



Agenda Date: 3/20/13

Agenda Item: 8B

STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

CLEAN ENERGY

IN THE MATTER OF THE CLEAN ENERGY PROGRAM)	ORDER
AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL)	
PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING)	
\$300,000)	DOCKET NOS.
)	
PORT AUTHORITY OF NY & NJ)	EO13020145V
)	
MACK-CALI REALTY CORPORATION)	EO13020146V
)	
PRINCETON UNIVERSITY)	EO13020147V

Parties of Record:

Christine Weydig, Deputy Director, Port Authority of New York & New Jersey
William Calisanti, Senior Director of Electrical Service & Facilities, Mack-Cali Realty Corporation
Edward Borer, Energy Plant Manager, Princeton University

BY THE BOARD:

The New Jersey Board of Public Utilities' (the Board) Commercial and Industrial (C&I) Energy Efficiency Program, which is marketed as the New Jersey SMARTSTART Buildings Program (SSBP or SMARTSTART), includes the C&I New Construction, C&I Retrofit, Pay-for-Performance New Construction, Pay-for-Performance Existing Buildings, Local Government Energy Audit, Direct Install, Combined Heat and Power and Fuel Cells, and Large Energy Users Pilot. These programs collectively offer financial incentives to encourage the installation of energy efficient products and technologies. Eligible applicants may receive incentives for a portion of the cost of installing energy efficient technologies such as lighting, Heating, Ventilation and air conditioning, water heating or other measures in new or existing buildings.

The Port Authority of NY & NJ, New York, NY, has submitted an application for a financial incentive in the amount of \$576,486.90 under the 2011 Large Energy Users Pilot (LEUP) Program, for projects located at its Journal Square Transportation Center, 138 Magnolia Avenue, Jersey City, NJ, and at its Harrison Maintenance Facility, 913 Frank E. Rogers Boulevard South, Harrison, NJ 07029. For the Journal Square Transportation Center, the applicant proposes to install upgrades to the central chilled water plant and associated controls;

mechanical upgrades to the variable chilled water pumping system; mechanical upgrades to the variable clockwise pumping system; mechanical upgrades to the variable frequency drives on cooling tower fan motors; and chilled water plant optimization. The applicant also plans to install demand control ventilation at the Harrison Maintenance Facility. Installing these measures will reduce the annual electric demand by an estimated 1,662,880 kWh, resulting in an estimated annual demand reduction of 77 kW, and will save the customer an annual estimate of 36,011 therms. Overall, this application will have an estimated annual energy cost savings of \$173,466.00 at a total project cost of \$1,064,317.00.

Mack-Cali Realty Corporation, Edison, NJ, has submitted an application for a financial incentive in the amount of \$821,182.68 under the 2012 LEUP Program, for projects located at eighty-nine locations spread throughout New Jersey. The attached certification lists the project locations, addresses, and measures to be installed.¹ These measures include retrofitting existing T12 lighting with T8 lamp and ballast systems in common areas, replacement of incandescent lamps with compact fluorescent lamps, and replacing high pressure sodium and metal halide high intensity discharge exterior lighting with induction lighting. This application will save the customer an estimated annual 2,898,073.70 kWh of electricity, resulting in an estimated annual demand reduction of 619.10 kW. Overall, this application will have an estimated annual energy cost savings of \$383,225.00 at a total project cost of \$1,125,193.71.

Princeton University, Princeton, NJ, has submitted an application for a financial incentive in the amount of \$500,000.00 under the 2012 C&I Retrofit – Custom Measure Incentive program for a project located at the MacMillan Building on Elm Road in Princeton, NJ 08544. The project consists of the installation of several high efficiency pumps and fans, with variable frequency drives to control them, throughout the campus' chilled water system. The upgrade will also require the modification of the water processing system. This project enables an estimated annual energy savings of 4,285,471 kWh of electricity to the customer, resulting in an estimated annual demand reduction of 242 kW. The project has an annual estimated energy cost savings of \$413,958.93 at an estimated total installed cost of \$2,135,106.00.

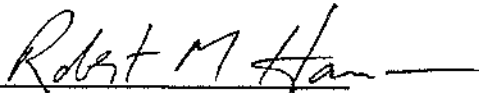
TRC, the Market Manager engaged by the Board to manage the New Jersey Clean Energy Program (NJCEP) C&I energy efficiency programs, has submitted certifications that the incentives for which TRC now seeks approval to commit have been calculated in accordance with the program policies and procedures, and that the listed amounts are the true and accurate estimated incentives for which the applicants are eligible. Further, Applied Energy Group, in its role as the NJCEP Program Coordinator, has reviewed the applications and submitted certifications that the incentives for which TRC now seeks approval to commit have been calculated in accordance with the program policies and procedures, and that the listed amounts are the true and accurate estimated incentives for which the applicants are eligible. Based on the above, Staff recommends that the Board approve the above-referenced applications.

¹ Mack-Cali has indicated that the final list of projects and scope of work may be slightly different from those submitted for approval. Mack-Cali understands that revisions to the scope of work will be reviewed by the Market Manager and may result in a modification of the incentive to be paid. In this case, the Market Manager will review instances where the as-built differs from the committed scope of work and may approve such changes provided the changes meet all program requirements and do not result in an increase in the incentive approved by the Board.


The Board **HEREBY ORDERS** the approval of the aforementioned applications for the total estimated incentive amounts of \$576,486.90 for the Port Authority of NY & NJ, \$821,182.68 for Mack-Cali Realty Corporation, and \$500,000.00 for Princeton University, and **AUTHORIZES** issuance of standard commitment letters to the applicants identified above, setting forth the terms and conditions of these commitments.

DATED: 3/20/13

BOARD OF PUBLIC UTILITIES
BY:


ROBERT M. HANNA
PRESIDENT


JEANNE M. FOX
COMMISSIONER


JOSEPH L. FIORDALISO
COMMISSIONER


MARY-ANNA HOLDEN
COMMISSIONER

ATTEST:


KRISTI IZZO
SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.



IN THE MATTER OF THE CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL
AND INDUSTRIAL PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING \$300,000 –
PORT AUTHORITY OF NY & NJ, MACK-CALI REALTY CORPORATION, PRINCETON
UNIVERSITY

DOCKET NOS. EO13020145V, EO13020146V and EO13020147V

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New York, NY 10003

William Calisanti
Senior Director of Electrical
Service & Facilities
Mack-Cali Realty Corporation
PO Box 7817
Edison, NJ 08818-7817

Edward Borer
Energy Plant Manager
Princeton University
Facilities Engineering
MacMillan Building
Elm Road
Princeton, NJ 08544

**Program Coordinator Certification
(New Incentive Commitments > \$300,000)**

I, **Maura Watkins**, hereby certify that in its role as Program Coordinator, Applied Energy Group, Inc. has reviewed the referenced below, as required by the policies and procedures applicable to each program, that the standardized equipment incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the amount shown below is the true and accurate estimated incentive for which the applicant(s) is(are) eligible.

For incentives based on uniquely calculated estimated energy savings, including the Custom Program, Pay for Performance and Large Energy Users Pilot Program, Applied Energy Group certifies locating documentation supporting the inputs used to calculate the rebate amount and evidencing TRC's evaluation of those inputs as required by the program's policies and procedures.

Maura H Watkins

By: _____

Date: 02-19-2013

Maura Watkins

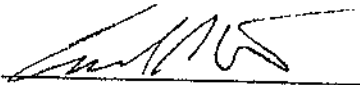
Quality Assurance Manager - Applied Energy Group, Inc.

Ref:	
App #	<u>L16218</u>
Applicant	<u>Port Authority of NY and NJ</u>
Payee	<u>Port Authority of NY and NJ</u>

Committed Amount: \$576,486.90

Market Manager Certification
(New Incentive Commitments > \$300,000)

I, Carl Teter, hereby certify that applications on the attached list have been reviewed by TRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the listed amounts are the true and accurate estimated incentives for which each applicant is eligible.

By: 
Carl P. Teter, P.E., LEED AP, Associate Vice President
App# L16218

Date: 2-20-13

1. Application Number: **L16218**
2. Program Name: **Large Energy Users Pilot Program**
3. Customer Contact (name, company, address, phone #):
Christine Weydlg, Deputy Director
Port Authority of NY & NJ
225 Park Ave South, 12th Flr, New York, NY 10003
212-435-5460
4. Project Name and Address:
Port Authority of NY & NJ
Location 1:
Journal Square Transportation Center, 138 Magnolia Ave, Jersey City, NJ 07036

Location 2:
Harrison Maintenance Facility, 913 Frank E. Rogers Blvd. South, Harrison, NJ 07029
5. Rebate amount: **\$576,486.90**
6. Brief description of measures:

Location #1

ECMs: Upgrades to the central chilled water plant and associated controls.

The existing controls will be replaced with a Demand-Based Control system to control various VFDs, actuators and valves as detailed below. This gives the mechanical systems the flexibility to operate at various parameters and allows the control system to determine the optimal operating parameters at any given load.

Variable CHW Pumping – Mechanical Upgrade

- Provide and install VFDs on motors (3 motors, 75 HP each)
- Provide and install (3) new Bray actuator on the existing Bray valves to provide isolation of the chilled water flow through the (3) existing chillers
- Provide and install a new Chilled water bypass piping and flow control valve for minimum flow control to chillers
- Replace (13) 3-way valves with 2-way
- Provide and install the required new pipe insulation to repair the piping disturbed with the valve replacement
- Include taps for CHW supply and return temperature sensors
- Include taps for differential pressure

Variable CW Pumping – Mechanical Upgrade

- Remove the existing 8" globe valve and install (1) lug style butterfly valve in the basement mechanical room above the condenser water pumps
- Provide and Install VFDs on new motors (3 motors, 100 HP each)
- Include the required taps for the differential pressure sensors

VFDs on Cooling Tower Fan Motors – Mechanical Upgrade

- Provide and install (4) premium efficiency electric motors to replace the tower fan drive motors. Motors shall be rated at 50 HP (460 volt 3-phase)
- Provide and install (4) Danfoss Graham VFDs rated for exterior installation rated at 50 HP (460 volt 3-phase)

Chilled Water Plant Optimization

To current systems will be upgraded to take advantage of energy saving strategies such as scheduling, setbacks, demand controlled ventilation, airside economizing, and Discharge Air Temperature (DAT) reset.

Location #2

ECMs: Installation of Demand Control Ventilation

The current BAS system will have additional sensors installed to increase the number of setpoints providing greater control over the current system. The adjustments to the HVAC system will include the following:

Occupied and unoccupied scheduling adjustment

Inside air temperature setpoint

Night Temperature Setback

Monitoring of CO2 levels and adjustments to the system

7. Annual Estimated Energy Savings:
1,662,880 kWh
77 kW
36,011 Therms
8. Annual Estimate Energy Cost Savings: **\$173,466**

**Program Coordinator Certification
(New Incentive Commitments > \$300,000)**

I, **Maura Watkins**, hereby certify that in its role as Program Coordinator, Applied Energy Group, Inc. has reviewed the referenced below, as required by the policies and procedures applicable to each program, that the standardized equipment incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the amount shown below is the true and accurate estimated incentive for which the applicant(s) is(are) eligible.

For incentives based on uniquely calculated estimated energy savings, including the Custom Program, Pay for Performance and Large Energy Users Pilot Program, Applied Energy Group certifies locating documentation supporting the inputs used to calculate the rebate amount and evidencing TRC's evaluation of those inputs as required by the program's policies and procedures.

Maura H Watkins

By: _____

Date: 02-19-2013

Maura Watkins

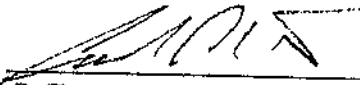
Quality Assurance Manager - Applied Energy Group, Inc.

Ref: _____
App # L16231
Applicant Mack-Cali Realty Corporation
Payee Mack-Cali Realty Corporation

Committed Amount: \$821,182.68

Market Manager Certification
(New Incentive Commitments > \$300,000)

I, Carl Teter, hereby certify that applications on the attached list have been reviewed by TRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the listed amounts are the true and accurate estimated incentives for which each applicant is eligible.

By: 
Carl P. Teter, P.E., LEED AP, Associate Vice President
App# L16231

Date: 2-20-13

1. Application Number: L16231
2. Program Name: Large Energy Users Pilot Program
3. Customer Contact (name, company, address, phone #):
William Calisanti, Senior Director of Electrical Service & Facilities
Mack-Cali Realty Corporation
PO Box 7817
Edison, NJ 08818-7817

4. Project Name and Address:

Building Name	Address
101 Eisenhower Pkwy.	101 Eisenhower Pkwy., Roseland, NJ
103 Eisenhower Pkwy.	103 Eisenhower Pkwy., Roseland, NJ
325 Columbia Tpk.	325 Columbia Tpk., Florham Park, NJ
7 Campus Drive	7 Campus Drive, Parsippany, NJ
8 Campus Drive	8 Campus Drive, Parsippany, NJ
9 Campus Drive	9 Campus Drive, Parsippany, NJ
1 Sylvan Way	1 Sylvan Way, Parsippany, NJ
5 Sylvan Way	5 Sylvan Way, Parsippany, NJ
2 Hilton Court	2 Hilton Court, Parsippany, NJ
4 Gatehall Drive	4 Gatehall Drive, Parsippany, NJ
201 Littleton Road	201 Littleton Road, Morris Plains, NJ
222 Mt. Airy Road	222 Mt. Airy Road, Basjking Ridge, NJ
10 Independence Way	10 Independence Way, Warren, NJ
721 Rte 202/206	721 Route 206, Bridgewater, NJ
6 Becker Farm Rd.	6 Becker Farm Road, Roseland, NJ
75 Livingston Ave.	75 Livingston Avenue, Roseland, NJ
85 Livingston Ave.	85 Livingston Avenue, Roseland, NJ
1324 Campus Pkwy.	1324 Campus Parkway, Wall Twp., NJ
100 Willowbrook	100 Wollowbrook Road, Freehold, NJ
2 Paragon Way	2 Paragon Way, Freehold, NJ
One River Center Bldg. 1	331 Newman Springs Rd., RedBank, NJ
3 Independence Way	3 Independence Way, Princeton, NJ
103 Carnegie Center	103 Carnegie Center, Princeton, NJ
5 Vaughn Drive	5 Vaughn Drive, Princeton, NJ
100 Overlook	100 Overlook Center, Princeton, NJ
500 College	500 College Road, Princeton, NJ
6 Commerce Drive	6 Commerce Drive, Cranford, NJ
10 / 12 Commerce Drive	10 / 12 Commerce Drive, Cranford, NJ
11 Commerce Drive	11 Commerce Drive, Cranford, NJ
14 Commerce Drive	14 Commerce Drive, Cranford, NJ
20 Commerce Drive	20 Commerce Drive, Cranford, NJ
65 Jackson Drive	25 Jackson Drive, Cranford, NJ
343 Thornall Street	343 Thornall Street, Edison, NJ
581 Main Street	581 Main Street, Woodbridge, NJ
100 Walnut	100 Main Street, Clark, NJ

300 Tice Boulevard	300 Tice Boulevard, Woodcliff Lake, NJ
17-17 Route 208	17-17 Route 28, Fair Lawn, NJ
One Bridge Plaza	One Bridge Plaza, Fort Lee, NJ
50 Tice Boulevard	50 Tice Boulevard, Woodcliff Lake, NJ
777 Passaic Ave.	777 Passaic Avenue, Clifton, NJ
365 W. Passaic	365 W. Passaic St., Rochelle Park, NJ
650 From Road	650 From Road, Paramus, NJ
61 S. Paramus Rd	61 S. Paramus Road, Paramus, NJ
461 From Road	461 From Road, Paramus, NJ
15 E. Midland Ave	15 E. Midland, Paramus, NJ
140 E. Ridgewood	140 E. Ridgewood, Paramus, NJ
135 Chestnut Ridge	135 Chestnut Ridge, Montvale, NJ
10 Mountainview	10 Mountainview, Upper Saddle River, NJ
2115 Linwood Ave.	2115 Linwood Ave., Fort Lee, NJ
395 W. Passaic	395 W. Passaic St., Rochelle Park, NJ
600 Parsippany Rd.	600 Parsippany Rd., Parsippany, NJ
5 Woodhollow	5 Woodhollow Rd., Parsippany, NJ
890 Mountain Avenue	890 Mountain Ave., New Providence, NJ
150 JFK Parkway	150 JFK Parkway, Short Hills, NJ
106 Allen Road	106 Allen Road, Bernards Twp., NJ
105 Eisenhower Parkway	105 Eisenhower Pkwy., Roseland, NJ
1305 Campus Pkwy.	1305 Campus Parkway, Wall Twp., NJ
1340 Campus Pkwy.	1340 Campus Parkway, Wall Twp., NJ
1350 Campus Pkwy.	1350 Campus Parkway, Wall Twp., NJ
4 Paragon Way	4 Paragon Way, Freehold, NJ
One River Center Bldg. II	331 Newman Springs Rd., RedBank, NJ
One River Center Bldg. III	331 Newman Springs Rd., RedBank, NJ
4 Century Drive	4 Century Drive, Parsippany, NJ
5 Century Drive	5 Century Drive, Parsippany, NJ
6 Century Drive	6 Century Drive, Parsippany, NJ
1 Executive Drive	1 Executive Drive, Moorestown, NJ
101 Executive Drive	101 Executive Drive, Moorestown, NJ
2 Executive Drive	2 Executive Drive, Moorestown, NJ
102 Executive Drive	102 Executive Drive, Moorestown, NJ
225 Executive Drive	225 Executive Drive, Moorestown, NJ
840 / 844 Lenola	840 / 844 Lenola, Moorestown, NJ
915 Lenola	915 Lenola, Moorestown, NJ
2 Commerce Drive	2 Commerce Drive, Moorestown, NJ
102 Commerce Drive	102 Commerce Drive, Moorestown, NJ
201 Commerce Drive	201 Commerce Drive, Moorestown, NJ
202 Commerce Drive	202 Commerce Drive, Moorestown, NJ
97 Foster Road	97 Foster Road, Moorestown, NJ
1245 Church Road	1245 Church Road, Moorestown, NJ
1247 Church Road	1247 Church Road, Moorestown, NJ
1256 Church Road	1256 Church Road, Moorestown, NJ

30 Twosome Drive	30 Twosome Drive, Moorestown, NJ
40 Twosome Drive	40 Twosome Drive, Moorestown, NJ
41 Twosome Drive	41 Twosome Drive, Moorestown, NJ
50 Twosome Drive	50 Twosome Drive, Moorestown, NJ
3 Terri Lane	3 Terri Lane, Moorestown, NJ
5 Terri Lane	5 Terri Lane, Moorestown, NJ
233 Mt. Airy Road	233 Mt. Airy Road, Basijking Ridge, NJ
101 Hudson	101 Hudson St., Jersey City, NJ
2 Independence Way	2 Independence Way, Princeton, NJ

5. Rebate amount: **\$821,182.68**

6. Brief description of measures:

The measures to be installed include older equipment found in common areas and exterior lighting. Common areas with T12 lighting will be retrofitted with T8 lamp and ballast systems. Incandescent lamps will be replaced with compact fluorescent lamps. For the exterior, High Pressure Sodium (HPS) and Metal Halide (MH) high intensity discharge (HID) lighting will be replaced with induction.

Mack-Cali has indicated that the final list of projects and scope of work may be slightly different from those submitted for approval. Mack-Cali understands that revisions to the scope of work will be reviewed by the Market Manager and may result in a modification of the incentive to be paid. In this case, the Market Manager will review instances where the as-built differs from the committed scope of work and may approve such changes provided the changes meet all program requirements and do not result in an increase in the incentive approved by the Board.

Building Name	Project name	Project details	Equipment replaced
101 Eisenhower Pkwy.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
103 Eisenhower Pkwy.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
325 Columbia Tpk.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
7 Campus Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
8 Campus Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
9 Campus Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
1 Sylvan Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
5 Sylvan Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
5 Sylvan Way	Parking garage lighting	Install T-8 fixtures	HPS
2 Hilton Court	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting

4 Gatehall Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
4 Gatehall Drive	Parking garage lighting	Install T-8 fixtures	HPS
201 Littleton Road	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
201 Littleton Road	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide & HPS
222 Mt. Airy Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
10 Independence Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
721 Rte 202/206	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
6 Becker Farm Rd.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
75 Livingston Ave.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
75 Livingston Ave.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
85 Livingston Ave.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1324 Campus Pkwy.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
1324 Campus Pkwy.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
100 Willowbrook	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
2 Paragon Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
One River Center Bldg. 1	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
One River Center Bldg. 1	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
3 Independence Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
3 Independence Way	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
103 Carnegie Center	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
103 Carnegie Center	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
5 Vaughn Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
5 Vaughn Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
100 Overlook	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
500 College	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
500 College	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
6 Commerce Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting

6 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
10 / 12 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
11 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
14 Commerce Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
20 Commerce Drive	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
20 Commerce Drive	Parking garage lighting	Install T-8 & induction fixtures	HPS
20 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
65 Jackson Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
343 Thornall Street	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
581 Main Street	Common area lighting	Retrofit fixtures to T-8 & CF lighting	T-12 & incandescent lighting
581 Main Street	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
100 Walnut	Common area lighting	Retrofit fixtures to T-8, CF & induction	T-12 & mercury vapor
100 Walnut	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
300 Tice Boulevard	Parking garage lighting	Install T-8 fixtures	HPS
300 Tice Boulevard	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
17-17 Route 208	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
One Bridge Plaza	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
One Bridge Plaza	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
50 Tice Boulevard	Parking garage lighting	Install T-8 fixtures	Mercury vapor
50 Tice Boulevard	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
777 Passaic Ave.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
777 Passaic Ave.	Parking lot lighting	Retrofit fixtures to induction lighting	Mercury vapor / HPS
365 W. Passaic	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
650 From Road	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
650 From Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
61 S. Paramus Rd	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide & HPS
461 From Road	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting

461 From Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
15 E. Midland Ave	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
15 E. Midland Ave	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
140 E. Ridgewood	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
135 Chestnut Ridge	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
10 Mountainview	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
2115 Linwood Ave.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
2115 Linwood Ave.	Parking garage lighting	Install T-8 fixtures	HPS
395 W. Passaic	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
600 Parsippany Rd.	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
5 Woodhollow	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
890 Mountain Avenue	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
890 Mountain Avenue	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
150 JFK Parkway	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
106 Allen Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
105 Eisenhower Parkway	Parking garage lighting	Install T-8 fixtures	Metal Halide
1305 Campus Pkwy.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1340 Campus Pkwy.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1350 Campus Pkwy.	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
4 Paragon Way	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
One River Center Bldg. II	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
One River Center Bldg. III	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
4 Century Drive	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
5 Century Drive	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
6 Century Drive	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide
1 Executive Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
101 Executive Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS

2 Executive Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
102 Executive Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
225 Executive Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
840 / 844 Lenola	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
915 Lenola	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
2 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
102 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
201 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
202 Commerce Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
97 Foster Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1245 Church Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1247 Church Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
1256 Church Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
30 Twosome Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
40 Twosome Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
41 Twosome Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
50 Twosome Drive	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
3 Terri Lane	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
5 Terri Lane	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
233 Mt. Airy Road	Parking lot lighting	Retrofit fixtures to induction lighting	HPS
101 Hudson	Common area lighting	Retrofit fixtures to T-8 lighting	T-12 lighting
2 Independence Way	Parking lot lighting	Retrofit fixtures to induction lighting	Metal Halide

7. Annual Estimated Energy Savings:

- 1) **2,898,073.70 kWh**
- 2) **619.1 kW**

8. Annual Estimate Energy Cost Savings: **\$383,225**

**Program Coordinator Certification
(New Incentive Commitments > \$300,000)**

I, **Maura Watkins**, hereby certify that in its role as Program Coordinator, Applied Energy Group, Inc. has reviewed the referenced below, as required by the policies and procedures applicable to each program, that the standardized equipment incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the amount shown below is the true and accurate estimated incentive for which the applicant(s) is(are) eligible.

For incentives based on uniquely calculated estimated energy savings, including the Custom Program, Pay for Performance and Large Energy Users Pilot Program, Applied Energy Group certifies locating documentation supporting the inputs used to calculate the rebate amount and evidencing TRC's evaluation of those inputs as required by the program's policies and procedures.

Maura H Watkins

By: _____

Date: 02-18-2013

Maura Watkins

Quality Assurance Manager - Applied Energy Group, Inc.

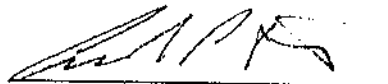
Ref:	
App #	<u>18911</u>
Applicant	<u>Princeton University</u>
Payee	<u>Princeton University</u>

Committed Amount: \$500,000.00

Market Manager Certification
(New Incentive Commitments > \$300,000)

I Carl Teter hereby certify that applications on the attached list have been reviewed by TRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which TRC now seeks approval to commit have been calculated in accordance with those policies and procedures, and that the listed amounts are the true and accurate estimated incentives for which each applicant is eligible.

By:



Carl P. Teter, P.E., LEED AP, Associate Vice President
App# 18911

Date:

2-20-13

1. Application Number: **18911**
2. Program Name: **SmartStart Retrofit – Custom Electric**
3. Customer Contact (name, company, address, phone #):
Edward (Ted) Borer, Energy Plant Manager
Princeton University
Facilities Engineering, MacMillan Bldg
Elm Rd, Princeton, NJ 08544
609-258-3966
4. Project Name and Address:
Princeton University
Facilities Engineering, MacMillan Bldg
Elm Rd, Princeton, NJ 08544
5. Rebate amount: **\$500,000.00**
6. Brief description of measures: **This project will install several high efficiency pumps and fans, with variable frequency drives to control them, throughout the campus's chilled water system. The upgrade will also require the modification of the process water system.**

ECM List Includes:
 - **Installation of New Condenser Water Pumps with VFDs – Location: Main Plant Cooling Tower**
 - **New Boiler Feed Water Pumps with VFDs – Location: Cogen Boiler Feed Water**
 - **Installation of Plate and Frame Pump Package for Cogen Equipment Cooling Water from Chilled Water – Location: Cogen**
 - **One New Turbine Enclosure Ventilation Fan VFD – Location: Cogen Plant**
7. Annual Estimated Energy Savings:
4,285,471 kWh
242 kW
8. Annual Estimate Energy Cost Savings: **\$413,958.93**