STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Petition of BNE Energy Inc. for a Declaratory Ruling for the Location, Construction and Operation of a 3.2 MW Wind Renewable Generating Project on New Haven Road in Prospect, Connecticut ("Wind Prospect")

Petition 980

March 28, 2011

PETITIONER BNE ENERGY INC.'S RESPONSE TO DEP COMMENTS

Petitioner BNE Energy Inc. ("BNE") appreciates the thorough review and comments from the staff of the Department of Environmental Protection ("DEP") dated March 14, 2011. In response to DEP staff's comments and recommendations, BNE is committing to additional mitigation measures and studies, which are summarized as follows:

1. Growing evergreen trees and/or shrubs on the eastern boundary of the Site where existing screening is limited, and at nearby homes with views as noted by DEP staff to provide additional screening and reduce the visual impact from the wind turbines;

2. BNE does not expect blasting to be needed during construction (See pre-filed testimony of Richard Desrosiers of GZA GeoEnvironmental, Inc. filed on March 28, 2011). In the unlikely event that blasting is necessary, BNE will:

    a. conduct pre-blasting survey work at selected residences to establish baseline water quality data, specifically for volatile organic compounds and for iron and manganese; and

    b. perform vibration monitoring at a handful of sites in the more proximal residential areas to monitor vibration levels from blasting for foundation work;

3. Promptly report any observations, relocations or fatalities of eastern box turtles on the Site in the manner and timeframe requested by DEP staff;

4. Perform a migratory bird study on the Site from March to April 2011, additional bat monitoring from May to Oct 2011, and post-construction bat monitoring for a period of 2 years from May to October by bat researchers familiar with northeastern bat species. The additional data will be provided to the DEP to better inform of bird and bat activity on the Site; and

5. Although not specifically addressed by DEP staff, BNE is also committing to provide post-construction noise monitoring on the Site for a period of two years to provide additional information on the noise produced by the wind turbines at the property boundary near the adjacent homes.

In addition, BNE submits the following responses to DEP staff's comments and provides further details regarding the commitments summarized above:

1. Please respond to DEP staff's comments about the difficulty of quantifying specific reductions of nitrogen oxides, sulfur oxides and carbon dioxide that will result from the Project.

A. DEP staff stated that "it is entirely reasonable and justified to expect emissions reductions to result from the operation of these turbines as opposed to alternate sources of generation in their absence, but that experience has shown it is very difficult to predict exactly which existing sources of generation would be displaced." DEP staff also recognizes the importance of wind power as a clean non-emitting source of electricity that will result in emissions reductions over time. While BNE understands the concern expressed with quantifying the specific reductions in the emissions of nitrogen oxides, sulfur oxides and carbon dioxide that will result from the Project, the emissions reductions listed on page 11 of Volume I of the Petition and in the pre-filed testimony of Joel Rinebold dated February 16, 2011, were calculated using the United States Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator which is a reasonable approach to calculating the environmental benefits of the Project.

2. Please describe the mitigation efforts that BNE will employ to address visual impacts.

A. BNE recognizes the visual concerns of the Project to the nearby homes. However, as noted by DEP staff, "[a]s a densely populated state, there are no locations in Connecticut which are miles from neighboring land uses, including residences. Some level of impact upon neighboring properties cannot be avoided in the siting of facilities such as that proposed in this petition…Mitigating the scale of these structures is the reasonably large size of the host site and the presences of the undeveloped Connecticut Water Company property to the west and north. The host turbine sites have a remote feel to them, with no homes visible from either site and with topography screening of the Sites from homes to the east and southeast, at least at ground level." DEP staff, however, also noted nearby homes of particular concern that have minimal existing screening from the turbines including homes on New Haven Road (#s 187, 198, 210, 213, 220), and on George Street (# 2 and four homes on the south side of the street) and Lee Road (#s 13, 15 and 17).

To address these concerns, BNE will commit to growing evergreen trees and/or shrubs on the Property where existing trees do not exist along the eastern border of the Site that abuts the homes along Route 69. Additionally, BNE agrees to establish a funding mechanism whereby nearby homes noted by DEP staff that do not have sufficient screening from the wind turbines will be reimbursed for the cost of reasonable screening. Also, BNE notes that we have proposed an alternate location of the northern turbine that increases the setback to a minimum of 920 feet from the nearest home. These measures will help mitigate the visual concerns expressed by DEP staff.

3. Please respond to the recommendations of DEP staff regarding the U.S. Cap and Jacket Remediation Site.

A. DEP staff concluded that the ground water from the U.S. Cap and Jacket site flows away from the proposed location of the turbines, and that the degree of contamination in the bedrock at the factory site is not significant. In addition, BNE does not anticipate the need for blasting during construction. See pre-filed testimony of Richard Desrosiers of GZA GeoEnvironmental, Inc. filed on March 28, 2011. However, due to the proximity of the U.S. Cap and Jacket factory and the contamination on that site, BNE will implement the prudent measures recommended by DEP staff. In the unlikely event that blasting is necessary to prepare the turbine foundations, BNE will conduct pre-blasting survey work at selected residences to establish baseline water quality data, specifically for volatile organic compounds and for iron and manganese, two metals which can be subject to mobilization by blasting. BNE will also perform vibration monitoring at a handful of sites in the more proximal residential areas to monitor vibration levels from blasting for foundation work.

4. Did VHB review habitat conservation guidelines prepared by the U.S. Fish & Wildlife Service?

A. Yes. The U.S. Fish and Wildlife Service Wind Turbine Guidelines Advisory Committee provided recommendations to the Secretary of the Interior on March 4, 2010 (USFWS Guidelines). These Guidelines are intended to provide science based technical advice regarding measures to avoid or minimize impacts to wildlife and their habitat resulting from wind energy projects. These Guidelines rely upon a "tiered" approach for assessing impacts to wildlife. The tiered approach provides a means for evaluation and decision making at each tier which enables a developer to assess potential risks to wildlife and determine the need for additional data collection. The tiers are described briefly as follows:

- Tier 1 – Preliminary site screening
- Tier 2 – Site characterization
- Tier 3 – Field studies to document site wildlife conditions and predict project impacts
- Tier 4 – Post-construction fatality studies
- Tier 5 – Other post-construction studies

BNE has relied upon the USFWS Guidelines to identify potential impacts of the development on wildlife and their habitat. VHB completed a Tier 1 assessment of the site including correspondence with the Connecticut Department of Environmental Protection's (CTDEP) Natural Diversity Database and literature review to obtain existing information about wildlife species presence, abundance, distribution, and use of the Project site and surrounding region. Avian resources that were consulted included: National Audubon Society Christmas Bird Counts, Hawk Migration Association of North America hawk counts, USGS Breeding Bird Surveys, Audubon Connecticut's Important Birds Areas, the *Atlas of Breeding Birds of Connecticut*, and the Cornell Lab of Ornithology Birds of North America. Bat resources included *New*

England Wildlife, *Connecticut Wildlife*, and other publications of the Connecticut Department of Environmental Protection's Wildlife Division, U.S. Fish and Wildlife Service (USFWS), and Bat Conservation International (BCI). For all wildlife species, relevant journal articles, books, conference proceedings, and pre- and post-construction wildlife studies at other wind turbine sites were also consulted. Following the Tier 1 assessment, VHB completed and submitted a CTDEP Natural Diversity Database Review Request Form and supporting materials to CTDEP and received written confirmation that eastern box turtle, a State Species of Special Concern, occurs in the vicinity of the Property. As a result of the Tier 1 assessment, a recommendation was made to BNE to retain the services of a consultant to evaluate bird and bat resources as part of a Tier 3 assessment. BNE Energy retained the services of Western Ecosystems, Inc. ("WEST") to conduct an evaluation of bird and bat resources at the site.

During Tier 2 assessments, VHB personnel conducted a habitat assessment to document existing habitat types and complete a list of potential terrestrial wildlife species that might utilize these habitats. Following this assessment VHB prepared and submitted an eastern box turtle habitat survey to CTDEP which detailed the likelihood this species may occur on the Property as well as various protection measures designed to prevent mortality during construction activities. VHB received concurrence from the CTDEP in a letter dated October 26, 2010 that these measures are adequately protective. Based on the results of the Tier 2 assessment, VHB determined it to be unnecessary to continue to Tier 3 regarding terrestrial wildlife species.

Pre-construction bird and bat acoustic surveys completed to-date and those proposed for 2011 by WEST fall within Tier 3 of the USFWS Guidelines. Post-construction surveys will fall within Tier 4. These surveys have or will address questions included in the Guidelines as well as utilize methods and metrics recommended within the Guidelines.

5. Please provide details of the reporting protocol that will be followed by BNE regarding eastern box turtle observations on the Site.

A. As requested by DEP staff, BNE will promptly report within one week of any eastern box turtles found at the Site to the Wildlife Division of the DEP. BNE will also provide to the Wildlife Division of the DEP GPS coordinates for release locations for any turtles captured and relocated on site but outside the construction area. Also, if any turtles are found dead or are accidentally killed, the carcasses will be retained and submitted to the DEP Wildlife Division at the earliest possible time to its Sessions Woods field office, or an alternate location, if requested.

6. Please respond to DEP staff comments regarding the acoustic bat surveys.

A. DEP staff concluded that, "[i]n general, the methods and process used for the acoustic bat surveys are appropriate, but a few modifications could have improved the results." BNE is pleased with the overall finding, but also understands the concerns expressed. Specifically, DEP staff expressed concern with the placement of the Anabat detectors

stating that "[i]t is possible that the placement of Anabat detectors at a higher position within the forest canopy may have increased the quality and detection rate of hoary bats in particular." As noted in BNE's response to interrogatory Q64 to Save Prospect Corp's Second Set of Interrogatories dated February 16, 2011, regarding the placement of the Anabats, BNE elected to utilize ground based Anabat detectors because placement of an elevated detector would have required lowering the meteorological tower to the ground which may have damaged meteorological instrumentation and resulted in study delay. A current conclusion reached by biologists working in the field of wind-energy/wildlife interactions is that bat activity indices derived from pre-construction acoustic studies show a rough correlation with post-construction fatality patterns (see final bat report and NWCC 2010). This conclusion is based on ground—based Anabat sampling. Also, while current information suggests that LF bats such as hoary bat may be detected at different rates at elevated vs. ground-based detectors, information collected at sites where both elevated and ground-based detectors are present have generally shown a greater overall activity rate at ground-based stations. Additionally, ground-based Anabat sampling has been a standard component of pre-construction acoustic bat monitoring at commercial wind-energy sites for several years. With respect to future wind projects that may be filed by the petitioner with the Siting Council, BNE commits to installing bat monitoring equipment at an elevated location on the meteorological tower to potentially increase the quality and detection rate of hoary bats in particular.

DEP staff expressed some concern that "the start date for the "maternity" surveys is a bit later than ideal for our area as the vast majority of our bats give birth in late May and early June." DEP staff requests that a post-construction bat monitoring program be established at the Prospect site, preferably for three years but, at a minimum, for two years to monitor bat mortality from the turbines for a six month period from May through the end of October. DEP staff also strongly recommended that bat researchers familiar with northeastern bat species be used to perform this survey work. Based on concerns expressed by DEP staff regarding the timing of bat monitoring during the mating season, BNE has retained WEST to conduct additional bat monitoring from May to Oct 2011. BNE also commits to post-construction bat monitoring for a period of 2 years from May to October by bat researchers familiar with northeastern bat species. The additional data will be provided to the DEP to better inform of bat activity on the Site.

7. <u>Please respond to DEP staff comments regarding the breeding bird surveys.</u>

A. DEP noted certain inaccuracies in the breeding bird report and expressed concern regarding the late timing of the surveys. However, despite these concerns, DEP staff "does not anticipate significant negative impacts to these species by the proposed project." DEP staff also indicated that the grassland and early successional habitat described in the report are management targets both in Connecticut and in the Northeast. WEST agrees with DEP staff that the grassland and early successional habitat are important to birds of conservation concern, but notes that the project development would actually increase these types of habitat on the Site. Additionally,

due to the concerns of DEP staff regarding the breeding bird surveys, BNE has retained WEST to conduct an additional migratory bird study on the Site from March to April 2011. The additional data will be provided to the DEP to better inform of bird activity on the Site.

8. Please clarify the 1.6 MW rating of the proposed GE wind turbine.

A. BNE is proposing to install two 1.6 MW wind turbines at 100 meter hub heights utilizing 82.5 meter diameter blades. However, BNE is requesting approval for rotor blades up to 100 meters in diameter due to the ever changing nature of the wind turbine industry. See BNE Petition at page 8. GE currently offers two different versions of the 1.6 MW wind turbine, the GE 1.6-82.5 and the GE 1.6-100, with 82.5 and 100 meter diameter blades, respectively. The maximum power output of both wind turbine models is 1.6 MW, however, the swept area and the power curve of the GE 1.6-100 is greater than that of the GE 1.6-82.5 turbine model and would therefore result in a greater annual production of electricity on the Site.

9. Please clarify why there are no listing of homes at 1 and 2 George Street on table 3 of the Shadow Flicker Analysis report.

A. The WindPRO software used to prepare the analysis identified potential shadow flicker on portions of both of these properties; however, the residential structures (the receptor locations) do not fall within the projected footprint of the anticipated shadow.

10. Please specify the correct scale on Plan C-002 of Exhibit I.

A. The scale of 200' to the inch noted on Plan C-002 of Exhibit I is a mistake. The correct scale is 400' to the inch.

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