

Agenda Date: 5/21/14 Agenda Item: 8B

CLEAN ENERGY

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/

		OLLAN LINEINOT
IN THE MATTER OF THE NEW JERSEY CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL (C&I) PROGRAM ENERGY EFFICIENCY)	ORDER
INCENTIVES EXCEEDING \$500,000)	DOCKET NOS.
THE TRUSTEES OF PRINCETON UNIVERSITY)	QO14040382
MASONIC CHARITY FOUNDATION OF NEW JERSEY)	QO14040383

Party of Record:

Robert Chandler, Project Manager, The Trustees of Princeton University Cindy Shemansky, Administrator, Masonic Charity Foundation of New Jersey

BY THE BOARD:

The New Jersey Board of Public Utilities' (the Board) Commercial & Industrial (C&I) Energy Efficiency Program includes nine (9) individual programs targeting the commercial and industrial market segments, consisting of New Construction, Retrofit, Pay for Performance - New Construction, Pay for Performance - Existing Buildings, Local Government Energy Audit, Direct Install, Small Combined Heat and Power (CHP) and Fuel Cells (FC), Large Energy Users Program, and the Societal Benefits Charge Credit Program. 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 and other measures in new or existing buildings.

The Trustees of Princeton University, Princeton, NJ, has submitted an application for a total financial incentive in the amount of \$669,250.90 under the 2012 Pay for Performance - New Construction program, for a project located at the Lakeside Graduate Housing complex on 5 New South, Princeton, NJ. The estimated first incentive, for the proposed energy reduction plan (ERP), is \$38,242.90. The estimated second incentive, for the as-built reduction plan, including installation of efficient water source heat pumps, installation of variable frequency drives on chilled water pumps, installation of an efficient gas-fired water heater, installation of high efficiency insulation in walls and ceilings, installation of efficient windows and glass doors,

installation of high-efficiency lighting, installation of Energy Star certified refrigerators and clothes washers, and installation of low-flow faucets and shower heads, is \$382,429. The estimated third incentive for the commissioning report is \$248,579. This application has an estimated 21% total energy savings¹ as compared to the current energy code used in New Jersey, American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1.2007, and will save the customer an estimated 696,038 kWh of electricity annually, with an estimated annual demand reduction of 139.20 kW. Through this project, the customer will also save an estimated 37,820 therms of natural gas annually. Overall, this application will have an estimated annual energy cost savings of \$165,610, with a 10% internal rate of return and an 8 year payback. This project has an estimated measure incremental cost of \$1,302,753.

The Masonic Charity Foundation of New Jersey, in Burlington, NJ, has submitted an application for a total financial incentive in the amount of \$996,000 under the 2014 Small Combined Heat and Power (CHP) and Fuel Cells program, for a project located at 902 Jacksonville Road. Burlington, NJ 08016. Under the program, participants are eligible to receive financial incentives to further enhanced energy efficiency in their buildings through on-site power generation with recovery and productive use of waste heat to reduce existing and new demands to the electric power grid. The applicant proposes to install two 249 kW gas engine CHP units with a total system installed capacity of 498 kW. Estimated annual efficiency for the proposed plant is 70%. The first estimated incentive, in the amount of \$298,800, is to be paid upon proof of purchase of equipment. The second estimated incentive, in the amount of \$597,600, is to be paid upon project completion, review and acceptance of documentation, and successful inspection. The remaining estimated incentive, in the amount of \$99,600, is to be paid one year after project inspection, acceptance, and following confirmation that the project has achieved its required minimum efficiency threshold. The system is expected to produce 4,006,359.9 kWh of electricity annually and expected to produce 13,312.8 MMBtu of thermal energy recovered from waste heat, to be used for space heating and domestic water heating. Overall, this application is expected to result in an estimated average annual energy cost savings of \$270,939.78 at an estimated turn-key project cost of \$4,615,699.

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.

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¹ Energy savings and cost savings are measured from a code-compliant building ASHRAE 90.1-2007 baseline.

The Board <u>HEREBY ORDERS</u> the approval of the aforementioned applications for the total estimated incentive amounts of \$669,250.90 for the Trustees of Princeton University and \$996,000 for the Masonic Charity Foundation of NJ, and <u>AUTHORIZES</u> issuance of standard commitment letters to the applicants identified above, setting forth the terms and conditions of these commitments. The effective date of this Order is May 30, 2014.

DATED: 5/21/14

BOARD OF PUBLIC UTILITIES BY:

DIANNE SOLOMON PRESIDENT

JEANNE M. FOX COMMISSIONER

JOSEPH L. FIORDALISO

COMMISSIONER

MARY-ANNA HOLDEN COMMISSIONER

ATTEST:

SECRETARY

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

IN THE MATTER OF THE NEW JERSEY CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL (C&I) PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING \$500,000 -- THE TRUSTEES OF PRINCETON UNIVERSITY AND MASONIC CHARITY FOUNDATION OF NJ DOCKET NOS. Q014040382 & Q014040383

SERVICE LIST

Robert Chandler, Project Manager The Trustees of Princeton University 5 New South Princeton, NJ 08544

Cindy Shemansky, Administrator Masonic Charity Foundation of NJ 902 Jacksonville Road Burlington, NJ 08016

Brian DeLuca TRC Solutions Program Manager 900 Route 9 North, Suite 104 Woodbridge, NJ 07095

Carl Teter TRC Solutions Associate Vice President 900 Route 9 North, Suite 104 Woodbridge, NJ 07095

Valentina Rozanova TRC Solutions Program Manager 900 Route 9 North, Suite 104 Woodbridge, NJ 07095

Michael Ambrosio Applied Energy Group, Inc. 317 George Street, Suite 305 New Brunswick, NJ 08901

James Nappi Applied Energy Group, Inc. 317 George Street, Suite 305 New Brunswick, NJ 08901 Caroline Vachier, DAG
Department of Law & Public Safety
124 Halsey Street
Post Office Box 45029
Newark, NJ 07102-45029

Veronica Beke, DAG Department of Law & Public Safety 124 Halsey Street Post Office Box 45029 Newark, NJ 07102-45029

Kristi Izzo, Secretary Board of Public Utilities 44 South Clinton Avenue, 9th Floor Post Office Box 350 Trenton, NJ 08625-0350

Elizabeth Ackerman, Director Office of Clean Energy Board of Public Utilities 44 South Clinton Avenue, 9th Floor Post Office Box 350 Trenton, NJ 08625-0350

Elizabeth M. Teng Board of Public Utilities 44 South Clinton Avenue, 9th Floor Post Office Box 350 Trenton, NJ 08625-0350

Sherri Jones Board of Public Utilities 44 South Clinton Avenue, 9th Floor Post Office Box 350 Trenton, NJ 08625-0350

Allison E. Mitchell Board of Public Utilities 44 South Clinton Avenue, 9th Floor Post Office Box 350 Trenton, NJ 08625-0350

Program Coordinator Certification (New Incentive Commitments > \$500,000)

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Ву:	,,,,,, <u></u>		Date:	04-16-2014
Maura Watk	ins			
Quality Assur	ance Manager	- Applied En	ergy Group, I	nc.
Ref:				
App#	18528			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Applicant	Princeton Unive	ersity		
Payee	The Trustees of	f Princeton I	Jniversity	
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Committed Amount: \$669,250.90

Market Manager Certification (New Incentive Commitments > \$500,000)

I <u>Carl Teter</u> 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.

Bv∙ ∠

Carl P. Teter, P.E., LEED AP, Associate Vice President

App# 18528

1. Application Number: 18528

2. Program Name: Pay for Performance-New Construction

Customer Contact (name, company, address, phone #):
 Robert Chandler, Project Manager/Real Estate
 Princeton University
 5 New South, Princeton, NJ 08544

4. Project Name and Address:
Lakeside Graduate Housing
Princeton University
5 New South, Princeton, NJ 08544

5. Rebate amount:

Incentive #1: \$38,242.90 Incentive #2: \$382,429.00 Incentive #3: \$248,579.00 Total: \$669,250.90

6. Brief description of measures: See next page

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Measure incremental costs | Si D62 953
Partner fees for modeling | S152,000
Partner fees for hispection & verification | S87,800
Partner fees for hispection & verification | S87,800
Partner fees for other services related to the program* | S87,800

7. Annual Estimated Energy Savings: See below

8. Annual Estimate Energy Cost Savings: See below

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	"Energy Efficiency Memory at		Laerey Savanes : BiologickWhit	Mant Microsi		Water Seweri Savings	Annual D&M? Savings	Anoual _{es} Cost Savings	Lafetime (years)	1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	CHR.		Weighted Lifetime
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1	Water Source Heat Pump	0.	166,314	Electricity	17.09	- 0	1	\$27,309	50	16.5	6%	\$252,648	\$1,365,438
2	VFD - Chilled Water Pump	0.7	72,961	Electricity	6.50	0		\$11,980	10	1.1	94%	\$89,522	\$119,802
3	Water Source Heat Pump	.0.	54,445	Electricity	91.47	- 0.		\$8,940	20	1.0	101%	\$124,153	\$178,797
4	Water Source Heat Pump	0.00	7 173,949	Electricity*	0.00	· 0 :		\$28,562	20	0.3	323%	\$416,087	\$571,249
5	Water Heater (Gas) - > 50 Gals.	1,540	0	~~Gas	0,00			\$20,894	7213	3.1	31%	\$157,204	\$271,618
6	Insulation - Walls, Kneewalls, Rim Band/Joists	0	5,702	Electricity	0.00	0		\$936	25	133.5	-10%	-\$108,697	\$23,407
7	Insulation - Ceiling	075.	26,178	Electricity	0.00	.0		\$4,298	*- 25 ::	0.9	107%	\$70,849	\$107,461
8	Windows and Glass Doors	· 0.	48,670	Electricity	0.00	· 0 **		\$7,992	15-	35.1	-9%	-\$185,197	\$119,874
9	CFL - Indoor Fixture	0 - em	48,931	Electricity	4.60	0.0		\$8,034	. : 12	3.0	32%	\$55,653	\$96,414
10	Fluorescent Fixtures		- 56,019	Electricity	6.39	0		\$9,190	. 12	6.5	11%	\$31,349	\$110,282
11	Custom Electric	0,8	. (25,31,301	Electricity	3.08	** 9/0	· Lu 7 A	\$5,140	· 15	0.6	176%	\$58,429	\$77,094
12	Custom Electric	0.	:-7,364≅	Electricity	9.59	3 a ()		\$1,209	7.33 ·	6.5	12%	\$4,959	\$15,719
13	LED Exit Signs	0-4	4,204 =	Electricity:	0.48	- 0		\$690	8	3.5	23%	\$2,446	\$5,522
14	Custom Gas	2.243		∵Gas ़	0.00	10,123	V	\$30,435	43	0.3	295%	\$ 313,373	\$395,652
	TOTALS:	3,782	696,038		139.20	10,123	\$0	\$165,610		8	10%	\$1,282,777	21

Program Coordinator Certification (New Incentive Commitments > \$500,000)

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Quality Assur	ance Manager -	Applied Energy	Group, Inc	c.
Ref: App #	24846CHP			,
Applicant	Masonic Charity	Foundation of N	1J	* - · · · · · ·
Payee	Ener-G Rudox In	ıc.		
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Committed Amount: \$996,000.00

Market Manger Certification (New Incentive Commitments > \$500,000)

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.

Carl P. Teter, P.E., LEED AP, Associate Vice President

App# 24846CHP

1. Application Number: 24846CHP

2. Program Name: Masonic Charity Foundation of New Jersey

Customer Contact (name, company, address, phone #):
 Cindy Shemansky, Administrator
 902 Jacksonville Road, Burlington, NJ 08016
 609-239-3900

4. Project Name and Address:

Masonic Charity Foundation of New Jersey 902 Jacksonville Road, Burlington, NJ 08016

5. Rebate amount:

Incentive #1: \$298,800 Incentive #2: \$597,600 Incentive #3: \$99,600 Total: \$996,000

6. Brief description of CHP to be Installed (size, efficiency, emission, equipment to be replaced):

Two (2), 249kW Gas Engine CHP units with total system installed capacity of 498 kW. Annual system efficiency of 70%. Waste heat to be used for space heating and domestic hot water via existing converted boilers. System will be designed to operate in grid-connected mode and is not currently designed to island.

CHP/Fuel	Cell Emissions Redu	ctions
NOx:	-113,088.60	lbs
5O ₂ :	9,623.25	lbs
CO ₂ :	5,676,945.39	lbs

7. Annual Estimated Energy Savings:

Expected Annual Electricity Production: 4,006,359.9 kWh Expected Annual Thermal Energy Production: 13,312.8 MMBtu of recovered heat for space heating and hot water.

8. Project Cost: \$4,615,699.00

9. Annual Estimate Energy Cost Savings:

Financial Evaluation	
Simple Payback Period (years) w/o incentive	14.25
IRR	4%
First Year (Annual) Cost Savings	\$228,921.43
Average Annual Cost Savings	\$270,939.78
Lifecycle Savings	\$362,741.42