

TAB 4

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

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

Docket/Petition No. 980

February 14, 2011

Prefiled Testimony of Michael S. Klein

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

My name is Michael S. Klein. My business address is Environmental Planning Services (EPS), 89 Belknap Rd., West Hartford, CT.

2. What is your position with EPS?

I am a principal of EPS.

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

Yes. We have been retained by Save Prospect Corp.

4. What is your field of expertise?

I am a biologist and soil scientist. I have 34 years of experience in biological and wetland surveys, erosion and sediment control, impact assessment and mitigation design. My clients have included private developers, town and state agencies, and citizen groups. I have served on a municipal Inland Wetlands and Watercourses Commission and a Planning and Zoning Commission.

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

EPS was asked to review the potential impacts of the proposed BNE Prospect Wind Turbine project on wetlands and watercourses, water quality, and bio-diversity.

When I was first contacted about this project, I responded that I would undertake an initial review and that if there were no significant issues I would decline to participate further.

6. What did your review determine?

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

EPS was asked to review the potential impacts of the proposed BNE Prospect Wind Turbine project on wetlands and watercourses, water quality, and bio-diversity.

When I was first contacted about this project, I responded that I would undertake an initial review and that if there were no significant issues I would decline to participate further.

6. What did your review determine?

Our review determined that there are numerous flaws in the methodology used to assess the impacts of the proposed wind turbines and that because of those flaws the conclusions reached by the Petitioner are unsubstantiated. Furthermore, construction of the project as shown on the plans filed with the Siting Council will result in substantial adverse impacts to wetlands, watercourses and water quality.

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

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

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

The trade-offs and impacts should be identified and explicitly recognized and incorporated into a review process that balances our energy needs against impacts on wetlands and watercourses, bio-diversity, runoff, and water quality. Accurate resource data, collected and interpreted by the appropriate natural resource scientists, is necessary to achieve a balanced outcome. Data collection standards can be tailored to facility type and size, but desk-top methods are not a substitute for site-specific surveys. The level of detail required should be conservative due to the many unknowns that exist with respect to wind power.

8. Did the study, investigation and review process of BNE in this case meet the appropriate standards?

No. It is my judgment that the wetland and biological surveys submitted by the applicant are inadequate to allow the Siting Council to make a reasoned judgment. The timing and duration of many of the surveys was not sufficient to identify the resources present, let alone describe and evaluate potential impacts.

Given the availability of specific technical guidance for proper protocols for pre-construction biological surveys in neighboring NY and NJ, it is inexplicable that proper

baseline surveys were not conducted. For example, no in-season, on-site surveys for vernal pools, mammals, reptiles, or amphibians were conducted. Wood Frog (*Rana sylvatica*), a vernal pool obligate species, was identified at the site, yet no in-season amphibian surveys were conducted at the site, nor was an assessment made of the terrestrial habitat value of the site for vernal pool obligate species which may be breeding in nearby offsite wetlands. The CT DEP recommendation for an on-site survey for the state-listed Eastern box Turtle was ignored. There are more significant problems with the bird and bat surveys.

The erosion and sediment control plans are inadequate. The site is a moderately to steeply sloping drumlin. Erection of each of the turbines requires construction of large, level pads for assembly of the blade and tower on the hillside, as well as an access road to the northern turbine. The cut and fill slopes shown are much steeper than what is permitted under the CT Guidelines for Soil Erosion and Sediment Control. These slopes cannot be stabilized as shown. In some cases, these slopes are shown as ending at the wetland boundary, without even the necessary distance to install silt fencing outside of the wetlands. It will not be possible to build or stabilize these slopes without adverse impacts to the wetlands.

The gravel access road is a long, continuous slope down to the north. Stormwater will attain significant velocities as it flows downslope. This will erode the road surface and the drainage ditches. The berms forming the sediment basins proposed to treat this water are themselves steeply sloping, inadequately stabilized, and will erode. The concentration of drainage downslope of these basins (even if they do not fail) will cause erosion on the slopes as shallow concentrated flow develops. The result will be sedimentation and destruction of wetlands and watercourses. There is also a reasonable likelihood of water quality impairment in the New Naugatuck Reservoir, which is located downstream of, and immediately adjacent to the site. Sediment and nutrients that reach the wetlands will be transported into the south-draining watercourse and then to the reservoir.

There will be short and long term changes in runoff and recharge as a result of drainage measures necessary to control stormwater. As noted above, this will result in erosion but also

has a high potential to alter the hydrologic regime of the wetlands, which are supported by groundwater seepage over the hardpan. The deep cuts proposed will penetrate the hardpan and intercept the high water table.. These cuts will be subject to seepage at the hardpan layer and as shown, will be difficult to impossible to stabilize. The diversion trenches and roadside ditches will intercept ground water and runoff, altering the existing flows and seepage that supports the wetlands.

The plans and Petition are incomplete in many ways.

- o No soil stockpile area is shown for the northern turbine.
- o 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 is permanent and should be added to the totals shown on the plans.
- o The dewatering treatment detail is not shown.
- o The total volume of earthwork (cut and fill) required to execute the plans is not shown.
- o There is no indication if the earthwork balanced. If not, the net import or export should be specified, so that traffic impacts can be evaluated.
- o Specialized materials (bank-run gravel, process gravel, rip-rap, etc.) will be required, which will have to be imported to the site. Without an estimate of the required volumes, it is not possible to evaluate traffic impacts.
- o 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. If there is a surplus, will it be exported from the site? If there is a deficit, will the required import adversely affect project economics.
- o The plans do not show how the discharge from the temporary diversion ditch will be conveyed to the roadside ditch @ Station 1+ 75. The slope shown is very steep and the plans do not call for any special measures to prevent erosion.

- o There is no grading shown for the downslope blade at each assembly area. If all three arms must be level to within 6" as the plans seem to indicate, then the area of disturbance shown is far too small and will likely extend into the wetland. If two arms of the blade are to be assembled and then the blade rotated, a substantial area of wetlands will be affected by tree removal..
- o The method of stabilization for the construction access road stormwater ditches and side slopes is not specified. The side slopes will experience substantial erosion which will eventually discharge to and pollute the wetlands and watercourses.
- o No stable outlet is shown for the sediment basins.
- o No measures are included in the design to control seepage and stabilize cut slopes in areas with a hardpan, or a seasonal high water table. Without such measures, significant erosion and slumping will occur.
- o There is no design, detail, or construction sequence for the level spreader called out on Sheets C-310 and C-311.
- o There are no plans for temporary control of stormwater during the time period required to complete the grading and develop stable temporary vegetation. Runoff will cause erosion on these slopes if they are not properly protected. No such measures are shown.
- o Similarly there are no details for how stormwater will be handled on the downslope side of the permanent access road. If it is to be sheeted off the re-seeded downslope side, the plans do not address the method of stabilization while grow-in occurs.
- o There are no plans or assurances for determining the success of the proposed restoration efforts, 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.
- o There are no calculations demonstrating the adequacy of the soil stockpile area or the sizing of the sediment basins.

- o The plans do not address long term stormwater quality control. If left untreated, degraded stormwater will pollute and impair the wetlands and the downstream reservoir. As an industrial use, there are very stringent requirements for permitting and monitoring which are not even acknowledged or addressed in the Petition.

There are numerous conflicts on the plans. For example:

- o The general erosion control notes limit earthen slopes to 2:1 or shallower, without special design and certification by a geo-technical engineer. The plans contain many instances of slopes much steeper than 2:1 without the required certified design
- o Sheet C-201, Note 9 limits the grading to slopes no steeper than 2:1. The grading for the Tower assembly area on that sheet shows a 1:1 slope. This also conflicts with the Erosion and Sediment Guidelines.
- o The erosion control barrier downslope of the access road between at least Station 1+00 and 5+00 (400') does not conform to the requirements of the Erosion Control Manual or the details shown on the plan and will result in erosion and degradation of water quality..
- o The grading shown for the sediment basins does not conform to the details in the Erosion and Sediment Control Plan. Grading the basin south of the lower blade assembly area in accordance with the detail, will most likely result in a direct impact on the wetland from vegetation removal, grading and filling. Grading in accordance with the plan sheets will result in an embankment that is too steep to be stable. Furthermore, no stabilized outlet is shown. This will result in erosion, adverse impacts to wetlands, and degradation of water quality. In summary, the Petition is deficient. The plans are incomplete and the supporting documentation suffers from many 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 CT Guidelines for Erosion and Sediment Control. As shown, the construction will result in erosion and subsequent discharge of sediment to the wetlands and watercourses on and adjacent to the site. It also appears likely that clear cutting in the wetlands will be required to assemble one of the rotors.

The result will be smothering of vegetation, loss and degradation of wetland habitat, and impairment of water quality.

The plans also do not adequately address site restoration or post-construction stormwater management. No measures for stormwater water quality treatment, monitoring, or record-keeping are proposed, in violation of CGS 22a-430b.. The site restoration plan is incomplete and does not adequately address conveyance of collected stormwater to a stable outlet. Based on my experience at other nearby sites in Connecticut, these deficiencies will result in additional erosion and long term sedimentation and pollution of wetlands and watercourses. The plans and narrative describe activities that are regulated under the CT Inland Wetlands and Watercourses Act (CGS 22a-46), but the Petition does not acknowledge the applicable permitting requirements. Since the plans do not comply with the Connecticut Guidelines for Soil Erosion and Sediment Control, they are not eligible for registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (CGS 22a-430b). The plans are reasonably likely to result in unreasonable water pollution, impairment of wildlife habitat, and destruction of wetlands and other natural resources.