

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**

April 28, 2011

**SAVE PROSPECT CORPORATION'S PROPOSED FINDINGS OF FACT**

Pursuant to § 16-50j-31 of the Regulations of Connecticut State Agencies, Save Prospect Corp. ("SPC") submits these proposed findings of fact. In addition, SPC adopts and incorporates by reference the proposed findings of fact submitted by parties FairwindCT and Messrs. Lamontagne and Satkunis as if fully set forth herein.

**Introduction**

1. Pursuant to Connecticut General Statutes ("CGS") §§ 16-50k(a) and 4-176(a) and § 16-50j-38 *et seq.* of the Regulations of Connecticut State Agencies ("RCSA"), BNE Energy, Inc. ("BNE") petitioned the Connecticut Siting Council ("Council") on November 11, 2010 for a declaratory ruling for the location, construction and operation of a 3.2 MW wind renewable generating project at 178 New Haven Road, Prospect, Connecticut (also known as "Wind Prospect"). (BNE Exhibit 1, Petition at p. 1.)
2. The proposed site is a 67.5 acre parcel. BNE has an option to purchase the property from the current landowners. Although BNE is proposing to use wind turbines manufactured by GE, it has no current contractual obligation to use GE turbines for Wind Prospect. (BNE 1, pp. 1, 13; March 3, 2011 Hr'g Tr. 77:1-10.)
3. BNE is a Delaware corporation based in West Hartford, Connecticut. Wind Prospect is BNE's first attempt at siting a commercial wind farm anywhere in the world. BNE's principal consultants on noise and shadow flicker likewise have no prior experience with wind turbines. For example, Mr. Libertine acknowledged that this is the first matter, other than practicing with the WindPRO software, that he has done a shadow flicker study. (BNE 1, p. 6; SPC Admin Notice 82, CCEF Memo dated April 22, 2008; March 3, 2011 Hr'g Tr. 143:3-6; March 31, 2011 Hr'g Tr. 139:18-20.)
4. BNE's proposed facility in Prospect includes two (2) wind turbines with hub heights of 328.08 feet (100 m). BNE seeks approval for a range of blade lengths from 132.22 feet (40.3 m) to 164.04 feet (50 m). BNE further seeks approval for a range of blade rotor diameter from 270.67 feet (82.5 m) to 328.08 feet (100 m). (BNE 1, pp. 7-8).

5. Pursuant to CGS § 16-50j(h), the Council solicited comments on BNE's petition from the following state departments and agencies: (a) Department of Environmental Protection, (b) Department of Public Health, (c) Department of Public Utility Control, (d) Department of Economic and Community Development, (e) Department of Emergency Management and Homeland Security, (f) Department of Agriculture, (g) Council on Environmental Quality, (h) Office of Policy and Management, and (i) Bureau of Engineering and Construction / Department of Transportation. (Hearing Notice.)
6. The Department of Public Health responded to the Council's solicitation and provided comments dated January 5, 2011. (DPH Letter dated January 5, 2011.)
7. The Department of Transportation responded to the Council's solicitation and provided comments dated January 20, 2011. (DOT Letter dated January 20, 2011.)
8. The Council and its staff conducted a field review of the site on February 23, 2011, at 2:00 p.m. (Id.)
9. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on February 23, 2011 and February 24, 2011, at the Long River Middle School Gymnasium located at 38 Columbia Avenue, Prospect, CT.
10. The Department of Environmental Protection responded to the Council's solicitation and provided comments dated March 14, 2011. (DEP Letter dated March 14, 2011.)
11. Pursuant to CGS § 16-50j(h), the Council solicited additional comments on BNE's petition from the state departments and agencies referenced in paragraph 7 *infra*, on March 22, 2011 and April 1, 2011. (Council Letters dated March 22, 2011 and April 1, 2011).
12. The hearing in this proceeding occurred during parts of four days: (a) February 24, 2011 in Prospect, CT, (b) March 3, 2011 in New Britain, CT, (c) March 15, 2011 in New Britain, CT, and (d) March 31, 2011 in New Britain, CT. (See transcripts February 24, 2011, March 3, 2011, March 15, 2011 and March 31, 2011.)
13. On February 24, 2011, the Council granted BNE's motion for protective order. The protective order transmitted to the parties and intervenors is stricter than BNE's proposed order and does not contain any of the reasonable conditions requested by FairwindCT and SPC. (See Protective Order signed by Daniel F. Caruso on February 24, 2011.)
14. On March 24, 2011, former Council member, Daniel F. Caruso, recused himself from this proceeding and ultimately resigned from his post as Chairman. (Caruso Letter dated March 24, 2011).

### **Origins of Wind Prospect**

15. Connecticut provides state assistance to developers of renewable energy by utilizing funds collected through surcharges included in consumers' electric rates. The Connecticut Clean

Energy Fund (“CCEF”) administers the funding programs available to developers of renewable energy. (BNE Admin. Notice 1, Energy Working Group Policy Paper; SPC Admin. Notice 44, Wind Power Siting, Incentives, and Wildlife Guidelines in the United States (Oct. 2007) at p. 21.)

16. The main goals of the CCEF are to: (a) create clean energy supply for Connecticut, (b) accelerate the development of clean energy technologies, and (c) educate Connecticut consumers about the benefits and availability of clean energy. (Id.)
17. Under the “Pre-Development Loan Program,” the CCEF provided funding to early-stage projects “that had yet to begin siting, permitting, or feasibility analysis but may have ultimately been considered for Project 150, once all their milestones were met. The projects had to incorporate existing and proven clean energy resources for power production and must have had a high likelihood of successful development and commercialization.” The CCEF discontinued the program for the FY11 and FY12 Plan period. (Council Admin. Notice 19, Connecticut Clean Energy Fund, FY 2011 - FY 2012 Comprehensive Plan.)
18. This program provided tiered-funding based on the size of the project: (a) funding in the form of non-recourse loans of up to \$250,000 was available for projects under five (5) MW, and (b) funding in the form of non-recourse loans of up to \$500,000 was available for projects of five (5) or greater. (March 31, 2011 Hr’g Tr. 197:14-20.)
19. By application dated November 19, 2007, BNE applied to the CCEF for pre-development funding for Wind Prospect. BNE’s proposal included six Vestas V82-1.65 MW wind turbines for a total nameplate capacity of 10 MW. (SPC Admin. Notice 81, BNE Application.)
20. The CCEF approved a proposal to construct a 10 MW wind farm in Prospect and recommended that the funding of the project occur in two phases. The first loan agreement between Connecticut Innovations (“CI”) and BNE is dated February 19, 2009 and provides for a loan of up to \$102,375.00. The second loan agreement between CI and BNE is dated June 24, 2010 and provides a loan of up to \$397,625.00. (SPC Admin Notice 82, CCEF Memo dated April 22, 2008; SPC Admin Notice 86, Loan Agreement dated Feb. 19, 2009; SPC Admin Notice 88, Loan Agreement dated June 24, 2010.)
21. After November 19, 2007, but before November 11, 2010, BNE states that it reduced the number of wind turbines for this project from six (6) to four (4). The capacity of each turbine however, increased from 1.65 MW to 2.5 MW. The total nameplate capacity remained at 10 MW. (See BNE response to SPC interrogatory no. 7, First Set; March 3, 2011 Hr’g Tr. 136:12-18.)
22. BNE has never sought Siting Council approval for anything other than two (2) turbines of 1.6 MW each at the Prospect site. (March 31, 2011 Hr’g Tr. 194:8-13.)

### **Revised Plans**

23. The original plans submitted with BNE's petition are not complete. (March 31, 2011 Hr'g Tr. 156:22-157:1.)
24. On February 16, 2011, BNE provided to the Council and parties revised site plans. The plans were revised to address the Connecticut Water Company's concerns over the potential for sedimentation and/or impacts to the wetlands during construction at the site. (BNE Exhibit 3, Supplemental Submission in Response to Connecticut Water Company dated February 16, 2011.)
25. On March 8, 2011, BNE filed supplemental testimony of Melvin L. Cline, which included revised site plans (attached thereto as Exhibit 1), revised soil erosion and sediment control plan (attached thereto as Exhibit 2) and revised storm water management plan (attached thereto as Exhibit 3). As part of the revised site plan, BNE relocated the northern turbine ("Turbine 2") approximately 160 feet to the south southwest of its original position to comply with GE recommended setbacks. (BNE Exhibit 18(b), Supplemental Pre-filed Testimony of Melvin L. Cline dated March 8, 2011, at p. 1.)
26. On March 28, 2011, BNE filed a new set of plans, which were attached to supplemental testimony of Mr. Cline. The plans were revised to address the Connecticut Water Company's concerns over the revised plans of March 8th. (BNE Exhibit 22, Supplemental Testimony of Melvin Cline with attachments dated March 28, 2011, at pp. 1-2.)
27. The drawings submitted by Zapata on or about March 28, 2011 are not stamped and sealed by a licensed professional engineer in the State of Connecticut. The plans are not final and do not, even after repeated revisions, demonstrate compliance with all applicable standards. (March 31, 2011, Hr'g Tr. 162:22-163:14 and 188:14-17.)

### **Environmental Impacts**

#### *Air and Water Quality Standards*

28. BNE did not request its engineer, Zapata, to perform a geotechnical investigation, topographical examination or initial survey of the project site. (March 31, 2011 Hr'g Tr. 187:24-188:13.)
29. The former U.S. Cap and Jacket property ("Cap and Jacket property"), which is located at 214 New Haven Road, is contiguous to and borders the project site to the east. The Cap and Jacket property is contaminated. In December 2000, the U.S. Environmental Protection Agency conducted an investigation of the Cap and Jacket property under its superfund program. (BNE Exhibit 9(a), Pre-filed Testimony of Paul Corey dated February 16, 2011, at p 3; BNE Exhibit 18(c), Supplemental Pre-filed Testimony of Michael Libertine dated March 8, 2011, at p. 1; SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at pp. 2-3.)

30. The sources of pollutants in the groundwater at the Cap and Jacket property include: (1) 1500 gallon waste solvent underground storage tank ("UST), (2) reported 750 gallon waste mineral spirals, (3) 200 gallon fuel oil tank UST, (4) three above ground 275 gallon tanks, (5) 550 gallon waste solvent UST, (6) stained soils, (7) trash and debris, (8) septic cleanout, (9) septic system wet well, (10) west leach field, (11) east leach field, (12) drinking water wells, and (13) drainage ditches. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at pp. 3-4.)
31. Pollutants such as volatile organics, semi-volatile organics and extractable total petroleum hydrocarbons were found in the groundwater and soils at the Cap and Jacket property. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at pp. 4-5.)
32. The EPA Brownfield Target Site Assessment did not fully test groundwater or soils below 7.5 feet below the ground surface. The volatile and semi-volatile organic chemicals detected at the Cap and Jacket property exceed the State of Connecticut soil and or groundwater criteria and thereby restrict the use of the Cap and Jacket property. The soil chemicals that exceed State GA PMC concentration for Groundwater Protection in 0-7.5 feet below ground surface are: (1) perchloroethylene, (2) extractable total hydrocarbons, (3) trichloroethene, (4) cis-1,2 dichloroethene and vinyl chloride. The groundwater chemicals that exceed State GA GPC concentrations in 0-7.5 feet below ground surfaces are: (1) perchloroethylene, (2) trichloroethenes, (3) 1,1,1 - trichloroethene, (4) 1,1,2 trichloroethene, (5) 1,1 dichloroethane, (6) 1,2 dichloroethenes, (7) methylene chloride, (8) vinyl chloride, (9) benzene and (1) 1,1 biphenyl. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at pp. 6-7.)
33. The pollutants at the Cap and Jacket property have not been fully remediated. The report prepared by Tetra Tech for the EPA found that the groundwater pollutant plume has migrated north and east of the Cap and Jacket property. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at p. 7.)
34. The contamination at the Cap and Jacket property has migrated to adjacent properties and has contaminated at least one residential well. Further, contaminants were found in a drainage ditch that connected with the storm sewer system and in turn discharged into an unnamed brook that traverses the project site and discharges into the reservoir that is used as a public water supply. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at pp. 8-9; SPC Exhibit 5(e), Supplemental Pre-filed Testimony of John Stamberg dated March 8, 2011, at p. 6; March 15, 2011 Hr'g Tr. 139:10-142:22, 167:3-169:12, and 173:3-14.)
35. If Wind Prospect is approved, the clearing of BNE's site, as proposed in its petition and subsequent revised site plans, may cause the existing groundwater contamination plume at the Cap and Jacket property to spread to more residents' wells and more areas of deep rock fracture migration. (SPC Exhibit 4(i), Pre-filed Testimony of John Stamberg dated February 16, 2011, at p. 9.)

36. Despite recommendations for further study, testing and remediation by the Connecticut DEP and the U.S. EPA, as well as recommendations for an ongoing well monitoring program within a half-mile radius, there has been no study, investigation, or remediation at the Cap and Jacket Property since the U.S. EPA concluded its site evaluation and partial remediation in 2003 and there has been no systematic or regular monitoring of wells in the surrounding area. (March 15, 2011 Hr'g Tr. 168:16-169:12.)
37. BNE first addressed the Cap and Jacket property in the Supplemental Pre-filed Testimony of Michael Libertine. (BNE Exhibit 18(c), Supplemental Pre-filed Testimony of Michael Libertine dated March 8, 2011, at p. 1.)
38. The site plans submitted by BNE in this proceeding fail to comply with the water quality standards of the State. The grading of slopes still does not comply with the 2002 Guidelines and could result in erosion and sedimentation. The 2002 Guidelines require that 2:1 or shallower slopes be the default grading. Where slopes will be steeper than 2:1, geotechnical testing must be conducted to demonstrate that the slopes will be stable, and "engineered structural design features" must be incorporated. (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at pp. 1, 11-12.)
39. If the plans filed with BNE's original petition are still valid and 50 meter blades are approved, then the blades at Tower 1, northeast leg, will extend 32 feet into the hillside. At this point, the ground is 15 feet higher than the assembly area and the blade will not be able to "hang over." (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at p. 4.)
40. Sheet C-102 of all versions of the plans contains a note stating "Blade assembly area shall not have a flatness deviation of more than 6 inches over the length of the blades." Neither of the blade assembly areas meet this criteria. (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at p. 4.)
41. The March 28th site plans still fail to comply with the state water quality requirements regarding basins and traps. The plans do not provide the amount of treatment required by the 2002 Guidelines, the 2004 Manual or the General Permit. (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at p. 5.)
42. The March 28th site plans still fail to provide any calculations for the sizing of temporary sedimentation facilities. In order to comply with the 2002 Guidelines and the General Permit, sizing calculations are required. (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at p. 6.)
43. The March 28th site plans still fail to provide adequate outlet protection that meet the requirements of the 2002 Guidelines. (FairwindCT Exhibit 5, Supplemental Testimony of William F. Carboni, dated March 28, 2011 at p. 6.)

### *Wildlife Impacts*

44. BNE filed a “Draft Prospect Anabat Survey Interim Report” (the “Bat Study”), which was attached to the petition as Exhibit L. The Bat Study was prepared by David Tidhar, Zapata Courage and Jeff Gruver of West Inc. (“WEST”). The report presents only the results of data collected by the ground sampling detectors between June 25 through August 31, 2010. (BNE Exhibit 1 vol. III, Exhibit L, Draft Prospect Anabat Survey Interim Report.)
45. Mortality rates of bats at wind sites in the eastern United States have been as high as 63.9 bats killed per turbine per year. Data collected over the last several years demonstrates that migratory bats are more susceptible to wind turbine mortality than hibernating bats. Specifically, the hoary bats, red bats and silver-haired bats usually account for over 80% of all bat mortalities. (SPC Exhibit 4 (h), Pre-filed Testimony of Scott Reynolds at pp. 2-3.)
46. Ground based Anabat sampling is not a standard component of any state, federal or NGO pre-construction monitoring program. Experts recommend sampling within the rotor swept zone. WEST did not utilize elevated sampling platforms for its study. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 1-3.)
47. The NYDEC, NJDEP, PAGC and Maine DNR have guidelines that recommend at least one year of pre-construction acoustic monitoring using elevated sampling platforms. Furthermore the Bats and Wind Energy Cooperative (BWEC) Advisory Group (cited as Kunz et al. 2007) recommends elevated sampling. West employees Gregory Johnson and Dale Strickland are members of BWEC. Jeff Gruver published a paper showing that temporal variation in bat activity can be accounted for by vertical shifts in bat activity throughout the night, and that different species adjust their activity in different ways. Gruver concludes that “[e]xclusive use of ground-based equipment can result in an incomplete picture of the activity of bats in complex forest stands.” (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 1-3.)
48. WEST’s conclusion that red bats and hoary bats are not common at the site is limited to “recognized” eastern red bat calls, which is only 4.5% of the MF calls that were identified to species. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at p. 5.)
49. Permanent water, such as the Naugatuck Reservoir, acts as a major attractant to foraging bats. Moreover, river valley systems, such as the Champlain and Connecticut River, are regional “hotspots” for Indiana myotis and eastern small-footed myotis. This is particularly true near reservoirs. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 8-9.)
50. The U.S. Fish and Wildlife Advisory Committee recommends: (1) a comprehensive Site Characterization (Tier 2) that should include documentation of the species composition and size classes of canopy trees throughout the project area, (2) a full year (April through October) of acoustic monitoring (Tier 3) collected concurrently with environmental variables such as temperature and wind speed, and (3) a monitoring protocol that is adequate temporally, spatially, and topographically to adequately characterize bat activity at the site.

The Committee also states that acoustic detectors “should be placed at high positions” and “near the rotor swept zone.” (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 9-10.)

**51.** The New Jersey DEP Guidelines (NJDEP, 2009) require that Tier 4 Structures (any site with turbines taller than 250 feet, which would include Wind Prospect) should have:

- One full year of pre-construction acoustic monitoring and two years post-construction acoustic monitoring (01 April - Oct 15).
- Monitoring at the project site and a reference site that is similar in habitat and near the project site.
- Monitors placed on met towers or elevated at appropriate heights with two detectors sampling the horizontal plane and one in the vertical plane for each turbine.
- Monitors facing north in the fall and south in the spring to capture migratory activity.
- Reports that present an estimate of the number and species of bats recorded flying through the rotor swept area of the proposed turbine.

(SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)

51. The New York DEC Guidelines (NYDEC, 2007) recommend acoustic monitoring on met towers from April 15 - October 15. If ground-based acoustics are used, they should be for summer monitoring and should be active (hand-held) transect surveys. Projects near endangered bat species may require mist-netting and additional work. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)

52. The Pennsylvania Wind Siting Guidelines (PAGC, 2007) pre-construction monitoring requirement was developed in consultation with the BWEC Advisory Committee. For a low-priority site, the PAGC requires acoustic monitoring (July through October) using met-tower based acoustic monitors. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)

53. The Vermont ANR Guidelines (VTANR, 2006) recommends two years of pre-construction acoustic monitoring, with at least two monitoring stations (with a minimum of two detectors per station) for all pre-construction acoustic monitoring protocols. Each station should use elevated sampling platforms (15m and 30m) and recording should occur from April through September. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)

54. The Arizona Wind Guidelines (AGFD, 2008) places the burden of proof with the developer for any deviations from the standardized pre-construction survey efforts. For example:



- Projects should coordinate pre-construction monitoring during the meteorological data collection phase.
- Projects should place acoustic monitoring stations on met towers in the proposed project area (identified as two Anabat detectors; one at ground level and one ideally within the rotor swept zone but not less than 30 m high).
- Total number of sampling stations depends on size of project and habitat complexity.
- For Category 2 sites (such as Wind Prospect), they require 1-2 years of pre-construction monitoring.
- The AGFD requires developers to identify physical attractants such as riparian areas, water or forage sources, or roosting habitat that could attract and concentrate bats.
- Sampling stations should be distributed evenly over the project site to maximize the ability to collect data; when sites have habitat complexity, they should also be placed to sample varied habitats.

(SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)

55. The Maine Windpower Advisory Group (Jones, 2006) recommends sampling at elevated platforms for an entire year of bat activity. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)
56. According to the Maryland Wind Technical Advisory Group Siting Guidelines (Gates et al. 2006), a developer should conduct one year of monitoring at the proposed site. The monitoring should be seasonally and spatially appropriate for the project. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)
57. According to the California Bat Working Group Survey Protocol for Wind Energy (Hogan, 2006), ground-level acoustics can't adequately assess migratory activity. At least one year of passive acoustic monitoring is recommended to capture the spatial and temporal variation in bat activity. (SPC Exhibit 5(d), Supplemental Pre-filed Testimony of Scott Reynolds at pp. 10-14.)
58. BNE conducted no on-site surveys for vernal pools, mammals, reptiles or amphibians. (SPC Exhibit 4(d), Pre-filed Testimony of Michael Klein, dated February 14, 2011 at p. 3.)
59. The peak breeding bird activity period in Connecticut begins in late May and ends in mid to late June, with the height of activity occurring within the first two weeks of June. By late June many birds are nesting and males have stopped or significantly reduced the frequency of territorial singing, which is the primary method of identification in forested habitat. The Connecticut DEP's Forest Interior Breeding Bird Survey protocol requires that surveys be conducted 3 times: once between May 20 and June 2, once between June 3 and June 16 and once between June 17 and June 30. BNE failed to obtain any surveys during the first two

periods. (SPC Exhibit 5(a), Supplemental Pre-filed Testimony of Michael Klein, dated March 8, 2011 at p. 7.)

### *Visibility*

60. BNE and/or VHB excluded the wind turbine 150 meter hub and blade height for seasonal visibility from Figure 4 of the Visual Resource Analysis Report, which is attached to the Petition as Exhibit J. (March 3, 2011 Hr'g Tr. 14:19-15:16.)
61. The total height of the turbine with a 328.08 feet (100 meter) rotor diameter is 492.12 feet. (BNE 1, pp. 7-8).
62. The total height of the turbine with a 270.67 feet (82.5 meter) rotor diameter is 463.42 feet. (BNE 1, pp. 7-8).
63. The wind turbine located at Forbes Park in Chelsea, Massachusetts is 165 feet from the ground to the hub center. The blades are 75 feet long each. The rated electrical power is only 550 kW. The total maximum tip height is only 240 feet. (SPC Admin. Notice 89, FAQ sheet concerning the wind turbine at Forbes Park.)
64. The wind turbine located at Phoenix Press is a Northwind 100 model. The rated electrical power is only 100 kW. The hub height is 121 feet and the rotor diameter is 69 feet. The total maximum tip height is 155.5 feet. (SPC Admin. Notice 90, Phoenix Press web page; SPC Admin. Notice 91, Northwind 100 Community Scale Wind Turbine fact sheet.)
65. If approved, Wind Prospect would be the most densely populated residential area in the United States within 0.6 miles of a wind turbine. There will be 129 residences within 2,640 feet (.5 mile) and 234 residences within 3,168 feet (.6 mile) of the proposed turbine locations. (SPC Exhibit 4(y), Pre-filed Testimony of Tim Reilly at pp. 12-14; SPC Exhibit 5(l), Supplemental Pre-filed Testimony of Tim Reilly at pp. 6-7; BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, at p. 4.)

### *Site Development Impacts*

66. The proposed location of the southern turbine is approximately 415 feet from the closest southern property line, 545 feet from the closest eastern property line. These distances do not take into account the fact that the turbines rotate such that at various times the blade tips will point toward adjacent properties and will be up to 164 feet closer (a net distance of 253 feet) to the nearest adjacent property. The proposed, alternative location of the northern turbine, as referenced in Mr. Cline's supplemental testimony dated March 8, 2011, is approximately 860 feet from the closest eastern property line. (March 31, 2011 Hr'g Tr. 115-117.)
67. The site is a moderately to steeply sloping drumlin. (SPC Exhibit 4(d), Pre-filed Testimony of Michael Klein, dated February 14, 2011 at p. 3.)

68. The site plans show a 40' x 50' facility support building, which contains a restroom, office, equipment storage and an educational pavilion. The plans do not show the grading, access drive, parking, septic system, well, lighting, erosion controls, or stormwater management facilities. The area disturbed for this construction will be permanent. (SPC Exhibit 4(d), Pre-filed Testimony of Michael Klein, dated February 14, 2011 at p. 4.)
69. The February 16th revised site plans identify an erosion and sediment control plan that utilizes a mixture of sediment basins and/or sediment traps. The calculations provided by BNE understate the size of the construction area by over 50%. The sediment delivery rate that BNE used for the undisturbed portion of the drainage area is for wooded areas, while in actuality, a good portion of the drainage basin is actually hayfield/pasture/grassy area, which has 5 times the sediment delivery rate of woods. As a result of these plans, none of the discharges from the site will be treated in accordance with the DEP's Erosion and Sediment Control Manual or the Stormwater Manual. (SPC Exhibit 5(a), Supplemental Pre-filed Testimony of Michael Klein, dated March 8, 2011 at pp. 2-4.)
70. BNE has not (1) showed, described or provided how large vehicles used to deliver wind turbine blades or tower sectors are capable of using the proposed road, (2) identified the type of crane or cranes it will use to unload the wind turbine component parts, (3) showed or engineered how and where the various blades and tower components will be located and (4) has not provided tower foundation designs and construction methodology. (SPC Exhibit 5(e), Supplemental Pre-filed Testimony of John Stamberg dated March 8, 2011, at p. 3.)
71. Wind turbine foundations are major components of a turbine's design and must be constructed properly to support loads in excess of 250 tons. A properly designed foundation will prevent the turbine from tipping over. If the foundations at the proposed site must be built with groundwater in the area, the groundwater will have to be pumped out, treated for sediment removal and discharged. In some cases groundwater can be lowered by "well pointing" in which the entire area effecting the foundation area is pumped out to lower the groundwater level. Also, the width of the foundation can be increased to offset some depth requirements. Without the foundation design and description of the construction technique the disturbed site area cannot be evaluated. The foundation design will likely increase the disturbed site area and/or will likely disturb the groundwater and possibly spreading pollutants from the Cap and Jacket property. (SPC Exhibit 5(e), Supplemental Pre-filed Testimony of John Stamberg dated March 8, 2011, at p. 5.)
72. To the west of the BNE site is the New Naugatuck Reservoir owned by the Connecticut Water Company with several wetlands on BNE's site that drain into the Reservoir. On the east side is the polluted Cap and Jacket property that has already polluted local wells and surface streams to the north. These unique circumstances make use and disturbance of this site, especially with tree removal, deep foundations and a road designed with poor engineering practice, vulnerable to two water sources used for human water supplies that exist near BNE's proposed site. (SPC Exhibit 5(e), Supplemental Pre-filed Testimony of John Stamberg dated March 8, 2011, at p. 7.)

73. In Connecticut, there is presently a proposed bill (H.B. no. 6029) that seeks to extend the property tax exemptions for renewable energy projects to wind turbines and their associated components. If this bill becomes law, BNE will not be the largest single taxpayer in Prospect. (March 3, 2011 Hr’g Tr. 99:13-23.)  
*Setback Standards Elsewhere (proposed and implemented)*
74. Some states have setback standards for the siting of industrial wind turbines. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, at pp. 2-4.)
75. Delaware’s setback standard is calculated from the adjoining property line. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 3.)
76. In Illinois, a county may not require a wind turbine or other renewable energy system that is used exclusively by an end user to be set back more than 1.1 times the height of the system from the end user’s property line. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 4.)
77. In South Dakota, larger towers must be set back at least 500 feet or 1.1 times the height of the tower, whichever is greater, from any surrounding property line. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 11.)
78. Ohio’s setback standard of at least 1.1 times the total height from turbine base is measured to the property line of the wind farm property. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 10.)
79. The New Hampshire setback standard referenced in Mr. Rinebold’s testimony applies to small wind systems of up to 100 kw. (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 7.)
80. California’s “wind setback requirement” is limited to “small projects.” (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 1.)
81. A 2006 report prepared by California Wind Energy Collaborative (for the California Energy Commission) listed the safety setback requirements of five counties (measured to the closest residence): (1) Alameda County - the greater of 3 times the overall turbine height or 500 feet, (2) Contra Costa County - 1,000 feet, (3) Kern County - the greater of 4 times the overall turbine height or 1,000 feet, (4) Riverside County - the greater of 3 times the overall turbine height or 500 feet measured to lot line with dwelling, and (5) Solano County - the greater of 3 times the overall turbine height or 1,000 feet. (SPC Admin. Notice 45, “Permitting Setback Requirements for Wind Turbines in California (Nov. 2006) at p. 12.)
82. Wyoming’s setback requirement of 5.5 times the maximum tip height or not less than 1,000 feet applies to platted subdivisions. Furthermore, the base of any tower must be at a distance of at least 110% maximum tip height from “(1) any property line contiguous or adjacent to

the facility . . . and (2) any public road right-of-way.” (BNE Exhibit 20, Supplemental Pre-filed Testimony of Joel Rinebold dated March 24, 2011, Exhibit A at p. 14.)

83. In Dixmont, Maine, each wind turbine must be set back at least 2,500 feet from the property line of any non-participating property (unless waived by the property owner in writing) and at least 1,500 feet from any public way. (SPC Admin. Notice 2, Town of Dixmont, Maine: Wind Energy Facility Ordinance at pp. 9-10.)
84. In Jackson, Maine, each wind turbine greater than or equal to 1 MW, or a turbine height greater than or equal to 300 feet must be set back from the property line of any non-participating landowner a distance of no less than 13 times the turbine height (unless waived by the property owner in writing) and set back from any public road a distance no less than 4 times the turbine height. (SPC Admin. Notice 3, Town of Jackson, Maine: Amended Wind Turbine Ordinance at pp. 9-10.)
85. In Thornidke, Maine, each wind turbine must be set back at least 1,800 feet from the property line of any non-participating property (unless waived by the property owner in writing) and at least 1,500 feet from any public way. (SPC Admin. Notice 5, Thorndike, Maine: Wind Energy Facility Ordinance at p. 8.)
86. The Montville (Maine) Wind Turbine Generator Ordinance states that “[s]etbacks to property lines are a minimum buffer of one mile from the Project Boundary. This is assuming a 1.5 MW industrial wind turbine, which has a Turbine Height of approximately 400 feet. However, larger wind turbines are louder, so a varying setback basis is required. A one mile setback is approximately equal to 13 times the turbine height for a 400 foot turbine. Therefore, the Setback Distance is defined as the larger of one mile or 13 times the Turbine Height, measured horizontally from the Project Boundary to the nearest property line.” Furthermore, wind turbines must be “set back from any public road a distance no less than 4 times the turbine height, measured horizontally.” (SPC Admin. Notice 6, Montville, Maine: Wind Turbine Generator Ordinance at p. 14.)
87. In February 2010, house bill 677, “An act relating to wind energy plants” was introduced in the Vermont legislature. The bill proposes minimum setback requirements for wind energy plants that exceed 0.49 megawatts. The setbacks proposed in the bill include (1) one and one-quarter miles (6,600 feet) from an occupied building if the elevation change between the wind turbine and the occupied building is equal to or less than 500 feet, (2) two miles (10,560 feet) from an occupied building, if the elevation change between wind turbine and the occupied building exceeds 500 feet, (3) one-half mile (2,640 feet) from the closest boundary of the parcel on which the wind turbine will be located, and (4) one-third of a mile (1,759 feet) from any public highway or right-of-way and from any above-ground utility line or facility. Under this bill, a property owner may waive one or more of the setback requirements by signing a written waiver of rights. (SPC Admin. Notice 7, Vermont: House Bill 677 at pp. 4-8.)
88. In November 2010, senate bill 2374, “An act concerning wind energy and supplementing Titles 13 and 40 of the Revised Statutes” was introduced in the New Jersey legislature. The

bill states that no state “entity may approve any plan, proposal, or permit application for a wind energy structure if that wind energy structure will be erected or installed at a site that is closer than 2,000 feet from any residence or residentially zoned property.” (SPC Admin. Notice 8, New Jersey Senate No. 2374 at pp. 1-2.)

89. The “Wind Turbines (Minimum Distances from Residential Premises) Bill,” which is currently before the United Kingdom Parliament, proposes a minimum distance requirement of 6,562 feet for wind turbines greater than 328 feet in height but less than 492 feet. (SPC Admin. Notice 9, United Kingdom Parliament, House of Lords Bill (HL Bill 17) at pp. 2-3.)
90. The French Academy of Medicine recommends a setback distance of 4,921 feet from utility scale wind turbines and the United Kingdom Noise Association recommends 5,249 feet. (SPC Admin. Notice 10, First International Symposium on Adverse Health Effects from Wind Turbines (2010) at p. 9.)
91. With respect to the siting of turbines at a safe distance from any occupied structure, road or public use area, GE has stated the following: “Some consultant groups have the capability to provide risk assessment based on site-specific conditions that will lead to suggestions for turbine locations. In the absence of such an assessment, other guidelines may be used. Wind Energy Production in Cold Climate provides the following formula for calculating a safe distance:  $1.5 \times (\text{hub height} + \text{rotor diameter})$ . While this guideline is recommended by the certifying agency Germanischer Lloyd as well as the Deutsches Windenergieinstitut (DEWI), it should be noted that the actual distance is dependent upon turbine dimensions, rotational speed and many other potential factors.” (SPC Admin. Notice 11, GE Energy: Ice Shedding and Ice Throw - Risk and Mitigation at p. 2.)

### **Public Health and Safety**

92. Tyler Nitsch, an 11 year-old boy who lives at 11 Lee Road in Prospect, has been diagnosed with various medical disorders, including epilepsy. Tyler’s parents moved to Prospect because of the quiet and peace it presented to their family. Tyler has a service dog named Safforn, who can sense Tyler’s seizures, assist with his anxiety and handle his autism. (Nitsch Written Statement to Siting Council dated March 23, 2011.)
93. Residents from Massachusetts, Maine and Wisconsin who live near wind farms were told they would not experience any adverse health impacts. After the wind farms began operating in towns of those states, some residents began to experience adverse health impacts. BNE presented no contradictory evidence from people who live near wind turbines. (SPC Exhibits 4(j), (m), (n), (u) and 5(g), Pre-filed Testimony of Neil Andersen, Annie Cool, Mark Cool, Cheryl Lindgren and John Ford; FairwindCT Exhibit 3, Pre-filed Testimony of Gerry Meyer; March 15, 2011 Hr’g Tr. 228:18-241:13.)

*Noise*

94. Noise may dramatically affect an individual's quality of life. In addition, people living near wind turbines may experience sleep disturbance. In 2001, the European Court of Human Rights heard personal testimony of individuals who lived with aircraft noise in the middle of the night. The Court ruled that flights to and from Heathrow Airport in London between 11:00 p.m. and 6 a.m. infringed on the rights of residents to a good night's sleep. (SPC Exhibit 4(b), Pre-filed Testimony of Arline Bronzaft dated February 13, 2011, at pp. 7-9; SPC Admin. Notice 14, Audiology Today (Jul. Aug 2010): "Wind Turbine Noise - What Audiologists Should Know" at p. 28; SPC Exhibit 5(g), Pre-file Testimony of John Ford at pp. 2-3; SPC Admin. Notice 29, "Wind Turbines, Noise and Health," by Dr. Amanda Harry (Feb. 2007) at p. 3.)
95. VHB conducted a Noise Evaluation for Wind Prospect. VHB selected ten receptor locations in the vicinity of Wind Prospect. The methods used to predict project sound levels at the receptors are not worst case. (BNE Exhibit 1 vol. III, Exhibit N, Noise Study at pp. 8-10; Council Admin. Notice 42, RCSA § 22a-69-1, et seq.; March 3, 2011 Hr'g Tr. 89:18-23; SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at pp. 4-6.)
96. The appropriate standard for measuring the noise generated by Wind Prospect is residential to residential, since that is the existing and historic zoning and use of the BNE property and the "receptor" properties. If the emitter zones were classified correctly as "residential," the noise limits would be 6 db lower (i.e. going from 61 to 55 db(A) during the daytime and going from 51 to 45 db(A) during the nighttime). Under this standard, the expected noise level at the site exceeds the noise limit criteria, which is measured at the property line. (SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at p. 4. March 15, 2011 Hr'g Tr. 112:2-12; March 3, 2011 Hr'g Tr. 89:20-21.)
97. The World Health Organization recommends that sound levels during nighttime and late evening hours should be less than 30 dBA during sleeping periods to protect children's health. (SPC Admin. Notice 28, "The 'How To' Guide to Siting Wind Turbines to Prevent Health Risks" at p. 5.)
98. On February 28, 2011, selectmen from Falmouth, Massachusetts voted unanimously to shut down the wind turbine known as "Wind 1" when wind speeds reach 10 meters per second no matter what time of day. (SPC Exhibit 5(g), Pre-file Testimony of John Ford at p. 4.)
99. The distance to nearest property line, excluding land owned by the Connecticut Water Company, is approximately 415 feet. The expected noise level for this project is below the standards considered acceptable by other jurisdictions addressing the issue, such as Quebec and the Cape Cod Commission. The clear trend in those areas that have had experience with wind turbines and the noise, shadow flicker and other burdens they impose, is to increase the setback distances. (SPC Exhibit 5(l), Supp. Pre-file Testimony of Tim Reilly, Exhibit M; SPC Admin. Notice 55, Proposed Amendments to Enabling Regulations and Regional Policy Plan for February 17, 2011 Cape Cod Commission Meeting; March 31, 2011 Hr'g Tr. 115-117; March 3, 2011, Hr'g Tr. 193:17-194:2.)

100. VHB's Noise Evaluation does not address prominent discrete tones (or pure tones) or infrasonic noise, which is likely to emit from a wind turbine. The lower frequency sounds can adversely affect the health of people exposed to wind turbines. (BNE Exhibit 1 vol. III, Exhibit N, Noise Study; SPC Exhibit 4(b), Pre-filed Testimony of Arline Bronzaft dated February 13, 2011, at p. 15; SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at p. 4.)
101. VHB's Noise Evaluation does not permit one to adequately address the potential impacts of wind turbine sounds on nearby residents. (SPC Exhibit 4(b), Pre-filed Testimony of Arline Bronzaft dated February 13, 2011, at p. 2.)
102. VHB conducted noise measurements at the site for five to fifteen minutes. In addition, there appears to be no monitoring performed at Fusco Field during the day, Lacey Lane or Coachlight Circle during the night. (SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at p. 4.)
103. The C-weighted sound level (dBC) is "[s]imilar in concept to the A-weighted sound level (dBA) but C-weighting does not de-emphasize the frequencies below 1k Hz as A-weighting does. It is used for measurements that must include the contribution of low frequencies in a single number representing the entire frequency spectrum. Sound level meters have a C-weighting network for measuring C-weighted sound levels (dBC) meeting the characteristics and weighting specified in ANSI S1.43-1997 Specifications for Integrating Averaging Sound Level Meters for Type 1 instruments." VHB did not measure noise on the "C" scale. (SPC Admin. Notice 6, Montville, Maine: Wind Turbine Generator Ordinance at p. 5; March 31, 2011 Hr'g Tr. 147:4-6.)
104. VHB conducted no independent verification of the manufacturer's specification that this particular model wind turbine (GE 1.6 MW) will have a maximum sound level of 106 dba. (March 31, 2011 Hr'g Tr. 147:17-23.)
105. The VHB Noise Evaluation used a sound computation method given in ISO-9613-2, which generally applies to computations performed in octave bands. The Noise Evaluation used a less rigorous method wherein only the overall A-weighted sound pressure levels ("SPL") were used. Overall A-weighted SPL is determined from individual octave band SPL in frequencies from 63 to 8,000 Hertz octave bands. This method is not acceptable for wind turbines like those proposed for Wind Prospect due to significant frequency and temporal characteristics of the turbines. Furthermore, the less rigorous method does not allow determination of compliance with CTDEP regulations sections 22a-69-3.2, 22a-69-3.3 and 22a-69-3.4. (SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at p. 7.)
106. VHB did not update the Noise Evaluation to account for BNE's alternative location of the northern turbine, which BNE proposes to move 160 feet south southwest of its original location. (March 31, 2011 Hr'g Tr. 141:20-142:1.)



107. Once approved, there are no noise control treatments or mitigation that can be added after the turbines are installed. The only method of minimizing noise after-the-fact is to shut the turbine down during noisy conditions. (SPC Exhibit 4(a), Pre-filed Testimony of Michael Bahtiarian dated February 15, 2011, at p. 9.)
108. Setback requirements in Quebec, Canada are specifically related to noise. (March 3, 2011, Hr'g Tr. 193:17-194:2.)
109. On or about February 17, 2011, the Cape Cod Commission in Massachusetts approved proposed regulations for the siting and review of land-based wind turbines. Included among the proposed regulations is a setback of 10 times the diameter of the turbines blades, as measured from the base to the nearest receptor. (SPC Exhibit 5(l), Supp. Pre-file Testimony of Tim Reilly, Exhibit M; SPC Admin. Notice 55, Proposed Amendments to Enabling Regulations and Regional Policy Plan for February 17, 2011 Cape Cod Commission Meeting.)

*Ice and Blade Throw*

110. Blades can be and have been thrown from wind turbines. (SPC Admin. Notice 13 and 46; SPC Exhibit 5(l), Supp. Pre-file Testimony of Tim Reilly, Exhibit N; March 3, 2011 Hr'g Tr. 203:8-11.)
111. BNE did not submit a blade throw analysis. (March 3, 2011 Hr'g Tr. 203:1-7.)
112. Ice can be and has been thrown from wind turbines. Any ice thrown from a wind turbine is dangerous. In some instances, ice may be thrown in the shape of a turbine blade. (SPC Admin. Notice 24; Feb. 24, 2011 vol. 1, 66:15 and 81:13-15; March 3, 2011 Hr'g Tr. 201:4-202:24.)
113. Attached as Exhibit 2 to the Pre-filed Testimony of Pierre Herraud is GL Garrad Hassan's "Ice Throw Risk Assessment for the Proposed Wind Farm." (BNE Exhibit 9(h), Pre-filed Testimony of Pierre Herraud with Ice Throw Risk Assessment.)
114. The Ice Throw Risk Assessment assumed a receptor size of only one square meter. (BNE Exhibit 9(h), Ice Throw Risk Assessment at 8; Feb. 24, 2011 Hr'g Tr. vol. 1, 70:7.)
115. The Ice Throw Risk Assessment assumed only 8 days of icing per year. If GL GH increased the number of icing days per year, the risk level would also increase. (BNE Exhibit 9(h), Ice Throw Risk Assessment at 8; Feb. 24, 2011 Hr'g Tr. vol. 1, 70:7; March 3, 2011 Hr'g Tr. 204:1-208:4.)
116. Appropriate setbacks can reduce the risk of injury from an ice throw event to zero. (March 3, 2011 Hr'g Tr. 172:19-21, 191:7-10.)
117. The Ice Throw Risk Assessment does not account for lift, which would cause ice to be thrown further from the wind turbine, thereby increasing the risk level. (March 3, 2011 Hr'g

Tr. 200:17-201:1; SPC Admin. Notice 22, Chatham-Kent Public Health Unit - “The Health Impact of Wind Turbines: A Review of the Science, Literature and Recommendations Concerning Public Safety and Ice Throws from Wind Turbines” at p. 3.)

*Shadow Flicker*

118. The Shadow Flicker Analysis submitted in response to Council interrogatory number 24 (1st Set) was conducted using the SHADOW module of the WindPRO software. (BNE Exhibit 2(a), Exhibit 3 VHB Shadow Flicker Analysis at p. 3; March 3, 2011 Hr’g Tr. 143:7-18.)
119. The Shadow Flicker Analysis is the first such analysis performed by VHB for any application or petition. (March 3, 2011 Hr’g Tr. at 143:5-6.)
120. VHB entered receptors as point data centrally located on each home or structure within the study area. Vacant, residential land without homes within the study area was excluded as a receptor location. (Feb. 24, 2011 Hr’g Tr. vol.1, 100:20-22.; March 31, 2011 Hr’g Tr. 113:7-11.)
121. VHB assigned a default value of one square meter (3 feet by 3 feet) to each receptor. The default value is set by the greenhouse mode of the WindPRO software. VHB could have input a larger receptor size but chose not to. (March 3, 2011 Hr’g Tr. 143:19-144:3; BNE Exhibit 5, Responses to Council Interrogatories, Set III dated February 16, 2011.)
122. The receptors are assumed to be only one meter off the ground (approximately three (3) feet). (March 3, 2011 Hearing Tr. 142:9-13, 144:14-15; BNE Exhibit 5, Responses to Council Interrogatories, Set III dated February 16, 2011.)
123. The Shadow Flicker Analysis does not assume two-story houses or structures within the study area. (Feb. 24, 2011 Hr’g Tr. vol. 1, 103:6-11.)
124. The instructions in the WindPRO software manual state that it is “sometimes questionable whether the shadow impact should be calculated for a window, the facade of the house or the full outdoor curtilage. Should a shadow in one end of the garden be added to a shadow in the other end of the garden?” (SPC Admin. Notice 71, WindPRO Manual, Chapter 4.2; March 3, 2011 Hr’g Tr. 144:4-11.)
125. One limitation of the WindPRO software is that it does not allow for any type of opacity factor. For its analysis, VHB assumed a 65-foot average tree height throughout the study area. Due to the limitation of the software, blocks of vegetation at uniform density and height are located throughout the study area. This “wall-like” vegetation keeps shadow flicker away from receptors. (Feb. 24, 2011 Hr’g Tr. vol. 1, 90:5-91:8; March 3, 2011 Hr’g Tr. 157:3-12.)
126. Eight (8) receptor locations will have more than 30 hours of exposure per year at worst case scenario. Three (3) of those receptors are expected to have more than 60 hours of exposure. VHB applied an arbitrary 50% reduction factor to account for probable case scenario. As a

result, three (3) receptors are expected to have more than 30 hours of exposure. (BNE Exhibit 5, Responses to Council Interrogatories, Set III dated February 16, 2011.)

127. The WindPRO software greenhouse mode does not provide for a 50% reduction factor; however, VHB manually input such a factor. (March 3, 2011 Hr'g Tr. 165:23-166:5.)
128. The shadow flicker "worst case" numbers determined by VHB exceed the standard that has been cited in a number of other cases for shadow flicker exposure cited in Mr. Libertine's testimony. The standard applied in other cases has been a "worst case" exposure, as it should be, because it would be unfair to allow BNE, as a property owner, to subject its neighboring residential property owners to even "worst case" exposure that is excessive. (March 3, 2011 Hr'g Tr. 163:11-165:13; BNE Exhibit 2(a), Exhibit 3 VHB Shadow Flicker Analysis; BNE Exhibit 9(b), Pre-filed Testimony of Michael Libertine dated February 15, 2011 at pp. 2-3.)
129. The Town of Dixmont, Maine, must deny an application for a wind energy facility if the applicant's shadow flicker study estimates that the duration and location of flicker will be such that there are more than 10 hours of flicker per year at any occupied structure located on a non-participating property. (SPC Admin. Notice 2, Town of Dixmont, Maine: Wind Energy Facility Ordinance at pp. 14-15.)
130. The July 2010 Rensselaerville Wind Power Committee Report states: "A field trip taken by the wind committee to the Maple Ridge Wind Farm in Tug Hill, New York in January 2011 demonstrated that even though one turbine may be turning at a frequency less than that needed to trigger photosensitive epilepsy, the contribution of two of them may cause an [sic] different sensation. This effect was experienced when two turbines were turning at about the same rotational velocity but were slightly out of phase with each other. The result was a flicker which was twice that of one turbine but still less than the frequency needed to trigger photosensitive epilepsy. Standing at the site for a few minutes caused a disorienting, dizzying sensation in at least two of the team members." (SPC Admin. Notice 1, Town of Rensselaerville, New York: Wind Power Committee Recommendation Report for Industrial Wind Power at pp. 33-34.)
131. In Jackson, Maine, each wind turbine must be designed and sited so that shadow flicker and/or blade reflection will not fall on a shadow flicker receptor more than 10 hours per year. (SPC Admin. Notice 3, Town of Jackson, Maine: Amended Wind Turbine Ordinance at pp.12.)
132. The Town of Thornidke, Maine, must deny an application for a wind energy facility if the applicant's shadow flicker study estimates that the duration and location of flicker will satisfy any of the following conditions: (1) There are more than 10 hours of flicker per year on any Non-participating Parcel, (2) There are more than 10 hours of flicker per year on any roadway, and (3) Flicker is possible at intersections of any roadways. (SPC Admin. Notice 5, Thorndike, Maine: Wind Energy Facility Ordinance at p. 12.)

133. The Town of Montville, Maine, requires that each wind turbine is designed and sited so that shadow flicker and/or blade reflection will not fall on a receptor more than 10 hours per year. (SPC Admin. Notice 6, Montville, Maine: Wind Turbine Generator Ordinance at p. 16.)
134. The WindPRO software has limitations in predicting the true impact of shadow flicker. The shadow flicker exposure won't truly be known until the wind turbines are operational. (March 3, 2000 Hr'g Tr. 166:22-167:3.)

**Respectfully submitted,  
SAVE PROSPECT CORP**

**/s/ Jeffrey J. Tinley**

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## CERTIFICATION

This is to certify that a copy of the foregoing has been delivered via electronic mail and/or first class mail, postage pre-paid on this 28th day of April, 2011 to the following:

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