STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

IN RE:
PETITION OF BNE ENERGY INC. (BNE) FOR A DECLARATORY RULING FOR THE LOCATION, CONSTRUCTION AND OPERATION OF A 3.2 MW WIND GENERATING PROJECT IN PROSPECT, CONNECTICUT

PETITION NO. 980

March 24, 2011

SUPPLEMENTAL PRE-FILED TESTIMONY OF JOEL M. RINEBOLD

Q.1. What is the purpose of your supplemental testimony?

A. The purpose of my supplemental testimony is to provide information regarding setback requirements, or the lack thereof, in various states throughout the United States, and to provide information concerning wind turbine lighting that is necessary to comply with the Federal Aviation Administration ("FAA") as requested by the Siting Council as a supplemental filing.

Q. 2. Do you wish to make any remarks regarding the use or application of setbacks?

A: Yes. BNE has in my opinion established an adequate buffer of at least 920 feet to the nearest residential dwelling to protect the public and safety. This buffer would exceed the maximum tip height of the proposed facility with the proposed 100 meter tower and either an 82.5 meter diameter or 100 meter diameter blade. This buffer would also exceed a setback equal to 1.5 times the maximum tip height of the tower with either an 82.5 meter diameter blade or a 100 meter diameter blade.

Q. 3. Does BNE comply with GE recommended setbacks?

A: Yes. I have reviewed GE's recommended setbacks and BNE complies with all recommended standards for facilities using an 82.5 meter diameter blade. An adjustment may be necessary to meet GE recommended setbacks for facilities using a 100 meter blade, or GE may accept the locations after further analysis and after GE completes a more detailed safety review of the proposed turbine locations. GE is a Connecticut based company and the leading manufacturer of wind turbines in the United States. There are more than 15,000 GE wind turbines installed worldwide with nearly 300 million operating hours and 140,000 GWh of energy produced, enough to power 6.5 million homes. The proposed turbine is one of the world's most widely used wind turbines. I am not aware of any other wind turbine manufacturer that has setbacks requirements more stringent than those used by GE. It is also my understanding that GE will not sell a wind turbine unless there is compliance with setback considerations, setback recommendations, and a safety review. It is my understanding that GE cannot compete for various wind turbine installations that are located nearby homes and schools.

That apparently is the case in Templeton at the Narragansett Regional High School. The wind turbine is a 1.65 MW AAER turbine owned by Templeton Municipal Light & Water Plant ("TML"), and located at the high school. The closest home is less than approximately 500 feet from the wind turbine, the school is approximately 640 feet from the wind turbine, and there are 14 homes less than approximately 920 feet from the turbine. According to the TML, originally GE was engaged with the TML to build the wind turbine, but subsequently GE had to decline development due to the application of GE setback considerations which include setback recommendations and a detailed safety review. As a result, TML contracted with AAER for the wind turbine. It should be noted, that according to TML the wind turbine began operations in September 2010 and the project has been extremely successful even though the setbacks are less than what is required by GE. TML has not received any complaints from nearby residents, and has indicated that the only time people call is over concern when the turbine is not spinning due to the lack of wind on that particular day. It is therefore, my opinion that compliance with GE recommended setbacks and safety review will be adequate to ensure safe and reliable service and protect public health and safety.

Q. 4. Is it typical for regulatory jurisdictions to use setbacks for wind facilities?

A: There does not appear to be a standard or typical state setback. In fact, most states do not have minimum setback requirements for wind facilities. Based on a recent OLR analysis of state wind turbine regulations, only ten states (California, Delaware, Illinois, Maine, New Hampshire, Ohio, South Dakota, Vermont, Wisconsin, and Wyoming) have siting statutes or regulations with specific provisions on wind projects. The OLR report is attached hereto. Based on this OLR report and my own research it appears that 15 out of 50 state regulatory jurisdictions have established formal setbacks or guidelines for wind facilities. In addition, formal provisions for noise control are not uncommon. States including Delaware, Illinois, New Hampshire, Ohio, New York, and South Dakota use setback standards that are 1.0 to 1.5 times the maximum tip height (MTH).

A few states require setbacks that exceed 1,000 feet or 1.5 times the maximum tip height; however these provisions do not appear to be widely agreed upon. Further, these setbacks may unnecessarily have a detrimental effect to preclude or reduce opportunities for development of wind facilities and would be considered problematic by wind developers. For example, Wisconsin's current setback requirements are 1.1 to 3.1 times MTH, but proposals to increase setbacks have become controversial and if enacted may have a significant effect to reduce the development of wind facilities in the state. This effect would also reduce the development of renewable energy, reduce the curtailment of foreign supplied energy, reduce the establishment of "green" jobs, and reduce the reduction of air pollutants and carbon emissions that generally occur with the development of wind facilities.

Other jurisdictions such as Maine and Vermont exercise their jurisdiction on a case by case basis to balance the public need for renewable energy with the site specific characteristics identified at and near a proposed facility. Some states such as Massachusetts and California defer to local jurisdictions. Below is a chart of state setback requirements:

State/Possession	Wind Setback Requirement
ALABAMA	NO
ALASKA	NO
ARIZONA	NO
ARKANSAS	NO
CALIFORNIA	BY COUNTY
COLORADO	NO
CONNECTICUT	NO
DELAWARE	1 MTH BY LOCAL
DISTRICT OF COLUMBIA	NO
FLORIDA	NO
GEORGIA	NO
HAWAII	NO
IDAHO	NO
ILLINOIS	1.1 MTH BY LOCAL /COUNTY
INDIANA	NO
IOWA	NO
KANSAS	NO
KENTUCKY	NO
LOUISIANA	NO
MAINE	BY LOCAL
MARYLAND	NO
MASSACHUSETTS	BY LOCAL
MICHIGAN	Guides 1.5 (HH + BD)
MINNESOTA	3.0 to 5.0 ROTOR DIAMETER
MISSISSIPPI	NO
MISSOURI	NO
MONTANA	NO
NEBRASKA	NO
NEVADA	NO
NEW HAMPSHIRE	1.5 MTH BY LOCAL
NEW JERSEY	NO
NEW MEXICO	NO
NEW YORK	1.5 MTH OR 1,500’
NORTH CAROLINA	NO
NORTH DAKOTA	NO
OHIO	1.1 MTH or 750’
OKLAHOMA	NO
OREGON	LOCAL WITH STATE OVERIDE
PENNSYLVANIA	NO
PUERTO RICO	NO
RHODE ISLAND	NO
SOUTH CAROLINA	NO

SOUTH DAKOTA	1.1 MTH OR 500'
TENNESSEE	NO
TEXAS	NO
UTAH	NO
VERMONT	BY LOCAL
VIRGIN ISLANDS	NO
VIRGINIA	NO
WASHINGTON	NO
WEST VIRGINIA	NO
WISCONSIN	1.1 to 3.1 MTH
WYOMING	5.5 MTH or 1000' BY COUNTY

Q. 5: Does this particular site have attributes that should require a larger buffer than that proposed?

A: No, I believe that this Prospect site is within a relatively large open land area buffered by public service water company land, urban land uses that include telecommunications towers and commercial uses, and a State transportation artery. Additionally, the two turbine locations proposed by BNE are located on the west slope of the site away from homes and businesses along Route 69 at a lower elevation on the property in order to provide a larger buffer. I believe that the 920 foot buffer is appropriate for a facility using the 82.5 meter blade, but that that noise restrictions should be enforced. BNE has demonstrated that the proposed turbine locations comply with state and local sound regulations. An adjustment in the facility locations may be necessary for use of the 100 meter blades. Restrictions in excess of these limits may have a general effect to preclude wind development in the State and may be considered inconsistent with State policy that seeks to promote the development and use of wind energy for the common public good to improve energy sustainability, reduce import of foreign energy products, protect environmental resources including air resources and the global climate, and to promote the development of "green" jobs centered around a sustainable energy economy.

Q.6: Do you believe that this proposed site is inappropriately surrounded by high density residential development?

A: No. It is true that there is some moderate density residential development located east of the project, and there is also some additional moderate density residential development located to the north and east of the project, but overall I would characterize this site as rural and largely undeveloped. At the proposed site, there are only 10 residential parcels within 1,320 feet, 129 residential parcels within 2,640 feet, and 626 residential parcels within one mile. In contrast there are other wind facility sites in Connecticut and outside of the state located within higher density areas. For example, at the Phoenix Press Wind facility at 15 James Street in New Haven, there are 47 residential parcels within 1,320 feet, 542 residential parcels within 2,640 feet, and

3,047 residential parcels within one mile. Outside of Connecticut at Forbes Park Wind Turbine at 1 Forbes Street in Chelsea, MA, there are 134 residential parcels within 1,320 feet, 701 residential parcels within 2,640 feet, and 4,999 residential parcels within one mile.

Q.7: Please describe FAA lighting requirements.

A. Based on wind turbine lighting guidelines from the FAA, flashing red (L864), or white (L-865) lights may be used to light wind turbines. The FAA has indicated that studies have shown that red lights are most effective, and should be the first consideration for lighting recommendations of wind turbines. As a result, BNE proposes to utilize red lights on the wind turbines. The light fixtures will be placed on the turbine nacelle and will flash simultaneously.

The FAA guidelines also indicate that the white paint most often found on wind turbine units is the most effective daytime early warning device. Other colors, such as light gray or blue, appear to be significantly less effective in providing daytime warning. Daytime lighting of wind turbine farms is not required by the FAA, as long as the turbine structures are painted in a bright white color or light off-white color most often found on wind turbines. The GE 1.6-82.5 wind turbines will be white and therefore not require daytime lighting.

The specifications of the red lighting option that BNE proposes to utilize to comply with FAA lighting requirements are as follows:

1. IFH-1710-000 Red LED Obstruction Light (Red at night only)

Specifications: Complies with FAA AC150/5345-43F Type L-864 and ICAO Annex 14, Medium Intensity, Type B
Night Intensity: 2,000 ±25% effective candelas
Beam Pattern: 360°C Horizontal, ≥3°C Vertical
Flash Rate: 20FPM or 30FPM Red Night, selectable

Q.8. Does this conclude your supplemental testimony?

A. Yes.

The statements above are true and accurate to the best of my knowledge.

3.24.11
Date

Joel M. Rinebold