

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

January 21, 2010

FINAL COMMENTS

SUBJECT: MINUTEMAN SAVOY WIND PROJECT
EOEA#: # 14513
LOCATION: SAVOY
ESTIMATED COST: \$35,000,000
REVIEW TYPE: EXPANDED ENVIRONMENTAL NOTIFICATION FORM
PROPONENT: MINUTEMAN WIND, LLC.
COMMENTS DUE: JANUARY 22, 2010

PROJECT DESCRIPTION:

Minuteman Wind, LLC proposes to develop a 12.5 MW wind farm on a 293-acre parcel of private land on West Hill in Savoy, Massachusetts. The proposed wind farm consists of five (2.5 MW) wind turbines, mounted on white monopole towers with cement foundations each with a hub height of two hundred sixty-two (262') feet and approximately four hundred twenty (420') feet from natural grade to the blade at its highest point. Each wind turbine will be accompanied by an enclosed power converter and generator step-up transformer. An 800 square foot maintenance building will also be located at the top of the hill. A single access pitched gravel road will run approximately 5,000' from Harwood Road to the top of the hill and then to each wind turbine. The construction of the access road will likely require a significant amount of fill to be brought onto the site.

The five wind turbines will be interconnected through an underground collection circuit routed from turbine to turbine along the side of the gravel access road. At the top of the hill, the circuit will be brought above ground and placed on 40' tall utility poles leading to an on-site electric substation bordering Harwood Road. The 1,280 square foot electric substation will be located in a 6,400 square foot clearing along Harwood Road. Approximately 3,000 feet of new utility poles and lines (15 new poles) will need to be installed along Harwood Road to connect the project to existing utility infrastructure.

A 800 square foot garage/utility shed will also be constructed at the base of the site adjacent to Harwood Road. Two staging or laydown areas will be created. A 71,875 square foot area at the top of the hill will need to be cleared and a 9,500 square foot staging area at the bottom of the hill along Harwood Road, has already been cleared and graded due to past logging activities. The staging areas will be revegetated once construction is complete.

The proposed project is expected to produce enough electricity to power 3,000 homes and will displace an estimated 11,730 tons of carbon that would be produced each year by a conventional fossil-fueled power plant producing the same electricity.

MEPA ENF thresholds being exceeded include land (> 25 acres of disturbance) and state action (Minuteman Wind, LLC received financial assistance from Massachusetts Technology Collaborative).

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

CONSIDERATIONS AND POTENTIAL ISSUES:

Consistency with Local and Regional Plans

The development of wind energy in the Town of Savoy is consistent with its adoption of a new wind zoning bylaw in 2008. The wind energy zoning bylaw details the approval process and sets standards for the development of wind energy to protect the public interest. This project may be consistent with Savoy's wind energy bylaw. Section 9.7.2 of the Savoy Commercial Wind Energy Facility Bylaw deals with shadow/flicker and places the burden of proof on the proponent to prove that shadowing or flickering does not have significant adverse impacts on neighboring or adjacent uses.

- The EENF does not meet the burden of proof in proving that shadowing or flickering does not have significant adverse impacts on neighboring or adjacent uses. If the shadow/flicker effects from this project are considered significant then this project is not consistent with the Town of Savoy's bylaw.

The project may be consistent with the *Regional Plan for the Berkshires* adopted by the Berkshire Regional Planning Commission in 2000. One of the policies stated in the plan reads to "encourage the use of solar and wind energy generation where appropriate provided that facilities are sited in such a way as to not significantly distract from aesthetic, wilderness, recreational, or ecological values."

- The EENF as submitted does not contain sufficient information to determine whether the project as proposed is appropriate.

Land Disturbance

According to the EENF and supplemental materials the project will disturb approximately 25.86 acres of land (25.7 acres on-site, 0.16 acres off-site). After construction is completed, 9.7 acres will be allowed to naturally re-vegetate to forest. The proponent will create approximately 11,412.50 square feet or 0.26 acres of impervious surface and construct structures covering 17,812.50 square feet. An on-site single access gravel road will be constructed over existing skid roads and cover 4.6 acres of land. In order to construct this gravel road, an additional 9.5 acres of land will be disturbed and covered with rocks and vegetation. Along a section of this gravel road, a 40' right-of-way will be cleared to enable the installation of utility poles and overhead electric lines. Along the top of the hill, a trench will be excavated along the side of the gravel road to carry electric lines from turbine to turbine.

According to the supplemental information, two off-site gravel roads will also be constructed to enable the transportation of turbine components. Each gravel road will be approximately 450' to 500' long and cover approximately 7,200 square feet of land each for a total of approximately 0.3 acres. It does not appear that either of these roads have been accounted for in the total off-site land disturbance calculations.

- The EENF does not include all anticipated off-site impacts. The route review submitted as supplemental information, indicates that improvements such as fill and grading are required to achieve turning radii at several intersection. These improvements should be accounted for.
- The EENF improperly characterizes the 4.6 acres of gravel roads as pervious surface. The gravel roads will need to be highly compacted to support the weight of the trucks and equipment. A highly compacted gravel road should be considered impervious surface.

Berkshire Regional Planning Commission Clearinghouse Review Report

Stormwater

Dealing with stormwater along ridgelines and steep slopes is challenging. The EENF states that the runoff from the tower pads, maintenance building and substation will naturally infiltrate back into the ground. The gravel access road will be pitched to disperse run off into gravel trenches or culverts. The grade of the access road will average approximately 7% with the steepest grade around 10%.

- The EENF provides that runoff from the impervious surfaces will naturally infiltrate into the ground. Later in the EENF, it provides that “wetland resources are limited along the ridgeline due to steepness and the lack of soil overlying bedrock.” The proponent should clarify how natural infiltration will occur with these soil conditions present.
- The EENF provides that runoff from the impervious surfaces will naturally infiltrate into the ground. Later in the EENF, it provides that “most of the wetland resources on the Property appear to occur on the eastern portion where topography is less steep and runoff collects and pools.” The proponent should clarify whether the runoff from these impervious surfaces will infiltrate into the ground or run off into nearby wetlands.
- The EENF provides that trenches and culverts will be used to collect stormwater from the gravel access road. The discussion of stormwater management controls is not adequate to determine if the standards within the Massachusetts Stormwater Management Policy have been met.
- The EENF provides no information on construction best management practices to determine how stormwater, sediment, or erosion will be addressed during the construction phase of the project.
- The proponent should closely monitor the roadway and stormwater control measures when the roadway is being used by semi-tractors to transport turbines and equipment to the top of the hill.

Wildlife & Rare Species

The EENF includes a letter from Massachusetts Natural Heritage & Endangered Species Program confirming that no endangered species habitat is mapped on or near the project site. According to the EENF, an independent wildlife biologist searched the project site for known local endangered species and found none. To the proponent’s credit, a number of avian impact studies have been performed at the project site. A Phase One Avian Impact Analysis (i.e. literature review) was conducted for the project site. Subsequently, an on-site study of breeding birds and an on-site migrating raptor study were performed. The breeding bird assessment found no endangered bird species on or near the project site and the migrating raptor study concluded that the project site is not a major raptor migratory route.

- The EENF does not include an on-site impact analysis for bats or nocturnal bird species. Thus, the likely impact on bat and nocturnal bird species is unknown. The unknown effects that this project may have on nearby bat populations is a significant concern of this Commission due to the severe decline in bat populations attributable to white nose syndrome.

Water Resources

The project site contains a number of wetlands, which are reportedly non-jurisdictional wetlands under the Wetlands Protection Act. The proposed project will directly impact one jurisdictional wetland on-site,

Berkshire Regional Planning Commission Clearinghouse Review Report

between turbines # 4 and # 5. Here, the proposed access road will cross a wetland resource area, impacting an approximate 1,153 square feet of wetland. According to the supplemental information provided by the proponent, the construction of one off-site gravel road will impact 7,200 SF of Riverfront Area. The proponent has provided no information or plans to mitigate or avoid impacts on the Riverfront Area, or how they plan to comply with the Performance Standards for Riverfront Area required under the Wetlands Protection Act.

The proponent frequently refers to their activities in the wetland areas as “limited project” activities; however, this does not relieve the proponent of their obligation to conduct wetland replication, which is not discussed in the EENF or the supplemental material. Furthermore, the supplemental information indicates that wetlands may exist along Harwood Road where 15 new utility poles are planned. The proponent plans to delineate this area once the snow cover melts.

- The EENF provides no information, documentation or plans showing how the proponent plans to mitigate or avoid direct impacts to the wetland resource and Riverfront Areas as required by the Wetland Protection Act.
- The EENF contains no discussion of wetland replication as required by the Wetlands Protection Act.

Shadow/Flicker Impacts

The EENF includes a shadow/flicker study performed by the UMass Renewable Energy Research Laboratory (RERL) to determine the likelihood that nearby residences would be exposed to shadowing or flickering due to the proposed project. The shadowing and flickering effect on receptors tends to vary with the time of day, season, wind direction, and sunlight.

- The UMass RERL study found that approximately nine (9) residences could be affected by shadowing/flickering impacts. The residences affected would be subject to shadow/flicker effects for 10 to 30 minutes each day for approximately 50 to 80 days per year depending on the location of the residence.
- The proponent should discuss the results of the shadow/flicker study with the occupants of the residences potentially affected and work with them to mitigate these anticipated adverse impacts.

Visual Impacts

The EENF contained photo simulations prepared by UMass RERL using WindPro software to simulate tower construction from varying locations in Savoy. The proponent has also submitted a viewshed analysis using GIS software.

- The EENF contained only daytime photo simulations. The proponent should conduct a visual impact assessment including pre- and post-construction photo simulations of the project as seen both during the day and at night with anticipated lighting.
- The viewshed analysis did not contain any legible street names or other identifiable locations to aid in determining the locations from which the project can be seen.

Berkshire Regional Planning Commission Clearinghouse Review Report

- The proponent did not conduct a balloon test. To best illustrate the visual impacts of the project, the proponent should offer to fly a large balloon for each turbine, to be flown at blade tip height.

Noise

The proponent has submitted a noise analysis to predict the potential noise levels generated by the wind project. The analysis shows that the increase in noise from the project will be 1 dbA at the property boundary and 1 dbA or less at nearby properties. This increase is well within the acceptable noise limits set by the Department of Environmental Protection's, Division of Air Quality Noise Regulations (310 CMR 7.10), which permits a 10 dbA increase in sound from ambient noise levels.

- The EENF provides no discussion of expected noise levels during the construction phase of the project, which includes the operation of heavy equipment and potential blasting of rock.

Transportation Route

The proposed delivery route is as follows, I-90 to Route 20, to Route 7 to Pittsfield, to Route 9 in Dalton, to Route 8A in Windsor to Savoy. Once in Savoy, trucks will travel along 8A/116, then north on Upper Loop Road to Chapel Road, then east on Brier Road, which then becomes Harwood Road and then to the project site. Due to the length of equipment, the proponent will make improvements to four intersections in Savoy. At 8A to 8A/116 the intersection will be graded or flattened on the inside corner or outside of the turn. At 8A/116 to Upper Road, grading and vegetation removal will occur on the right shoulder. At Upper Loop Road to Chapel Road, grading required and limited vegetation removal. At Chapel Road to Brier Road, a new gravel road will be constructed through private land and rejoin Brier Road. The proponent will work with the Savoy Highway Department on these improvements.

The supplemental information provided by the proponent did include a route review in Savoy. However, a route review has not been provided for the entire route. The route review indicated that to achieve acceptable turning radii at intersections in Savoy, improvements will be necessary. Suggested improvements are bringing in fill, grading and even the installation of a culvert, which raises questions of potential wetland impacts that have not been accounted for. The review does well in identifying intersections in Savoy that are in need of improvement, but the proponent provides no definite plans to make these improvements nor do they attempt to quantify what additional impacts are anticipated. In addition, the capacity of the bridges on the planned transportation route is still an unresolved issue that could dramatically affect off-site impacts if an alternative route is necessary.

- Based upon local knowledge of the planned transportation route, the proponent will be unable to physically maneuver the large pieces of equipment through portions of Lee, Pittsfield and Dalton without major modifications to existing intersections in these locations. The EENF contains no discussion of whether the planned transportation route is adequate.
- The following intersections may present significant problems for the proponent in transporting wind turbine components from I-90 to Savoy:
 - Housatonic Street to Park Street (Lee)
 - Park Street to Main Street (Lee)
 - Main Street to W. Center Street (Lee)
 - South Street to East Street (Pittsfield)
 - Merrill Road to Dalton Avenue (Pittsfield)
 - Main Street (Rtes. 8 & 9) to North Street (Rtes. 8A & 9) (Dalton)

Berkshire Regional Planning Commission Clearinghouse Review Report

- The transportation of such large equipment along the planned transportation route will likely cause significant traffic problems on these heavily traveled streets and highways. The EENF does not contain a discussion of how these traffic impacts will be mitigated or avoided.
- The EENF contains no discussion of any posted bridges which may exist along the planned transportation route and whether or not the equipment can be safely transported across these bridges.
- The EENF does not provide details about the planned intersection improvements, whether or not they will be permanent, and whether or not these areas will be revegetated and whether or not any additional wetlands will be impacted.
- The proponent should ensure that drainage systems at the existing intersections are not disturbed or changed.
- In order to accurately quantify anticipated off-site impacts, the proponent should determine the feasibility (i.e. turning radii, bridges, etc.) of the transportation route.

Historical/Recreational/Cultural Impacts

The EENF contained no discussion of the project's impact on historical, recreational or cultural resources in Berkshire County. The viewshed map did not identify any known historical, recreational or cultural sites in Savoy or the surrounding area.

- The EENF did not state whether the proponent contacted the Town of Savoy or surrounding towns to determine whether any adverse impacts will occur on significant historical, recreational and cultural resources.
- If the project site is used for recreational purposes, the EENF should contain a discussion of the measures proposed to protect the safety of the public.

Alternatives

The EENF briefly discusses a project alternative and two different turbine transportation routes. The EENF states that the five turbine system, although 80 feet taller than the original seven turbine system, will decrease visual impacts, lessen land disturbance, and increase generation capacity.

The EENF also included a discussion of transportation route alternatives. One alternative would be to use Adams Road through Savoy State Forest, but this option would have potential wetland impacts and require rebuilding of a degraded road. A second alternative would be to use Black Brook Road, but this would require the replacement of a bridge, an expense the proponent was not willing to assume.

- The EENF lacked any meaningful discussion about alternatives, such as varying the location, height and number of wind towers on site as a means of avoiding or mitigating adverse impacts.
- The EENF does not contain an analysis and discussion of any alternative sites.

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

Other

- We recommend that no local permit public hearings be closed prior to the completion of the MEPA review process.

COMMENTS AND RECOMMENDATIONS:

As a preliminary matter, the Commission is charged with performing technical reviews of projects under MEPA. These comments should not be taken as an endorsement or approval of wind energy projects of this magnitude in Berkshire County.

The purpose of MEPA is to “provide meaningful opportunities for public review of the potential environmental impacts for which Agency Action is required...” 301 CMR 11.00 (1). The EENF as submitted does not provide a meaningful opportunity for public review as required. A meaningful opportunity for review of a project cannot occur when the proponent fails to provide details or plans of anticipated environmental impacts and then claim that such plans or details will be worked out at a later date thereby circumventing a complete and adequate MEPA review of the project. It is the proponent’s responsibility to provide detailed information about the project’s anticipated environmental impacts and proposed mitigation measures. The proponent has failed to provide adequate details in the EENF, as discussed below, to enable meaningful public review of the Minuteman Savoy Wind Project.

The Commission would like to take this opportunity to voice its concern about an emerging and troubling pattern of MEPA filings for wind energy projects in Berkshire County concerning project segmentation. For example, the land disturbance calculations for Berkshire Wind and Hoosac Wind have increased substantially since their first ENF filings. It is understandable that as a project develops and evolves land disturbance and other calculations may vary. However, projects submitted for MEPA review should be at a sufficient level of design to provide an accurate and realistic snapshot of the anticipated environmental impacts and proposed mitigation measures. Proposed wind farms, such as the Minuteman Savoy Wind Project, are enormous projects and as such should be thoroughly scrutinized. A thorough MEPA review is best accomplished when all environmental impacts, both on-site and off-site, and proposed mitigation measures are fully documented, understood and considered at one time.

In 2004, the Berkshire Regional Planning Commission approved Wind Power Policy Siting Guidelines that sets forth the position of the Commission on MEPA reviews for wind energy projects. The Commission believes that a complete EENF should be required for all wind energy projects over 100’ in height. The Wind Power Policy provides standards that an EENF should meet in order to be considered “complete.” In accordance with these standards, the Commission finds that the EENF appears wholly **inadequate** for the MEPA process because it is impossible to determine the total level of impacts based on the level of information submitted.

Standard (a) A detailed site plan showing all access roads, pad sites, accessory generating structures, power lines, wetland resources, wetland mitigation areas (if any), rare species habitat, stormwater controls.

- The discussion of stormwater control measures is entirely inadequate to determine whether the standards of the Massachusetts Stormwater Management Policy have been met or whether nearby wetlands will be adequately protected and stormwater adequately managed.

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

- The discussion of measures to mitigate or avoid impacts to wetland and wetland buffer zones is wholly inadequate.
- The EENF failed to discuss wetland replication as a means of mitigating direct impacts on wetland resource areas.

Standard (c) A wildlife habitat assessment, including assessment of impact to migratory, resident and breeding avian and bat populations.

- The EENF did not include an on-site assessment to determine the risk to bats and nocturnal birds.

Standard (e) A visual impact assessment, including pre- and post-construction photo simulations of the project as seen during the day and at night.

- The EENF did not include nighttime simulations with anticipated FAA required lighting.
- As a part of the visual impact assessment, the EENF lacked any plans or discussion of measures to avoid or mitigate shadow/flicker impacts on nearby residences.

Standard (f) Alternative sites analysis.

- The EENF lacked any meaningful discussion about project alternatives that take into account varying the location, height and number of wind towers on site as a means of avoiding or mitigating adverse impacts.
- The EENF lacks a sufficient discussion about alternative sites.

For the reasons stated above, the Commission takes the following position:

- 1. The Commission requests that the Secretary require the proponent to submit an EIR with a much greater level of detail and containing additional information, or**
- 2. The proponent withdraw the current EENF and resubmit a subsequent EENF with a much greater level of detail and additional information;**

If the Secretary elects to require an EIR, the Commission recommends the following information be included in the EIR.

- A detailed alternatives analysis that provides a comparison of several different alternatives and the anticipated impacts each would create.
- An analysis of the visual impact of the project, including views of the hilltop at night showing the required FAA lighting.
- Multiple detailed viewshed analyses, not limited to the Town of Savoy and the immediate surrounding area, which identify roads, public places and historical/cultural/recreational areas.

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

- Document and describe the anticipated impacts on Article 97 lands.
- A detailed action plan to mitigate or avoid shadowing/flickering impacts on affected residences.
- Additional calculations for all off-site disturbed land and wetland impacts including all new roads to be constructed and anticipated intersection improvements.
- An independent and more thorough Phase I Avian Risk Assessment and additional bird assessments conducted in coordination with federal and state wildlife agencies, which among other things study the effect of FAA required lighting on avian species.
- The findings from an on-site bat and nocturnal bird impact analysis to determine the risk to bats and nocturnal bird species from the project.
- A monitoring plan and contingency plan to identify and mitigate any adverse impacts to wildlife, birds and bats should they occur.
- An independent and more thorough noise assessment with an in-depth discussion on the effects the proposed wind turbines will have on the public health.
- Plans in greater detail showing the improvements to be made at each intersection in Savoy and other intersection improvements outside of Savoy.
- Detailed construction plans for both on-site and off-site improvements that include:
 1. construction limits; and
 2. sediment and erosion controls.
- A detailed description of the stormwater management controls both during construction and after construction as a permanent measure, which demonstrates that stormwater is being managed to meet the requirements of the Wetlands Protection Act and the MA Stormwater Management Policy.
- An erosion and sediment control plan which includes frequent monitoring during all phases of construction to insure that the erosion control devices function properly.
- A more detailed description of the wetland and Riverfront Area impacts and measures to protect these resources.
- A detailed plan to replicate impacted wetlands in accordance with the Wetlands Protection Act, which is consistent with the *Massachusetts Inland Wetland Replication Guidelines* (2002) and the *Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands* (2006).
- A detailed plant list for wetland replication, a monitoring plan to determine the success of the wetland replication and a plan to address invasive species through monitoring and eradication (should invasive species become established).
- A plan to prevent the introduction of invasive species, which includes alternatives to hay bales such as silt-fencing and straw-baling to reduce the risk of the inadvertent introduction of invasive species.

**Berkshire Regional Planning Commission
Clearinghouse Review Report**

- Draft operation plans to manage the anticipated impacts on each municipality that will be affected by the transportation and construction of this project. Such plans should deal with traffic, road closures, emergency services and compensation to each municipality for any costs incurred and damage caused.

The Berkshire Regional Planning Commission endorsed these comments at their meeting on [January 21, 2010](#)