TAB 3

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

Docket/Petition No. 980

February 16, 2011

Prefiled Testimony of Eric Davison

1. Please state your name and address for the record.

My name is Eric Davison. My business address is Environmental Planning Services (EPS), 89 Bellknap Rd., West Hartford, CT.

2. What is your position with Environmental Planning Services?

I am a wildlife biologist and wetland scientist.

3. Has EPS been retained as an expert witness by one of the parties to these proceedings?

Yes. We have been retained by Save Prospect Corp.

4. What is your field of expertise?

I am a wildlife biologist and wetland scientist. I have 15 years of experience conducting bird surveys in Virginia, Connecticut, Rhode Island and New York. I have a B.S. in Wildlife Conservation from the University of Massachusetts. My recent projects (2009-2010) include breeding bird surveys conducted in eastern New York for the Cary Institute of Ecosystems Studies, Millbrook, NY and for the National Audubon Society in southeastern Connecticut and Rhode Island.

5. What was EPS asked to do in this case?

EPS was retained to review Petition 980, submitted by BNE Prospect for two wind turbines in Prospect, CT, with respect to potential impacts on wetlands, watercourses and biotic resources. My particular area of responsibility was birds.

6. What did your review determine?

After reviewing the Petition and the supporting technical report by WEST, Inc. in Volume 3, Exhibit M, it is our opinion that the survey design was inadequate to address the range of documented adverse impacts and the methodology used to implement the design was flawed. Therefore, the conclusions presented in the Executive Summary of the West Report, and carried forward into the Petition, are unsubstantiated.

Wind turbines can affect birds in three ways: (1) habitat loss, (2) disturbance and (3) mortality via collision. This study does not adequately address any of these impact types. The breeding bird study is flawed in its design and in the methods used to collect the data. As a result, the study cannot adequately assess the potential impact of wind turbine development at this site on birds.

The field methodologies were flawed as a result of the improper seasonal timing of the survey, improperly located data points, insufficient number of data points, and the lack of early spring, fall, or nocturnal surveys. Additionally, the validity of the data that was collected is suspect, given the inability of the field crew to identify a significant number of the birds they encountered.

The primary study design goals, assessment of the abundance and diversity of the site's breeding birds, were not reached due to the flawed field methodologies noted. Moreover, the overriding study goal, a breeding bird inventory, does not address impacts to migratory birds,

which has been identified in several studies as the greatest potential impact of wind turbines on birds (Erickson *et al.* 2001; Johnson *et. al.* 2002).

As the National Wind Coordinating Collaborative noted: *"There is a need to conduct studies to identify migratory pathways, congregation areas such as staging and stopover habitats, and other areas of high concentration to aid in risk assessment and avoidance of high risk sites when developing wind power."(NWCC, 2010)* Audubon New York has recognized the need for comprehensive pre-development site assessment, stating:

"Assessing avian use of a site prior to wind turbine development is a crucial first step in preventing wind farm placement in high-risk areas. Pre-development surveys should include both field and radar surveys during the breeding, migrating, and wintering seasons, should allow for adequate observation sample sizes (i.e., sampling days), and ideally would occur for more than one year. (source:

http://ny.audubon.org/IssuesAction_ConservationIssues_WindPower_Position.html)

_____The New Jersey Department of Environmental Protection and New York Department of Environmental Conservation have both issued guidance documents for review of wildlife impacts resulting from wind turbine developments. Both recommend that bird surveys be conducted for a minimum of one year and should include inventory of spring and fall migrants, migratory raptors and breeding birds. Yet this study in no way addresses the potential impacts of this turbine development on migratory birds, and the report discussion makes no mention of the lack of migratory bird data as a limitation of this study.

8. Do you have an opinion in general regarding wind and other renewable energy projects?

Yes. EPS and I recognize that renewable energy projects are necessary to support sustainable growth. These projects will require trade-offs; in some cases impacts may be unavoidable.

9. In your opinion what should be done in order to evaluate and address the potential trade-offs and impacts of the proposed project?

The bird study should consist of a minimum 1-year survey, properly timed to capture the spring and fall migration and late-spring/summer breeding season. The number and locations of survey points should be adequate to address the potential impacts to birds breeding in or migrating through the habitats surrounding the proposed turbine locations. The study results should identify and quantify the impact to both migratory and breeding bird habitats and populations.

10. Did the study, investigation and review process of BNE and WEST, Inc. in this case meet the appropriate standards? If not, please identify and explain your specific technical concerns.

No. It is my judgment that survey design was inadequate to address the range of documented adverse impacts and the methodology used to implement the design was flawed. My specific technical concerns are as follows:

The Location and Abundance of Survey Points is Inadequate

The survey point locations and abundance cannot adequately assess breeding bird abundance and species diversity at the proposed turbine locations or the landscape scale impacts due to the following factors:

1. A total of 12 data points were surveyed for breeding birds during the study. Four to seven of these BBS points are located offsite or very close to the parcel boundary (see *Breeding Bird Surveys for the Prospect Wind Resource Area* by WEST, Inc, Figure 2). This leaves as few as five points within the parcel, an inadequate number to characterize the 67 acre parcel.

2. Landscape or population scale impacts were not assessed at all. In the report's discussion section, it states that at least one study (Pearce-Higgins, *et.al.* 2009) determined that: "*levels of turbine avoidance suggest breeding bird densities may be reduced within a 500 meter buffer of the turbine by 15%-53%*". The placement of the BBS points did not adequately assess bird usage at such a scale relative to the turbine locations, and therefore cannot adequately assess the potential impacts to birds. Because birds are highly mobile, and because these off-site impacts are so far reaching (the potential impact zone of each turbine covers approximately 200 acres) this is a very important omission.

3. The study employed only 12 data collection points. This is a small number of data points for a 67 acre site. Using the 5-minute, 50-m radius protocol, an observer can typically collect data at 20-30 BBS points in given morning (ca. 5am-9am survey period). The collection of data at additional points would have provided a more robust dataset for statistical analysis.

The Timing of the Survey was Insufficient to Capture either breeding or migratory Bird Use

4. The BBS was conducted outside of the ideal survey period in Connecticut. BBS's in Connecticut should begin in late-May and end in mid-late June (reference CT DEP Forest Interior Bird Survey Program http://www.ct.gov/dep/cwp/view.asp?A=2723&Q=325722). The period between June 1st and June 15th is generally considered to be the period when singing by territorial males is at its peak for the majority of species. This is a critical time to collect BBS data particularly in forested habitat when visual identification alone is difficult. Breeding birds vary in detectibility over relatively short time periods, and the best period for repeatable counts may be brief. Many warblers, for instance, sing for only a few days and then become much quieter once mated. At the same time, growth of vegetation can rapidly make counting more difficult in early summer (Bibby *et.al.* 2000). This survey effort included no late May or early-mid June surveys. The first survey date was June 28, 2010. Therefore, the peak song period for most species was not captured.

5. No spring or summer nighttime call-back surveys were conducted to inventory nocturnal species such as owls and nightjars. Several species of owls in Connecticut are state-listed; the Northern Saw-whet Owl, Short-eared Owl and Long-eared Owl. These species are known to occur in the vicinity of forested wetlands and large waterbodies (e.g., New Naugatuck Reservoir), habitat types that occur on or immediately adjacent to the site.

6. No early spring surveys were conducted to observe species such as American Woodcock (*Scolopax minor*), a declining species known to occur in agricultural and forest edge habitat.

7. As mentioned in the discussion section of the report: "*two-thirds of fatalities documented during post-construction mortality monitoring studies were assumed to be migrants* (NRC

2007)". Yet there was no data collected (e.g., mist-netting and radar surveys) on spring and fall migratory bird use.

The Survey Results Inadequately Address Potential Impacts

The survey results and discussion provide limited analysis of potential impacts to breeding birds and no analysis of impacts on migratory birds. It also did not address impacts on specific suites of species that are likely to be susceptible to impacts of turbine development in forested habitat, such as forest-interior specialists. Additionally, the results do not quantify (i.e., in size or extent) the impacts of direct habitat loss and associated disturbance or avoidance zones that will likely surround the turbines.

8. The most commonly observed species was "unidentified passerine", with 58 observations during the three field visits. This is an unusually high number of unidentified birds and represents a significant data collection error rendering the statistical analysis invalid. The high number of unidentified birds is likely due to the late timing of the survey (i.e., late June-early July), a period when there is a decrease in the number of singing territorial male birds.

9. Page 4, under section header "Bird Diversity and Species Richness" it states that: *"species diversity and richness were compared between seasons for breeding bird surveys"*. Yet there is no indication that multi-season surveys were conducted at the site, and no comparative analysis of species diversity/richness was provided for other surveys conducted at an ecologically comparable site.

10. The discussion states that: *"post-construction mortality studies conducted at 12 wind facilities throughout the nation indicate a national avian mortality rate of 2.3 birds per turbine per year"*. It is assumed that this statement is intended to indicate that mortality rates are insignificant. However, rates of mortality resulting from collision will vary both seasonally and geographically. As noted above, these impacts can be far greater in areas of high concentrations of migrants, and this study provides no assessment of migratory bird use.

11. The site is part of a large un-fragmented forest block surrounding the New Naugatuck Reservoir. This forest block is of sufficient size to support area-sensitive forest-interior bird. Several species of forest-interior birds were confirmed on the site by the BBS (e.g., Scarlet Tanager, Wood Thrush). These species are highly susceptible to impacts resulting from forest loss and fragmentation, and these impacts can extend as far as 100 m from the edge of any disturbance. However, no analysis of the potential impacts of the proposed activities on forest-interior bird habitat or populations was provided. This impact analysis should extend beyond the footprint of the turbine to include the area of avoidance described by Pearce-Higgins *et.al.* (2009).

12. The statistical analysis provided is potentially flawed for several reasons:

    a. The most commonly observed bird was "unidentified passerine", recorded 58 times out of a total of 525 observations (11% of the total composition). This represents a significant "data gap" which affects both species richness and species diversity results.

    b. The data set is small and may not be statistically relevant.

    c. The survey covers two different habitat types (open and forested). Bird detectibility varies greatly between these two habitat types; i.e., birds are easier to detect in open habitats (e.g., fields, meadows) than in forested habitats (Bibby *et.al.* 2000). If this variation in detectibility was not accounted for in the statistical analysis, than the statement: "*Bird abundance and species richness at survey points proximate to proposed turbine locations was low to moderate relative to the open meadow and forest edge points*" is not valid).

13. The statement in the executive summary "*bird abundance and species richness at survey points proximate to proposed turbines locations was low to moderate relative to the open meadow and forest edge points*" is misleading. It suggests that the forested areas surveyed are of lower value as a result of the reduced species richness and abundance. While this conclusion may be due in part to the issue of "habitat bias" as described in "c" above, it is also well known that in Connecticut open non-forested habitats generally have a higher diversity of bird species than forested habitats. The proper comparison would be between the forested data points on site to results in similar forested habitats within the same eco-region; and also for on-site open field/meadow to data collected in a similar open habitat nearby. Without such a comparative analysis, there is no basis for the statement.

14. Twelve of the species observed on the site are considered to be "species of conservation concern" by the CT Department of Environmental Protection and national conservation organizations, due to declining populations. However, no analysis of impact was given for species, which are listed below:

Common Name	**Scientific Name**	**Conservation Status**
Eastern Towhee	*Pipilo erythrophthalmus*	PIF Tier IIA, GCN
Field Sparrow	*Spizella pusilla*	GCN
Indigo Bunting	*Passerina cyanea*	GCN
Eastern Kingbird	*Tyrannus tyrannus*	GCN
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	PIF Tier IIA
Scarlet Tanager	*Piranga olivacea*	PIF Tier IA, GCN
Wood Thrush	*Hylocichla mustelina*	GCN, PIF Tier IA
Black-throated Green Warbler	*Dendroica virens*	GCN
Chestnut-sided Warbler	*Dendroica pensylvanica*	GCN
Ovenbird	*Seiurus aurocapilla*	GCN
Baltimore Oriole	*Icterus galbula*	PIF Tier IA
Chimney Swift	*Chaetura pelagic*	PIF Tier IIA

KEY – Species of Conservation Concern

GCN =
Species listed as "Greatest Conservation Need" (GCN) as described in the CT State *Comprehensive Wildlife Conservation Strategy* (CWCS)

PIF = Partners in Flight Designation (Area 09)

Tier I High Continental Priority
Species that are typically of conservation concern throughout their range. These are species showing high vulnerability in a number of factors, expressed as any combination of high parameter scores leading to an average score > 3 (the midpoint); total of 7 parameter scores will be 22, with AI 2 (so that species without manageable populations in the region are omitted).

Tier I A -*High Regional Responsibility*
Species for which this region shares in major conservation responsibility; i.e., conservation in this region is critical to the overall health of this species.

Tier II High Regional Priority
Species that are of moderate continental priority, but are important to consider for conservation within a region because of various combinations of high parameter scores

Tier II A *High Regional Concern.* Species that are experiencing declines in the core of their range and that require short-term conservation action to reverse or stabilize trends. These are species with a combination of high area importance and declining (or unknown) population trend

Tier IIC. *High Regional Threats.* Species of moderate continental priority that are uncommon in a region and whose remaining populations are threatened, usually because of extreme threats to sensitive habitats. These are species with high breeding threats scores within the region (or in combination with high non-breeding threats outside the region)

Source: http://www.partnersinflight.org/bcps/pl_09sum.htm

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