



Agenda Date: 2/22/17  
Agenda Item: 8F

**STATE OF NEW JERSEY**  
**Board of Public Utilities**  
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CLEAN ENERGY

IN THE MATTER OF THE REQUEST TO WAIVE )  
COMBINED HEAT AND POWER/FUEL CELL )  
(CHP/FC) REQUIREMENT – TRENTON BIOGAS )  
LLC; AND IN THE MATTER OF THE CLEAN )  
ENERGY PROGRAM AUTHORIZATION OF )  
COMMERCIAL AND INDUSTRIAL (C&I) )  
PROGRAM ENERGY EFFICIENCY )  
INCENTIVES EXCEEDING \$500,000.00 – )  
TRENTON BIOGAS, LLC )

ORDER

DOCKET NO. QW17010074

**Parties of Record:**

**Brian Blair**, Trenton Biogas LLC  
**Michael Ambrosio**, TRC Energy Solutions  
**Stefanie A. Brand, Esq.**, Director, Division of Rate Counsel

**BY THE BOARD:**

This Order memorializes action taken by the Board of Public Utilities (Board or BPU) at its February 22, 2017 public meeting, where the Board considered and determined whether to (i) grant a request by Trenton Biogas LLC (Trenton Biogas) to waive certain requirements of New Jersey’s Clean Energy Program’s (NJCEP’s) Combined Heat and Power/Fuel Cell (CHP/FC) Program, and (ii) authorize and approve the commitment of up to \$2,743,850 in CHP/FC Program incentives to Trenton Biogas.

**BACKGROUND**

On August 8, 2016, Trenton Biogas submitted Application #NJFCPS1532593088 to NJCEP’s CHP/FC Program Manager seeking \$2,743,850 in incentive payments for a proposed 3.4 Megawatt (MW) biogas CHP system (Trenton BG CHP System) with an estimated capital cost of \$36,000,000 to be installed at the inactive Carver Greenfield Sludge Drying Facility located on Duck Island, Hamilton Township, New Jersey (Trenton Facility). The Trenton BG CHP System would consist of:

- 3 anaerobic digestion tanks that would produce biogas;
- 3 turbines that would burn all of the biogas in the 3.4 MW CHP system; and
- A heat recovery unit that would recover the excess heat exiting the turbines and use it to warm the anaerobic digestion tanks (thereby increasing their efficiency), dry the solids remaining after digestion (thereby allowing them to be cost-effectively disposed), process fluids in the tanks into valuable fertilizer feedstock, and provide space and water heating for use on-site.

Staff's review of the application has determined that the project does not fully comply with the CHP/FC program requirements. Specifically, the project exceeds the 10-year payback period requirement and the sizing requirement. Thus, Trenton Biogas requested waivers of these requirements to qualify for an incentive.

NJCEP includes several individual Commercial & Industrial (C&I) Energy Efficiency (EE) Programs targeting the C&I market segments. Eligible applicants may receive rebates or other incentive payments for a portion of the cost for installing energy efficient technologies and energy conservation measures and/or implementing projects involving Distributed Energy Resources (DER), including, among other things, CHP through the CHP/FC Program. All proposed C&I rebates or other incentive payments exceeding \$500,000 require specific Board approval. See I/M/O the Comprehensive Energy Efficiency and Renewable Energy Resource Analysis for the 2009 through 2012 Clean Energy Program - Revised 2012-2013 Programs & Budgets - Revised Renewable Energy Incentive Approval Process, BPU Dkt. No. EO07030203 (June 21, 2013).

By Order dated June 29, 2016 (Docket Nos. QO16040353 & QO106040525)(FY17 Order), the Board approved the NJCEP budgets and program descriptions for Fiscal Year 2017 (FY17). The eligibility requirements for the CHP/FC program are contained in a Compliance Filing, submitted by the NJCEP Program Administrator<sup>1</sup> and approved by the Board in the FY17 Order (FY17 Compliance Filing). The FY17 Compliance Filing, among other things, includes the following requirements pertaining to the CHP/FC Program:

- Each CHP 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).
- 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.

[FY17 Compliance Filing, p. 74.]

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<sup>1</sup> On January 13, 2017, TRC Environmental Corporation acquired the NJCEP Program Administrator Contract from Applied Energy Group, Inc. (AEG) and assumed AEG's rights and duties thereunder.

Prior to the Board's approval of the language quoted above, Staff sought public comment on the FY17 Compliance Filing. The May 31, 2016 Request for Comments included a Summary of Program Modifications for Fiscal Year 2017 (Summary). The Summary included the following explanation of the above-quoted 10-year payback requirement for the CHP/FC program (Payback Requirement):

***Cost-effectiveness screening***

Staff proposes that all CHP projects be required to pass a cost-effectiveness test to be eligible for incentives by demonstrating the simple payback is 10 years or less (including any federal tax credits and Program incentives). The proposed 10 year simple payback requirement aligns with the current Program rule that CHP systems have a minimum 10-year all-inclusive system warranty or service contract, and ensures that the Program will not incentivize projects where the simple payback is greater than the project measure life.

[Summary, p. 25; see also FY 17 Order, p. 18.]

The Summary also stated an intention to renew the commitment to "[i]ncentivize biomass and biogas-fueled projects" by folding the previous bio-power component of the previous Renewable Energy Incentive Program (REIP) into the CHP/FC Program. (Summary, p.25).

**PROJECT DESCRIPTION**

The Trenton BG CHP System will generate approximately 26 Gigawatt hours (GWh) annually, including an offset of approximately 6.1 GWh in on-site electric consumption and 2.6 GWh to be consumed by the adjacent Trenton Sewer Utility District facility. It will also generate approximately 70,914 million british thermal units/year (MMBtu/year) of thermal energy for use onsite as described above. It is projected that the Trenton BG CHP System will result in cost savings to the developer as follows: \$963,000/year in avoided electric costs, and \$269,473/year in avoided heating costs.

Regarding energy efficiency, the Trenton BG CHP System would have an overall energy efficiency of 70.8% as compared to the CHP/FC Program's threshold of 65%. It would also meet all other CHP/FC Program requirements, other than (a) the Payback Requirement and (b) the requirement that it be sized to meet no more than the applicant's on-site load (Sizing Requirement).

In addition to the energy costs savings described above, the Trenton BG CHP System would also provide a nearly complete hedge against fluctuations in electricity, natural gas, and oil prices, essentially locking in the cost of energy produced by the System. Reducing exposure to market fluctuations would be especially important to the Trenton BG CHP System's governmental customers whose ability to increase their budgets is subject to legal restriction and other limits, and whose pricing from Trenton Biogas presumably is fixed.

The Trenton BG CHP System would also provide significant environmental and other non-financial benefits. First, the biogas the Trenton BG CHP System would generate from the organic wastes it receives would be a Class I renewable energy source as defined by N.J.S.A. 48:3-51 and N.J.A.C. 14:8-2.2, and the process of producing and combusting the biogas is carbon neutral.<sup>2</sup> Second, the Trenton BG CHP System would combust this biogas to replace the power that would otherwise be obtained from the electric grid (produced mainly by non-renewable energy sources) and an oil-fired boiler currently located at the Trenton Facility.

Regarding the payback period, the System is estimated to have a 21-year payback period. The System's turbines and heat recovery unit are estimated to cost \$9,100,000. However, when their cost is combined with that of the back end and front end equipment related to the production of the biogas combusted in the System's turbines (e.g., waste handling equipment, digester and buffer tanks, byproduct handling equipment), the overall capital cost of the entire Trenton BG CHP System exceeds \$36,000,000.<sup>3</sup> Thus, it would take 21 years' worth of energy cost savings to recover that \$36,000,000 cost. The application states that the Trenton BG CHP System's equipment has a measure life equal to the maximum the Program recognizes, i.e., 20 years.

Regarding the Sizing Limit, the combustion of the biogas produced by the Trenton BG CHP System is projected to result in the export of \$844,340/year of electricity from the System's site.

### **STAFF RECOMMENDATION**

For the reasons described below, Staff recommends that the Board grant Trenton Biogas' requested waivers of the Payback Requirement and Sizing Requirement and approve the incentive amount of \$2,743,850.

In granting a waiver from program requirements, the Board has applied the two-prong analysis provided for in N.J.A.C. 14:1-1.2(b)(1). See I/M/O the New Jersey Smartstart Buildings Program – Request for Exemption (Westerly Road Church), Non-Docketed Matter (September 13, 2012)(granting request); see also I/M/O Request of Indoor Sports Pavilion for a Waiver of N.J.A.C. 14:8-4.3(j), Docket No. EG12060504V (August 15, 2012) (denying request). In that analysis, the Board first considers whether the applicant's request is in accordance with the general purpose and intent of the program requirements. The Board then considers whether requiring full compliance with the requirements "would adversely affect the ratepayers of a utility or other regulated entity, the ability of said utility or other regulated entity to continue to render safe, adequate and proper service, or the interest of the general public." N.J.A.C. 14:1-1.2(b)(1).

OCE Staff finds Trenton Biogas' requests for waivers to be in accord with the general purpose and intent of the subject requirements and of the Program in general. The Payback Requirement was intended to "ensure that the Program will not incentivize projects where the simple payback is greater than the project measure life." In the present case the System's 21-

<sup>2</sup> See <http://biogas.ifas.ufl.edu/FAQ.asp>

<sup>3</sup> The inclusion of the cost of the back end and front end processing equipment in the present case has no impact on the amount of the NJCEP incentive related to the subject system (because the incentive was limited by the system's power production capacity, not its cost) and is not intended to and does not set any precedent.

year payback period is not significantly greater than its 20-year measure life. Inclusion of the back end and front end costs associated with the biogas production/processing accounts for a large portion of the overall cost of the project and the resultant 21-year payback period calculation. However, this biogas portion of the system contributes to several significant environmental benefits including reduction of CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub> and particulate emissions. Such benefits are consistent with other NJCEP goals and policies such as those of encouraging the development of renewable energy projects that deliver environmental and health benefits.<sup>4</sup>

As to the Sizing Requirement, its overall intent and purpose is to maximize ratepayer benefits from NJCEP incentives by limiting those incentives to the cost of power for onsite needs only. In other words, the CHP/FC Program was not intended to encourage new sellers to enter the wholesale electricity market. The present Trenton BG CHP System was not designed to be of a size sufficient to supply the wholesale market, but was designed instead to be of a size sufficient to take all of the biogas produced at the Trenton Facility. The electricity available for offsite sale is only an incidental benefit of sizing the System to be able to take the biogas.

Further, strict compliance with these requirements would adversely affect the public interest. Specifically, strict compliance with the requirements would be to the detriment of achieving environmental benefits. Requiring full compliance would be to the detriment of energy efficiency goals, as this system would have an overall energy efficiency of 70.8%. In addition, granting the waivers would have no significant effect on the off-taking utility's ability to provide safe, adequate, or proper service.

Last, the Program Administrator has submitted its certification (conditioned on the Board's grant of the requested waivers from the Payback Requirement and Sizing Requirement) that the incentives were calculated in accordance with the CHP/FC Program rules and are the true and accurate estimated incentives for which the applicant is eligible. Specifically, the Trenton BG CHP System's three incentive payments would be in the respective amounts of \$823,155, \$1,371,925, and \$548,770, for a total amount of \$2,743,850.<sup>5</sup>

## **DISCUSSION & FINDINGS**

The Board **HEREBY FINDS** Staff's analysis and recommendations to be well-reasoned and appropriate. Accordingly, the Board **HEREBY FINDS** that granting the requested waivers of the Payback Requirement and the Sizing Requirement would further the general purpose and intent of those requirements and of the NJCEP more generally, and it also **HEREBY FINDS** that in this unique circumstance full compliance with the foregoing requirements would adversely affect the public interest. Accordingly, the Board **HEREBY GRANTS** Trenton Biogas' request for waivers of the Payback Requirement and to the Sizing Requirement for the construction and operation of the Trenton BG CHP System, as described above.

<sup>4</sup> Comprehensive EE & RE Resource Analysis, dated May 31, 2016, p. 6 (Appendix A to Board Order, I/M/O Comprehensive EE & RE Resource Analysis for FY17, Docket No. QO16040352 (June 29, 2016).

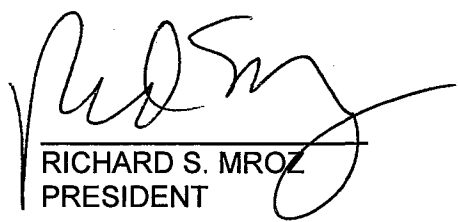
<sup>5</sup> CHP/FC incentive payments are disbursed upon completion of each of three milestones: (1) purchase of equipment; (2) installation and operation, including successful inspection; and (3) acceptance and confirmation of achievement of the required performance thresholds based upon 12 months of actual operating data.

The Board also **HEREBY AUTHORIZES** the approval of Trenton Biogas' application for the total incentive amount of up to \$2,743,850, and it finally **HEREBY AUTHORIZES** issuance of a standard commitment/approval letter to Trenton Biogas consistent with the foregoing, setting forth the terms and conditions of these commitments.

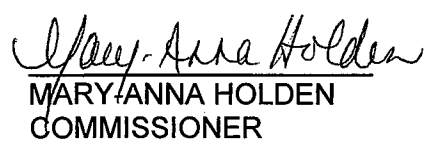
This Order shall be effective on March 4, 2017.

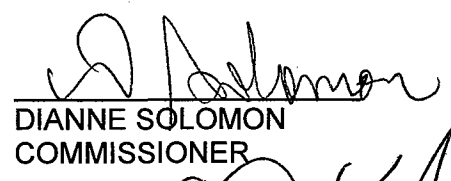
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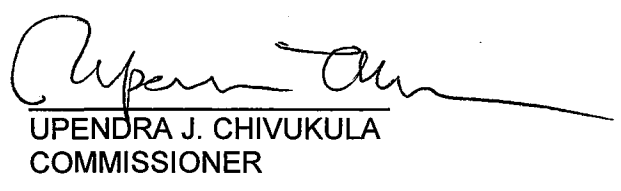
BOARD OF PUBLIC UTILITIES  
BY:

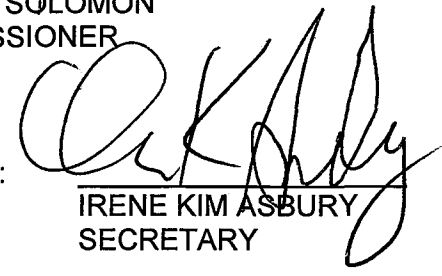
  
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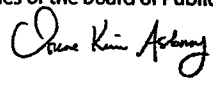
  
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COMMISSIONER

ATTEST:   
IRENE KIM ASBURY  
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 REQUEST TO WAIVE COMBINED HEAT AND POWER/FUEL  
CELL (CHP/FC) REQUIREMENT – TRENTON BIOGAS, LLC; AND IN THE MATTER OF  
THE CLEAN ENERGY PROGRAM AUTHORIZATION OF COMMERCIAL AND INDUSTRIAL  
(C&I) PROGRAM ENERGY EFFICIENCY INCENTIVES EXCEEDING \$500,000.00 –  
TRENTON BIOGAS LLC

DOCKET NO. QW17010074

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