From: William Franks
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Subject: Response to Question 6

Please see the attached response to Question 6. Question 6 asks: Are there any solutions that you would like the Coalition to know about that do not fit within the Focus Areas above? The attached describes a municipal solid waste gasification and electric generation proposal.

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I have been watching with interest the presentations and discussions in the meetings being conducted by CCMSS this month and next. Question 6 asks: Are there any solutions that you would like the Coalition to know about that do not fit within the Focus Areas above? Below is such a suggestion.

Introduction

National Green Fuels LLC (NGF) is a developer, financer and operator of municipal solid waste (MSW) gasification plants. Its agent is Independent Power and Renewable Energy LLC (IPRE). NGF and IPRE believe in a holistic approach to municipal waste management. A system is required that solves the entire problem, as opposed to the current approach which is to have one system for cans and bottles, another for paper, another for food waste and anything leftover is sent to a land fill or incinerator. NGF believes that the solution is a high temperature slagging gasifier producing a hydrogen rich syngas (35%) and other chemicals that can be used in the chemical industry and for electric generation. The conversion plant is modular and can be expanded as Connecticut needs require. The gasifier is designed for the next fifty years for MSW disposal. It is designed to add new improvements in technology as the country moves towards hydrogen transportation fuels.

NGF and IPRE have communicated this vision as further described below to Governor Lamont and Commissioner Dykes.

History

NGF and sister companies have spent many years making proposals without a successful conclusion, because of the fractured responsibility in most states as to who was responsible to pay for the ultimate elimination of methane and GHG discharges. The incineration industry built facilities that are clearly not meeting the recently adopted environmental regulations that classify the gasses from the incinerator stack as being a serious health hazard to the surrounding population from furons and dioxins which cannot be separated from the stack discharges. The majority of states have delegated the MSW disposal problem to county or city governments, who, for the most part, set up municipal landfills that are major generators of methane and GHG, also health hazards to the surrounding population.

The U.S. EPA under the Obama administration spent three years studying the MSW pollution and health hazards and concluded: the most environmentally safe MSW disposal method was diversion to an industrial process and the

abandonment of landfills and incinerators. The U.S. EPA did not propose any financial support, but, rather, delegated the responsibility to the states to solve the problem. A group of states including Connecticut formed the U.S. Climate Alliance. In the last five years the Alliance members have adopted state energy plans that require their instate electric energy be generated from other than fossil fuel sources.

The Technology

As previously noted, the technology platform is a high temperature slagging gasifier producing a hydrogen rich syngas (35%) and other chemicals that can be used for electric generation and/or in the chemical industry. The conversion plant is modular and can be expanded as Connecticut's needs require. The gasifier is designed for the next fifty years for MSW disposal. It is designed to add new improvements in technology as the country moves towards hydrogen transportation fuels.

These are the facts about the technology:

1. It has been proven for reliability and operating cost in seven plants built in Japan since 1990.

2. New York and Los Angeles County have issued RFIs[1][2] resulting in over one hundred submissions from around the world. The high temperature gasifier technology proposed by IWT (an NGF sister company) was also recommended Number One by both selection committees. So, two detailed analysis have evaluated the technology. One for NYC and one for Los Angeles. These are referenced in the two footnotes below.

3. The combined cycle gas turbine (CCGT) electric generating component of the plant is technology that has been in use for 50 years. CCGT operational reliability and efficiency are very well established.

4. A summary overview of the NGF technology and project benefits can be provided upon request.

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[1] Evaluation of New and Emerging Solid Waste Management Technologies prepared for the New York City Economic Development Corporation and the New York City Sanitation Department September 16, 2004

[2] Los Angeles County Conversion Evaluation Report Phase II, Sept 2007, prepared for the County of Los Angeles Department of Public Works and the Los Angeles County Solid Waste Management Committee/Integrated Waste Management's Solid Waste Management Task Force's Alternative Technology Advisory Subcommittee.

NGF proposes a public private partnership with Connecticut. NGF will build a one million ton per year MSW gasifying plant, which is estimated to cost $1.3 billion. The plant can produce ~240 MW of electricity.

NGF will provide that electricity to Connecticut for free as its contribution to a public private partnership with Connecticut. From the other side, Connecticut will need to implement an environmental fee of 0.5% on all consumer goods sold. This environmental fee will fund an escrow account which will be drawn upon to pay the processing fee of $290/ ton MSW processed. The processing fee has three components: 1. $120/ton MSW processed is to pay the operating costs of the plant; 2. $130/ton MSW processed is to pay the debt service to finance the plant; 3. $40/ton MSW is NGF's profit for developing, designing, building and operating the facility.

The proposed conversion plant will provide high paying industrial jobs for the Connecticut labor force both in construction and operation. Another key component of the proposal is that Connecticut municipalities will be responsible for the MSW feedstock and its energy content. The MSW can be enriched with plastic. An energy content of ~7000 btu/lb will yield 240 MW of power. The better the MSW mix the more electricity the Connecticut will receive.

Furthermore, NGF will not be relying on any capital contribution or yearly cash payments from Connecticut other than the treatment fee being charged to the environmental fund. In return for Connectcut's contribution to the partnership of land and MSW supply for at least a fifty year contract, a substantial cash payment from the project finance proceeds can be made to help toward reducing Connecticut's finances. It is NGF's plan, with its partner Connecticut, to transform Connecticut’s MSW treatment system by closing the existing environmentally noncompliant MSW disposal system into a reliable, environmentally superior waste processing and electric generation system that will rank Connecticut as the world's best.

Connecticut's 240 megawatts of electric power will have a market value of $120 million per year at a price of five cents per kilowatt hour. Twice that if you value it at the price of new offshore wind. It can be used support state ownership of Connecticut’s electric distribution companies or as a credit against citizen’s electric bills.

A complete economic analysis can be done as part of the project development process. A policy decision is required by Connecticut to agree to proceed, subject to compliance with all applicable laws and regulations, with a high temperature slagging gasifier conversion plant mated to a combined cycle electric generation plant. This policy can be justified based on the reports developed by NYC and Los Angelos It is a unique, sustainable technology approach which will protect and enhance the public health and welfare.

Financing Cost

The cost of financing is currently very low relative to historic levels. In other words, interest rates are the lowest they have been in 40 years. This is an incentive for Connecticut to act quickly to take advantage of the current low interest rates. The only place they can go in the future is up. Thus, increasing the cost of debt service.

NGF and IPRE stand ready to meet in person or via Zoom to further present this concept to municipalities, Governor Lamont or Commissioner Dykes.

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