

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

**Petition of BNE Energy Inc. for a
Declaratory Ruling for the Location,
Construction and Operation of a 4.8 MW
Wind Renewable Generating Project on
Winsted-Norfolk Road in Colebrook,
Connecticut (“Wind Colebrook North”)**

Petition No. 984

April 27, 2011

SUPPLEMENTAL PRE-FILED TESTIMONY OF MICHAEL S. KLEIN

Q20. You have previously filed testimony in this proceeding. Why are you submitting this supplemental testimony?

A20. On the day my pre-filed testimony was due, I received information from the petitioner, BNE Energy Inc. (“BNE”), including a revised set of site plans, a new stormwater management plan, a new erosion control plan, pre-filed testimony of some of its witnesses and interrogatory response related to my pre-filed testimony. I am now submitting this additional pre-filed testimony to provide the Council with my analysis of this new information.

Q21. What did your review of the revised plans and other new documents filed in support of this petition reveal?

A21. I determined that none of the numerous flaws in the baseline natural resources inventory have been corrected, despite the petitioner’s tacit admission of these flaws, as evidenced by:

- Hiring an ecologist/herpetologist to conduct additional baseline surveys.
- Committing to additional avian and bat studies.

Unfortunately these additional studies will not be completed until late fall of 2011 at the earliest. Therefore, their results will not be available to inform the impact analysis. This impact

assessment remains fundamentally flawed by the deficiencies in the baseline data collection. Because of those flaws; the conclusions reached by BNE are unsubstantiated.

Q22. What is your general conclusion, after more detailed review of the revised plans and supporting documents recently submitted in support of the petition?

A22. The additional studies that BNE has commissioned and the extensive plan revisions constitute a tacit admission that the plans previously filed were inadequate, and would have resulted in substantial adverse impacts to wetlands and watercourses from erosion and sedimentation. However, the conclusions presented in Vol. 1 of the Petition remain unsubstantiated, particularly with respect to indirect and cumulative impacts of site development, because BNE and its consultants failed to provide adequate data that would permit an accurate site assessment. The revised plans are a substantial improvement but construction of the project as shown on the plans result in adverse impacts and destruction of wetlands, watercourses, and natural resources of the state. There are still aspects of the plans that do not conform to the CT DEP's 2002 Soil Erosion and Sediment Control Guidelines, the CT DEP's 2004 Stormwater Quality Manual or the CT DEP Stormwater General Permit.

Q23. Please elaborate on those conclusions.

A23. Desk-top methods and extrapolations from nearby parcels are not a substitute for site-specific surveys. The level of detail in the baseline data provided with the environmental assessment should be conservative due to the many unknowns that exist with respect to wind power. In this case, no detailed, baseline surveys of existing conditions were completed, other than a wetland delineation. The data that were provided were not collected at the site, and suffer from substantial methodological problems which invalidate the results and any conclusions as to impacts that are based on those results.

Q24. What are your most significant findings?

A24. First, by retaining Dr. Michael Klemens to conduct additional biological surveys, the petitioner has made a tacit admission that the ecological baseline data collection was inadequate. The timing and duration of many of the surveys was not sufficient to identify the resources present, let alone describe and evaluate potential impacts. This failure is inexplicable and significant.

Second, that the revised site development plans still do not provide acceptable environmental controls. The construction will result in direct and indirect adverse impacts on wetlands, watercourses and other natural resources from filling of wetlands, erosion, sedimentation, and degradation of water quality. The direct adverse impact result from wetland filling and removal of over 10 acres of mature forest, including the acreage which has already been clear cut to install the meteorological tower.

Q25. Will the additional biological surveys that BNE's consultants plan to conduct be sufficient to address the lack of adequate baseline data?

A25. No. The results of any complete survey cannot be available on a timeline that would allow the petitioner to alter the plans or re-evaluate impacts during the Siting Council's review process. Although preliminary data on early season amphibian breeding maybe available, a full characterization of the herpetofauna, including a survey for the state-listed Smooth Green Snake and Spring Salamander, cannot be completed before the hearing process ends. The significant deficiencies in the avian and bat surveys cannot be thoroughly addressed until next fall. Finally, the botanical survey for the CT-listed Great St. John's Wort cannot be completed until mid-summer. Spring Salamander is especially vulnerable to indirect impacts from the proposed construction, since the large scale clearing and grading has a significant potential to disrupt springs and raise water temperatures.

Q26. Do the revised plans comply with sound environmental design practices, the CT DEP Stormwater General Permit, the CT Soil Erosion and Sediment Control Guidelines, the CT DEP Stormwater Quality Manual, and the CT Surface Water Quality Standards?

A26. No, they do not. The deficiencies in the baseline data collection remain. The revised plans acknowledge the inadequacy of the topographic data, indicating that further design cannot be completed without such a survey. On a steeply sloping site, with significant cuts and fills required, and wetland and property line constraints, this omission is critical.

The revised plans for construction of the access road, crane road, blade and tower assembly areas still do not meet best management practices and do not meet the requirements of the CT Soil Erosion and Sediment Control Guidelines, the CT DEP Stormwater General Permit for Construction and Dewatering Wastewaters, the CT DEP Stormwater Quality Manual, or the CT Surface Water Quality Standards

The Stormwater Pollution Prevention Plan does not meet the following portions of the CT General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities. Implementation of the plans as submitted is reasonably likely to result in violation of the CT Surface Water Quality Criteria for color, suspended and settleable solids, silt or sand deposits, turbidity, phosphorus, and benthic invertebrates.

Q27. What is your opinion of BNE's revised site plans, stormwater pollution prevention plans and erosion control plans?

A27. The erosion and sediment controls and stormwater treatment measures remain inadequate. The plans still do not fully comply with the minimum standards for erosion control and stormwater management. A site like this, that (according to the applicant) contains high quality wetland, wildlife and biological resources, merits the highest level of controls. Significant erosion will still occur. The eroded sediments will be transported to, and pollute,

high quality wetlands and watercourses, adversely affecting fish and in-stream biota. The sediment will degrade the wetlands and destroy fish habitat and other natural resources, in violation of the water quality standards of this State.

Q28. Please describe the basis for your opinion that BNE's revised plans still do not comply with Connecticut's water quality standards.

A28. The lack of an accurate topographic survey for the entire site means that the plans are still preliminary in nature. The supporting documentation suffers from technical deficiencies. The conclusions with respect to absence of direct or indirect wetland impacts are incorrect. The proposed development of the site does not conform to the 2002 CT Soil Erosion and Sediment Control Guidelines, the CT DEP 2004 Stormwater Quality Manual, the CT DEP's Stormwater General Permit, or the CT Surface Water Quality Standards.

The plans still contain slopes steeper than 3:1 and higher than 15' do not contain reverse slope benches. These slopes will erode and discharge sediment to wetlands and watercourses.

The access road still lacks proper permanent controls to protect the wetlands immediately adjacent to it. The stone check dams proposed in the roadside ditches do not meet the standards for spacing or height. Stormwater will erode the unpaved road surface and the drainage ditches, and the sediments will be transported to the wetlands.

Not all of the flows from drainage outfalls are conveyed to a stable outlet. These flows will re-concentrate on the sloping hillside, and cause erosion, resulting in sedimentation and destruction of wetlands and watercourses.

The revised plans still do not represent best management practices for control of non-point source pollutants, such as sediment, phosphorus and nitrogen and will result in discharges that degrade the existing high quality streams at the site adversely affecting aquatic life, benthic organisms, and wetlands, in violation of the CT Surface Water Quality Standards.

Q29. What other deficiencies still remain with regard to stormwater and erosion control?

A29. The grading and erosion control plans are remain incomplete in several ways:

- With the exception of the proposed wetland crossing, the plans are still based on topographic information of unknown accuracy, which was not field verified and was not intended for use in engineering design. Use of this unverified information is not in accordance with best management practices, the 2002 CT Soil Erosion and Sediment Control Guidelines and the CT DEP Stormwater General Permit.
- No measures for sediment control from dewatering discharges are shown, despite the wetland crossing, which will require excavation below the water table, and numerous deep cuts. These measures are required under the CT Soil Erosion and Sediment Control Guidelines and the CT DEP Stormwater General Permit.
- The spacing of the stone check dams on the erosion control plans (Sheets C-200-204 remains greater than the maximum permitted as per the detail on Sheet C-502 and the CT Soil Erosion and Sediment Control Guidelines.
- There are still numerous cases on Sheets C-200-204 where the silt fence and hay bale barriers shown do not conform to the detail on Sheet C-502, the CT Soil Erosion and Sediment Control Guidelines or the CT DEP's Stormwater General Permit.
- The soil stockpile area now shown will not be accessible during the initial phases of construction. It is 1500' into the site, requires a wetland crossing for access and is located on a hillside that slopes approximately 10%, and will be subject to run-on from a large upslope area.

- No subsurface information has been provided to support the design of the permanent water quality measures. This information, required by the CT DEP Stormwater Quality Manual, includes field permeability testing, and test pits or soil borings to verify depth to seasonal high groundwater and depth to bedrock, at the location of each infiltration facility.
- No pre-treatment is provided for the infiltration trenches, as required by the CT DEP Stormwater Quality Manual.
- Vegetative buffers are not provided for the trenches. Monitoring wells are not provided for the infiltration trenches as required in the CT DEP Stormwater Quality Manual.
- There is no provision for intercepting and conveying overflow from the infiltration trenches to a stable outlet, as required by the CT DEP Stormwater Quality Manual.
- No outlet protection is shown for TST 1, which discharges onto an 8-10% slope, in violation of the CT Soil Erosion and Sediment Control Guidelines. The outlet protection NE of Turbine #3 discharges onto a moderate slope. Flows will re-concentrate and will cause erosion.
- The physical arrangement of the elements around the Turbine require overlapping tower lay down and blade assembly areas. This would require that the tower be erected prior to assembling the blades, which would result in conflicts in final assembly.
- The temporary diversion swale SSE of Tower #2 discharges onto a slope that is steeper than 10%. Flows will re-concentrate and cause erosion.
- The construction sequence for the culvert installation at the stream crossings calls for a temporary stream crossing and a timber bridge. No details are provided, but

these structures can result in impacts to stream and wetlands. Temporary wetland impacts must be fully documented and detailed.

- Restriction of the construction of the permanent wetland crossing to a 60 day period will substantially constrain construction schedule or result in long term use of the temporary crossings. Although no details are provided, these temporary crossings typically are not designed to accommodate large storm events. Their presence at the site for a substantial period of time increases the likelihood that a significant storm event will occur, resulting in the failure of the crossing and adverse impacts to the downstream wetlands and watercourse.
- No details have been provided for dewatering of the culvert foundations in the wetlands. This operation has a reasonable likelihood of causing pollution of wetlands and watercourses, and these details are required under the CT DEP Stormwater General Permit.
- No controls are shown to protect the watercourse downstream of the crossing during construction of the culverts.
- There are no standards for determining success of the proposed restoration, nor is there any allowance for necessary remedial measures that may be required. For example, invasive species control is very important on a site where large areas of soil will be exposed, yet there are no plans for monitoring for their presence or a contingency if invasion occurs.
- There are no financial assurances securing the restoration, nor is the restored area subject to any restrictive easement guaranteeing its preservation in perpetuity. This is one of the major flaws in BNE's argument that its plan provides some wildlife benefits by elimination of other development.

- The total amount of earthwork has not been provided; only the net (cuts minus fills). The 4950 cubic yards of excess material is proposed to be used on-site with no indication of where this material will be deposited, or how it will be stabilized.
- There is no estimate of the volume of topsoil required for restoration or an analysis of the sufficiency of the on-site topsoil, in terms of volume and fertility.
- There is still no grading shown for the downslope blade at each assembly area. If the blade is to be cantilevered, it seems likely that some form of support will be required, given the 120+' length of the blade that would be cantilevered.
- The Post construction grading plans are incomplete. No grading is shown for the stormwater basins, which are located on steep slopes and will likely extend off the subject property. The clearing limits do not correspond to the ponds shown.
- No documentation has been provided for the assumptions used in the design calculations for the temporary sediment traps, permanent diversions, outlet protections, permanent stormwater basins, etc. Given that some of the assumptions are demonstrably incorrect (as shown above), documentation should be provided for all of the design assumptions.

Q30. Are the revised plans reasonably likely to result in unreasonable pollution, impairment or destruction of wetlands, water quality, wildlife, or the natural resources of the State?

A30. Yes. Although many improvements have been made, there are still deficiencies in the plans. Construction of the project in conformance with the revised plans will result in erosion and subsequent discharge of sediment to the wetlands and watercourses on and adjacent to the site. The result will be smothering of vegetation, loss and degradation of wetland habitat, and impairment of water quality.

The plans still do not adequately address site restoration or post-construction stormwater management. The measures for long-term water quality treatment do not meet the requirements of the CT DEP Stormwater Quality Manual or the CT DEP Stormwater General Permit. The site restoration plan is incomplete. Based on my experience at other sites in Connecticut, these deficiencies will result in additional erosion and long-term sedimentation and pollution of wetlands and watercourses. The plans are reasonably likely to result in unreasonable water pollution, impairment of wildlife habitat, and destruction of wetlands and other natural resources.

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

April 27, 2011
Date



Michael S. Klein

CERTIFICATION

I hereby certify that a copy of the foregoing document was delivered by first-class mail
and e-mail to the following service list on the 27th day of April, 2011:

Carrie L. Larson
Paul Corey
Jeffery and Mary Stauffer
Thomas D. McKeon
David M. Cusick
Richard T. Roznoy
David R. Lawrence and Jeannie Lemelin
Walter Zima and Brandy L. Grant
Eva Villanova

and sent via e-mail only to:

John R. Morissette
Christopher R. Bernard
Joaquina Borges King


Denise L. Myron