



Agenda Date: 1/23/13

Agenda Item: 8C

STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, NJ 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.
)	
THE TRUSTEES AT PRINCETON UNIVERSITY)	EO12121077V
)	
PAULSBORO REFINING COMPANY LLC)	EO13010002V
)	
ST. BARNABAS HEALTH CARE SYSTEM)	EO13010010V
)	
DSM NUTRITIONAL PRODUCTS LLC)	EO13010011V

Parties of Record:

Bill Broadhurst, Campus Energy Manager, The Trustees at Princeton University
Lou Katogir, Staff Process Engineer, Paulsboro Refining Company LLC
Bill Cuthill, Vice President of Facilities Management, St. Barnabas Health Care System
William Radigan, Procurement Manager, DSM Nutritional Products LLC

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 New Jersey property owners 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 Trustees at Princeton University, Princeton, NJ, have submitted an application for a financial incentive in the amount of \$429,822.85 under the 2011 Large Energy Users Pilot program, for a project located at the Engineering Quadrangle (referred to in the Final Energy Efficiency Plan [FEET] as E-Quad) and at Fine Hall at Princeton University, Princeton, NJ. The

applicant proposes to install and upgrade several lighting components in the E-Quad, including installation of occupancy sensors in hallways, classrooms, and laboratories; upgrading of lighting fixtures in the hallways, offices, classrooms, and laboratories; and lighting fixture retrofits in the atrium and various other locations throughout the E-Quad. Additionally, the applicant proposes to reschedule the operation of air handling units (AHUs) to shut off service to offices after normal business hours. Most of the AHUs will also be upgraded to units with variable frequency drives (VFDs). With regards to fume hoods in the building's laboratories, the applicant proposes to conduct performance tests according to ASHRAE 110 protocols to reduce the face velocity of the units. Furthermore, the return air relative humidity levels will be set at more appropriate points required for clean rooms. By introducing the proper humidity, the applicant will not need as much air heating or cooling to satisfy the building's temperature requirements. Finally, for the E-Quad, windows will be covered with insulating film and all heating hot water pumps will be placed on a schedule to avoid running continuously. For Fine Hall, the existing mixed air multizone units will be retrofitted to isolate the hot deck ductwork completely, so that the existing cold deck would be used as the main supply duct. Installing these measures will enable an estimated annual energy savings of 604,197 kWh, and will result in an estimated annual energy savings of 85,465 therms of natural gas. Overall, this applicant will have an estimated annual energy cost savings of \$161,591.22.

Paulsboro Refining Company LLC, Paulsboro, NJ, has submitted an application for a financial incentive in the amount of \$749,734.98 under the 2011 Large Energy Users Pilot program, for a project located at 800 Billingsport Road, Paulsboro, NJ. The applicant proposes to add a new steam generator and a new steam super heater in the unit's reactor effluent system, which is an improvement on the process line that will result in increased steam recovery. The proposed equipment installation will involve an increased annual use of 4,744,519 kWh of electricity but ultimately results in an annual natural gas savings of 3,463,404 therms (a net annual savings of 330,152 MMBtu). Overall, this applicant will have an estimated annual energy cost savings of \$1,148,000.

St. Barnabas Health Care System, Livingston, NJ, has submitted an application for a financial incentive in the amount of \$421,453.80 under the 2011 Large Energy Users Pilot program, for a project located at Monmouth Medical Center, 300 Second Avenue, Long Branch, NJ. The applicant proposes to install two 300 hp, dual fuel modular boilers with economizers and two associated boiler feedwater pumps. The low-mass design of the boiler allows for shorter start up times and reduced stand-by losses. The smaller boiler capacity will have fast response to load as well as having a high fuel-to-steam efficiency. Staging the boilers will also be controlled in order to select the optimal configuration for any steam load scenario and target the best overall plant efficiency available at any one time. Installing these measures will enable an estimated annual energy savings of 127,170 therms of natural gas. Overall, this applicant will have an estimated annual energy cost savings of \$155,100.

DSM Nutritional Products LLC, Parsippany, NJ, has submitted an application for a financial incentive in the amount of \$341,299.94 under the 2011 Large Energy Users Pilot program, for a project located at 202 Macks Island Drive, Belvidere, NJ. The applicant proposes to replace an existing oversized 40 MW combined heat and power (CHP) system with the installation of a 10.6 MW cogeneration system configured to satisfy the campus' steam usage requirement when fully operational. The proposed CHP configuration would also satisfy approximately 82% of the monthly average campus electrical load. The total installed capacity would be 10.6 MW and has an annual system efficiency of 67.6%. The system's emissions are detailed in the attached Market Manager Certification. Once installed, the system will have an estimated energy savings of 74,161,060 kWh annually, and an estimated 4,053,610 therms would be

recovered annually from the CHP waste heat to be repurposed for process heating, space heating, and water heating. Overall, this applicant will have an estimated annual energy cost savings of \$3,485,253 at a project cost of \$22,800,000.

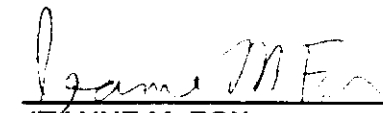
TRC, the Market Manager engaged by the Board to manage the New Jersey Clean Energy Program (NJCEP) C&I energy efficiency programs, has submitted certifications that the incentives for which TRC now seeks approval to commit have been calculated in accordance with the program policies and procedures, and 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, the Staff recommends that the Board approve the above-referenced applications.

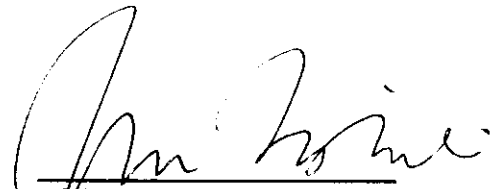
The Board **HEREBY ORDERS** the approval of the aforementioned applications for the total estimated incentive amounts of \$429,822.85 for the Trustees at Princeton University, \$749,734.98 for Paulsboro Refining Company LLC, \$421,453.80 for St. Barnabas Health Care System, and \$341,299.94 for DSM Nutritional Products LLC, and **AUTHORIZES** issuance of standard commitment letters to the applicants identified above, setting forth the terms and conditions of these commitments.

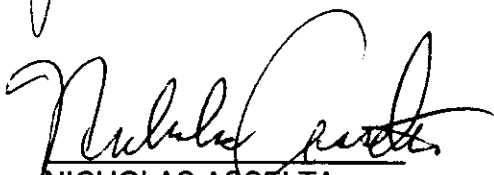
DATED: 1/23/13

BOARD OF PUBLIC UTILITIES
BY:


ROBERT M. HANNA
PRESIDENT


JEANNE M. FOX
COMMISSIONER

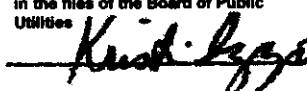

JOSEPH L. FIORDALISO
COMMISSIONER


NICHOLAS ASSELTA
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 (C&I) PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING \$300,000 – THE TRUSTEES AT PRINCETON UNIVERSITY; PAULSBORO REFINING COMPANY LLC; ST. BARNABAS HEALTH CARE SYSTEM; DSM NUTRITIONAL PRODUCTS, LLC

DOCKET NOS. EO12121077V, EO13010002V, EO13010010V & EO13010011V

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New Brunswick, NJ 08901

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Campus Energy Manager
The Trustees at Princeton
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PO Box 2158
Princeton, NJ 08543

Lou Katogir
Staff Process Engineer
Paulsboro Refining Company LLC
800 Billingsport Road
Paulsboro, NJ 08066

Bill Cuthill
Vice President of Facilities
Management
St. Barnabas Health Care System
95 Old Short Hills Road
Livingston, NJ 07039

William Radigan
Procurement Manager
DSM Nutritional Products LLC
45 Waterview Boulevard
Parsippany, NJ 07054

**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: 11-30-2012

Maura Watkins

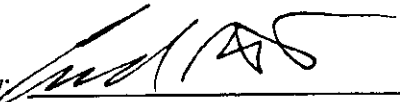
Quality Assurance Manager - Applied Energy Group, Inc.

Ref: _____
App # L16215
Applicant The Trustees at Princeton University
Payee The Trustees at Princeton University

Committed Amount: \$429,822.85

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# L16215

Date: 12-4-12

1. Application Number: **L16215**
2. Program Name: **Large Energy Users Pilot Program**
3. Customer Contact (name, company, address, phone #):
Bill Broadhurst, Campus Energy Manager
The Trustees at Princeton University
Princeton University, MacMillan Building
P.O. Box 2158
Princeton, NJ 08543
609-258-9008

4. Project Name and Address:

E-Quad, Princeton University, Princeton, NJ 08543
Fine Hall, Princeton University, Princeton, NJ 08543

5. Rebate amount: **\$429,822.85**

6. Brief description of measures:

ECM INFORMATION			
Building	Building Type	ECM #	ECM Description
E Quad	Classroom	1	Off-Hour Lighting Schedule for Hallways and stairwells
E Quad	Classroom	2	Delamping in Hallways
E Quad	Classroom	3	Delamping in Offices and Implementing Task Tuning
E Quad	Classroom	4	Delamping in Classrooms and Labs
E Quad	Classroom	7	Occupancy Sensors for Classroom and Lab
E Quad	Classroom	8	HD to TS Fixture Retrofit
E Quad	Classroom	9	T12 to T8 Fixture Retrofit and T8 U-Tube Retrofit
E Quad	Classroom	12	Reschedule the Operation of AHUs Serving Offices
E Quad	Classroom	13	Upgrade Constant Volume AHUs and EFs to Variable Flow
E Quad	Classroom	19	Utilize ASHRAE 110 Fume Hood Performance Testing for Airflow Reduction
E Quad	Classroom	20	Optimize Clean Room Operation
E Quad	Classroom	21	Apply Low-E Glass Films on Windows
E Quad	Classroom	25	Provide Scheduling and OSA Lockout Control for Comfort HHW Pumps
Fine	Classroom	1N	Multizone Conversion to pneuma-valve retrofit

7. Annual Estimated Energy Savings:
 - 1) **604,197 kWh**
 - 2) **85,465 Therms**
8. Annual Estimate Energy Cost Savings: **\$161,591.22**

**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: 12-28-2012

Maura Watkins

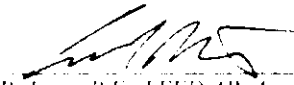
Quality Assurance Manager - Applied Energy Group, Inc.

Ref: _____
App # L16223
Applicant Paulsboro Refining Company LLC
Payee Paulsboro Refining Company LLC

Committed Amount: \$749,734.98

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

I, Carl Teter, hereby certify that applications on the attached list have been reviewed by IRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which IRC 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.

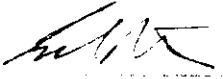
By 
Carl P. Teter, P.E., LEED AP, Associate Vice President
lpp L16223

Date: 12-28-12

1. Application Number: **L16223**
 2. Program Name: **Large Energy Users Pilot Program**
 3. Customer Contact (name, company, address, phone #):
Lou Katogir, Staff Process Engineer
Paulsboro Refining Company L.L.C
800 Billingsport Road
Paulsboro, NJ 08066
(856) 224-6056
 4. Project Name and Address:
Paulsboro Refining Company L.L.C
800 Billingsport Road
Paulsboro, NJ 08066
 5. Rebate amount: **\$ 749,734.98**
 6. Brief description of measures:
The Energy Improvement Project consists of the addition of a new Steam Generator and a new Steam Super heater in the unit's reactor effluent system downstream of the High Temperature Flash Drum. Energy recovered from the High Temperature Flash Drum vapor will generate superheated steam and improve the cooling capacity of the system.
 7. Annual Estimated Energy Savings:
-4,744,519 kWh
3,463,404 Therms
 8. Annual Estimate Energy Cost Savings: **\$1,148,000**
-

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

I, Carl Teter, hereby certify that applications on the attached list have been reviewed by IRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which IRC 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 1.16214

Date: 12-28-12

1. Application Number: **L16214**
 2. Program Name: **Large Energy Users Pilot Program**
 3. Customer Contact (name, company, address, phone #):
**Bill Cuthill, VP Facilities Management
St. Barnabas Health System
95 Old Short Hills Road
Livingston, NJ 07039
973-322-5364**
 4. Project Name and Address:
**Monmouth Medical Center
300 Second Avenue, Long Branch, NJ 07740**
 5. Rebate amount: **\$ 421,453.80**
 6. Brief description of measures:
The Energy Conservation Measure proposed for MMC includes the installation of two (2) 300 hp, dual fuel modular boilers with economizers and two (2) associated boiler feedwater pumps. The low-mass design of the boiler allows for shorter start up times and reduced stand-by losses. The small boiler capacity will have fast response to load as well as have a high fuel-to-steam efficiency. Staging the boilers will also be controlled in order to select the optimal configuration for any steam load scenario and target the best overall plant efficiency available at any one time.
 7. Annual Estimated Energy Savings:
127,170 Therms
 8. Annual Estimate Energy Cost Savings: **\$155,100**
-

**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: 01-03-2013

Maura Watkins

Quality Assurance Manager - Applied Energy Group, Inc.

Ref: _____
App # L16219

Applicant DSM Nutritional Products, LLC

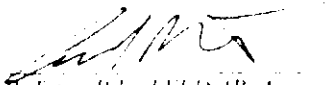
Payee DSM Nutritional Products, LLC

Committed Amount: \$341,299.94

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

I, Carl Teter, hereby certify that applications on the attached list have been reviewed by IRC or its subcontractors as required by the policies and procedures applicable to each program, that the incentives for which IRC 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. 1.16.219

Date

12-28-12

- 1 Application Number: **L16219**
- 2 Program Name: **Large Energy Users Pilot Program**
- 3 Customer Contact (name, company, address, phone #):
William Radigan, Procurement Manager
DSM Nutritional Products LLC
45 Waterview Blvd.
Parsippany, NJ 07054
973-257-8269

- 4 Project Name and Address:
DSM Nutritional Products
202 Macks Island Drive, Belvidere, NJ 07823

- 5 Rebate amount: **\$341,299.94**

- 6 Brief description of measures:

The current and known process steam requirements of the site have been calculated in excess of 360,000 kbs of steam per year. The proposed CHP configuration would satisfy the entire campus steam usage requirement when the CHP is fully operational and the summer curtailments / work stoppages are eliminated.

The average electrical demand per month, in the 20 month period from January 2008 to August 2009, is calculated at approximately 11.5 MW. The proposed CHP configuration would satisfy approximately 82% of the monthly average campus electrical load. It is acknowledged that electrical load within the 20 month period decreased in the summer months due to summer production curtailment necessitated by the increased electrical rates from JCP&L, however it is anticipated that with the implementation of the proposed CHP, that production would be more evenly distributed throughout the year, eliminating summer curtailment.

Total installed capacity will be 10.6 MW distributed as follow:

- 7.9 MW Combustion Turbine Generator awarded to Solar Turbines
- 2.7 MW Steam Turbine Generator awarded to Siemens
- 100,000 lb/h Heat Recovery Steam Generator with accompanying Selective Catalytic Reduction awarded to Rentech Boiler Systems, Inc.

Annual System Efficiency – 67.6%

Emissions of CHP System:

- NOx – 0.41 lbs/MWh
- SOx – 0.165 lbs/MWh
- PM-10 – 0.508 lbs/MWh
- CO2 – 2,543 lbs/MWh
- CO – 0.78 lbs/MWh
- VOC – 0.46 lbs/MWh

7. Annual Estimated Energy Savings:
 - 1) **74,161,060 kWh**
-

- 2) **10.6 MW**
- 3) **4,053,610 therms recovered from the CHP waste heat and repurposed for process heating, space heating, and water heating.**

8. Project Cost: **\$22,800,000.00**

9. Annual Estimate Energy Cost Savings: **\$3,485,253.00**