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 8, 2011

PETITIONER BNE ENERGY INC.'S RESPONSES TO FOURTH SET OF SITING COUNCIL INTERROGATORIES

Petitioner BNE Energy Inc. ("BNE") submits the following responses to the Siting Council's fourth set of interrogatories, dated March 1, 2011.

36. The Petition states that the proposed project would comply with Connecticut Department of Environmental Protection air and water quality standards. Please specifically state what air and water quality standards BNE would comply with for the proposed project.

A36. The Project will fully comply with Connecticut Department of Environmental Protection ("DEP") air standards. Wind turbines produce zero emissions and thus will comply with DEP air quality standards. The Project also complies with DEP Water Quality Standards. Discharges from the proposed Project are primarily related to stormwater but also relate to a small septic system associated with a proposed maintenance building. No direct discharges are proposed to the State's surface waters. Due to the fact that many of the Surface Water Quality Standards relate to discharges into surface waters, matters of compliance are primarily related to potential secondary impacts associated with stormwater discharge to uplands in proximity to surface waters (Site inland wetlands). It should be noted that wind generation projects are significantly different from other types of electric generation projects, in that they do not require discharge cooling water or wastewaters often associated with other types of electric generation projects. In addition, the access road, parking areas and compound will be gravel surface to minimize runoff and promote infiltration and recharge of groundwater.

The applicable Surface Water Quality Standards ("WQS") include the following:

1. It is the State's goal to restore or maintain the chemical, physical, and biological integrity of surface waters. Where attainable, the level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water shall be achieved.

No direct impacts or discharges to surface waters are proposed. Stormwater discharged to uplands in proximity to the Site's surface waters will be properly treated by utilizing best management practices in accordance with the DEP's 2004 Connecticut Stormwater Quality Manual. Potential non-point source pollutants originating from erosion and sedimentation during

construction primarily consist of suspended particulate soil media that will be minimized by incorporating best management practices detailed in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control Manual. Due to the unmanned nature of the Project and low traffic it generates, the proposed development would not be considered to be classified as a land use with potential for high pollutant loads (i.e., heavy metals, hydrocarbons, synthetic organic chemicals, trash, etc.). Additional measures have been implemented by BNE to address the potential for secondary impacts to surface waters during construction, including third party erosion and sedimentation control inspections and adoption of a Spill Prevention Plan. Therefore, the Project will comply with the State's goal to maintain the chemical, physical, and biological integrity of surface waters.

2. Existing and designated uses such as propagation of fish, shellfish and wildlife, recreation, public water supply, and agriculture, industrial use and navigation, and the water quality necessary for their protection is to be maintained and protected.

As noted above, existing and designated uses will be protected by maintaining and protecting the quality of surface water both during and after construction of the Project.

18. Best Management Practices for control of non-point source pollutants may be required by the Commissioner on a case-by-case basis.

As noted above, potential non-point source pollutants originating from erosion and sedimentation during construction will be minimized by incorporating best management practices detailed in the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control Manual. Additional measures have been implemented by BNE Energy to address the potential for secondary impacts to surface waters during construction, including third party erosion and sedimentation control inspections and adoption of a Spill Prevention Plan.

19. The Commissioner shall require Best Management Practices, including imposition of discharge limitations or other reasonable controls on a case-by-case basis as necessary for point and nonpoint sources of phosphorus and nitrogen, including sources of atmospheric deposition, which have the potential to contribute to the impairment of any surface water, to ensure maintenance and attainment of existing and designated uses, restore impaired waters, and prevent excessive anthropogenic inputs of nutrients or impairment of downstream waters.

With the exception of a small septic system, which will be designed in compliance with local and state health codes and contribute negligible quantities of nitrogen and phosphorus to the Site, the Project will not result in discharge of phosphorous and nitrogen that will impair surface water or groundwater quality. Disturbed areas of the Site will be revegetated following construction with a variety of native herbaceous vegetation which will not require fertilization or maintenance with herbicides or pesticides. Therefore, the Project will not result in excessive anthropogenic inputs of nutrients or synthetic organic chemicals that might impair surface waters.

With respect to groundwater, the Site is located in an area which is mapped by the DEP with a groundwater quality off "GAA_s". The GAA and GAA_s designations are defined by the CTDEP as:

> GAA – Ground water used or which may be used for public supplies of water suitable for drinking without treatment; ground water in the area that contributes to a public drinking water supply well; and ground water in areas that have been designated as a future water supply in an individual water utility supply plan or in the Area wide Supplement prepared by a Water Utility Coordinating Committee pursuant to Title 25 of the General Statutes.
>
> GAA_s – Ground water that is tributary to a public water supply reservoir.

The designated use for GAA groundwater is described by the DEP as "Existing or potential public supply of water suitable for drinking without treatment; baseflow for hydraulically-connected surface water bodies."

The proposed operations will include a well which will be drilled on-site and withdraw water from the on-site aquifer. The well water will be used in a restroom that will be utilized by Site personnel. The restroom will discharge to a septic system that will also be located on-site. The well and septic system will be designed and constructed in compliance with local and state health codes.

No other use of groundwater or discharge to the ground or subsurface water will be created. Operation of the turbine does not require bulk storage of fuel or other hazardous materials which could be accidentally released to the environment. Normal operations will not require any discharges, other than for sanitary purposes. The potential for impacts to groundwater resulting from a release of hazardous materials during construction will be minimized through the adoption of a Spill Prevention Plan. This plan was incorporated into the plans as a result of correspondence with the Connecticut Water Company.

The proposed well and septic system will be similar to, or have less of an impact, than a typical residential dwelling. Based upon this information, the Project will comply with the Connecticut Water Quality Standards.

37. What state and/or local permits are required for the proposed project?

A37. BNE would need to complete a registration under the Connecticut General Permit for Stormwater and Dewatering Wastewaters from Construction Activities from the DEP. In addition, BNE will need to obtain the following local permits: a building permit upon approval of BNE's petition and development and management plan, a permit for the upgrade to Kluge Road, and local approval of BNE's proposed well and septic system associated with the proposed outbuilding on the Property. BNE does not anticipate requiring a DOT encroachment permit, as noted in the DOT's comments dated January 20, 2011.

38. Regarding the Mechanical Loads Analysis, why is the ground elevation data for each turbine different from the elevation data presented in the Petition? Which information is correct? How does this affect the conclusions of the Mechanical Loads Analysis?

A38. The ground elevation data used in the MLA for each turbine is the approximate elevation of each proposed location of the wind turbines that were analyzed by GE. The conclusions of the MLA are based on an analysis of the specific proposed locations and could change if the proposed locations are modified.

39. In determining compliance with DEP Noise standards, how is the emitter type determined? How is a "utility" defined by the DEP?

A39. Conn. Gen. Stat. Sec. 22a-69.2. "Classification of land according to use" defines Class A, B, and C land uses that should be applied to the DEP Noise Standards. Classifications are based on the proposed use, not on the underlying zoning of the property. The noise analysis assumed that the land use of the proposed Project was consistent with Class C land uses – a utility use. This is consistent with the current use of the Property, which is developed with a telecommunications facility.

40. Would the sound made by the proposed wind towers be subject to aerodynamic modulation because of the shear caused by the hilly terrain?

A40. The noise analysis assumed that the wind turbines would operate under normal conditions based upon data provided by the manufacturer. The proposed turbine locations have passed GE's MLA analysis using the GE 1.6-82.5 turbines at 100 meter hub heights and will operate under normal conditions based upon data provided by the manufacturer. See responses to interrogatories #1 and #6 to the Siting Council's first set of interrogatories dated February 3, 2011.

41. Is the Individual Risk referred to in Section 5.3 of the ice throw analysis, based on icing conditions occurring eight days per year with no mitigation efforts in place?

A41. Yes. The Individual Risk is the risk assumed during icing conditions assuming no mitigation efforts are in place. In addition, the Individual Risk assumes the utilization of the 100 meter blade diameter. The closest dwelling is located 251 meters (approximately 823 feet) from a turbine and the risk level associated with an ice fragment strike is once in 8,391 years assuming the wind turbines operate during icing conditions (8 icing days). Assuming the 82.5 meter blade diameter is utilized, the Individual Risk drops to once in 82,639 years for the closest dwelling and nil for all other dwellings. Additionally, assuming the 82.5 meter blade diameter is utilized, the risk of an ice fragment being thrown beyond 255 meters (approximately 837 feet) is nil.

In addition, BNE is committed to implementing mitigation efforts so that the risk level is nil. BNE is proposing an alternative location for the northern turbine so that the closest dwelling is over 900 feet from the nearest turbine so that the risk of an ice throw fragment is nil. In addition,

BNE is agreeing to mitigation efforts detailed in response to interrogatory #47 to reduce ice throw risk to the fullest extent.

42. What is generally regarded as an acceptable risk or chance of occurrence (in a percentage) for ice being thrown beyond the boundary of the host property? Is this percentage based on a guideline? If so, please specify the guideline. At what point does the risk level become unacceptable?

A42. With regard to the risk of ice being thrown or dropped by a wind turbine, natural hazards such as lightning strike risk can be considered as a suitable benchmark. Statistical information on this risk can be found on the National Weather Service's website (http://www.lightningsafety.noaa.gov/medical.htm). For illustration purpose, odds of being struck by lightning in a given year is 1 in 500,000 and odds of being struck by lightning in a lifetime (est. 80 years) is 1 in 6,250.

43. Please explain how the risk level along the vertical axis of Figure 5-3 of the ice throw study correlates with the throw and drop ranges shown in Table 5-1. In other words, what is the percentage impact probability of each risk level?

A43. There is no direct correlation between the ranges presented in Table 5-1 and the risk levels presented in Figure 5-3. The ice throw and drop ranges shown in Table 5-1 are derived from the results of the 1,000,000 simulations performed of ice fragment being thrown/dropped without taking into account the number of ice fragment per year. The typical range is the distance within which 90% of the ice fragment will be found. Exceptional range is the maximum distance an ice fragment has been calculated to be found. The Figure 5-3 presents the Risk Levels of ice fragment strike as a function of the distance from the wind turbine taking into account the number of ice fragment per year.

44. In reference to Section 5.2, icing conditions are generally described as occurring under "appropriate conditions of temperature and humidity." Please provide specific examples of meteorological conditions under which icing could occur (e.g., freezing rain, wet snow followed by rapid cooling).

A44. The described appropriate conditions are usually defined with a range of temperature: +-3ºC [4ºF] around freezing temperature 0ºC [32ºF] and a relative humidity greater than 97%. It should be noted that these conditions do not necessarily lead to ice accumulation and are usually used as a trigger for a site visit and a thorough monitoring of the wind farm output to detect ice accumulation. It is also recommended to monitor weather forecast on a daily basis to understand the risk of icing precipitation.

45. What is the GE recommended residence setback distance (radius, in feet) for icing conditions and for blade throw. Provide the actual values.

A45. This documentation has previously been provided to the Council under seal pursuant to the protective order in place in this proceeding on February 16, 2011.

Q46. Does the site meet GE's recommended setbacks for ice throws assuming an 82.5 meter rotor? Does the site meet GE's recommended setbacks for ice throws assuming a 100 meter rotor? Did BNE submit any safety analysis concerning ice throws to GE?

A46. GE's recommended setbacks are minimum setback recommendations to its customers. Generally, if the proposed layout meets GE's recommendations, then no further analysis is needed. However, if a proposed turbine location does not meet GE's recommended setback requirements, then further site specific analysis is needed to confirm that the proposed locations are safe and reliable. Based on site specific conditions, if a proposed turbine does not meet the recommended setbacks, further mitigation efforts could be needed. Assuming the 1.6-82.5 meter turbine at a 100 meter hub height, the proposed location of the southern turbine complies with GE recommended setbacks for ice throw, but the proposed location of the northern turbine is slightly inside the recommended setbacks. However, based on the ice throw analysis of GL Garrad Hassan, assuming the 82.5 meter blade diameter is utilized, the risk of an ice fragment being thrown beyond 255 meters (approximately 837 feet) is nil. Based on the site-specific analysis, BNE believes that the proposed locations of the turbines provide a proper setback for ice throw, particularly given the mitigation efforts that will be employed on the site to reduce ice throw risk. See responses to interrogatories #46 to 48. However, to eliminate any potential risk of ice throw, and in order to fully comply with GE's recommended setbacks without the need for further analysis, BNE is proposing an alternative location for the northern wind turbine that will be a minimum of 920 feet from the nearest home. The alternative location increases the setbacks of the Project and fully complies with GE's recommended setbacks for the GE-1.6-82.5 meter turbine. The proposed locations are for the GE 1.6-82.5 meter turbines at 100 meter hub heights. Additional modifications to the northern turbine location would be necessary in order to comply with GE's recommended setbacks in the event that GE 1.6-100 meter diameter blades were utilized on the site.

46. What is the step-by-step procedure that BNE would follow in the event of potential turbine blade icing? Please include techniques that would be employed to remove ice from the turbine blades.

A47. Below is the step-by-step procedure that BNE would follow in the event of potential turbine blade icing, and the techniques that would be employed to remove ice from the turbine blades.

- Wind Prospect will be monitored 24 hours per day, 7 days per week. The turbines are expected to be monitored remotely by GE and by onsite personnel during regular business hours and icing events.

- BNE and GE will be continuously monitoring weather forecasts for conditions which are favorable to producing icing events. If there is a potential for an icing event, BNE and remote monitoring staff will monitor the total aggregate output of the facility in comparison to the actual wind speed.

- The turbines operate within a specific operating range producing certain amounts of power at different wind speeds. Ice formation will affect the aerodynamics of the turbine blades and will decrease the power output of the turbines. If the power output is not within a certain range, the turbines will be automatically shut down.

- In addition to this system, the turbines will be equipped with vibration sensors which will detect imbalance. If ice does start to form on the blades, the blades could become unbalanced and a vibration will be detected by the vibration sensors. If this occurs the turbines will automatically be shut down.

- The turbines can also be shut down remotely and manually on-site.

Re-start procedure:

- If the turbines are shut down due to icing, BNE will be responsible for monitoring the turbines until the ice has fallen from the blades and the turbines can resume normal operating conditions.

- The turbines will remain shut down until BNE can assess the operating conditions of the turbine. At that time, BNE may restart the turbines provided that the area affected by possible ice falling is appropriately monitored to prevent injury to people in the area or damage to property. A designated technician will be present at the turbine site before and after an iced turbine is started up. This individual will assess the suitability of an iced turbine for any potential impact to adjacent individuals or property.

- In extreme conditions, BNE will curtail or shut down turbines in advance of subjecting the turbines to ice build up on the turbine blades and risk of ice throw. Depending on the wind direction and conditions of the icing event, turbines may be manually positioned (by yawing) out of the upwind position to reduce direct ice build up on the turbine and blades.

- There will be no specific technique to remove ice build up on the blades. It is common to wait for the ice to melt and fall from the blades. BNE will thoroughly inspect and validate the turbines to ensure that there is no remaining ice on the blades prior to restart.

47. If the proposed turbines are shut down during icing conditions, how is it determined when they should be restarted?

A48. BNE will do a thorough visual inspection and validate the totality of the ice melt before restarting the wind turbine. BNE shall remain on site for the next hour of operation to ensure there is no remaining risk.

48. Revise the ice throw analysis to include historical meteorological data for the subject area indicating icing events (at least 25 years). Please include the following additional information within the revised analysis for the 82.5 and 100 meter rotor diameters:

a. probability of ice (0.5 kg and 1.0 kg) striking a residence within 275 meters of the turbines using the area of the roof and siding within the calculation rather than a square meter.

b. **probability of ice (0.5 kg and 1.0 kg) striking each off-site parcel within 275 meters, or any portion thereof, using the area of the affected parcel within the calculation.**

A49. Historical meteorological data can be found on the National Climatic Data Center (NCDC) maintained by the US Department of Commerce. These historical data must be used with care as the measured figures may not be pertinent for your issue. However they are suitable for benchmark comparison and validation of on-site observation. The most interesting historical meteorological map found on the NCDC web site is related to the annual mean number of days with freezing precipitation. As shown on the map, Connecticut has an annual mean number of days with freezing precipitation which range from 5.5 days on its south-western part to 20.4 days in sparse northern parts of the State with center counties of the state covered by an mean value between 10.5 to 15.4.

Considering that a day with freezing precipitation is defined as a day with at least one (1) observation of freezing precipitation (not necessarily 24 hours of icing events), that the estimated eight (8) icing days are 8 X 24 = 192 hours of ice detected by an on-site meteorological mast and the relative south location of the Prospect wind farm, GL GH is in the opinion that the measured number of days of icing event is broadly consistent with long-term observations.

49. Provide photo-simulations of the proposed turbines, similar to the ones provided in Petition Exhibit J, in areas of year-round visibility, including but not limited to the locations marked on the attached map.

A50. Photo-simulations from those areas identified on the Council's map are attached hereto as Exhibit 1. Please note that this map includes the revised location of the northernmost turbine.

50. Would the proposed turbines be visible from Lee Road extending from George Street to Route 69 (generally), or from the George Road and Route 69 intersection area? If so, why were these areas omitted from the visibility analysis?

A51. As depicted on Figure 4 of the Visual Resource Evaluation Report in BNE's Petition at Exhibit J, visibility is anticipated at the George Street-Route 69 intersection and along portions of George Street farther eastward. However, there appears to be a short gap immediately east of the intersection where the proposed turbines would not be visible as a result of intervening vegetation. Moving northward from the George Street-Route 69 intersection along New Haven Road, existing vegetation to the west appears to obstruct direct lines of sight towards the turbines.

51. Provide a visibility diagram showing the percent of the turbines, including blades, that would be visible within a 1 mile radius of the proposed turbines. Use 100%, 75%, 50%, 25%, and 10% shading. Provide for both the 100 meter and the 82.5 meter rotor

diameters. Provide this information at a 1"≈500' scale and use multiple pages if necessary. Include the acreage of each shading designation.

A52. The requested map is currently being prepared and requires significant model manipulation and requires additional printing time. The map will be provided when complete.

52. Resubmit Petition Exhibit J, Figure 3 to include visibility of the turbines, including blades, at the 82.5 meter and 100 meter rotor diameters.

A53. Revised Figure 3, from Petition Exhibit J, is attached hereto as Exhibit 2 includes visibility of the turbines, including blades, at the 82.5-meter and 100-metere rotor diameters.

53. Provide the shadow flicker map (originally provided in response to Council interrogatory #35(a) at a scale of 1"≈750'.

A54. VHB plotted the shadow flicker map (originally provided in response to Council interrogatory #25(a)) at a scale of 1"=500' on a 24" x 36" size map layout in an attempt to provide a small-scale rendering of the raster image of the WindPRO software results. However, even at this enlarged view, some of the receptor locations appear to fall within shading that is not consistent with the numerical results tabulated by the software. This is because the WindPro raster image of shadow flicker is a 10-meter by 10-meter grid cell dataset that contains values based on the table report values. Due to the 10 meter resolution of the grid cells, the resulting raster image is not as accurate as the table values, and thus is used to depict a generalization of the shadow flicker results on the map. There will always be some differences between the raster map and the detailed tabular results. The tabular results are more accurate because they are calculated at an exact point, where the raster pixel represents a value that is calculated at the center of the square, and assumes that anything in the square (grid) will have the same value. As indicated above, printing the raster image map at the smaller scale does not substantially improve this resolution issue and therefore the re-scaled map has not been included. However, if the Council feels it necessary to submit, BNE is happy to provide the image as a 24" x 36" plot that would include the entire 2,000-meter study area at a scale of 1"=500'.

54. For those homes that may be exposed to shadow flicker at 30 hours per year or greater, provide a shadow flicker assessment that includes an analysis of actual conditions (window orientation, sunshine probability, wind probability, etc.)

A55. VHB does not have the proper software module to provide the requested assessment. It is important to note, however, that our Shadow Flicker Analysis does assume that windows face the turbines and various atmospheric and operations-related conditions are generally accounted for, resulting in what we believe to be an over-estimation of likely scenarios. These include percentage of sunny/cloudy days and probability of wind (both adequate for activating the turbines and proper direction to create flicker effect).

55. How do the following properties contained within the Shadow Flicker Report Probable Case Table 3 correspond to the Shadow Flicker diagram prepared for Council interrogatory #35(a)?

	Table		***Diagram***
DG	**207 N H. Rd-**	**33 hrs**	**> 40 hrs (part of building)**
BL	**198 N H Rd.**	**0**	**> 40 hrs**
A	**1 George St.**	**0**	**20-30 building**
X	**255 NH Rd**	**0**	**20-30 and 30-40 in front of building**
JN	**9 Cambridge Dr.**	**0**	**<10 building**

A56. With the exception of receptor location JN (located at 9 Cambridge Drive), the receptors noted do not physically fall within the those duration ranges. As discussed in Interrogatory response 54 above, some receptor locations (including DG, BL, A and X as identified in the Council's question) appear to fall within shaded areas representing higher duration ranges than those summarized in the corresponding Shadow Flicker Report Probable Case Table 3. However, this is due to the resolution of the grid cells that are generated for output in the raster image and do not always accurately reflect the calculated table values. For receptor location JN, we believe that the Council may have interpreted the aerial photograph of the residence structure underlying this receptor as a light lavender color (which would indicate less than 10 hours of potential shadow flicker). There are no raster pixels located along Cambridge Drive.

56. Please provide a brief overview of site restoration following completion of the proposed project, including what features will be permanently disturbed.

A57. The total area to be disturbed in the revised layout is 9.79 acres during construction. The final site disturbed area is 5.61 acres. An additional disturbed area for the proposed Facilities Support Building, parking area, access road to the parking area and sidewalks is estimated to be approximately 0.15 acres. The total disturbed area will be approximately 5.76 acres. The areas that comprise the disturbed area are the two turbine areas, ½ the width of the site access road, the proposed Facility Support Building, including sidewalks from the building to the parking area, the parking area; and the electrical collector yard. When the access road is reduced, the gravel will be shipped off-site and the remaining fill will be spread on site.

57. Volume 3, Tab N of the petition discusses the difference between Class III and Class II turbines and the need for further analysis in choosing a turbine type. Would a Class II turbine meet greater wind loads than a Class III turbine? What analysis was performed between April and November 2010 to determine the turbine type that is proposed? What that when the Mechanical Loads Assessment was done?

A58. Yes. A Class II turbine would meet greater wind loads than a Class III turbine. GE performed the Mechanical Loads Assessment in the April to September 2010 timeframe using site specific wind data provided by BNE and various other factors. See responses to interrogatories #1 and #6 to the Siting Council's first set of interrogatories dated February 3, 2011. See also, the MLA analysis conducted by GE and filed as a confidential document subject to a protective order in this proceeding.

58. When was the GE 1.6-82.5 turbine reclassified from a Class III (as stated in Volume 3, Tab N of the Petition) to a Class II (as stated in BNE's response to Council interrogatory 2) turbine.

A59. The GE 1.6-82.5 was introduced in 2009. Initially, the turbine was classified as a Class III turbine, but it is now certified as a Class II turbine as a result of the continued development of the product.

59. Most analyses submitted refer to the GE 1.6-82.5 turbine, when was the GE 1.6-100 turbine studied? Is it part of the GE 1.6-82.5 "family" of turbines? Please explain the reason for the statement at the end of BNE's response to Council interrogatory 2 that "it is unlikely that GE's 1.6-100 Class III turbine would be suitable for this Site."

A60. BNE is proposing to install two GE 1.6-82.5 turbines at 100 meter hub heights for Wind Prospect. However, due to the ever changing wind turbine technology advancements, BNE is requesting approval for up to 100 meter diameter blades in the event GE makes further changes to the GE-1.6-82.5. The GE 1.6-100 turbine is part of the GE 1.6-82.5 family of turbines. The primary difference is that the blades of the GE 1.6-100 turbine are longer 48.7 meters (approximately 160 feet) versus the blades of the GE1.6-82.5 model which are 40.3 meters (approximately 132 feet). The longer blades increase the swept area of the blades, increasing the power curve and electricity production capability of the turbine. GE conducted an MLA analysis for the GE 1.6-82.5 turbines at 100 meter hub heights and determined that they are suitable for the Site. However, based on that analysis, GE does not believe that the GE 1.6-100 model would pass the MLA analysis and be suitable for the Site.

60. How does the cut-in speed of a GE 1.6-82.5 compare with the cut-in speed of a GE 1.6-100? Provide all information shown in Table 1 of Tab N, Volume 3 of the petition for the GE 1.6-100.

A61. The cut in speed or the speed at which the blades would begin to produce electricity for the GE 1.6-82.5 is 3.5 m/s. Similarly, the cut in speed for the GE 1.6-100 is also 3.5 m/s. However, 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. Enclosed are the power curves for the two GE 1.6 MW wind turbine models. The documents are confidential and being filed subject to protective order.

61. BNE's response to Save Prospect interrogatory 19 discusses safety and reliability statistics of the GE 1.5 series. Do you have the same information for the GE 1.6 series?

A62. GE's 1.6-82.5 model was designed and built on the success of the GE 1.5-77, changing only what was required to increase customer value. The 1.6-82.5 model provides a 15% increase in swept area relative to the 1.5-77 and greater energy capture. With the use of advanced load controls, the 1.6-82.5 can be sited in IEC Class II wind regimes.

Enhancements to GE's 1.6-82.5 wind turbine include an improved gearbox design and an upgraded pitch system. GE's 1.6-82.5 wind turbine utilizes GE Energy's proven Mark* VIe controller and advanced diagnostic capability to increase troubleshooting efficiency. The enhancements to the GE 1.5 series improved the energy production capabilities of the turbine. Additionally, since the 2007 model year the median turbine availability (the percentage of time the turbine is ready to make power) has been above 97.9% with 2010 model year turbines having a median availability of 99.3%.

62. What is the diameter of the base of the tower? What is the diameter of the tower structure just below the nacelle?

A63. The specifications of the GE-1.6-82.5 at 100 meters is being filed as a confidential document subject to the protective order in this proceeding.

63. Referring to BNE's response to Save Prospect interrogatory 41, please explain what type of intermittence would trigger protection and/or a transfer trip, and provide an example.

A64. During periods of relatively low loads on the circuit it is possible for generation from the proposed Project to exceed the total circuit load. During feeder failure / fault due to the loss of the circuit or transformer, a transfer trip scheme would be used to prevent the possibility of the Project being islanded with customer loads.

64. Referring to BNE's response to Save Prospect interrogatory 58, please provide any relevant data from 2009 and/or 2010.

A65. BNE requests additional clarification from the Council as to what data is specifically requested in this interrogatory.

65. Does the ground detectors used in the bat analysis in the petition provide a reliable count to be used in the estimation of the number of bats that would die from the construction and operation of the wind turbines? Would elevated bat detectors provide more accurate information for the analysis?

A66. Echolocation pass data cannot distinguish among individuals, and therefore the data do not provide an enumeration of the number of bats present at a particular time. As a result, indices of echolocation activity are unlikely to provide precise estimates of eventual fatality levels. What indices of echolocation activity can provide are relative estimates of risk, and this estimate is strengthened by considering other site- and region-specific factors that may influence the magnitude of fatalities to bats.

While developers have generally been encouraged to collect data at both ground and tower-mounted heights to aid in determining which provides a better estimate of relative risk (for

example the PA guidelines, Kunz et al. 2007),[1] it is not yet clear whether elevated or ground-based detectors are better suited to making assessment of potential fatalities. Based on the large pool of echolocation activity data collected by WEST and others (eg, Arnett et al. 2006, Redell et al.)[2] throughout North America, it is clear that echolocation activity collected at higher elevations (eg, on met towers) is generally lower than rates observed from ground-based detectors, though rates of low-frequency passes tend to be proportionally higher at elevated detectors. In southern Alberta, Baerwald and Barclay (2009) found a tentative relationship between echolocation activity of migratory bat (hoary and silver-haired bats) recorded at 30 meters and fatalities of those species, though they found no difference between activity of migratory bats recorded at ground level and activity at 30 meters when data were pooled across sites. [3]

66. In the pre-filed testimony of Thomas Wholley on page 1, he states that he has worked on air quality and noise permitting for various turbines in multiple states. Is any of this permitting experience with wind turbines? What type of turbines is this experience related to? How are the computer data centers referred to in the second to last sentence of Question 2 of this document, related to electricity generation?

A67. The proposed Prospect Wind Turbine project is Mr. Wholley's first wind turbine project. However, Mr. Wholley has extensive experience in conducting noise analysis of electrical power generating engines (generators). The noise analysis follows the same process. The manufacturer's sound level data for the generators are projected to receptor locations and the results are compared to State noise impact standards. The computer data centers are facilities that maintain data for internet, banking, files that need electrical back up power that is provided by generators. The facilities are frequently located adjacent to residential areas that need to be evaluated.

67. What is the cost per foot for each foot the electric line would extend to the interconnection point? Would the cost per foot increase if the electric line had to extend over a greater distance from the turbines to the interconnection point?

A68. The need and for a new line extension and the type of extension has not been finalized at this time. Consequently, the cost per foot has not been identified.

---

[1] Kunz, T.H., E.B. Arnett, B.M. Cooper, W.P. Erickson, R.P. Larkin, T. Mabee, M.L. Morrison, M.D. Strickland, and J.M. Szewczak. 2007a. Assessing Impacts of Wind-Energy Development on Nocturnally Active Birds and Bats: A Guidance Document. Journal of Wildlife Management 71(8): 2449-2486.

[2] Redell, D., E. B. Arnett, J. P. Hayes, and M. M. P. Huso. 2006. Patterns of pre-construction bat activity determined using acoustic monitoring at a proposed wind facility in south-central Wisconsin. A final report submitted to the Bats and Wind Energy Cooperative. Bat Conservation International. Austin, Texas, USA.

[3] Baerwald, E.F. and Barclay, R.M.R. 2009. Geographic variation in activity and fatality of migratory bats at wind energy facilities. Journal of Mammalogy 90(6): 1341-1349.

68. What additional electrical equipment would be required to extend the distance between the turbines and the electrical interconnection?

A69. Presently, BNE is engaged with CL&P to interconnect at Kluge Road with consideration of circuit conductors, circuit breakers, reclosers, relays, metering, and monitoring devices. This equipment and circuit conductors would all be considered for the interconnection and any interconnection extension.

69. If the proposed turbines were moved farther into the property, at a lower elevation, would the turbines have to be taller to achieve the same generation efficiency? If so, how much taller?

A70. Yes. If the proposed turbines were moved farther into the property at a lower elevation, the turbines would have to be taller to offset the decrease in elevation in order to achieve the same generation efficiency. For example, if a turbine location was fifty feet lower in elevation, then the tower height would have to be fifty feet taller to achieve the same generation efficiency. This is due to the wind shear on the site which results in greater wind resources at higher elevations. It should be noted that the GE-1.6 comes with two options for tower heights, 80 meters and 100 meters. As such, if the turbines are located further down the hill at lower elevations it would not be possible to increase the height of the turbines to offset the decrease in elevation. As a result, the capacity factors of the turbines would be reduced resulting in less electricity production on the site. A reduction in capacity factors could compromise the viability of the Project.

70. Is the Connecticut Water Company property adjacent to the site designated as Class I, Class II or Class III? If it is Class III, what is the feasibility of moving the proposed turbines onto that property?

A71. It is BNE's understanding that the Connecticut Water Company property adjacent to the site is designated as either Class I or Class II property. Therefore it would not be feasible to move the proposed turbines onto that property.

Respectfully Submitted,

By: /s/ Carrie L. Larson

Attorney For BNE Energy Inc.
Carrie L. Larson, Esq.
clarson@pullcom.com
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702
Ph. (860) 424-4312
Fax (860) 424-4370

Certification

This is to certify that a copy of the foregoing has been mailed this date to all parties and intervenors of record.

Mayor Robert Chatfield
Town Office Building
36 Center Street
Prospect, CT 06712-1699

Jeffrey Tinley
Tinley, Nastri, Renehan & Dost LLP
60 North Main Street
Second Floor
Waterbury, CT 06702

Thomas J. Donohue
Killian & Donohue, LLC
363 Main Street
Hartford, CT 06106

John R. Morissette (electronic format only)
Manager-Transmission Siting and Permitting
The Connecticut Light & Power Company
P.O. Box 270
Hartford, CT 06141-0270

Christopher R. Bernard (electronic format only)
Manager-Regulatory Policy (Transmission)
The Connecticut Light & Power Company
P.O. Box 270
Hartford, CT 06141-0270

Joaquina Borges King (electronic format only)
Senior Counsel
The Connecticut Light & Power Company
P.O. Box 270
Hartford, CT 06141-0270

Nicholas J. Harding
Emily A. Gianquinto
Reid and Riege, P.C.
One Financial Plaza
Hartford, CT 06103

Andrew W. Lord
Murtha Cullina LLP
CityPlace 1
185 Asylum Street
Hartford, CT 06103

Eric Bibler
31 Old Hyde Road
Weston, CT 06883

/s/ Carrie L. Larson
Carrie L. Larson

ACTIVE/72955.3/CLARSON/2396963v1