

May 18, 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

Dear President Quiniones:

What is contained in this submission is a response to the RFI on The New York Energy Highway submitted by The Hudson Renewable Energy Institute (THREI), Inc. The mission of the Institute is to encourage the used and development of renewable energy through competitive market mechanisms. In a review of the objectives set by The New York Energy Highway Task Force the proposal by THREI addresses: the expansion of diverse power generation sources down state, the development of utility-scale renewable generation sources throughout the State, the creation of jobs and opportunities for New Yorkers, contributes to an environmentally sustainable future for New York State, promotes advanced technologies that benefit system performance and operations, and complies and improves on NYISO market rules. 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 Hudson Renewable Energy Institute, Inc is Allan Page the Chairman and CEO of the Institute.

The following contact information is provided:

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Brief summary of respondent's background:

The Hudson Renewable Energy Institute, Inc was founded in 2003 by a group of individuals who wished to encourage renewable energy sustainability by the use of the competitive market place. To date the Institute has followed the New York State RPS proceeding providing comments and has provided educational opportunities to interested parties through conferences and commentary.

Allan Page is one of the founders of THREI. When not volunteering his time to the Institute, Mr. Page is a Principal with the energy consulting firm of A. Page & Associates LLC. Prior to starting A. Page & Associates, Mr. Page had a 30 plus year career with Central Hudson Gas & Electric and the CH Energy Group. As part of that experience Mr. Page represented Central Hudson in the establishment of the NYISO and participated in the unbundling of the Electric Utility industry in New York under the Competitive Opportunities proceeding before the New York Public Service Commission.

As a principal with A. Page & Associates, Mr. Page has worked with clients on the development of renewable energy projects, helped clients purchase supply off the bulk power system, represented clients in such foreign energy markets as India, China, Uganda, the Dominican Republic and the United Arab Emirates. Mr. Page continues to advise clients in State and Federal energy regulatory proceedings.

In deference to the request of the Task Force to keep this background section brief, suffice it to say that the respondent by education and experience, has a robust background on the New York State and international energy markets and infrastructure.

For more information on the respondent's background the following web sites of www.threi.org and www.apageassociates.com may be referenced.

Project Description:

Type of Proposed Project:

The project as proposed deals with modifying current power markets to allow for the purchase and sale by contract of a differentiated electric product to end use customers whether industrial, commercial, or residential on a long term basis. Essentially what this modification to the electric market place would create is a supply side option for the Smart Grid allowing customers to exercise their buying or purchasing power to acquire longer term energy supply from designated generation sources at pricing that reflects the actual societal value of such generation. The project would entail a process similar to what occurred in New York State which allows for customer retail access.

Size of Proposed Project:

As envisioned the project would take place as a proceeding of interested parties that use the bulk power market place in New York to generate, manage, transport, deliver, and merchandise power. Specifically involved would be the NY Public Service Commission, FERC, the NYISO, Transmission Owners, ESCOs and other interested parties.

Project Proposed Location/Fuel Source/Project Operational Date

These areas suggested in the submission are not applicable to this proposed project.

Experience, market availability and sustainability of project technology

Currently the New York Public Service Commission, NYISO, and New York State Transmission Owners have the capability to put in place a system which allows the tracking of individual kilowatt-hours from the source of generation to the end user. Such capability is utilized by utilities in New York State to provide customers in the state with retail access to suppliers other than their local utilities. However what a customer purchases is an undifferentiated product typically aggregated and supplied as a commodity to the end user, marketed almost exclusively on cost savings.

The market place has the capability to supply a kilowatt-hour from a source of generation which has value to the customer which differs across the spectrum of generation options. Today for larger transactions using bilateral power contracts, in fact customers are purchasing from a designated source of supply. What is proposed is to make this option available to all customers using standardized contracts having varying terms from designated sources priced at the market value of the source of supply. The contracts would be capable of being traded in a fashion similar to the trading of a share of stock.

Project Justification:

How the proposed project could address the State's objectives and goals.

We stand at an electric energy cross roads today most specifically in New York State. Arguably electricity has made New York the Empire State but at the same time has caused waste, air, visual, cost impacts which society finds unacceptable. The renewable electric generation concept was put in place to address many of these societal concerns. At the same time these electric generation concerns were developing society was providing the mechanisms that support renewable energy use and development. Such supporting mechanisms include open transmission access, independent system operators, competitive opportunities, renewable portfolio standards, retail access, the smart grid, and IT capabilities. How best to draw all these mechanisms together is the focus project. To date much of the emphasis has been on centralized coordination of the supporting mechanisms. The project revolves around a truly competitive electric energy market place as a means to provide for that coordination.

Since the time of Edison over 100 years ago the generation and distribution of electric energy has changed substantially. One of the largest changes is an appreciation of the

value of the source of generation. A unit of energy whether a kilowatt-hour or a megawatt-hour, from a solar generating facility has attributes which are much superior to attributes accruing from coal generation. Typically in a competitive market based economy, product attributes sell at different prices. A pound of Black Angus beef sells for a higher price than a pound of beef from a Hereford cow. A pound or cup of Starbuck's coffee sells at a higher price than a pound or cup of Dunkin Donut's coffee. A Mercedes sells for more than a Chevrolet, or the billable hour for an attorney in Poughkeepsie is less than an attorney on Park Avenue in NYC.

Whether energy, nutrition, caffeine, transportation or professional services, all five products are mass produced and may be termed commodities. However, when it comes to electric energy typically the energy can only compete in the market place based upon price. Thus even though a solar kilowatt-hour generated has generation attributes that are superior to those of a kilowatt-hour generated from a coal generating facility the respective kilowatt-hours enter the electric energy market place competing exclusively on price.

The reason for the competition being exclusively on price is based upon a market place established at the time of Edison when one kilowatt-hour could not be distinguished from another kilowatt-hour and when no one really cared where the kilowatt-hour was coming from.

Today in New York electric supply or generation is considered a competitive market. But the electric generation market is vintage Thomas Edison. In a Thomas Edison market, renewable energy production cannot compete as a commodity on price.

In order to level the playing field to allow renewable energy production to compete, nationally and internationally society has provided subsidies. These subsidies are called RECs, or feed in tariffs, or net metering, or alternative compliance payments, or production tax credits, cash grants or as is the case in New York centralized procurement payments. Most states in the union have renewable portfolio standards put in place to subsidize the development of renewable energy generation.

Now there are many changes that have taken place technologically since the time of Edison. No longer are moving parts required to exclusively generate a kilowatt-hour. Metering and information technology are capable of tracking and billing for energy units being produced. Customers in many parts of the US can shop for electric supply provided through aggregators or Energy Services Companies. A kilowatt-hour can be tracked from a source and hour generated to a meter where the energy will be distributed. Since the time of Edison there have been some significant policy changes with the National Energy Policy Act of 1992 opening up the electric transmission system, the Competitive Opportunities proceeding in New York allowing electric retail customers to buy supply from parties other than their local utility, clean air act legislation providing production cost advantages to renewable sources of electric generation, the establishment of independent system operators, and renewable portfolio standards.

But even with the technological changes and policy changes that have taken place during the course of the last 100 years, we are still stuck in the Edison market place. So what is the concern? The concern is with efficiency and using the market place to propel the development and use of renewable energy. The current central planned and subsidized renewable energy market place is costly, inconsistent, and slow to develop. Customers who are providing the subsidies in the current markets are unaware of the subsidies being provided and do not have a choice in where their subsidies are being directed.

So what is being proposed in this project is moving to make the electric renewable energy market place more competitive. What is required is a differentiated electric supply product. A differentiated electric supply product distinguishes one kilowatt-hour from another kilowatt-hour by the source of generation which created the kilowatt-hour. Created with the kilowatt-hour generated would be a contract enabling the kilowatt-hour to be sold and owned by a consumer at a price reflective of the value of the kilowatt-hour. A new market design as envisioned would allow renewable energy project developers to sell the output of their facilities under long term contracts to an end use customer. As part of this contract included would be costs for maintaining system reliability, energy scheduling, balancing, and reconciliation along with other ancillary services to deliver that energy. The contract would be between the generator, ISO and utility providing a product to the customer who purchased the contract. The contract could be a fixed or variable cost contract, priced at the fully allocated cost to assure project profitability. Contracts purchased by customers could be subsequently traded as are shares of stock on stock exchanges. This concept of a power supply contract is not new and currently exists in the ISO market place in the form of bilateral agreements or power purchase and sale agreements between parties. What is proposed is to base the contract on an individual unit of production standardized in a fashion similar to the contract for an individual share of stock or a futures contract which may then be purchased and traded on market exchanges. IT technology allows for such contract identification, sale, tracking, and retirement, to be owned and accounted for.

What is currently being proposed models what is in place to a large degree with retail access programs in New York State. With such programs a customer signs up with an ESCO for electric supply. The customer if residential or small commercial possessing no interval meter has a load profile established by the utility which the ESCO uses to acquire supply for customer delivery. During the delivery period the ESCO matches supply purchased from a source of generation to the load profile of the customer on an hourly basis. The hourly energy supply purchased by the ESCO from the generator is transported through the NYISO control area and delivered to the utility and customer meter. This energy is balanced, reconciled, and financially accounted for, after the delivery period, between the ESCO, ISO, and utility for over and under deliveries. Thus for retail access customers, an accounting and financial settlement is currently taking place for generation deliveries into the NYISO control area, deliveries to the utility system, and deliveries to the end use customer. All schedules and deliveries are meeting existing NYISO security constrained economic dispatch criteria maintaining adequacy of supply and system reliability.

What is being proposed as a modification to the retail access model in New York is to allow direct access to a renewable energy project developer. Allow the project output to be sold by contract on a long term basis of say 20 years. Let the per kilowatt-hour output to be sold at a price per unit based upon value. Allow the contract to be owned by the customer who can resell the contract.

So how do the benefits of such a revised model for a differentiated product fit into the State's objectives and goals? The revised model allows the developer to put together a long term power purchase agreement required for project financing, at a price that reflects project profitability based upon the per unit selling price of output. It allows the per unit selling price to differ from the price in the commodity market. Based upon consumer preference it allows the acquiring customer to provide a value based project and product subsidy as opposed to centralized subsidies that have societal impacts adversely impacting those economically less fortunate individuals. It allows the customer to purchase a supply of superior value to fossil fueled electric production and obtain a contract which over the life of the contract might in fact end up providing savings versus electric commodity purchases. It allows the customer to trade the contract. Specifically relating to the objectives and goals of the Energy Highway: the diversity of supply should improve based upon consumer preferences; based upon longer term contracts major system uncertainties should be reduced; based upon the availability of sustainable revenue infusions the development of utility-scale generation in the state should increase.

The revised model opens up a market place for IT applications supporting customer purchases and producing jobs. It opens up a trading market place for renewable contracts. It allows for customer choice providing a supply side option in the heavily dominated demand side benefits accruing from Smart Grid applications.

In regard to jobs there are three areas where jobs would develop. First tying all the contract provisions to be sold to a customer, together, and making those provisions understandable, manageable, and user friendly will take IT applications that are significant. These applications subsequent to development will require support, maintenance, and constant improvement.

Second with a customer market place that supports renewable energy development, generation projects proposed, permitted, and constructed should increase substantially adding development, professional, construction, and maintenance positions.

Finally the Smart Grid development has failed to take off as initially envisioned simply because it lacks a customer supply side option. The Smart Grid produces efficiencies, better control, and other demand side options. However, the customer who wants an energy product of value to purchase is left out of the equation. Marrying a purchase option to other control options available through Smart Grid applications will help to accelerate Smart Grid development with associated job creation.

Financial

Suffice it to say that available funding, accounting, and organizational capability is already in place to provide for such a competitive market albeit such capabilities would need to be redirected.

Prospects of a private-public partnership

The structure of a private-public partnership already exists in the State and State sanctioned retail access programs are a testimony to such partnerships. This project would simply be an extension to what already is in place.

General financial structure and funding options

The funding options are already in place to allow this project to move forward through the use of a NY PSC sanctioned proceeding to establish the use of a differentiated retail electric supply option for retail access customers with provisions previously discussed.

Permit/Approval Process

Federal, State and local permits needed to develop and operate the project/Permitting status/Permitting uncertainties

Such permits do not apply to this proposed project.

Other Considerations

There are federal and state regulations or laws that would restrict certain customer classes from participating in direct purchase programs from a source of generation. These restrictions would need to be modified as part of the project proposed.

Much of the material in this submission was fully discussed in a conference on this topic held on March 14, 2012 at Marist College in Poughkeepsie. As part of the discussion that took place on the 14th it was noted that customer demand for such options to purchase a differentiated product will develop slowly over a period of time. Typically customers based upon the complexity of the market place tend to avoid electric supply options. However, with the capability of smart technologies and the capability of the market place to provide user friendly easily understood applications the projection is for 10 to 15 % of the market place to eventually desire a differentiated product. With a demand of say 10% or 1650 GwH of the 165, 000 GwH typically supplied on a yearly basis in the NYISO control area, this could amount to some very significant renewable project development based upon this proposed project being implemented.

Very truly yours,

The Hudson Renewable Energy Institute, Inc.

Allan R. Page
Chairman & CEO