minimum performance target (as well as all other program requirements) will be achieved in aggregate, as well. Only one set of incentives will be paid per project, and all incentive caps apply.

Multifamily complexes and campus-style facilities are viewed as a single entity that is eligible for Pay for Performance incentives subject to the annual incentive caps of \$1 million per electric account and \$1 million per gas account, not to exceed \$2 million per project.

Partner Network

See P4P Existing Buildings section. Partners previously certified under the New Construction component will have to partake in a training webinar to become informed regarding the new program requirements. Depending on program demand, the Program Manager may provide subsidized Energy Modeling Training Sessions for Program Partners related to ASHRAE 90.1-2013.

¹⁹ For the purpose of tracking technical reviews and site inspections each building addressed within a multi-building ERP may be considered a separate project. This is necessary because although a single ERP will include all of the necessary project information, the review of each of the building simulation models will require individual attention. Similarly, site inspections will take considerably longer for multi-building projects as each building will require an inspection. Where applicable, administrative tracking will be associated with any approved sampling of building simulation models (i.e., if a single model is developed to represent several similar buildings).

Program Offerings and Incentives

Incentives up to \$1,000,000 per electric and \$1,000,000 per gas utility account, not to exceed \$2,000,000 per project, are available and will be released in phases upon satisfactory completion of each of three Program milestones, which are:

1. Submittal and approval of a Proposed ERP with proposed design meeting all program requirements,
2. Submittal and approval of an As-Built ERP and Commissioning Report confirming installation and operation of recommended measures per the Proposed ERP. Changes between proposed and as-built design must be accounted for at this point, although as-built project must still meet all program requirements.
3. Submittal of ENERGY STAR Portfolio Manager benchmark based on first year of operation with score of 75 or higher. Building types not eligible for ENERGY STAR Certification can qualify for this incentive by obtaining *ASHRAE Building Energy Quotient (bEQ) In-Operation* Certification with equivalent score as set by Program Guidelines.

Incentives are paid based on the rate schedule in Table 5 below.

Table 5: P4P NC Incentive Schedule

	Cost reduction over 90.1-2013 Baseline	Incentive by Building Type Per Square Foot	
Minimum Performance Requirement	15% Multifamily 5% All other	Industrial/High Energy Use Intensity	Commercial and Multifamily
Incentive #1 Proposed Energy Reduction Plan	+ 0 - 1.9% (Tier 1)	\$0.10	\$0.08
	+ 2 - 4.9% (Tier 2)	\$0.12	\$0.10
	+ 5% or greater (Tier 3)	\$0.14	\$0.12
	Max	\$50,000.00	
	Pre-Design Bonus	\$0.02	
	Max	\$10,000.00	
Incentive #2 As-Built Energy Reduction Plan and Cx Report	+ 0 - 1.9% (Tier 1)	\$1.00	\$0.80
	+ 2 - 4.9% (Tier 2)	\$1.20	\$1.00
	+ 5% or greater (Tier 3)	\$1.40	\$1.20
	Max	75% Measure Incremental Cost	
Incentive #3 Building Performance		\$0.40	\$0.35
	Max	25% Measure Incremental Cost	

- Incentive #1 is contingent on moving forward with construction and must be supported by required program documentation (e.g. signed Installation Agreement). The Program Manager, in coordination with the Office of Clean Energy, may waive this contingency in extreme situations where construction is halted due to economic or other external factors. If a project is cancelled after the receipt of Incentive #1, the incentive amount should be returned to NJCEP. If the Incentive #1 payment is not returned to NJCEP,

the customer/Partner may reapply to the Program but will not be eligible for another Incentive #1 payment for the same facility.

- Total of Phase 1, 2, and 3 incentives is limited to \$1 million per electric account and \$1 million per gas account, not to exceed \$2 million per project. Total of these three incentives cannot exceed 100% of total project cost, inclusive of other incentives, grants, and other sources of funding. Entity caps apply.

Incentive #1 Pre-Design Bonus (Integrative Process): Projects that are in pre-design or schematic design may be eligible for a higher Incentive #1. The goal is to incentivize applicants to critically think about their building design from an energy efficiency standpoint early in the process where changes are easier to make, thereby supporting high-performance, cost-effective project outcomes. In order to qualify, Partner will need to work with the applicant beginning in pre-design and continuing throughout the design phases. They will perform a preliminary “simple box” energy modeling analysis before the completion of schematic design that explores how to reduce energy loads in the building and accomplish related sustainability goals by questioning default assumptions. They will then document how this analysis informed building design decisions relative to owner’s project requirements, basis of design, and eventual design of the project. This submittal shall be submitted after Application approval but prior to the Proposed Energy Reduction Plan. Although pre-construction inspections are not routinely performed in this program, AEG may inspect projects applying for this bonus.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all Pay for Performance program projects. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficiency measure qualification and incentive calculation. Applicant supplied information and project technical data are entered into the database, electronic files are created for all documents and ongoing project correspondence. The Program Manager performs 100% internal Quality Control review of all submitted Proposed Energy Reduction Plans.

The Program Manager quality assurance staff will perform 100% post-construction inspections. Pre-construction inspections are not conducted as part of the regular program process, but may be done as required. The Program Manager will regularly conduct pre-approval technical reviews of Proposed Energy Reduction Plans, and perform file reviews on a sampling of applications prior to incentive payments. The selection of ERP reviews will be based on a pre-determined, random sampling percentage.

Large Energy Users Program

Program Purpose and Strategy Overview

The purpose of the Large Energy Users Program (LEUP) is to foster self-investment in energy efficiency and combined heat and power projects for New Jersey's largest commercial and industrial utility customers. This program was established in 2011 as a pilot following requests from these customers to develop a program specific to their needs and in recognition of their large contribution to the SBC. These large, sophisticated facilities have unique needs and internal processes which may not align with the structure of the other C&I programs with respect to submission criteria or timing. The LEUP offers a more flexible process to these customers, many of whom have engineers on staff, but in turn requires that participating facilities comply with accountability processes to obtain incentives, thus assuring that the desired efficiency is achieved. The program supports various types of large customers spanning the pharmaceutical, higher education, industrial, building management, data center and other commercial sectors.

Specific design features include:

- Ability to submit multiple projects/buildings under one application submission;
- Flexible application submission process providing the customer the opportunity to submit up to 3 scopes of work in each program year;
- Appealing incentive structure allowing customers to obtain up to 90% of their respective NJ Clean Energy Program contribution for qualifying projects;
- Ability to participate in other programs while engaged in LEUP.

Program Description

Incentives are awarded to customers that satisfy the program's eligibility and program requirements ("Eligible Entities or Eligible Customers") for investing in self-directed energy projects that are customized to meet the requirements of the customers' existing facilities while advancing the State's energy efficiency, conservation, and greenhouse gas reduction goals. The program relies on eligible customers and their technical consultants to identify and develop qualifying energy efficiency projects that they believe will be beneficial for their operations and that will meet program criteria as described below. In support of LEUP projects the Program Manager will provide the following services:

- Budget management and energy savings reporting;
- Review and approval/rejection of all submitted Draft Energy Efficiency Plan (DEEP) submittals;
- Review and approval/rejection of all submitted Final Energy Efficiency Plan (FEEP) submittals;
- Technical assistance via email and telephone to assist entities in the proper submittal of the required information;
- Updates of data tracking tools to incorporate additional tasks related to this initiative;
- Incentive processing including issuance of checks and tracking/recordkeeping.

Eligible customers who wish to participate in the LEUP must comply with the following program steps:

*Please note, the approved entity may choose to submit the FEEP in lieu of submitting a DEEP.

Submittal Requirements for Fund Commitment

Qualifying entities shall submit a FEEP to the Program Manager for existing facilities only. The FEEP must be submitted to the Program Manager for review three (3) months from the date of the DEEP approval letter.

Program Standards

1. All ECMS must meet Minimum Performance Standards, which may be fulfilled during Professional Engineer review, which shall be understood as the most stringent of:
 - a. Pay for Performance Guidelines-Appendix B
 - b. ASHRAE 90.1-2013
 - c. Local code
2. ECMS must be fully installed no later than twelve (12) months from approval of the Final Energy Efficiency Plan. Extensions may be granted for a period of up to six months with satisfactory proof of project advancement. (This could be in the form of copies of permits, equipment invoices, installation invoices indicating percentage complete, updated project schedules, etc.)

Limitations/Restrictions

1. New construction and major rehabilitation projects are not eligible under the program; however, these projects may be eligible for other NJCEP incentives.
2. Incentive will be limited to energy-efficiency measures. The following shall not be included as part of this program:
 - a. Renewable energy
 - b. Maintenance energy saving projects
3. Incentive shall only be available for ECMS approved in the FEEP. Program Administrator may waive this restriction on a case-by-case basis.
4. ECMS already installed or under construction will not be considered for incentives and shall not be included in FEEP. Program Administrator may waive this restriction on a case-by-case basis.
5. Federal grants/incentives are allowed; other state/utility incentives are allowed so long as they are not originating from NJCEP funds; NJCEP loan funds are allowed. Total of Federal, state, utility, and LEU Program funding shall not exceed 100% of total project cost.

Review and Payment Framework

1. Upon receipt of the FEEP, Program Manager will have sixty (60) days to review each submittal and provide comments to entity.

2. Program Administrator will present FEEPs to Board for approval as required by Board policy and commitment of incentive. Program Administrator may conduct up to three site inspections per FEEP submission including a pre inspection, at 50% completion and 100% completion, as required.
3. If ECMs are not completed within the specified timeframe, incentive commitment may be forfeited.
4. Entity will provide M&V data as requested and will comply with any program evaluation activities.

Target Markets and Eligibility

The Large Energy Users Program is available on a first come, first served basis so long as funding is available to existing, large commercial and industrial buildings that meet the following qualifications:

- Eligible entities must have contributed a minimum of \$300,000 (on a pre-sales tax basis) into New Jersey's Clean Energy Program fund in fiscal year 2016 defined as from July 1, 2015 to June 30, 2016 (aggregate of all buildings/sites). Eligible Entities shall be defined as (1) Public: having distinct and separate budgetary authority; (2) Public Schools: having distinct and separate budgetary authority; (3) Private: Non-residential companies including all related subsidiaries and affiliates regardless of separate EIN numbers or locations within New Jersey. Consistent with DOCKET NO. EOO7030203).
- The total fiscal year 2016 contribution is calculated as \$0.025905/therm times total therms plus \$0.003437/kWh times total kWh or by updated conversion factors provided and approved by BPU staff
- In order to be considered for incentives, the average billed peak demand of all facilities submitted in the DEEP/FEEP must meet or exceed 400kW and/or 4,000 DTherms.
 - Example: Entity submits DEEP/FEEP for two buildings. Building one has a metered peak demand of 200kW; building two has a metered peak demand of 600kW. Per the above guideline, both buildings would be considered for incentives, as the average would be equal to 400kW.

The program will be available via an open enrollment with funding committed on a first come, first served basis.

Entities interested in applying to participate in the program will submit the following information (limit two pages excluding attachments):

- Number of buildings/sites and list of all associated fiscal year 2016 utility and third-party supplier accounts.
- Total usage and number of location or premise IDs as provided by utility.
- Total contribution to New Jersey's Clean Energy Program fund in previous fiscal year from above buildings/sites.

Program Offerings and Incentives

The Program will offer a maximum incentive per entity which will be the lesser of:

- \$4 million.
- 75% of total project(s) cost as identified in the FEEP. Total project costs may include pre-engineering costs, soft costs, and other costs associated with the preparation of the FEEP.
- 90% of total NJCEP fund contribution in previous year (i.e. from all entity facilities).
- \$0.33 per projected kWh saved annually; \$3.75 per projected Therms saved annually.

The program has a minimum incentive commitment of \$200,000. Projects with incentives below this threshold will be redirected to other NJCEP programs. Incentives shall be reserved upon approval of the DEEP. Program funds will be committed upon approval of FEEP by the Program Manager and, if required, by the Board of Public Utilities. Incentive shall be paid upon project completion and verification that all program requirements are met. Entities may submit up to three (3), DEEP/FEEPs throughout the program year.

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all Program participants. All energy efficiency plans are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficient measure qualification and incentive calculation. Applicant supplied information and program administrator performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence. Pre and/or post inspections will be conducted as required.

Customer-Tailored Energy Efficiency Pilot

Program Purpose and Strategy Overview

In FY17, the AEG team proposes to launch a pilot program to better serve the needs of specific commercial and industrial customers whose usage is too large for them to qualify for the Direct Install program, but too low for the Large Energy Users Program. There are likely significant energy efficiency opportunities at the facilities that these customers operate, and while NJCEP clearly offers programs in which they can participate, the existing mix of available programs may not provide the tools that will allow these customers to maximize their efficiency.

To address this, the Commercial and Industrial Customer-Tailored Energy Efficiency Pilot Program (C&I CTEEP) will employ Account Management to engage targeted customers in the mid-large energy cost category. Rather than simply contacting these customers with program information, the Account Managers will establish regular communications with these customers to better understand the specific energy efficiency opportunities and barriers at play. The C&I CTEEP will use a custom approach to assisting customers in overcoming those barriers with the goal of obtaining commitments to proceed with projects based on a variable mix of technical assistance, financial analysis, design incentives, and measure incentives. Recognizing that both efficiency opportunities and the barriers to addressing them can vary dramatically from customer to customer, the Account Manager will work closely with decision makers at participating customer facilities to identify a range of energy efficiency projects that can be incorporated into capital planning, along with a package of support that will result in the desired efficiency improvements being installed. Incentive caps will be consistent with caps for other C&I participants.

In addition to securing commitments for significant energy efficiency projects for customers who might not otherwise participate at the level envisioned, the C&I CTEEP will gather information about the unique needs of customers in the mid-large energy cost category to maximize program impacts and benefits. The information gathered through implementation of this pilot, along with data from the C&I baseline study to be conducted in FY17, will be a useful tool in the development of future C&I program models.

AEG will coordinate with BPU Staff to develop details of program implementation; and staff will present a proposal to the Board in early FY17.

SBC Credit Program

The SBC Credit Program was approved by Board Order dated December 20, 2013, Docket Number EO12100940. The purpose of the SBC Credit Program is to implement the SBC Law (found at N.J.S.A. 48:3-60.3) and to foster self-investment in energy efficiency projects by providing financial support to all C&I ratepayers in the State of New Jersey. Credits will be granted to participants that satisfy the program's eligibility and program requirements to invest in self-directed EE projects. AEG will coordinate with BPU Staff to develop details of program implementation.

Distributed Energy Resources

Combined Heat and Power-Fuel Cell

Program Purpose and Strategy Overview

New Jersey's Clean Energy Program promotes several categories of Distributed Energy Resources (DER) to assist in increasing market activities that will increase overall combined system efficiency, reduce overall system peak demand, further the use of emerging and renewable technologies, reduce emissions, and provide cost-effective reliability solutions for New Jersey while supporting the State's Energy Master Plan.

Program Description

Under the category of Distributed Energy Resources (DER), NJCEP offers incentives for Combined Heat and Power (CHP) and Fuel Cell with heat recovery projects. Incentives are also offered for renewable energy storage projects as described below.

For the purposes of this program, CHP is defined as follows:

- *Combined Heat and Power*

Combined heat and power (CHP), also known as cogeneration, is the sequential production of electricity and useful thermal energy from a single source fuel. Useful thermal energy means energy in the form of direct heat, steam, hot water, or other thermal form that is used for heating, cooling, humidity control, process use, or other valid thermal end-use energy requirements; and for which fuel or electricity would otherwise be consumed. Bio-power and partial bio-power projects that meet these criteria are considered to be CHP projects for program purposes.

Waste heat to power projects that comply with the following definition are treated as CHP projects by the program:

- *Waste Heat to Power*

Waste heat to power (WHP) is the process of capturing waste heat discharged as a byproduct of a process and using that heat to generate power. In this configuration, a source fuel is first used to provide thermal energy to meet load requirements of a process or system (i.e. not deliberately creating excess thermal energy for the purpose of electricity generation). The byproduct of this process is heat that would otherwise be wasted to the atmosphere. The waste heat is then repurposed to produce electricity, as opposed to directly consuming additional fuel for this purpose.

Projects meeting the definitions of either CHP or WHP above are eligible to receive incentives, and are collectively referred to as CHP projects in the remainder of this document.

Target Market and Eligibility

The CHP program is open to all New Jersey commercial and industrial utility customers paying into the Societal Benefits Fund. Applications are reviewed and funds committed on

a first come, first serve basis provided all program requirements are met. CHP systems that receive funding from the Energy Resiliency Bank will not be eligible for incentives through New Jersey's Clean Energy Program.

Equipment Eligibility

Natural gas, hydrogen, biogas, and mixed fuel (e.g. natural gas and biogas) CHP equipment installed on the customer side of the utility meter is eligible for incentives. 100% renewable fueled projects, including biodiesel and landfill gas-fueled projects which meet CHP program criteria, are also eligible to receive incentives. Incentives for mixed-fueled and 100% renewable-fueled systems will not exceed those listed in Table 29.

To qualify for incentives, CHP projects must meet all of the following eligibility criteria:

- Equipment must be new, commercially available, and permanently installed. (Expansion of an existing system with new equipment is also eligible, however, only the incremental expansion would be eligible for incentives.)
- The CHP system must achieve an annual system efficiency of at least 65% (Lower Heating Value – LHV), based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.
- Waste heat utilization systems or other mechanical recovery systems are required. New electric generation equipment which captures waste heat or energy from existing systems is also allowed. In order to qualify for incentives, systems must operate a minimum of 5,000 full load equivalent hours per year (i.e. run at least 5,000 hours per year at full rated KW output). The Office of Clean Energy (OCE) may grant exceptions to the minimum operating hours requirement for critical facilities (as defined by the Office of Emergency Management and FEMA), provided the proposed system operates a minimum of 3,500 full load equivalent hours per year.
- Projects are subject to ten (10) year warranty requirements.
- Each CHP and WHP project must pass a project-level cost-effectiveness analysis demonstrating the simple project payback is 10 years or less (including any federal tax benefits and the Program incentive).
- All CHP project submissions must contain specific cost data for making the unit island mode capable, regardless of whether the project has the capability or not.
- Enhanced incentives will not be offered through the CHP Program for systems participating in the Pay-for-Performance (P4P) Programs, Large Energy Users Program, or other NJCEP programs.
- System must be sized to meet all or a portion of the customer's on-site load, not to exceed 100% of most recent historical annual consumption or peak demand. For all CHP projects, any surplus power that may become available during the course of a given year may be sold to PJM.

Third party ownership (or leased equipment), such as procured under Power Purchase Agreements is permitted within the program with the following provisions:

- In order to ensure the equipment remains on site and is in operation for the term of the agreement, a binding agreement is required between the parties. A copy of this agreement shall be provided to the Program Manager prior to commitment of incentives. The agreement should state that the equipment could be transferred to new owners should the property be sold or otherwise have a buyout provision such that the equipment remains on site and stays in operation. Only permanently installed equipment is eligible for incentives and this must be physically demonstrable, upon inspection, prior to receiving an incentive. This can be demonstrated by electrical, thermal and fuel connections in accordance with industry practices for permanently installed equipment and be secured to a permanent surface (e.g. foundation). Any indication of portability, including but not limited to temporary structures, quick disconnects, unsecured equipment, wheels, carrying handles, dolly, trailer or platform will deem the system ineligible.
- The customer/applicant will be allowed to sign over the incentive to the third party owner. A valid project cost shall be demonstrated as part of the application in order to establish an appropriate incentive level.
- All other program rules apply.

Not Eligible for CHP Incentives

The following types of generating systems/equipment are not eligible for the program:

- Used, refurbished, temporary, pilot, demonstration or portable equipment/systems.
- Back-Up Generators - systems intended for emergency or back-up generation purposes.
- Any system/equipment that uses diesel fuel, other types of oil, or coal for continuous operation.
- Fuel Cell systems which do not have a heat recovery component.

Incentives

Incentives vary based on CHP technology, type, project size and total project cost. Details on qualifying technologies and available incentives can be found in Appendix C: Distributed Energy Resources Incentives.

Projects will receive program incentives in three partial payments. The first incentive will be paid upon proof of purchase of equipment. The second payment will be paid upon project installation and operation, including successful inspection. The remainder of the project incentive will be paid upon acceptance and confirmation that the project is achieving the required performance thresholds based on twelve (12) months of continuous operating data submitted within 24 months of installation demonstrating the system meets program requirements.

The payment structure is summarized in Table 6 below:

Table 6: CHP Incentive Payment Schedule

Purchase	Installation	Acceptance of 12 months post-installation data
30%	50%	20%

Applicants will not be allowed to receive incentives for the installed generation equipment from other available SBC-funded programs or from the Energy Resilience Bank. CHP projects will be evaluated on a per site basis and incentives awarded accordingly. Installations of multiple systems planned for the same site within a 12-month period must be combined into a single project.

Quality Control Provisions

Quality control provisions are designed to assure that systems that receive incentives are operating as expected and providing the desired benefits to the State. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficient measure qualification and incentive calculation. Applicant supplied information and Program Administrator performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence.

Renewable Electric Storage Projects

Program Purpose and Strategy Overview

New Jersey's Renewable Electric Storage Program supports installation of renewable electric storage systems in government, commercial, institutional, and industrial entities for the purpose of providing back-up power for essential services, electric load shifting, and/or helping to stabilize the electric distribution system through the provision of frequency regulation services.

Program Description

On December 16, 2015, the Board approved the revised FY16 compliance filing with the proposal to offer half of the \$6 million program budget through an open enrollment, prescribed rebate program. This \$3 million open enrollment program launched March 1, 2016 and as of May 3, 2016, nine renewable electric storage projects have been submitted, with six under review and three cancelled that did not meet program requirements.

The Board also recommended a subsequent \$3 million program budget incentive offering based on the Rutgers University Laboratory of Energy Smart Systems (RU LESS) research and stakeholder input. RU LESS is evaluating approaches to incentivize behind-the-meter distributed energy investments. The expectation is that the RU LESS research results together with the results from FY15 solicitation and the FY16 open enrollment, prescriptive rebate program roll out will inform how a subsequent FY17 grant program should be structured to maximize the ratepayer investment. The final RU LESS evaluation report is expected to be released in May 2016.

The results of the RU LESS study, as well as stakeholder input, will greatly influence the design and implementation of the FY17 Renewable Electric Storage Program, which has not yet been determined. Program details will be provided when they have been finalized in coordination with the BPU.

Renewable Energy

Solar Renewable Energy Certificate Registration Program

Program Purpose and Strategy Overview

New Jersey's solar policies and Renewable Portfolio Standards (RPS) were established through legislation and implemented through regulation. NJCEP's Solar Renewable Energy Certificate (SREC) Registration Program (SRP) is designed to meet the goals and objectives of the regulations.

Program Description

SRECs are tradable certificates that represent the clean energy benefits of electricity generated from a solar electric system. For each 1,000 kWh (1MWh) of electricity a solar electric system generates, an SREC is issued which can then be sold or traded separately from the power. The revenues from SREC sales or trades can make it more economically attractive for individuals and businesses to finance and invest in clean, emission-free solar power.

The SRP provides registration for solar renewable energy certificates (SRECs) for solar projects, including both behind-the-meter and direct grid-supply projects connected to the New Jersey distribution system. The Generation Attribute Tracking System (GATS) operated by PJM Environmental Information Services is used for tracking and trading of SRECs and Class I and Class II RECs.

In FY17, the focus of the SRP will be on processing the registration of SRECs and continuing to support the goals and objectives of New Jersey's solar polices while communicating accurate, objective information with respect to the SREC market.

FY17 Program Changes

There are no program changes planned for FY17. The Program Manager will continue to work closely with Board Staff to update and modify SRP registration submittal requirements as necessary to adhere to applicable rule amendments that may occur. The Program Manager will also continue to enhance the online portal, streamline the SRP Registration process, and provide up to date reporting on program results/trends.

Target Markets and Eligibility

Eligible solar technology is defined as a system that utilizes semi-conductor technologies to produce electricity directly from sunlight. All systems must meet program requirements regarding equipment certification, proper installation practices and compliance with program procedures and processes. Solar PV systems connected to the distribution system in New Jersey can participate in New Jersey's SREC Registration Program.

Offerings and Customer Incentives

There are no direct customer incentives. The New Jersey SREC Registration Program provides a means for SRECs to be created and verified to allow them to be sold or traded. Solar generating facilities that are interconnected with the electric distribution system in

New Jersey and that meet all applicable rule requirements as well as all SREC Registration Program requirements will be eligible to generate NJ SRECs upon successful completion of all requirements. The rules governing the submittal of new SREC Program Registrations and Final As-Built paperwork may be referenced at N.J.A.C. 14:8-2.4. The SRP guidelines will continue to conform to these rules and will be modified as required to reflect any changes to the rules as they become effective.

In addition:

1. The Program Manager will provide support for the Utility's SREC-Based Financing Programs. This will include coordination with the Solicitation Manager for NJCEP website postings, notifications to the Renewable Energy Program distribution list and establishment of timelines for submittal of SREC Registration Program registrations for each solicitation round.
2. A web based solar portal will be used for submitting SRP Registrations, providing a more streamlined and automated registration submittal and acceptance process.
3. The Program Manager will prepare monthly reports identifying program results and trends.

Planned Program Implementation Activities for FY17

The Renewable Energy Programs will have the following areas of focus in FY17:

1. Sustain the growth of New Jersey's solar markets, while communicating accurate and objective information on market development activity.
2. Continue working with the appropriate stakeholder working groups such as the Renewable Energy Committee.
3. Monitor policy development processes, inform the market of key outstanding questions and decisions (e.g. new RPS levels, net metering, etc.) and translate new policies into program operational procedures as required.

Quality Control / Quality Assurance Provisions

All renewable energy systems facilitated through the SRP program must be installed in accordance with program equipment requirements, program performance requirements, manufacturer specifications, and provisions of the National Electrical Code (NEC). The Installer is also required to meet SRP program contractor license requirements.

Quality Control (QC) serves as a check to ensure specific parameters of a renewable energy installation have been achieved. Quality Assurance (QA) defines processes that ensure quality standards using efficient and cost effective mechanisms.

The QA protocol requires diligence on the part of the "in-office" processing team to ensure the "Final As-Built" project information submitted as part of the final application paperwork is complete, correct and in compliance with all program requirements. This review process is critical for the success of the QA program, which complements the on-site QC inspection process to ensure program compliance.

On-site verifications will be conducted for approximately 10% of the SREC Registration Program projects. An on-site verification will be performed for all grid-supply projects, all

behind the meter projects with a capacity greater than 500 kW, and all add-on systems that add additional capacity or unique installations. The Program Manager may also conduct on-site verifications upon written request from the OCE or PJM-GATS to verify the cause for high meter reads or system production reading anomalies and submit written explanation of the findings to the OCE and PJM-GATS.

Twenty-five percent of the projects that receive an inspection waiver will be randomly selected for a more in-depth paperwork review. The Program Manager reserves the right to request additional information, including PV watts, shading analysis, photos, etc.

Goals and Renewable Generation

The SRP does not have specific program goals in terms of the number of participants or capacity or quantity of solar electric generating systems installed. However, the SRP program does support the goals outlined in New Jersey's Renewable Energy Portfolio Standards (N.J.A.C. 14:8-2):

Table 7: RPS Requirements for Energy Years 2015-17

Energy Year	Solar Electric*	Class I Renewable Energy	Class II Renewable Energy
June 1, 2014-May 31, 2015	2.45%	8.807%	2.5%
June 1, 2015-May 31, 2016	2.75%	9.649%	2.5%
June 1, 2016–May 31, 2017	3.00%	10.485%	2.5%

*The Solar Act signed by Governor Christie on July 23, 2012 replaced the gigawatt-hour goals of the RPS with percentage-based goals.

State Energy Program

Limited funding may be available from the U.S. Department of Energy for a State Energy Program (SEP) grant which would allow fuel oil, propane, and municipal and cooperative electric utility customers (in other words, customers of non-investor owned electric and gas utilities) to participate in select NJCEP programs. Absent this supplemental funding, these customers are not eligible for NJCEP funding since they do not pay into the SBC. If available, funds will be provided on a first come, first-served basis.

Other than expiration dates related to the availability of SEP funds, existing program guidelines and rules related to NJCEP programs will apply. The Program Manager will process applications and provide general support for these initiatives, and the fees associated with administering the participation of these customers and processing these applications will be paid with NJCEP funds. Currently, SEP funding is expected to be available for the following programs:

- Residential Gas and Electric HVAC Program;
- Home Performance with ENERGY STAR;
- C&I Direct Install.

Appendix A: Residential Incentives

Residential New Construction

Table 8: FY17 Financial Incentives per Single Family Unit for, Code compliance through ERI pathway, ENERGY STAR Certified Homes, Zero Energy Ready Home, and Zero Energy Home + RE.

HERS (Before Renewables)	Code compliance through ERI Pathway	ENERGY STAR Home	ENERGY STAR home plus ERI path code compliance **	Zero Energy Ready Home	ZERH plus ERI path code compliance **	Zero Energy Ready Home + RE	ZERH + RE plus ERI path code compliance**
65		\$1,750					
60		\$2,000					
55	\$750*	\$3,000	\$3,750				
54	\$750	\$3,000	\$3,750				
50	\$750	\$4,500	\$5,250	\$6,500	\$7,250	\$9,500	\$10,250
45	\$750	\$7,250	\$8,000	\$9,250	\$10,000	\$12,250	\$13,000
40	\$750	\$10,250	\$11,000	\$12,250	\$13,000	\$15,250	\$16,000
35	\$750	\$13,750	\$14,500	\$15,750	\$16,500	\$18,750	\$19,500
30	\$750	\$17,250	\$18,000	\$19,250	\$20,000	\$22,250	\$23,000
25	\$750	\$18,250	\$19,000	\$20,250	\$21,000	\$23,250	\$24,000
20	\$750	\$19,250	\$20,000	\$21,250	\$22,000	\$24,250	\$25,000
* For projects within climate zone 5 only and climate zone 4 must meet 54 HERS Index							
**Amounts include \$750 for ERI compliance							

Table 9: FY17 Financial Incentives per Multi Single Family Unit for Code compliance through ERI pathway, ENERGY STAR Certified Homes, Zero Energy Ready Home, and Zero Energy Home + RE.

HERS (Before Renewables)	Code compliance through ERI Pathway	ENERGY STAR Home	ENERGY STAR Home plus ERI path code compliance **	Zero Energy Ready Home	ZERH plus ERI path code compliance* *	Zero Energy ready Home + RE	ZERH + RE plus ERI path code compliance **
70		\$1,125.00					
65		\$1,312.50					
60		\$1,500.00					
55	\$750*	\$2,250.00	\$3,000				
54	\$750*	\$2,250.00	\$3,000				
50	\$750	\$3,375.00	\$4,125	\$4,875.00	\$5,625	\$7,125	\$7,875
45	\$750	\$5,437.50	\$6,188	\$6,937.50	\$7,688	\$9,188	\$9,938
40	\$750	\$7,687.50	\$8,438	\$9,187.50	\$9,938	\$11,438	\$12,188
35	\$750	\$10,312.50	\$11,063	\$11,812.50	\$12,563	\$14,063	\$14,813
30	\$750	\$12,937.50	\$13,688	\$14,437.50	\$15,188	\$16,688	\$17,438
25	\$750	\$13,687.50	\$14,438	\$15,187.50	\$15,938	\$17,438	\$18,188
20	\$750	\$14,437.50	\$15,188	\$15,937.50	\$16,688	\$18,188	\$18,938
	* For projects within climate zone 5 only and climate zone 4 must meet 54 HERS Index						
	**Amounts include \$750 for ERI compliance						

Table 10: FY17 Financial Incentives per Multi Family Unit for Code compliance through ERI pathway, ENERGY STAR Certified Homes, Zero Energy Ready Home, and Zero Energy Home + RE.

HERS (Before Renewables)	Code compliance through ERI Pathway	ENERGY STAR Home	ENERGY STAR Home plus ERI path code compliance**	Zero Energy Ready Home	ZERH plus ERI path code compliance**	Zero Energy ready Home + RE	ZERH + RE plus ERI path code compliance**
75		\$625					
70		\$750					
65		\$875					
60		\$1,000					
55	\$750*	\$1,500	\$2,250				
54	\$750*	\$1,500	\$2,250				
50	\$750	\$2,250	\$3,000	\$3,250	\$4,000	\$4,750	\$5,500
45	\$750	\$3,625	\$4,375	\$4,625	\$5,375	\$6,125	\$6,875
40	\$750	\$5,125	\$5,875	\$6,125	\$6,875	\$7,625	\$8,375
35	\$750	\$6,875	\$7,625	\$7,875	\$8,625	\$9,375	\$10,125
30	\$750	\$8,625	\$9,375	\$9,625	\$10,375	\$11,125	\$11,875
25	\$750	\$9,125	\$9,875	\$10,125	\$10,875	\$11,625	\$12,375
20	\$750	\$9,625	\$10,375	\$10,625	\$11,375	\$12,125	\$12,875
	* For projects within climate zone 5 only and climate zone 4 must meet 54 HERS Index						
	**Amounts include \$750 for ERI compliance						

Table 11: FY17 Financial Incentives for ENERGY STAR Multifamily High-Rise

New Financial Incentive Table for Multifamily High Rise

Baseline	Savings Before RE	Baseline	Savings Before RE	Baseline	Savings Before RE	Incentive Per Unit
90.1-2007	25%	90.1-2010	20%	90.1-2013 App G 2010 OR 2013	15%	\$1,250
	30%		25%		20%	\$1,500
	35%		30%		25%	\$1,750
	40%		35%		30%	\$2,000
	45%		40%		35%	\$2,250

COOLAdvantage and WARMAdvantage Incentives

*Table 12: COOLAdvantage Customer Incentives*²⁰

Equipment Requirements	FY17 Incentive Amount
Central A/C: SEER \geq 18 EER \geq 13	\$500
SEER \geq 16 EER \geq 13	\$300
Heat Pump: For Central Air-Source Heat Pumps SEER \geq 18 EER \geq 13 & HSPF \geq 10	\$500
SEER \geq 16 EER \geq 13 & HSPF \geq 10	\$300
Ductless “Mini-Split” Unit: SEER \geq 20 EER \geq 12.5 & HSPF \geq 10	\$500
Ground-source (Geothermal) Heat Pump: ENERGY STAR Qualification	\$500

²⁰ From AHRI directory, CEE-AHRI directory or equivalent ENERGY STAR listing.

*Table 13: WARMAdvantage Customer Incentives*²¹

Equipment	Minimum Efficiency	FY17 Incentive Amount
Gas Furnace – Tier 1	$\geq 95\%$ AFUE	\$250
Gas Furnace – Tier 2	$\geq 97\%$ AFUE	\$500
Oil Furnace	$\geq 85\%$ AFUE	\$500
Furnace & DHW Combination ²²	Qualifying Gas Furnace (see Minimum Efficiency for Furnaces noted above); <u>AND EITHER:</u> <ul style="list-style-type: none"> • a qualifying standalone water heater (see Minimum Efficiency for water heaters below) • <u>OR</u> an indirect-fired water heater attached to the qualifying furnace 	\$700 (Gas Furnace Tier 1, see Water Heater incentive reductions) \$950 (Gas Furnace Tier 2, see Water Heater incentive reductions)
Gas Boiler	HYDRONIC: $\geq 90\%$ AFUE Steam: $\geq 82\%$ AFUE	\$300 (Hydronic) Eliminate steam rebate
Oil Boiler	HYDRONIC $\geq 87\%$ AFUE Steam $\geq 82\%$ AFUE	\$300 (Hydronic) Eliminate steam rebate
Boiler & DHW Combination	Qualifying Boiler (see Minimum Efficiency for Boilers noted above) and water heating as noted below: <ul style="list-style-type: none"> • Integrated water heating and boiler unit (Combi Boilers) • <u>OR</u> a qualifying standalone water heater (see Minimum Efficiency for water heaters below) <u>OR</u> an indirect water heater attached to the qualifying boiler	\$700 (see Water Heater incentive reductions)
Water Heater	≥ 0.82 Energy Factor or, $\geq 90\%$ Thermal Efficiency w/sealed combustion.	\$300
Power Vented Water Heater	≥ 0.67 Energy Factor	\$300
Heat Pump Water Heater	≥ 2.0 Energy Factor	\$500
Solar Domestic Hot Water	ENERGY STAR certified SRCC OG-300 listed; and SF ≥ 0.5)	\$1,200

²¹ Incentives in effect for purchases made after the FY16 notification period.

²² This is the total combined incentive amount for qualifying furnace and hot water heating equipment, and may not be combined with individual NJCEP incentives for furnaces or water heaters.

Appliance and Consumer Electronics Incentives

Table 14: FY17 Appliances and Consumer Electronics Incentives

Equipment	Incentive Tiers	Performance Criteria	FY17 Rebate	Rebate Type ²³
Clothes Washer	Tier 1 (Aligned with ENERGY STAR V7.1)	Front Load - IMEF \geq 2.28, IWF \leq 3.7 Top Load - IMEF \geq 2.06, IWF \leq 4.3	\$50	Downstream
	Tier 2 (Aligned with CEE Tier 2)	IMEF \geq 2.74, IWF \leq 3.2	\$75	Downstream
Clothes Dryer	Tier 1 (Aligned with ENERGY STAR V1.0 Vented Gas)	CEF \geq 3.48	\$100	Downstream
	Tier 1 (Aligned with ENERGY STAR V1.0 Vented /Ventless Standard Electric)	CEF \geq 3.93		
	Tier 2 (Aligned with ENERGY STAR 2014 Emerging Technology Award)	CEF \geq 4.30 for Standard Electric CEF \geq 4.0 for Standard Gas	\$300	Downstream
Refrigerator	Tier 1 (Aligned with ENERGY STAR V5.0 =>7.75 cu ft.)	Baseline ENERGY STAR	\$50	Downstream
	Tier 2 (Aligned with CEE Tier 2 =>7.75 cu ft.)	15% over the measured Federal Minimum Efficiency Standard	\$75	Downstream

²³ The types of rebates are defined as follows: 1. Downstream is when the rebate is paid directly to the customer, usually through use of a rebate form or an instant discount. 2. Midstream is when the payment goes directly to the retailer. The retailer is able to pass all or part of the rebate onto the customer, or they can use it as an incentive to stock more of the product and increase their profit margins. 3. Upstream is when the manufacturer of the good received the rebate directly and it is most often passed onto the customer in the form of an instant rebate.

Advanced Power Strip	Tier 1	Provides standby power management	\$15 (Maximum)	Upstream/Midstream
	Tier 2	Provides active power management	\$40 (Maximum)	Upstream/Midstream
Air Cleaners	N/A	Baseline ENERGY STAR	\$20	Midstream
Freezers	N/A	Baseline ENERGY STAR	\$20	Midstream
Sound bars	N/A	Baseline ENERGY STAR	\$15	Midstream
Room A/C	N/A	Baseline ENERGY STAR	\$40	Midstream

Table 15: Value LED criteria

Attribute	ANSI Lamp Type	Lumen Output Range	Efficacy	Lifetime	Luminous Distribution	CCT	CRI	Color Maintainence	Power Factor	Warranty
Value(s)	A (per ANSI C78.20:2003)	800 - 1,999	70	$L_{70} = 10,000$	<p>80% of the luminous intensity measured values (candelas) shall vary by no more than 35% from the average of all measured values in the 0° to 130° zone. All measured values (candelas) in the 0° to 130° zone shall vary by no more than 60% from the average of all measured values in that zone.</p> <p>No less than 5% of total flux (zonal lumens) shall be emitted in the 130° to 180° zone.</p>	2700K, 3000K, 3500K, 4000/4100K, 5000K, & 6500K (within 6%)	≥ 80 & $R_g > 0$	Total linear distance (+/-) 0.007 Duv on the CIE 1976 u'v' diagram.	0.5	3 Years
Documents Manufacturer to provide for verification	LM-79 Report	LM-79 Report	LM-79 Report	LM-80 Report & completed ENERGY STAR TM-21 Calculator	LM-79 Report & completed ENERGY STAR Luminous Intensity Calculator	LM-79 Report	LM-79 Report	LM-79 Report	LM-79 Report or ANSI C82.77-10-2014	Product packaging
Additional Documents Manufacturer to provide for verification				ENERGY STAR TM-21 Calculator	ENERGY STAR Luminous Intensity Calculator					

Home Performance with ENERGY STAR Incentives

Table 16: NJ HPwES FY17 Single-Family Incentives and Requirements

Incentive Tier	Requirements	Customer Incentive	Contractor Incentive
Tier 1	Energy audit only	No incentives	No incentives
Tier 2	<p>Estimated total energy savings from all work must total at least 5% but less than 20%.</p> <p>Must install air sealing.</p> <p>Must install insulation in at least one open, accessible area of the outside thermal boundary of the home.</p> <p>May also install water heater measures from the Eligible Measures List. Heating and A/C equipment is not eligible</p>	<p>Cash rebate of 50% of the costs of the measures used to calculate TES up to \$2,000.</p> <p>0% financing up to \$5,000 where a utility financing offer is unavailable.</p>	<p>Upon satisfactory project completion, including meeting program guidelines for quality work and addressing health/safety issues, a \$500 production incentive will be paid to the contractor.</p>
Tier 3	<p>Level 1.</p> <p>Estimated total energy savings from all work must total at least 20% but less than 25%.</p> <p>Must install air sealing.</p> <p>Must install insulation in at least one open, accessible area of the outside thermal boundary of the home.</p> <p>May include additional measures from the Eligible Measures List.</p>	<p>Cash rebate of 50% of the costs of the measures used to calculate TES up to \$3,000.</p> <p>Either 0% financing up to \$10,000 or 4.99% financing up to \$15,000, where a utility financing offer is unavailable.</p>	<p>Upon satisfactory project completion, including meeting program guidelines for quality work and addressing health/safety issues, a \$500 production incentive will be paid to the contractor.</p>
	Level 2.	Cash rebate of 50% of the costs of the measures used to	Upon satisfactory project completion, including meeting program guidelines

	<p>Estimated total energy savings from all work must total at least 25%.</p> <p>Must install air sealing.</p> <p>Must install insulation in at least one open, accessible area of the thermal boundary of the home.</p> <p>May include additional measures from the Eligible Measures List.</p>	<p>calculate TES up to \$4,000.</p> <p>Either 0% financing up to \$10,000 or 4.99% financing up to \$15,000, where a utility financing offer is unavailable.</p>	<p>for quality work and addressing health/safety issues, a \$500 production incentive will be paid to the contractor.</p>
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Table 17: NJ HPwES FY17 Multifamily Incentives and Requirements

Incentive Tier	Requirements	Customer Incentive	Contractor Incentive
Tier 1	Energy audit only	No incentives	No incentives
Tier 2	<p>Estimated total energy savings from all work must total at least 5% but less than 15%.</p> <p>Must install air sealing.</p> <p>Must install insulation in at least one open, accessible area of the outside thermal boundary of the home.</p> <p>May also install water heater measures from the Eligible Measures List Heating and A/C equipment is not eligible.</p>	<p>Cash rebate of 50% of the costs of the measures used to calculate TES up to \$500 per unit.</p>	<p>Upon satisfactory project completion, including meeting program guidelines for quality work and addressing health/safety issues, the contractor will be paid a \$50 production incentive per unit.</p>
Tier 3	<p>Level 1.</p> <p>Estimated total energy savings from all work must total at least 15% but less than 20%.</p> <p>Must install air sealing.</p>	<p>Cash rebate of 50% of the costs of the measures used to calculate TES up to \$1,000 per unit.</p>	<p>Upon satisfactory project completion, including meeting program guidelines for quality work and addressing health/safety issues, the contractor will</p>

	<p>Must install insulation in at least one open, accessible area of the thermal boundary of the home.</p> <p>May include additional measures from the Eligible Measures List.</p>		be paid a \$50 production incentive per unit.
	<p>Level 2.</p> <p>Estimated total energy savings from all work must total at least 20%.</p> <p>Must install air sealing.</p> <p>Must install insulation in at least one open, accessible area of the thermal boundary of the home.</p> <p>May include additional measures from the Eligible Measures List.</p>	<p>Cash rebate of 50% of the costs of the measures used to calculate TES up to \$1,500 per unit.</p>	Upon satisfactory project completion, including meeting program guidelines for quality work and addressing health/safety issues, the contractor will be paid a \$50 production incentive per unit.

Table 16 and Table 17 NJ HPwES Incentives and Requirements Notes:

1. Customers replacing heating and/or central cooling systems who receive incentives for their new HVAC systems through the NJCEP HPwES Program may not apply for or receive additional incentives from the NJCEP WARM/COOLAdvantage program.
2. Insulation installations must comply with the requirements detailed in the NJ HPwES Eligible Measures document. Insulation upgrade is not required in cases where all open, accessible areas of the home are currently at or exceed the IECC 2015 prescriptive R-values.
3. NJ utilities may offer a 0% loan or on-bill repayment plan up to \$10,000 or 4.99% financing up to \$15,000 for Tier 3 projects and/or \$5,000 for Tier 2 projects to underwrite the non-rebated portion of the customer cost for HPwES projects in their service territories. NJCEP will offer a 0% financing up to \$10,000 or 4.99% financing up to \$15,000 for HPwES work for any participants where a utility loan or on-bill repayment program is not in place or in instances where a utility customer has been denied through the utility program.
4. NJ utilities may fund HPwES incentives for Tier 3 and/or Tier 2 projects in their service territories. NJCEP will continue to provide incentives for any project where a utility incentive program is not in place or does not cover the full incentive amount due as scheduled in the table above.

5. The Program Administrator and the Office of Clean Energy will continue to process and pay incentives from funds supplied by other sources as they may become available.
6. Appliances, lighting, doors, and windows are not measures eligible for Program incentives.
7. The measures used to calculate TES may also include health & safety measures and qualified accessories, as listed on the NJ HPwES Eligible Measures document, as a component to the installations of Eligible Measures.
8. To accelerate consumer awareness while leveraging private investment through program marketing, the Program has will offer a cooperative advertising program.
9. Projects will continue to have expiration dates. The contractor will need to re-enroll projects to the program following the Auto Proceed process for projects not completed and submitted to the program prior to their expiration date, and will be eligible for the incentive levels available at the time of re-enrollment.
10. The Contractor production incentive will be eliminated if the project fails an initial quality control field inspection. In addition, the contractor will be locked out of the Auto Proceed process if project issues remain unresolved for more than 30-days from the time they are notified of the failed inspection. As soon as the issues are resolved, the contractor will be unlocked from the software. The elimination of the contractor incentive will not be applied to new contractors for their first ten inspections.
11. Incentives are payable only upon satisfactory project completion.
12. A NJ homeowner may apply for a second HPwES project at the same site (home/townhouse) only under the following conditions: 1) The contractor must perform a new audit based on the existing conditions of the home after the first completed HPwES project; and 2) The total incentives from both projects cannot exceed current HPwES incentives caps based on the second project's estimated total energy savings (TES). These rules only apply to a single homeowner for the length of the home ownership. A NJ homeowner may apply for a second HPwES project at a different site (home/townhouse).

Appendix B: Commercial and Industrial Incentives

Existing Program Incentive Caps

Incentive caps have been established to ensure that there is equitable access to the C&I programs for all qualifying customers. These caps have been established because of the potential scale of commercial/industrial energy efficiency projects, where a few extremely large projects could otherwise consume a significant share of the available budgets, leaving other customers unable to access project funding.

C&I New Construction and Retrofit Programs - \$500,000 per electric account and \$500,000 per natural gas account, per fiscal year. A customer is defined as a utility account.

Pay for Performance Program - \$1 million per electric account and \$1 million per natural gas account per fiscal year, not to exceed \$2 million per project.

A Pay for Performance project is defined as a single building owned by an entity, which has met Pay for Performance eligibility requirements and is, or will be, participating in the Pay for Performance Program. If a project possesses more than one electric account and more than one gas account, the multiple electric accounts will be treated as a single electric account and the multiple gas accounts will be treated as a single gas account, and the project will be held to the above-mentioned cap.

Large Energy Users Program – LEUP participants will be limited to the lesser of \$4 million per eligible entity per fiscal year, 90% of calculated NJ Clean Energy Program contribution, 75% of eligible project cost or \$0.33/kWh and \$3.75/Therm saved annually.

Direct Install – Project incentive cap of up to \$125,000. Direct Install participants will also be held to a fiscal year entity cap of \$250,000 per entity. The signed Scope of Work Agreement will be the milestone used to determine proximity to the entity cap.

Local Government Energy Audit Program – LGEA participants will be held to a fiscal year entity cap of \$100,000 per entity. Exceptions apply; see the specific program description in this document.

Combined Heat and Power – CHP participants are held to a fiscal entity cap of \$4 million per entity, per fiscal year. The entity cap is based on the fiscal program year July 1 to June 30.

Program-Wide Entity Caps

If an entity brings more than one project through the New Jersey's Clean Energy Program in one fiscal year in addition to the project caps defined above, they will be held to a fiscal year entity cap. The milestones used to determine the cap, by program, are as follows:

- Application approval - Retrofit, New Construction, Combined Heat and Power
- Energy Reduction Plan / Proposed Energy Reduction Plan approval - Pay for Performance / Pay for Performance New Construction
- Final Energy Efficiency Plan approval - Large Energy Users

- Fully executed Scopes of Work - Direct Install

These same milestones will be used in determining whether an entity has exceeded the fiscal year entity cap.

Entity Cap

An entity cap of \$4 million per entity, per fiscal year will be in effect in FY17.

Entity Cap “fiscal year”

The C&I Programs use a fiscal 12-month period for tracking entity cap limits from July 1 – June 30. Once the entity cap limit for applications has been reached, based on above milestones, the earliest an entity may apply for subsequent incentive funding is July 1st of the following year. Incentives received under all C&I Programs, except the Local Government Energy Audit, count toward the fiscal year entity cap.

Extension Policies

Many programs include deadlines for submittal of information. For example, some programs require the submittal of a final application within six months or one year from the date of the letter approving the initial application.

The NJCEP provides for extensions of deadlines provided certain conditions are met. Program managers are authorized to approve first extensions. Additional standards/guidelines for approving extensions are set out in the program descriptions that follow and in the Guidelines established for each program. The Program Administrator with the approval of Board Staff may grant up to two additional extensions, beyond the first extension.

C&I New Construction and Retrofit Incentives

Table 18: C&I Custom Measure Incentives

Technology Classification	FY17 Incentive
Custom Measure Incentives:	
Measures not covered by the prescriptive incentive tables	<p>Performance incentives of \$0.16/kWh and \$1.60/therm of first year savings, 50% of total installed project cost, or buy down to 1-year payback. Based on estimated savings - minimum of 75,000 kWh or 1,500 Therms saved annually required.</p> <p>Proposed projects must exceed ASHRAE 90.1-2013 by 2% where applicable. In cases where ASHRAE standards do not apply, the Program will require that custom measures exceed industry standards per the Consortium for Energy Efficiency (CEE), EPA ENERGY STAR, and/or others.</p> <p>Minimum savings requirements may be waived by the Program Manager on a case-by-case basis if project savings are within 10% of these minimum requirements. Projects with both electric and gas savings may be considered for incentives if either of the minimum savings requirements are met. Multiple smaller applications may not be grouped to meet minimum savings requirements. Minimum IRR requirement removed</p>

Table 19: C&I Chiller Incentives

Electric Chillers: FY17 Electric Chiller Efficiency and Incentive Structure

Note A - The manufacturer's published chiller efficiency must be determined using the Air-Conditioning, Heating and Refrigeration Institute (AHRI) 550/590 test procedures and at the AHRI standard evaporator and condenser temperatures. If an applicant has a water cooled centrifugal chiller that is designed to operate at other than the AHRI standard conditions the procedure in Standard 90.1-2013, Section 6.4.1.2.1 may be used by the applicant to adjust the manufacturer's published efficiency at non-AHRI conditions to the efficiency at AHRI standard conditions. The applicant will need to provide the manufacturer's non-AHRI ratings as well as the calculations for the chiller efficiency at AHRI conditions.

Constant speed chillers will have to meet or exceed IPLV efficiency to qualify for the incentive program while the incentive will be based on the chillers performance relative to the full load efficiency. Conversely, variable speed chillers will have to meet or exceed the full load efficiency to qualify for the incentive program while the incentive will be based on the chillers performance relative to the IPLV efficiency.

Electrically operated comfort cooling air-cooled and water-cooled chillers are eligible for incentives under the prescriptive path. Chillers for process cooling (e.g. manufacturing, data center, food storage or processing, et cetera) loads may apply for an incentive under the custom path.

Capacity	Path A		Path B		Path A		Path B	
	Incentive Minimum Full Load kW/ton	Qualifying IPLV kW/ton	Qualifying Full Load kW/ton	Incentive Minimum IPLV kW/ton	Incentive Minimum Full Load EER	Qualifying IPLV EER	Qualifying Full Load EER	Incentive Minimum IPLV EER
Air Cooled								
tons < 150					10.30	13.70	9.70	16.12
tons > 150					10.30	14.00	9.70	16.42
Water Cooled Positive Displacement								
tons < 75	0.735	0.600	0.780	0.490				
75 < tons < 150	0.706	0.560	0.750	0.480				
150 < tons <	0.647	0.540	0.680	0.431				
300 < tons <	0.598	0.520	0.625	0.402				
tons > 600	0.549	0.500	0.585	0.372				
Water Cooled Centrifugal								
tons < 150	0.598	0.550	0.695	0.431				
150 < tons <	0.598	0.550	0.635	0.392				
300 < tons <	0.549	0.520	0.595	0.382				
400 < tons <	0.549	0.500	0.585	0.372				
tons > 600	0.549	0.500	0.585	0.372				

Proposed FY17 Incentives									
Type	Capacity	Existing Building				New Construction			
		Constant Speed		Variable Speed		Constant Speed		Variable Speed	
		Base \$/ton	Perf \$/ton	Base \$/ton	Perf \$/ton	Base \$/ton	Perf \$/ton	Base \$/ton	Perf \$/ton
AC	tons < 150	\$20.00	\$3.50	\$90.00	\$4.00	\$10.00	\$3.50	\$45.00	\$4.00
AC	tons ≥ 150	\$20.00	\$2.75	\$92.00	\$4.00	\$10.00	\$2.75	\$46.00	\$4.00
WC positive disp	tons < 75	\$13.00	\$2.25	\$40.00	\$2.50	\$6.50	\$2.25	\$20.00	\$2.50
WC positive disp	75 ≤ tons < 150	\$20.00	\$2.00	\$43.00	\$2.00	\$10.00	\$2.00	\$21.50	\$2.00
WC positive disp	150 ≤ tons < 300	\$17.00	\$2.00	\$43.00	\$2.00	\$8.50	\$2.00	\$21.50	\$2.00
WC positive disp	300 ≤ tons < 600	\$15.00	\$2.25	\$37.00	\$2.00	\$7.50	\$2.25	\$18.50	\$2.00
WC positive disp	tons ≥ 600	\$30.00	\$2.00	\$44.00	\$2.00	\$15.00	\$2.00	\$22.00	\$2.00
WC centrifugal	tons < 150	\$24.00	\$2.25	\$24.00	\$2.75	\$12.00	\$2.25	\$12.00	\$2.75
WC centrifugal	150 ≤ tons < 300	\$10.00	\$2.00	\$30.00	\$2.50	\$5.00	\$2.00	\$15.00	\$2.50
WC centrifugal	300 ≤ tons < 400	\$8.00	\$2.00	\$20.00	\$2.00	\$4.00	\$2.00	\$10.00	\$2.00
WC centrifugal	400 ≤ tons < 600	\$8.00	\$2.00	\$25.00	\$2.00	\$4.00	\$2.00	\$12.50	\$2.00
WC centrifugal	tons ≥ 600	\$8.00	\$2.00	\$25.00	\$2.00	\$4.00	\$2.00	\$12.50	\$2.00

Performance Incentives apply for each 0.1 EER above the Incentive Minimum EER or for each 0.01 kW/ton below the Incentive Minimum kW/ton.

Performance Incentives apply for each 0.1 EER above the Incentive Minimum EER or for each 0.01 kW/ton below the Incentive Minimum kW/ton.

For new construction projects operating under ASHRAE 90.1-2013 code, proposed equipment must exceed minimum program efficiency requirements for Path A (constant speed) IPLV and Path B (variable speed) Full Load.

Technology Classification	FY17 Incentive
Water Cooled Chillers	Incentive table revised to reflect New Construction and Existing Buildings separately shown above.
Air Cooled Chillers	Incentive table revised to reflect New Construction and Existing Buildings separately shown above.
Natural Gas Chillers:	
Gas Absorption Chillers	≥1.1 full load or part load Coefficient of Performance (COP)
< 100 tons	Up to \$450 per ton
100 to 400 tons	Up to \$230 per ton
> 400 tons	Up to \$185 per ton
Gas Engine Driven Chillers	Treated under Custom measure path (≥1.1 full or part load COP)
Desiccant Systems	Up to \$1.00 per cfm (gas or electric)

Table 20: Electric HVAC Incentives

Technology Classification		FY17 Incentive							
HVAC Systems:		<i>Please refer to tables below for HVAC minimum efficiency standards and incentives</i>							
SmartStart Equipment Type	Cooling Capacity tons	Incentive Tier	Existing Building and New Construction						
			Minimum Qualifying Efficiency		Incentive \$/ton				
		SEER	HSPF	EER	IEER	COP			
Unitary HVAC Split System							\$92		
Unitary HVAC Split System		1	14.0				\$105		
Unitary HVAC Single Package		1	14.3				\$92		
Unitary HVAC Single Package		2	16.0				\$103		
Unitary HVAC Single Package or		1			11.5	13.0	\$73		
Unitary HVAC Single Package or		2			12.5	14.0	\$79		
Unitary HVAC Single Package or		1			11.5	12.4	\$79		
Unitary HVAC Single Package or		2			12.0	14.0	\$89		
Central DX AC		1			10.5	11.6	\$79		
Central DX AC		2			11.0	12.5	\$85		
Central DX AC		1			9.7	11.2	\$72		
Central DX AC		2			10.0	12.0	\$77		
Air Source HP Split System		1	14.3	8.4			\$92		
Air Source HP Split System		2	15.5	8.5			\$100		
Air Source HP Single Package		1	14.3	8.2			\$92		
Air Source HP Single Package		2	15.5	8.5			\$100		
Air Source HP Single Package or		1			11.5	12.2	3.4	\$73	
Air Source HP Single Package or		2			12.1	12.8	3.5	\$77	
Air Source HP Single Package or		1			11.5	11.6	3.3	\$79	
Air Source HP Single Package or		2			11.7	15.0	3.3	\$82	
Air Source HP Single Package or		1			9.5	10.5	3.2	\$79	
Air Source HP Single Package or		2			9.7	12.0	3.2	\$82	
SmartStart Equipment Type	Cooling Capacity Btu/hr	Incentive Tier	Existing Building			New Construction			
			Minimum Qualifying Efficiency		Incentive \$/ton	Minimum Qualifying Efficiency		Incentive \$/ton	
			EER	COP		EER	COP		
PTAC	< 7,000	1	12.0		\$40	12.0		\$20	
PTAC	≥ 7,000	1	12.0		\$40	12.0		\$20	
PTAC	≥ 8,000	1	11.7		\$40	11.7		\$20	
PTAC	≥ 9,000	1	11.4		\$40	11.4		\$20	
PTAC	≥ 10,000	1	11.1		\$40	11.1		\$20	
PTAC	≥ 11,000	1	10.8		\$40	10.8		\$20	
PTAC	≥ 12,000	1	10.5		\$40	10.5		\$20	
PTAC	≥ 13,000	1	10.2		\$40	10.2		\$20	
PTAC	≥ 14,000	1	9.9		\$40	9.9		\$20	
PTAC	≥ 15,000	1	9.6		\$40	9.6		\$20	
PTHP	< 7,000	1	12.0	3.4	\$40	12.0	3.4	\$20	
PTHP	≥ 7,000	1	12.0	3.4	\$40	12.0	3.4	\$20	
PTHP	≥ 8,000	1	11.7	3.3	\$40	11.7	3.3	\$20	
PTHP	≥ 9,000	1	11.4	3.3	\$40	11.4	3.3	\$20	
PTHP	≥ 10,000	1	11.1	3.2	\$40	11.1	3.2	\$20	
PTHP	≥ 11,000	1	10.8	3.2	\$40	10.8	3.2	\$20	
PTHP	≥ 12,000	1	10.5	3.1	\$40	10.5	3.1	\$20	
PTHP	≥ 13,000	1	10.2	3.1	\$40	10.2	3.1	\$20	
PTHP	≥ 14,000	1	9.9	3.0	\$40	9.9	3.0	\$20	
PTHP	≥ 15,000	1	9.6	3.0	\$40	9.6	3.0	\$20	

SmartStart Equipment Type	Cooling Capacity tons	Incentive Tier	Existing Building			New Construction				
			Minimum Qualifying Efficiency		Incentive \$/ton	Minimum Qualifying Efficiency		Incentive \$/ton		
			EER	COP		EER	COP			
Water Source Heat Pump	< 1.4	1	12.4	4.3	\$40	12.4	4.3	\$20		
Water Source Heat Pump	< 1.4	2	14.0	4.8	\$45	14.0	4.8	\$23		
Water Source Heat Pump	≥ 1.4 and < 5.4	1	13.3	4.3	\$60	13.3	4.3	\$30		
Water Source Heat Pump	≥ 1.4 and < 5.4	2	15.0	4.5	\$68	15.0	4.5	\$34		
Water Source Heat Pump	≥ 5.4 and < 11.25	1	13.3	4.3	\$80	13.3	4.3	\$40		
Water Source Heat Pump	≥ 5.4 and < 11.25	2	15.0	4.5	\$90	15.0	4.5	\$45		
SPVAC	< 5.4	1	10.2		\$45	10.2		\$10		
SPVAC	< 5.4	2	10.7		\$47	10.7		\$12		
SPVAC	≥ 5.4 and < 11.25	1	10.2		\$45	10.2		\$10		
SPVAC	≥ 5.4 and < 11.25	2	10.7		\$47	10.7		\$12		
SPVAC	≥ 11.25 and < 20	1	10.2		\$45	10.2		\$10		
SPVAC	≥ 11.25 and < 20	2	10.7		\$47	10.7		\$12		
SPVHP	< 5.4	1	10.2	3.1	\$45	10.2	3.1	\$10		
SPVHP	< 5.4	2	10.7	3.2	\$47	10.7	3.2	\$12		
SPVHP	≥ 5.4 and < 11.25	1	10.2	3.1	\$45	10.2	3.1	\$10		
SPVHP	≥ 5.4 and < 11.25	2	10.7	3.2	\$47	10.7	3.2	\$12		
SPVHP	≥ 11.25 and < 20	1	10.2	3.1	\$45	10.2	3.1	\$10		
SPVHP	≥ 11.25 and < 20	2	10.7	3.2	\$47	10.7	3.2	\$12		

SmartStart Equipment Type	Cooling Capacity tons	Incentive Tier	Existing Building			New Construction				
			Minimum Qualifying Efficiency		Incentive \$/ton	Minimum Qualifying Efficiency		Incentive \$/ton		
			EER	COP		EER	COP			
Groundwater Source Heat Pump	< 11.25	1	18.4	3.7	\$80	18.4	3.7	\$40		
Groundwater Source Heat Pump	< 11.25	2	22.0	3.9	\$96	22.0	3.9	\$48		
Ground Source Heat Pump	< 11.25	1	14.4	3.2	\$80	14.4	3.2	\$40		
Ground Source Heat Pump	< 11.25	2	18.0	3.6	\$100	18.0	3.6	\$50		

Dual Enthalpy Economizers	All Up to \$250/unit. New construction not eligible
Occupancy Controlled Thermostats for Hospitality / Institutional Facilities	Up to \$75/per occupancy controlled thermostat
A/C Economizing Control	≤5 tons - \$85 >5 tons - \$170

Table 21: Gas HVAC Incentives

Technology Classification		FY17 Incentive	
Gas Fired Boilers: FY17 Efficiency Levels			
Boiler Type	Size Category (MBh input)	Non-Condensing	Condensing
Hot Water	< 300	85% AFUE	93% AFUE
Hot Water	≥ 300 and $\leq 2,500$	85% Et	91% Et
Hot Water	> 2,500	85% Ec	93% Ec
Steam	< 300	82% AFUE	NA
Steam, all except natural draft	≥ 300 and $\leq 2,500$	81% Et	NA
Steam, all except natural draft	> 2,500	81% Et	NA
Steam, natural draft	≥ 300 and $\leq 2,500$	79% Et	NA
Steam, natural draft	> 2,500	79% Et	NA
< 300 MBH		Hot Water Non-Condensing - \$0.95/MBH; Min \$400 Hot Water Condensing - \$2.00/MBH ; Min \$1,000 Steam Natural Draft - \$1.40/MBH; Min \$30 Steam Power Ventilation - \$1.40/MBH; Min \$400 Efficiency level defined by above table	

≥ 300 MBH - 1500 MBH	Hot Water Non-Condensing - \$1.75/MBH Hot Water Condensing - \$2.20/MBH ; Min \$1,000 Steam Natural Draft - \$1.00/MBH Steam Power Ventilation - \$1.20/MBH Efficiency level defined by above table
> 1500 MBH - 2500 MBH	Hot Water Non-Condensing - \$1.50/MBH Hot Water Condensing - \$2.20/MBH Steam Natural Draft - \$0.90/MBH Steam Power Ventilation - \$1.20/MBH Efficiency level defined by above table
> 2500 MBH – 4000 MBH	Hot Water Non-Condensing - \$1.30/MBH Hot Water Condensing - \$2.00/MBH Steam Natural Draft - \$0.70/MBH Steam Power Ventilation - \$1.00/MBH Efficiency level defined by above table
> 4000 MBH	Treated under Custom Measure Path
Boiler Economizer Controls	BTU - Incentive $\leq 800,000$ - \$1,200 $> 800,000$ - $< 1.6\text{mil}$ - \$1,500 $\geq 1.6\text{mil}$ - $< 3\text{mil}$ - \$1,800 $\geq 3\text{mil}$ - $< 3.5\text{mil}$ - \$2,100 $\geq 3.5\text{mil}$ - $< 4\text{mil}$ - \$2,400 $\geq 4\text{mil}$ - \$2,700
Gas Furnaces	
AFUE to $\geq 95\%$ $\geq 2.0\%$ Fan Efficiency, ENERGY STAR qualified	Incentive up to \$400 per furnace

Technology Classification	FY17 Incentive
Gas Infrared Heating	Low Intensity Infrared Heater with Reflectors ≤100,000 btu/hr. - \$500 per unit >100,000 btu/hr. - \$300 per unit Indoor Only

Table 22: Gas Water Heating Incentives

Technology Classification	FY17 Incentive																	
Gas Fired Water Heating:	<table border="1"> <thead> <tr> <th>Capacity</th> <th>Efficiency</th> <th>Incentive \$ / MBh</th> </tr> </thead> <tbody> <tr> <td>≤ 75,000 Btu/h</td> <td>≥ 0.67 EF</td> <td>\$1.75</td> </tr> <tr> <td>≤ 75,000 Btu/h</td> <td>≥ 0.80 EF</td> <td>\$3.50</td> </tr> <tr> <td>> 75,000 Btu/h</td> <td>≥ 82% Et</td> <td>\$1.75</td> </tr> <tr> <td>> 75,000 Btu/h</td> <td>≥ 92% Et</td> <td>\$3.50</td> </tr> </tbody> </table>			Capacity	Efficiency	Incentive \$ / MBh	≤ 75,000 Btu/h	≥ 0.67 EF	\$1.75	≤ 75,000 Btu/h	≥ 0.80 EF	\$3.50	> 75,000 Btu/h	≥ 82% Et	\$1.75	> 75,000 Btu/h	≥ 92% Et	\$3.50
Capacity	Efficiency	Incentive \$ / MBh																
≤ 75,000 Btu/h	≥ 0.67 EF	\$1.75																
≤ 75,000 Btu/h	≥ 0.80 EF	\$3.50																
> 75,000 Btu/h	≥ 82% Et	\$1.75																
> 75,000 Btu/h	≥ 92% Et	\$3.50																
Gas Fired Water Booster Heaters:																		
≤ 100 MBH	Up to \$17 per MBH																	
> 100 MBH	Up to \$35 per MBH																	

Table 23: Variable Frequency Drives

Variable Frequency Drives		
	Motor Size (HP)	Incentive (\$)
VAV - Variable Air Volume HVAC System:	5 HP ≤ 50 HP	
CV - Constant Volume HVAC System:	0.5 HP ≤ 50 HP	
T - Cooling Tower:	10 HP ≤ 50 HP	
P - Chilled Water Pump:	20 HP ≤ 50 HP	
A - Air Compressor:	25 HP ≤ 200 HP	
BP - Boiler Feed Water Pump:	5 HP ≤ 50 HP	
BF - Boiler Fan Motor:	5 HP ≤ 50 HP	
K- Kitchen Hood:	0.5 HP ≤ 50 HP	
• Controlled HP is the cumulative motor HP controlled by each VFD.	7.5	\$1,000
• Controlled HP less than the listed eligible values are ineligible for incentives.	10	\$1,100
• Controlled HP more than the listed eligible values should use the C&I Custom program.	15	\$1,200
• If the controlled HP falls in between the HP listed on the VFD incentive table, the incentive is based on the lower controlled HP listed.	20	\$1,300
• For all VFD measure except air compressors, the maximum controlled threshold is 50HP. VFDs controlling more than 50HP, except related to air compressors, will be reviewed through the custom measure path.	25	\$1,400
• For new air compressors with VFDs, prescriptive incentives will be provided for units up to 200HP. VFDs controlling air compressor motors exceeding 200HP will be reviewed through the custom measure path.	30	\$1,500
	40	\$2,500
	50	\$3,000
	60	\$3,500
	75	\$4,000
	100	\$5,000
	200	\$7,000

Table 24: Premium Efficiency Motors

Technology Classification	FY17 Incentive
Premium Efficiency Motors:	
Fractional (< 1 HP) Electronic Commutated Motors (ECM)	Up to \$40 per ECM for replacement of existing shaded-pole motor in refrigerated/freezer cases New construction projects not eligible

Table 25: C&I Lighting Incentives

Technology Classification	FY17 Incentive
Prescriptive Lighting: For all prescriptive lighting, fixture or lamp must be listed by UL or other OSHA approved Nationally Recognized Testing Laboratory (NRTL) in accordance with applicable US standards	
T-8 lamps retrofitted to reduced wattage T8 lamps	<p>Up to \$5 per fixture for T8 to reduced wattage T8 (28W/25W 4') retrofit or new fixture – requires lamp and ballast replacement</p> <p>For retrofit to T8 lamps 4' systems only –High Performance or Reduced Wattage lamps and ballasts must be qualified by CEE unless otherwise defined by the program.</p>
Permanently De-lamp Fixtures and Add Reflectors as long as changing to a more efficient lighting system.	<p>Up to \$10 per fixture for the retrofit of T8 to T8 technology with permanent delamping and adding new reflectors.</p> <p>For retrofit to T8 lamps 4' systems only –High Performance or Reduced Wattage lamps and ballasts must be qualified by CEE unless otherwise defined by the program.</p>
T-5 and T-8 Fixtures replacing HID fixtures or incandescent	<p>Incentives will be paid as a Prescriptive Measure based on specific eligibility requirements.</p> <p>T12 retrofit/replacements not eligible for incentive.</p>
	T-5 or T-8 fluorescent fixtures replacing >750 Watts or greater HID, or incandescent fixtures: Up to \$150 per fixture removed.
	T-5 or T-8 fluorescent fixtures replacing 400 - 750 Watts HID, fluorescent, or incandescent fixture: Up to \$100 per fixture removed
T-5 and T-8 Fixtures replacing HID fixtures	T-5 or T-8 fluorescent fixtures replacing 250-399 Watts HID fixture: Up to \$50 per fixture removed.
	T-5 or T-8 fluorescent fixtures replacing less than 250 Watts HID fixture: Up to \$25 per fixture removed.
	Refer to Application and/or website for standards that apply to these measures
New Construction and Complete Renovation	Existing buildings eligible for performance lighting incentives; Existing lighting must be completely removed from area where new lighting is to be installed.

Induction Lighting Fixtures Retrofit of HID	Up to \$50 per HID ($\geq 100W$) fixture retrofitted with induction lamp, power coupler and generator. Replacement unit must use 30% less wattage per fixture than existing HID
Induction Lighting Fixtures Replacement of HID	Up to \$70 per HID($\geq 100W$) fixture with a new induction fixture Replacement unit must use 30% less wattage per fixture than existing HID

LED Prescriptive Lighting – For incentive eligibility, LED equipment must be listed on the current ENERGY STAR or Design Lights Consortium qualified products list. LED (integral/screw-in) lamp and recessed downlight incentives are provided for replacement of incandescent/halogen lamps only. Incentives will not be provided for:

- LEDs replacing existing LED lamps/fixtures; or LEDs replacing existing T12 equipment
- LED Lamps (Integral/Screw-In) replacing HID and CFL lamps.
- Installation of eligible screw-in/plug-in lighting measures in non-permanent and non-hard-wired fixtures (Example - refrigerator, oven, floor/desk lamps, etc.).

Technology Classification	FY17 Incentive
LED Lamp (Integral/Screw-In)	\$5/lamp for PAR30, PAR30L, PAR38, R30, B10, CA10, F10, G16.5, G25, MR16, PAR16, PAR20, R20, Globe, Candelabra, A15, A19, A21, BR30, BR40, R40, B13, BA10, F15, MRX16 and other miscellaneous types
LED Refrigerated Case Lighting	Up to \$30 per 4' LED Fixture Up to \$42 per 5' LED fixture Up to \$65 per 6' LED fixture
LED Display Case Lighting	Incentive for replacement of fluorescent lighting system in medium or low temperature display cases. Technical requirements of this incentive are listed on the prescriptive lighting application. Up to \$30 per display case
LED Shelf-mounted display and task lights	Up to \$15 per foot
LED Portable Desk Lamps	Up to \$5 per fixture
LED Wall-wash Lights	Up to \$30 per fixture
LED Stairwell and Passageway Luminaires	Up to \$40 per fixture
LED Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	Up to \$100 per fixture; new and retrofit
LED Outdoor Pole/Arm-Mounted Decorative Luminaires	Up to \$50 per fixture; new and retrofit
LED Outdoor Wall-Mounted Area Luminaires	Up to \$100 per fixture
LED Parking Garage Luminaires	Up to \$100 per fixture

LED Track or Mono-point Directional Lighting Fixtures	Up to \$30 per fixture
Large Outdoor Pole/Arm-Mounted Area and Roadway Retrofit	Up to \$150 per fixture
LED high-bay and Low-bay fixtures for C&I Buildings	Up to \$150 per fixture
LED High-bay Aisle Lighting	Up to \$150 per fixture
LED Bollard Fixtures	Up to \$50 per fixture
LED Linear Panels (Luminaires for Ambient Lighting of Interior Commercial Spaces)	Up to \$15 per fixture for 1x4, 2x2 (new and retrofit) Up to \$25 per fixture for 2x4 (new and retrofit)
LED Fuel Pump Canopy	Up to \$100 per fixture
LED Architectural Flood and Spot Luminaries	Up to \$50 per fixture
LED Linear Ambient Luminaires (Indirect, Indirect/Direct, Direct/Indirect, Direct)	Up to \$20 per 2' fixture Up to \$30 per 3' fixture Up to \$45 per 4' fixture Up to \$60 per 6' fixture Up to \$75 per 8' fixture
LED Retrofit Kits	Incentive offered as a Custom measure except as noted.
LED Linear Lamps (2' and 4')	Up to \$5/Lamp
LED Bath Vanity	Up to \$5/fixture
LED Cove Mount	Up to \$5/fixture
LED Decorative Candle: Other	Up to \$5/fixture
LED Decorative: Other	Up to \$5/fixture
LED Downlight Pendant	Up to \$5/fixture
LED Bath Vanity	Up to \$5/fixture
LED Downlight Solid State Retrofit	Up to \$5/fixture
LED Downlight Surface Mount	Up to \$5/fixture
LED ENERGY STAR: Other	Up to \$5/fixture

LED Outdoor Porch Wall Mount	Up to \$5/fixture
LED ENERGY STAR Outdoor Post-Mount	Up to \$5/fixture
LED Porch (wall mounted)	Up to \$5/fixture
LED Torchiere	Up to \$5/fixture
LED Ceiling Mount	Up to \$5/fixture
LED Close to Ceiling Mount	Up to \$5/fixture
LED Decorative Pendant	Up to \$5/fixture
LED Inseparable SSL - Other	Up to \$5/fixture
LED ENERGY STAR Security	Up to \$5/fixture
LED ENERGY STAR Wall Sconces	Up to \$5/fixture
LED Wrapped Lens	Up to \$5/fixture

Table 26: C&I Lighting Controls Incentives

Technology Classification	FY17 Incentive
Lighting Controls:	Wireless and Hard-Wired Only
Occupancy Sensors (Turning fixtures off in Existing facilities only) (e.g. ceiling) Wall Mounted Remote Mounted	Up to \$20 per control Up to \$35 per control
Day Lighting Dimmers – All facilities Fluorescent, HID or LED Fixtures	For both fluorescent fixtures, HID or Fluorescent Hi-Bay, and LED controls - \$45 per fixture controlled. New construction projects not eligible unless exceeding code requirement under ASHRAE 90.1-2013
Hi-Low Controls - All facilities: Fluorescent, HID or LED Fixtures	For all Hi-Low Controls, \$35 per fixture controlled New construction projects not eligible unless exceeding code requirement under ASHRAE 90.1-2013

Table 27: C&I Lighting Performance Incentives

Technology Classification	FY17 Incentive
Performance Based Lighting incentives for indoor and outdoor installations (attached to building)	<p>Lighting projects must exceed ASHRAE 90.1-2013 lighting power density (LPD) standards</p> <p>Eligible incentive is the lesser of \$30 per eligible fixture or \$1/Watt over the LPD baseline per qualified area</p> <p>Available for New Construction and Existing Buildings. Areas within existing building eligible only if existing lighting completely removed.</p> <p>New construction additions (add-ons) to an existing building are eligible</p> <p>Existing buildings eligible for areas where existing lighting is completely removed.</p>

Table 28: C&I Food Service Incentives

Technology Classification	FY17 Incentive
Refrigeration Controls: <i>Door heater and electric defrost controls not eligible for new construction projects unless equipment purchased prior to March 21, 2016 or providing sufficient code permit documentation under former energy code (ASHRAE 90.1-2007)</i>	
Door Heater Control	\$50 per control
Electric Defrost Control	\$50 per control
Novelty Cooler Shutoff	\$50 per control
Evaporator Fan Control	\$75 per control
Refrigeration Doors/Covers:	
Energy-Efficient Doors for open Refrigerated Doors/Covers	\$100 per door
Aluminum Night Curtains for Open Refrigerated Cases	\$3.50 per linear foot
Commercial Dishwashers: Equipment must be qualified by the current version* of ENERGY STAR or CEE* ²⁴	
Under Counter	\$400 per unit
Door Type	\$700 per unit
Single Tank Conveyor	\$1,000 per unit
Multiple Tank Conveyor	\$1,500 per unit
Commercial Combination Oven/Steamer (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.	
<ul style="list-style-type: none"> ○ ASTM Criteria: <ul style="list-style-type: none"> ○ Must meet the idle energy rate requirements in the Electric Combination Oven/Steamer Table, utilizing American Society for Testing and Materials (ASTM) F2861. ○ Must have a cooking energy efficiency of 50 percent or greater in steam mode and 70 percent cooking energy efficiency or greater in convection mode, utilizing (ASTM) F2861. 	

* Version in place at time of application submittal

- Combination oven/steamer pan capacity based on the maximum capacity of full-size 2 1/2-inch deep hotel pans. This must be consistent with the number of pans used to meet the energy-efficiency qualifications per ASTM F2861.

Pan Capacity	
Less than 15 pans	\$1,000 per oven
15-28 pans	
Greater than 28 pans	

Commercial Combination Oven/Steamer (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a cooking energy efficiency of 38 percent or greater in steam mode and 44 percent or greater in convection mode, utilizing ASTM F2861.
 - Must meet the idle energy rate requirements in the Gas Commercial Combination Oven/Steamer Table, utilizing ASTM F2861.
 - Combination oven/steamer pan capacity on based on the maximum capacity of full-size 2 1/2-inch deep hotel pans. This must be consistent with the number of pans used to meet the energy-efficiency qualifications per ASTM F2861.

Pan Capacity	
Less than 15 pans	
15-28 pans	\$750 per oven
Greater than 28 pans	

Commercial Convection Oven (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load (potato) cooking energy efficiency of 70 percent or more, utilizing ASTM F1496.
 - Full-size electric ovens must have a tested idle energy rate of 1.6 kW or less, utilizing ASTM F1496.
 - Half-size electric ovens must have a tested idle energy rate of 1.0 kW or less, utilizing ASTM F1496.

Commercial Convection Oven (Electric)	\$350 per oven
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Commercial Convection Oven (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:

<ul style="list-style-type: none"> ○ Must have a tested heavy load (potato) cooking energy efficiency of 44 percent or greater and an idle energy rate of 13,000 Btu/h or less, utilizing ASTM F1496. 	
Commercial Convection Oven (Gas)	\$500 per oven
Commercial Rack Oven (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.	
<ul style="list-style-type: none"> ○ ASTM Criteria: ○ Must have a tested baking energy efficiency of 50 percent or greater, utilizing ASTM F2093. 	
Commercial Rack Oven Single (Gas)	\$1,000 per single oven
Commercial Rack Oven Double (Gas)	\$2,000 per double oven
Commercial Conveyor Oven (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.	
<ul style="list-style-type: none"> ○ ASTM Criteria: ○ Must have a tested baking energy efficiency of 42 percent or greater, utilizing ASTM F1817. ○ Small conveyor ovens with total conveyor width 25 inches or less must have a tested idle energy rate that is 29,000 Btu/h or less, utilizing ASTM F1817. ○ Large conveyor ovens with total conveyor width greater than 25 inches must have a tested idle energy rate that is 57,000 Btu/h or less, utilizing ASTM F1817. ○ Multiple-deck oven configurations are paid per qualifying oven deck. 	
Commercial Conveyor Oven – Small (Conveyor width 25in. or less, Gas)	\$500 per deck
Commercial Conveyor Oven – Large (Conveyor width greater than 25in., Gas)	\$750 per deck
Commercial Fryer (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.	
<ul style="list-style-type: none"> ○ ASTM Criteria: ○ Must have a tested heavy load cooking energy efficiency of 80 percent or greater and an idle energy rate of 1.0 kW or less, utilizing ASTM F1361. ○ Multiple vat configurations are paid per qualifying vat. 	
Commercial Fryer (Electric)	\$200 per vat

Commercial Fryer (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must meet a tested heavy load cooking energy efficiency of 50 percent or greater and an idle energy rate of 9,000 Btu/h or less, utilizing ASTM F1361.
 - Multiple vat configurations are paid per qualifying vat.

Commercial Fryer (Gas)	\$749 per vat
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Commercial Large Vat Fryer (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load (French fry) cooking energy efficiency of 80 percent or greater, utilizing ASTM F2144.
 - Multiple vat configurations are paid per qualifying vat.

Commercial Large Vat Fryer (Electric)	\$200 per vat
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Commercial Large Vat Fryer (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load (French fry) cooking energy efficiency of 50 percent or greater, utilizing ASTM F2144.
 - Multiple vat configurations are paid per qualifying vat.

Commercial Large Vat Fryer (Gas)	\$500 per vat
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Commercial Griddle (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load cooking energy efficiency of 70 percent or greater and an idle energy rate of 355 watts per square foot of cooking surface or less, utilizing ASTM F1275.

Commercial Griddle (Electric)	\$300 per griddle
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Commercial Griddle (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load cooking energy efficiency of 38 percent or greater and an idle energy rate of 2,650 Btu/h per square foot of cooking surface or less, utilizing ASTM F1275.

Commercial Griddle (Gas)	\$125 per griddle
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Commercial Steam Cooker (Electric): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load (potato) cooking energy efficiency of 50 percent or greater, utilizing ASTM F1484.

Commercial Steam Cooker (Electric)	\$1,250 per steamer
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Commercial Steam Cooker (Gas): Equipment must be qualified by the current version of ENERGY STAR, CEE or ASTM criteria defined below.

- ASTM Criteria:
 - Must have a tested heavy load (potato) cooking energy efficiency of 38 percent or greater, utilizing ASTM F1484.

Commercial Steam Cooker (Gas)	\$2,000 per steamer
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Insulated Holding Cabinets:

- Must meet CEE Tier II specification.
- Does not include cook and hold equipment.
- All measures must be electric hot food holding cabinets that are fully insulated and have solid doors.

Insulated Holding Cabinet, Full Size	\$300 per unit
Insulated Holding Cabinet, ¾ Size	\$250 per unit
Insulated Holding Cabinets, ½ Size	\$200 per unit

Commercial Glass Door Refrigerators:

- The refrigeration system must be built-in (packaged).
- Cases with remote refrigeration systems do not qualify.
- Must meet ENERGY STAR Version 2.0 specification.

ENERGY STAR Glass Door Refrigerators – Internal volume <15 ft ³	\$75 per unit
ENERGY STAR Glass Door Refrigerators – Internal volume 15 ft ³ –29.9 ft ³	\$100 per unit
ENERGY STAR Glass Door Refrigerators – Internal volume 30 ft ³ –49.9 ft ³	\$125 per unit
ENERGY STAR Glass Door Refrigerators – Internal volume ≥ 50 ft ³	\$150 per unit

Commercial Solid Door Refrigerators:

- The refrigeration system must be built-in (packaged).
- Cases with remote refrigeration systems do not qualify.
- ENERGY STAR specification Version 1.0 refrigerators do not qualify.
- Must meet ENERGY STAR Version 2.0 specification.

ENERGY STAR Solid Door Refrigerators – Internal volume <15 ft ³	\$50 per unit
ENERGY STAR Solid Door Refrigerators – Internal volume 15 ft ³ –29.9 ft ³	\$75 per unit
ENERGY STAR Solid Door Refrigerators – Internal volume 30 ft ³ –49.9 ft ³	\$125 per unit
ENERGY STAR Solid Door Refrigerators – Internal volume ≥ 50 ft ³	\$200 per unit

Commercial Glass Door Freezers:

- The refrigeration system must be built-in (packaged).
- Cases with remote refrigeration systems do not qualify.
- Must meet ENERGY STAR Version 2.0 specification.

ENERGY STAR Glass Door Freezers – Internal volume <15 ft ³	\$200 per unit
ENERGY STAR Glass Door Freezers – Internal volume 15 ft ³ –29.9 ft ³	\$250 per unit
ENERGY STAR Glass Door Freezers – Internal volume 30 ft ³ –49.9 ft ³	\$500 per unit
ENERGY STAR Glass Door Freezers – Internal volume ≥ 50 ft ³	\$1,000 per unit

Commercial Solid Door Freezers:

- The refrigeration system must be built-in (packaged).
- Cases with remote refrigeration systems do not qualify.
- ENERGY STAR specification Version 1.0 freezers do not qualify.
- Must meet ENERGY STAR Version 2.0 specification.

ENERGY STAR Solid Door Freezers – Internal volume <15 ft ³	\$100 per unit
ENERGY STAR Solid Door Freezers – Internal volume 15 ft ³ –29.9 ft ³	\$150 per unit
ENERGY STAR Solid Door Freezers – Internal volume 30 ft ³ –49.9 ft ³	\$300 per unit
ENERGY STAR Solid Door Freezers – Internal volume ≥ 50 ft ³	\$600 per unit

Commercial Ice Machines:

- Ice machines must be tested in accordance with the Air Conditioning and Refrigeration Institute (ARI) Standard 810.
- Includes machines generating ice cubes that are 60 grams (2 oz.) or lighter. It also includes flaked, crushed and fragmented ice makers.
- Only air-cooled machines (self-contained, ice making heads, or remote condensing) qualify.
- The entire ARI tested ice making system must be purchased.
- Remote machines must be purchased with qualifying remote condenser or remote condenser/compressor unit.
- The efficiency specifications for the two qualifying tiers are equivalent to ENERGY STAR or Super-Efficient.

ENERGY STAR Ice Machine (101–200 lbs./day)	\$50 per unit
ENERGY STAR Ice Machine (201–300 lbs./day)	\$50 per unit
ENERGY STAR Ice Machine (301–400 lbs./day)	\$75 per unit
ENERGY STAR Ice Machine (401–500 lbs./day)	\$75 per unit
ENERGY STAR Ice Machine (501–1000 lbs./day)	\$125 per unit
ENERGY STAR Ice Machine (1001–1500 lbs./day)	\$200 per unit

ENERGY STAR Ice Machine (greater than 1500 lbs./day)	\$250 per unit
Super-Efficient Ice Machine (101–200 lbs./day)	\$100 per unit
Super-Efficient Ice Machine (201–300 lbs./day)	\$100 per unit
Super-Efficient Ice Machine (301–400 lbs./day)	\$150 per unit
Super-Efficient Ice Machine (401–500 lbs./day)	\$150 per unit
Super-Efficient Ice Machine (501–1000 lbs./day)	\$250 per unit
Super-Efficient Ice Machine (1001–1500 lbs./day)	\$400 per unit
Super-Efficient Ice Machine (greater than 1500 lbs./day)	\$500 per unit

Note: The incentives identified above may be reduced with the approval of the Office of Clean Energy.

Appendix C: Distributed Energy Resources Incentives

CHP Incentives

Table 29: CHP Technology and Incentive Levels

Eligible Technology	Size (Installed Capacity)	Rated	Incentive (\$/Watt)	% of Total Cost Cap per project	\$ Cap per project
Gas Internal Combustion Engine Combined Heat & Power Powered by non-renewable or renewable fuel source, or a combination	$\leq 500 \text{ kW}^{(1)}$		\$2.00	30-40% ⁽²⁾	\$2 million
	$>500 \text{ kW} - 1 \text{ MW}^{(1)}$		\$1.00		
	$>1 \text{ MW} - 3 \text{ MW}^{(1)}$		\$0.55	30%	\$3 million
	$>3 \text{ MW}^{(1)}$		\$0.35		
Gas Internal Combustion Engine					
Gas Combustion Turbine					
Microturbine					
Fuel Cells with heat recovery					
Waste Heat to Power (WHP) ⁽³⁾ Powered by non-renewable fuel source. Heat recovery or other mechanical recovery from existing equipment utilizing new electric generation equipment (e.g. steam turbine)	$\leq 1 \text{ MW}^{(1)}$		\$1.00	30%	\$2 million
	$>1 \text{ MW}^{(1)}$		\$0.50	30%	\$3 million

- (1) Incentives for CHP and WHP are tiered which means the incentive levels vary based upon the installed rated capacity, as listed in the chart above. For example, a 4 MW CHP system would receive \$2.00/watt for the first 500 kW, \$1.00/watt for the second 500 kW, \$0.55/watt for the next 2 MW and \$0.35/watt for the last 1 MW (up to the caps listed).
- (2) The maximum incentive will be limited to 30% of total project. This cap will be increased to 40% where a cooling application is used or included with the CHP system (e.g. absorption chiller).
- (3) Projects installing CHP with WHP will be eligible for incentives shown above, not to exceed the lesser of percent per project cap or dollars per project cap of the CHP. Minimum efficiency will be calculated based on annual total electricity generated, utilized waste heat at the host site (i.e. not lost/rejected), and energy input.

Appendix D: Multifamily Decision Tree

Figure 1: Multifamily Decision Tree

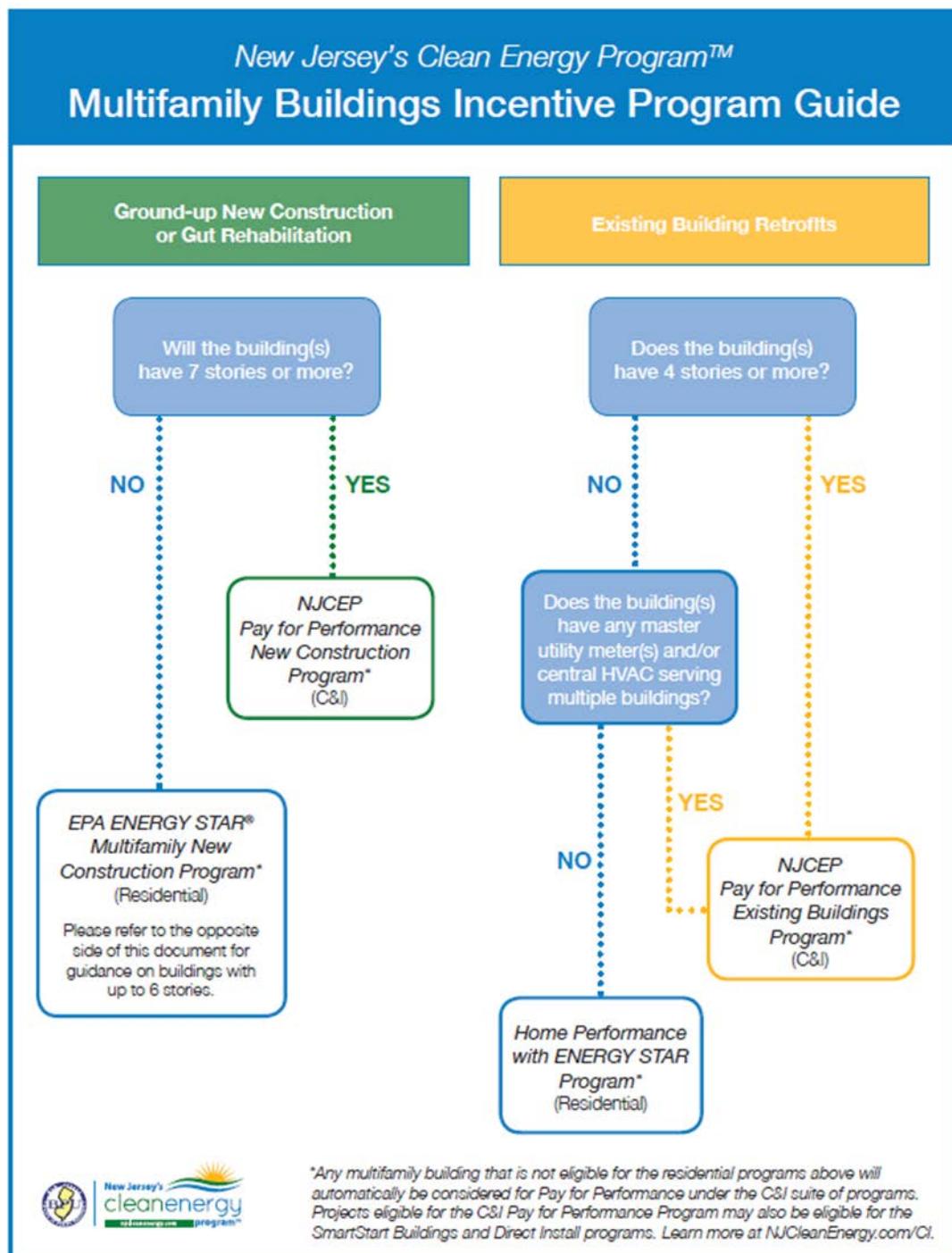
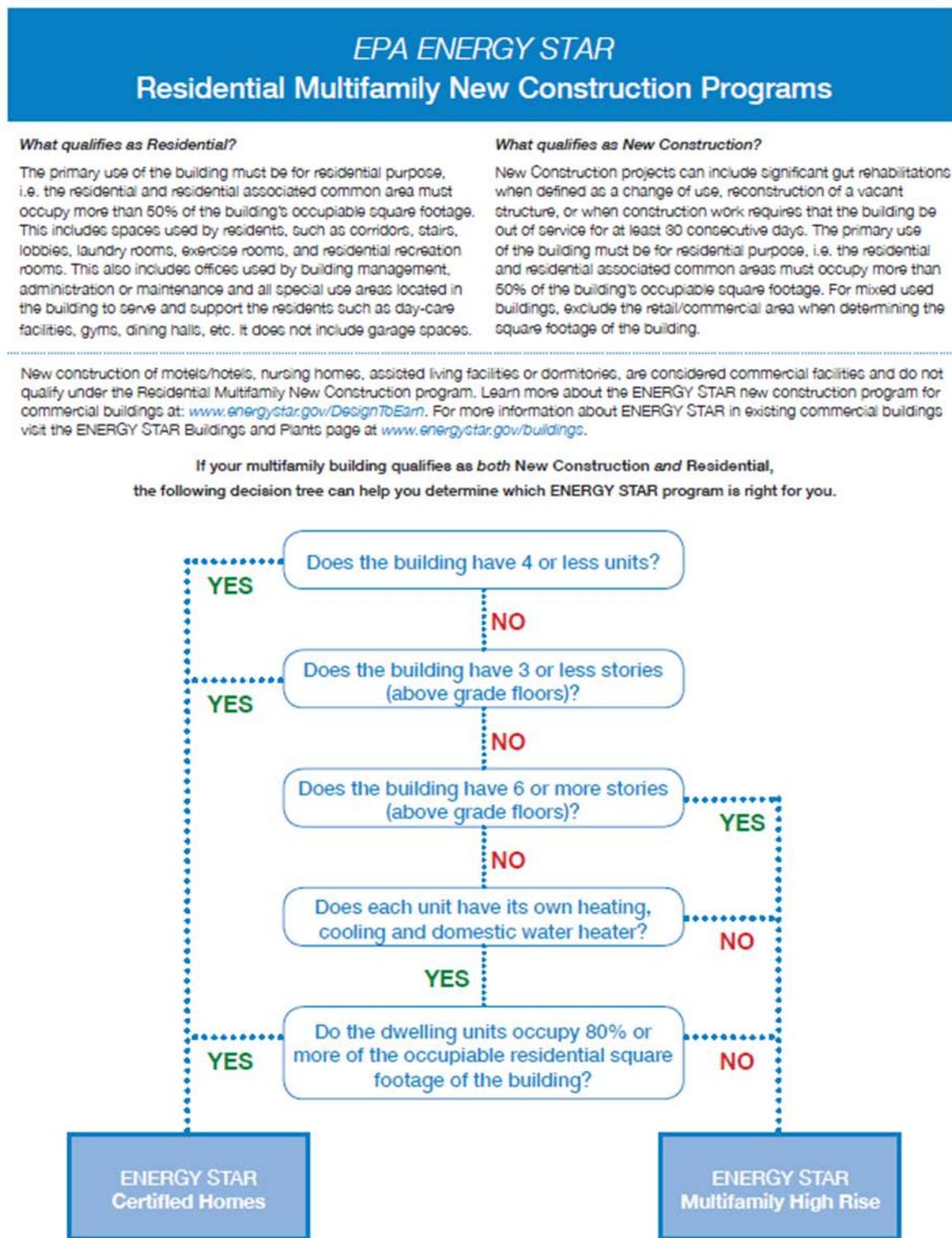


Figure 2: ENERGY STAR Multifamily Guidelines



Appendix E: Outreach Plan

BPU staff anticipates the Department of Treasury to issue a marketing and website RFP in FY17 that includes a request for services for a full-scale marketing and public relations plan and a website overhaul. Upon BPU approval, AEG will implement an interim marketing plan while the RFP is under review. Please see the FY17 CRA for more information.

On March 14, 2016, the AEG Team submitted an *Enhanced Outreach Plan for Program Administration and Management Services, New Jersey Clean Energy Program* to BPU Staff for approval.

Enhanced Outreach Plan Summary

The Enhanced Outreach Plan (Plan) will be added in FY17 and will improve NJCEP participation throughout the State by building off “best in class” experience and expertise. The Plan incorporates best practices and the AEG Team’s experience nationwide, and takes recommendations from the Process Evaluation Study completed by ERS into account to implement a reasonable and solid outreach structure that provides flexibility as individual programs evolve. The following Plan description includes high-level details from the complete Plan which can be provided upon request.

Program-wide Themes and Outreach

There are multiple themes and outreach tasks that resonate across the entire NJCEP. These include:

- Account Management Outreach
- Coordination and Planning with BPU Ombudsman's Office and Office of State Energy Services
- Enhanced Coordination with Sustainable Jersey
- Enhanced Coordination with Utilities
- NJIT Clean Energy Learning Center Coordination

The Plan was developed by first reviewing core contract responsibilities and tasks to bolster efforts for NJCEP implementation. The core Program focuses on inbound communication to the Team from customers and Trade Allies. As demonstrated by Team experience, the key to maximizing energy efficiency program participation is outbound communications through an Account Management team with daily ground level contact. Account Managers, supporting Commercial and Industrial (C&I), Renewable and Residential programs, will proactively conduct person-to-person communication which encourages potential applicants and Trade Allies to use the program resources to reduce first costs while guiding them to the programs appropriate for their specific circumstances. The Account Managers will come from within the various energy efficient industries supported by the Program, bringing with them knowledge of contacts, techniques and equipment best suited for capturing projects.

The Plan includes continuous collaboration, monitoring and coordination both within the Team and with the BPU (Ombudsman and Office of State Energy Services), Investor

Owned Utilities (IOUs) and Sustainable Jersey (SJ) to ensure the best possible outcome. We will build off of existing relationships with various organizations, large and small customers and Trade Allies to enhance outreach.

C&I and Renewable Programs

A dedicated team of Account Managers will be distributed geographically and cross-trained on all NJCEP programs with focus on outreach to customers, industry groups, and associations for the purposes of developing relationships, identifying leads and projects and guiding them to the core implementation teams. Specific sectors of focus may include:

- Property Management
- Healthcare
- Hospitality
- Municipal, County and State Government
- Education – K-12, Colleges and Universities
- Retail
- Industrial – Manufacturing, Warehousing, Food Preparation, Pharmaceutical
- Data Centers
- Key Stakeholders – Architects, Engineers, Contractors, Distributors, Manufacturers and ESCOs

The Enhanced Outreach Plan crosswalks all C&I and Renewable Programs. By instituting expanded trade and business association relationships, the Team will evaluate new membership opportunities, develop content for technical articles and co-branded materials, and leverage speaking and sponsorship opportunities. To facilitate stronger and more effective relationships with utilities, the Team will establish regular meetings with utility contacts and coordinate customer outreach by specific sectors. Enhanced coordination with BPU Office of the Ombudsman will continuously identify opportunities for event participation, speaking engagements, new memberships and trainings. Enhanced coordination with Sustainable Jersey will provide input to BPU for the new SJ contract; improve coordination of outreach and messaging; and promote development of lead tracking, follow up and measurement strategies.

While Account Management is the backbone of outreach, partner and Trade Ally network engagement is the backbone for marketplace engagement. The Enhanced Outreach Plan focuses on proactive outbound communication which is generally more effective than the reactive inbound communication methods of the core contract. The DI and P4P programs require coordination with DI and P4P contractors to promote training, gather program feedback and track completed projects per partner. The Team will conduct direct outreach to Benchmarking and LGEA participants to follow up regarding program participation and track energy efficiency measure implementation and energy savings. Account Managers will coordinate with core program implementation team members regarding in-field and technical assistance roles to maximize effectiveness.

Residential Programs

Initial outreach will be conducted with Sustainable Jersey, the NJ Utilities, realtors and local trade and business associations, as appropriate. A detailed schedule will be put together to efficiently run the outreach plan.

The Outreach Team will implement enhanced coordination with Sustainable Jersey by identifying a strategy for incentivizing towns in FY17 to complete a certain amount of “whole house” energy efficiency programs. This may be to potentially incentivize completed projects under Home Performance, but further collaboration with SJ is required.

The Team will develop new partnerships/memberships with various New Jersey building, government and community organizations to develop speaking opportunities, program education and event participation.

Enhanced Outreach Account Managers will establish a Trade Ally Advisory Committee to obtain community “buy in” to NJCEP programs and to guide changes. Through their continuous outreach, Account Managers will be a resource for market information, case studies, and tips to upsell higher efficiency products. Beyond simple geographic distribution, Account Managers will be cross trained and function as Technical Field Reps specifically for Home Performance and HVAC who will provide appropriate contacts for referrals. Another key enhancement will be upstream focus by Account Managers on supply chains and manufacturers. They will be well positioned to conduct sales training for counter staff and to distribute collateral material.

The Enhanced Outreach Team will train and engage Realtors with collateral materials to share with customers when they first move into homes as this is a logical time to make renovations and energy efficiency improvements. These efforts can spill over to the entire Real Estate community by creating green designation for realtors, encouraging insurance companies to promote discounts on homeowner insurance based on green investments, and linking with green mortgage lenders. The Outreach Team will investigate the opportunities for statewide Realtor messaging. At the low income level, the Outreach Team will get owner/landlord “buy in” for NJCEP opportunities and promote the opportunities to renters or people on limited incomes.

The Enhanced Outreach Plan will allow for expanded event Outreach such as attending environmental/green events and employer/employee fairs. A logical progression for larger companies is follow-up after the C&I outreach team engages with a larger customer and the residential team follows with an event for the employees. The Plan will further allow for information sessions with manufacturers, local distributors, dealers and retailers, developers, builders, contractors and building science professionals. Lead tracking at all events will be provided to the appropriate Account Manager for follow up.

Appendix F: FY17 Program Budgets

Program/Budget Line	Total Budget	Detailed AEG FY17 Budget					
		Administration	Sales, Marketing, Website	Training	Rebates, Grants and Other Direct Incentives	Rebate Processing, and QA	Evaluation
Total NJCEP	\$314,634,451.08	\$14,744,488.92	\$4,277,334.95	\$830,000.00	\$283,253,165.10	\$11,479,462.11	\$50,000.00
EE Programs	\$251,356,162.24	\$13,127,127.70	\$471,567.83	\$696,000.00	\$226,808,876.35	\$10,202,590.36	\$50,000.00
Res EE Programs	\$89,108,990.91	\$5,645,233.52	\$163,887.00	\$531,500.00	\$76,230,469.38	\$6,537,901.01	\$0.00
HVAC	\$13,947,000.00	\$1,541,227.73	\$43,001.84	\$103,500.00	\$11,560,396.63	\$698,873.80	\$0.00
RNC	\$19,428,037.50	\$1,551,670.50	\$43,001.72	\$245,500.00	\$16,981,914.90	\$605,950.38	\$0.00
EE Products	\$24,532,000.00	\$1,186,329.12	\$38,941.72	\$25,000.00	\$19,925,659.14	\$3,356,070.02	\$0.00
HPWES	\$31,201,953.41	\$1,366,006.17	\$38,941.72	\$157,500.00	\$27,762,498.71	\$1,877,006.81	\$0.00
C&I EE Programs	\$162,247,171.33	\$7,481,894.18	\$307,680.83	\$164,500.00	\$150,578,406.97	\$3,664,689.35	\$50,000.00
C&I NC	\$3,902,244.07	\$946,240.17	\$38,941.72	\$29,500.00	\$2,843,736.78	\$43,825.40	\$0.00
C&I EB	\$51,178,338.38	\$1,537,883.91	\$38,941.84	\$29,500.00	\$47,316,142.83	\$2,255,869.80	\$0.00
P4P NC	\$15,353,068.38	\$968,652.43	\$38,941.72	\$20,500.00	\$14,213,907.51	\$111,066.72	\$0.00
P4P EB	\$37,685,532.70	\$1,115,645.62	\$43,631.14	\$12,500.00	\$35,897,259.14	\$616,496.80	\$0.00
LGEA	\$3,129,802.00	\$872,884.75	\$38,941.72	\$12,500.00	\$1,938,801.24	\$266,674.29	\$0.00
DI	\$28,657,079.40	\$945,713.46	\$69,340.97	\$43,000.00	\$27,286,903.38	\$312,121.60	\$0.00
LEUP	\$20,141,106.40	\$944,873.85	\$38,941.72	\$17,000.00	\$19,081,656.09	\$58,634.74	\$0.00
Custom C&I Pilot	\$2,200,000.00	\$150,000.00	\$0.00	\$0.00	\$2,000,000.00	\$0.00	\$50,000.00
Distributed Energy Resources	\$57,628,288.84	\$821,097.64	\$116,825.28	\$100,000.00	\$56,204,017.82	\$386,348.10	\$0.00
CHP/Fuel Cell	\$49,802,806.80	\$526,490.45	\$77,883.56	\$75,000.00	\$48,854,526.52	\$268,906.27	\$0.00
RE Storage	\$7,825,482.04	\$294,607.19	\$38,941.72	\$25,000.00	\$7,349,491.30	\$117,441.83	\$0.00
RE Programs	\$2,000,000.00	\$796,263.57	\$38,941.84	\$34,000.00	\$240,270.94	\$890,523.65	\$0.00
SREC Registration	\$2,000,000.00	\$796,263.57	\$38,941.84	\$34,000.00	\$240,270.94	\$890,523.65	\$0.00
Planning and Administration	\$3,650,000.00	\$0.00	\$3,650,000.00	\$0.00	\$0.00	\$0.00	\$0.00
Interim Marketing	\$750,000.00	\$0.00	\$750,000.00	\$0.00	\$0.00	\$0.00	\$0.00
PA Outreach	\$2,900,000.00	\$0.00	\$2,900,000.00	\$0.00	\$0.00	\$0.00	\$0.00

Appendix G: FY17 Program Goals and Performance Metrics

NJCEP FY17 Portfolio Summary

Energy Efficiency	Annual MWH Savings FY17	Lifetime MWH Savings FY17	Annual MW Savings FY17	Lifetime MW Savings FY17	Annual Therm Savings FY17	Lifetime Therm Savings FY17	First Year Cost per Energy Saved		Levelized Cost	
	\$/kWh	\$/therm	\$/kWh	\$/therm					\$/kWh	\$/therm
RES-HVAC	5,256	92,494	1.7	25.7	2,305,495	44,309,042	\$0.14	\$4.20	\$0.21	\$0.49
RES-New Construction	6,540	163,497	4.6	115.4	644,394	16,109,859	\$0.31	\$9.22	\$0.11	\$1.21
RES-Energy Efficient Products	169,462	3,209,436	14.7	266.3	82,902	917,282	\$0.14	\$4.18	\$0.01	\$37.32
RES-HPwES	3,510	59,262	1.3	22.4	918,620	21,177,417	\$0.90	\$26.36	\$0.75	\$2.63
RESIDENTIAL TOTAL	184,768	3,524,688	22.4	429.7	3,951,411	82,513,600	\$0.16	\$10.17	\$0.04	\$1.69
C&I-New Construction	4,373	67,074	0.9	13.3	60,040	1,051,224	\$0.27	\$7.85	\$0.03	\$2.47
C&I-Retrofit	131,194	1,970,706	25	369	945,511	14,845,144	\$0.13	\$3.77	\$0.02	\$2.44
C&I-Pay-for-Performance NC	7,785	131,399	6	94	369,228	6,327,852	\$0.25	\$7.34	\$0.07	\$1.46
C&I-Pay-for-Performance	14,044	226,637	4	63	975,464	17,996,076	\$0.19	\$5.49	\$0.05	\$0.75
C&I-Local Govt Energy Audit	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C&I-Direct Install	35,520	516,962	9	130	760,394	12,080,752	\$0.53	\$15.51	\$0.06	\$2.85
C&I-Large Energy Users	42,205	759,687	6	111	128,460	2,312,280	\$0.23	\$6.75	\$0.02	\$7.61
C&I-Pilot-Customer Tailored	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
C&I TOTAL	235,120	3,672,465	49.8	779.6	3,239,095	54,613,328	\$0.23	\$8.34	\$0.03	\$2.18
DER	100,000	1,790,000	14.5	260.0	0	0	\$0.17	N/A	\$0.02	N/A
DER TOTAL	100,000	1,790,000	14.5	260.0	0	0	\$0.17	N/A	\$0.02	N/A
RE TOTAL							N/A	N/A		
PORTFOLIO TOTAL	519,888	8,987,153	86.7	1,469.3	7,190,506	137,126,928	\$0.19	\$9.35	\$0.04	\$2.19

Appendix H: Cost-Benefit Analysis

Cost-Effectiveness Methodology

Cost-effectiveness analysis compares the costs and benefits of energy efficiency and renewable energy measures, programs and portfolios of programs. Estimates of both costs and benefits are relative to those that would otherwise have been incurred had “baseline” or “standard” equipment, building systems and/or energy using practices been purchased or remained in place. A measure, program, or portfolio is considered cost-effective if the benefit-cost ratio is greater than 1.0.

AEG analyzed the cost-effectiveness of each NJCEP program individually, as well as the entire portfolio as a whole, using the Total Resource Cost (TRC) test as it has historically been computed in New Jersey – i.e. comparing the total costs of efficiency programs (the program administrator costs, including rebate costs, plus additional costs borne by consumers to buy and install efficiency measures) with the economic value of the energy savings that measures produce over their useful lives.

Efficiency measure savings were estimated utilizing a combination of the NJ Protocols to Measure Resource Savings and actual program experience (for customized type programs where no set savings algorithms are in place). Program level savings were then calculated using the AEG team’s estimates of annual participation rates for each measure of project.

Translating program-level electricity, gas, fuel oil and propane savings into economic terms requires a set of “avoided cost” assumptions, which cover the full range of savings attributes that efficiency and renewable energy measures often provide including:

- Reduced production or use of energy itself (e.g., MWh, therms of gas and/or gallons of fuel oil or propane);
- Reduced investment in peak electric generating capacity;
- Reduced capital investment in transmission and distribution system infrastructure;
- Reduced electric line losses; and
- Reduced emissions.

These “avoided costs” are typically based on the value to the energy system, which is different than (and typically lower than) retail energy prices which include a number of fixed costs which cannot be avoided. The AEG team relied exclusively on avoided cost assumptions provided by Rutgers CEEEP. The value of savings in future years were also discounted using a discount rate assumption provided by Rutgers CEEEP.

All of the computations based on these inputs were made using AEG’s BenCost™ tool. This is a Microsoft Excel®-based modeling platform that uses the fundamental principles of cost-effectiveness economics consistent with industry best-practices. Key features of the BenCost model include:

- **State-Specific Inputs:** BenCost is customized to accommodate inputs provided directly from the utility client.

- **Transparency:** The methodology, inputs, calculations, and assumptions used in the cost-effectiveness modeling can be easily identified and followed. That said, the sheer volume of assumptions and calculations can make review challenging. AEG is prepared to assist the BPU in its review of our analysis and/or provide training on how to examine or use the BenCost tool if desired.
- **Regulatory Testing:** AEG has submitted results from BenCost to regulatory agencies and stakeholder groups as part of formal DSM proceedings across multiple jurisdictions and regions of the country. Thus, the tool itself has been widely tested and approved.
- **Customizability:** Outputs from the tool can be tailored to meet the precise reporting requirements established by different regulatory commissions. Thus, we welcome any requests from the BPU for modifying our standard outputs to meet its needs.

Cost-Benefit Analysis Results

Energy Efficiency	TRC	UCT	SCT	PCT	RIM
RES-HVAC	1.04	1.70	1.07	3.76	0.30
RES-New Construction	1.02	1.79	1.07	2.92	0.39
RES-Energy Efficient Products	1.56	4.44	1.84	7.13	0.23
RES-HPwES	0.74	1.39	0.75	1.63	0.19
RESIDENTIAL TOTAL	1.16	2.48	1.29	4.42	0.25
C&I-New Construction	1.34	2.28	1.52	6.29	0.32
C&I-Retrofit	1.33	4.16	1.52	4.07	0.34
C&I-Pay-for-Performance NC	1.87	2.37	1.99	4.45	0.48
C&I-Pay-for-Performance	1.33	2.35	1.44	4.31	0.34
C&I-Local Govt Energy Audit	N/A	N/A	N/A	N/A	N/A
C&I-Direct Install	1.04	1.45	1.16	3.40	0.31
C&I-Large Energy Users	2.29	2.97	2.65	7.95	0.31
C&I-Pilot-Customer Tailored	TBD	TBD	TBD	TBD	TBD
C&I TOTAL	1.36	2.65	1.53	4.33	0.33
DER	0.80	3.32	0.93	2.57	0.31
DER TOTAL					
RE TOTAL					
PORTFOLIO TOTAL	1.15	2.63	1.29	3.95	0.29