

May 29, 2012

Mr. Gil C. Quiniones
Co-Chair, Energy Highway Task Force
President and CEO
New York Power Authority
113 Main Street
16th Floor
White Plains, N. Y. 10601-3170

Re: Response to the Request For Information (RFI) Submitted
Under The New York Energy Highway for Taylor Biomass Energy

Dear President Quiniones:

What is contained in this submission is a response to the RFI on The New York Energy Highway submitted by Taylor Biomass Energy-Montgomery LLC (TBEM). TBEM was created out of a need to provide an environmentally beneficial and economic solution to waste generation issues in New York, Nationally, and Internationally. The solution involves a project for taking municipal solid waste (MSW) and very selectively sorting the waste to extract clean biomass. The clean biomass is then used in an indirectly heated gasification process to produce hydrogen and methane. The hydrogen and methane gases produced provide a source of fuel for a highly efficient combined cycle power facility to generate clean electric energy. The process has been qualified under the New York Renewable Portfolio Standard (RPS) for centralized procurement after certification through comparative emission testing.

In a review of the objectives set by The New York Energy Highway Task Force the TBEM project provides benefits within the following areas:

- 1) Reducing constraints on electric flows within the New York down State area.
- 2) Expanding the diversity of power generation sources supplying the down State area.
- 3) Providing for electric system supply adequacy in the face of a myriad of system fuel uncertainties.
- 4) Encouraging the development of larger non intermittent renewable energy generation sources within the State.
- 5) Improving on the fleet efficiency of generation sources located in New York State or supplying the NYISO control area.
- 6) The creation of higher paying long term jobs.
- 7) Reducing the carbon generated by solid waste land filling.
- 8) The application of an advanced state of the art technology to address not only power production issues but also to address environmental solid waste concerns.
- 9) Producing rate payer value as it relates to deferring other immediate system reinforcements in a growing load pocket.
- 10) Reinforcing NYISO system supply adequacy and capacity requirements.

What follows is the required information to comply with the content for RFI submissions presented in the order specified for submission by the Task Force.

Respondent Information:

Responding for the Taylor Biomass Energy Montgomery Project is Allan Page. Mr. Page has been affiliated with the project since 2003 and has assisted in a variety of project development requirements including project financing, a power purchase agreement, electric transmission interconnection, and active participation in the development of the New York RPS.

Even though the submission has been developed through Mr. Page the project CEO and founder of TBEM has reviewed and approved the submission and will participate directly in the developments that occur subsequently. Mr. Page is being listed as the point of contact exclusively based upon questioning that may result from this submission. However, Mr. Taylor's contact information is also listed as another source of contact if preferred.

The following contact information is provided:

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Brief summary of respondent's background:

The respondent Taylor Biomass Energy is a business in the State of New York that finds its lineage stretching back to the 1950s and has during the last 60 years been involved with clearing, landscaping and recycling. In the late 1990s Jim Taylor the CEO of the business saw (the primary focus of the business at the time being construction and demolition recycling) a need to address the issue of landfill closures in the northeast. Such closures were impacting construction and demolition (C&D) recycling since even though some 97% of incoming C&D product could be recycled there was still a need for some percentage of land fill disposal. In addition the concept of burying in landfills, materials that could in some fashion be used as an energy resource led to the development of Taylor Biomass Energy's project focus of extracting non contaminated biomass predominately from municipal solid waste streams, and using the biomass as a feed stock for energy production.

The Taylor process biomass extraction involves both hand picking and the use of state of the art sorting and separating mechanisms to harvest only non hazardous biomass from waste streams. Taylor Recycling has been involved in the development and mechanization of sorting and separating for the last 20 plus years at its current facility on Neelytown Road in Montgomery. Taylor is a nationally recognized expert in the sorting and separating of waste streams for the purpose of deriving value from the waste streams.

The biomass feed stock harvested from the waste streams is used in a high temperature indirectly heated circulating fluidized bed gasification process to create gases which are used in a combined cycle application to produce electric energy. The technology used to provide the indirect heating was researched at Battelle Laboratories prior to demonstration by the Department of Energy. TBEM has as one of its executives the inventor of the process that created the gasification technology and provided oversight for the DOE's demonstration project at the scale that mirrors the scale to be deployed by TBEM.

The gases generated are consumed in a highly efficient combined cycle facility with a combustion turbine generator and steam turbine generator combination that not only uses exhaust heat from the combustion turbine but also utilizes process heat to increase the energy needed for the steam cycle. The Taylor team from its inception has utilized the expertise of a partner who has combined cycle and NYISO market place experience with combined cycle technology.

Thus for the three components that make up the TBEM process facility or the sorting and separating, gasification, and combined power cycle, TBEM has amassed a significant background and experience base.

Project Description

Type of proposed project:

The project as proposed is a combined cycle power plant with a Solar combustion turbine and a Dresser-Rand steam turbine. There will be a short spur to connect the project into the Central Hudson transmission system.

Size of proposed project:

The electrical output of the project is based upon the temperatures that are ambient during operation. Typically the lower the ambient temperature the higher the expected generation output of the facility. However, in nominal terms the plant will be rated in the 20 Mw range. Based upon the receipt of fuel and the thermal refractory requirements the plant will operate as a must run unit at full output. After initial break in, the plant is expected to have a capacity factor around 92%. The plant will sell both energy and capacity into the NYISO market place.

Proposed project location:

The project will be located at the site of an existing Taylor Recycling Facility on Neelytown Road in the Town of Montgomery, Orange County, New York. The site for the project construction is crossed by the Central Hudson 69 Kv WM line, and the WM line terminal which will interconnect with the project is supplied by the Rock Tavern substation in Zone G of the NYISO.

Fuel source and availability of fuel:

The project has signed 20 year waste agreements with municipal entities to supply the primary waste streams to the project. Other waste streams from land clearing and construction and demolition projects will also contribute to the biomass used in the project.

Earliest date project can be operational:

The project is currently scheduled to be commercially operational by the end of 2013. With accelerated financing, closings, accompanied by equipment orders, and construction contract signing, this date could be accelerated but at this juncture a date earlier than year end 2013 is unlikely.

Experience, market availability and sustainability of project technology:

Assuming three components to the project of sorting, gasification, and electric generation the project has assembled a team of parties with considerable experience to bring an integration of all three elements on line. Details were previously provided in the section on respondent's background. The integration of these components takes place through

professional firms hired to provide for environmental compliance, permitting, design, material procurement, construction, and commissioning.

Essentially all components required to construct the project are off the shelf items that have availabilities with various lead times. However, all items are available in the market place and based upon the fact that the items are used in numerous other applications the sustainability of project technology is highly likely.

Project Justification

How the proposed project could address the State's objectives and goals described above:

- 1) The project will reduce some of the UPNY/SENY deliverability constraints in the State based upon its positioning in Zone G of the NYISO.
- 2) The project adds to the diversity of the New York Control area generation mix providing a resource that is combined cycle, using sorted and separated waste streams.
- 3) This project has a project life of over 20 years under existing contracts and at the term of the contracts the project should be able to become a merchant plant in the day ahead market place. The long term continued operation of the plant beyond 20 years is almost a certainty albeit that with a negative cost of fuel the sale of the output will essentially only be required to finance operational costs to generate net income. Thus the project should assist in assuring the long-term reliability of the electric system in the State even in the face of major system uncertainties.
- 4) Not only does this project provide for a utility-scale renewable generation resource in the State but it also encourages the proliferation of similar projects throughout the State. There have been a number of requests from parties throughout the State for similar project construction subsequent to bringing this currently proposed facility on line.
- 5) This project is a vast improvement over existing technologies that use municipal solid waste to generate power. The tail end of the facility consisting of a combined cycle power plant certainly provides a quantum improvement over a simple cycle steam generator system. In addition the project takes waste heat streams from flue gases and product gases to enhance the capture of btus which would otherwise be wasted.
- 6) This project will provide long term employment opportunities for 80 to 90 highly paid full time project employees. In addition it has been estimated that the project will require up to 400 construction employees to complete. The project is the first of many to come into and outside the State. The headquarters for Taylor Biomass Energy, the development company, will remain within the State adding professional employment opportunities to headquarter employees who will support development, construction, and operations of future facilities. As

envisioned the full business roll out will create thousands of highly paid jobs within New York State.

- 7) Not only does this project reduce air emissions versus conventional power plants due to the sorting and gasification that takes place but it also addresses a solid waste problem in the State that continues to add substantially to green house gas generation. Under the best of conditions adding biomass to a landfill generates vast volumes of methane which has a greenhouse gas multiplying effect of 23 times that of CO₂. Under the best of conditions only 60 percent of the methane generated in landfills can be captured. The Taylor project eliminates 100% of the potential methane production.
- 8) The Taylor project is an advanced technology application. The project may be termed a better mouse trap technology taking existing product lines and integrating them into a composite whole which addresses waste placement problems, greenhouse gas generation and creates a source of renewable energy. Although the components of the project are all proven, the integrated application of sorting, gasifying, and generating with high efficiency requirements places the project in the advanced technology category.
- 9) One of the distinct beneficiaries of the project are Central Hudson rates payers who will see a reduction in constrained power deliveries into Zone G, who may depend upon the installation to reduce Central Hudson system losses and who may hopefully see some incremental improvement in system reliability.
- 10) The project has been through the NYISO SRIS process with demonstrated minimal impacts on the NYISO transmission system. The project was admitted into the Class Year 2011 Facility Study and currently the Interconnection Agreement is being drafted by Central Hudson. All interconnection costs forecasted by Central Hudson have come in under previously forecasted amounts and the requirements to interconnect apply standard protection systems.

Financial

Prospects for a private-public partnership:

In the form of a PPA currently in place for the project, there is a public private partnership with the off take agreement being held by a State agency.

General financial structure and funding options:

The project has sought conventional project financing with the caveat that a DOE loan guarantee is acquired along with a cash grant under Treasury 1603. Currently financing is contingent upon the receipt of a DOE loan guarantee.

Permit/Approval Process

Federal, State, and local permits needed to develop and operate the project:

At this juncture the project has been through the SEQR process with the Town of Montgomery being the lead agency. The SEQR process has addressed all outstanding environmental and construction issues and the project has been granted full authority to proceed into full project construction and subsequent operation.

Permitting status, including NYISO interconnection status:

The project has been granted permitting to construct with subsequent pro forma permitting to operate subsequent to authorized construction. In regard to the NYISO interconnection the project finds itself in the Class Year 2011 Facility Study Group and has an approved NYISO SRIS study. With the approval of the SRIS study to the extent that TBEM agrees to be obligated to pay for any Facility Study upgrades the Interconnection Agreement may be developed and executed by the transmission owner, the NYISO, and by TBEM. Central Hudson is in the process of creating the first draft of the Interconnection Agreement which is contemplated to be completed and signed by the three parties to the agreement in approximately 3 months.

Key uncertainties in federal, State and local project permitting, and suggestions for how such uncertainties can be addressed:

Having acquired all its required permits the project has no permitting uncertainties.

Other Considerations

Issues or challenges the proposal faces and suggestions for how these issues and challenges can be addressed for the project and future projects:

The most significant challenge this project has faced is that of financing. Indeed some 10 years into project development the finalization of the financing is still to be determined.

As an advanced technology project the Taylor project finds itself close to the proverbial valley of death into which many advanced technology projects fall. The federal government put in place loan guarantees along with cash grants under 1603 to address these advanced technology financing concerns. However, these programs have had some significant administrative issues which have continued to make financing an ongoing concern as of the date of this submission. In essence the difficulty in financing an advanced technology project results from the duration of tying up capital to generate adequate returns and the risks involved in both the advanced nature of the project and the short term nature of today's investment market place.

The Taylor project is capital intensive, there is risk involved in the integration of the three different components of the project, and the returns are longer term in a market place fraught with uncertainty. As such investors view such types of investments without some type of supplemental support, as marginal. There have been numerous potential TBEM

investors who have indicated they like the concept of the project but asked the question why should they invest when there were other projects with close in returns and less risk.

Taylor Biomass Energy Proposal For Providing Advanced Energy Technology Assistance Under the New York Energy Highway.

Specifically targeting (a) advanced energy technology projects which reduce carbon and are renewable, (b) create jobs, (c) provide for State economic development, and (d) add to grid stability through generation availability above 50%, the following proposal is made to encourage investment and development of such projects.

- 1) Allow State jurisdictional utilities to invest and own such projects using current customer funding being collected under the RPS. In the case of Central Hudson in whose territory the TBEM project is located Central Hudson will collect as much as \$186 million from its customers over the total funding period for the RPS stretching out to 2024.
- 2) Allow utilities to make an equity investment or place 20% of the cost to construct the project in rate base with the remaining funding acquired through debt. Net income above the authorized rate of return for the utility would be returned to the customers.
- 3) The advanced energy technology developer who owns the rights to the technology being developed would manage construction and be the operator of the facility once constructed. The developer costs to construct would be capitalized as part of the asset value of the project and operational costs would be expensed once the project was in operation.
- 4) The advanced energy technology developer would be allowed to buy back ownership in the facility during or after 20 years of operation at the depreciated value of the facility. This would avoid utilities from becoming vertically integrated.
- 5) This proposal in part is modeled after State authorized PILOT (payment in lieu of tax) agreements whereby a municipality or authority owns a project and leases back the project to the developer over a specific period of time to assist in project development. In this case the utility would own the project and the developer would lease back from the utility. The modeling also takes into account historic utility co-tenancy agreements in New York State under which electric generation was constructed during the 1970s, such as the agreement between Central Hudson, Con Edison, and Niagara Mohawk to construct and operate the 1200 Mw Roseton generating facility on the Hudson River. For the Roseton co-tenancy agreement three parties owned the plant but Central Hudson was the operating co-tenant and had the right to purchase additional ownership in structured blocks during the life of the agreement at the depreciated value of the percentage of plant being purchased at the time.

Benefits to the Proposal Specifically Regarding a TBEM Advanced Energy Project

State Benefits

- Help to reach its 30% by 2015 goals under the New York State RPS.
- Add almost 2% to the RPS energy goal targeted for 2015 of 10.4 million Mwhs.
- Reduce carbon generation.
- Assist in New York State regional economic development.
- Over a 20 year life approximately \$1billion in economic benefits generated.
- Help in the State's recycling and reuse objectives.
- Reduce the pressure on the State to landfill biomass.
- Provide better control over project funding assistance accruing under the RPS.
- Provide for fuel diversity for State generation.
- Provide energy infrastructure support in a higher load density region.
- Provide for full time, higher wage, long term employment.
- Better RPS oversight provided through PSC utility project reviews.
- Avoids utilities from again becoming vertically integrated.
- Avoids any tax payer funding to support.
- Reduces State NOx and SOx emissions per average Mwh generated.

Utility Benefits

- Provide another source of earnings for State jurisdictional utilities.
- Relieve some of the pressure on utilities to file periodic rate cases.
- Add to load growth through economic development within a utility service area.
- Improve loss of generation adequacy or installed capacity to a service area.
- Reduce requirements for transmission voltage upgrades.
- Provide for regional voltage support and frequency control.
- No requirement to encumber the utility asset base.

Customer Benefits

- Reduce the pressure on increasing delivery rates.
- Reduced increasing property tax pressures.
- Reduce actual delivery rates.
- Allow RPS dollars collected to directly benefit the franchise in which collected.
- Improve service reliability.
- Provide a solution for regional solid waste disposal thus reducing costs.
- Provide socio-economic benefits from additional higher paid employment.
- Allow local professional employees to remain closer to work site.
- Reinforce overwhelming community support for project development.

Developer Benefits

- Provide for project financing.

- Provide utility expertise in the energy market place.
- Provide utility balance sheet support reducing the costs for project development.
- Provide utility credit support reducing construction and operational costs.

The State over the course of the last number of years has taken extraordinary steps to maintain the structural and economic well being of the State by making or allowing for targeted investments. Such investments made to retain IBMs presence in the State or to invest \$3 billion in an RPS program has shown the State's commitment to the State's well being. The proposal herein made has numerous pieces that would need to be worked out but in the case of developing an advanced technology with superior development outcomes it is a proposal that should be placed high on the list for consideration.

Thank you for your initiatives.

Very truly yours,

Allan R. Page
Principal A. Page & Associates LLC
Submitted on behalf of Taylor Biomass Energy LLC