Berkshire Regional Planning Commission
Clearinghouse Review Report

December 4, 2009

DRAFT

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:	**DECEMBER 29, 2009**

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 2000' from Harwood Road to the top of the hill and then another 4,200' to reach 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 2,000 feet of new utility poles and lines will need to be installed along Harwood Road to connect the project to existing utility infrastructure.

A 200 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 cleared, a 71,875 square foot area at the top of the hill and a 9,500 square foot staging area at the bottom of the hill along Harwood Road. 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).

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 the project will disturb 25.7 acres of land. After construction is completed, 9.7 acres will be allowed to naturally revegetate. The proponent will create approximately 10,454 square feet or 0.24 acres of impervious surface and construct structures covering 10,612 square feet.

A single access gravel road will be constructed over existing skid roads and cover 16.46 acres of land. 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.

- The gross square footage for structures provided in the EENF includes only the wind turbine and maintenance shed. According to the narrative and site plan, the proponent plans to install a garage/utility shed at the base of the access road. This additional square footage is not included.

- The EENF does not indicate how the figure of 25.7 acres of land disturbance was calculated and whether or not that figure includes the anticipated off-site impacts, such as the grading and removal of vegetation at intersections in Savoy, clearing for new utility poles along Harwood Road, work done by Western Mass Electric to extend the lines from Hinsdale to Savoy and any potential land disturbances from the construction of a new gravel road near Brier Road.

- The EENF indicates that 9.7 acres will be allowed to naturally revegetate. The EENF is not clear as to whether or not these areas will be allowed to return to their natural state or will be periodically maintained by cutting or herbicides.

- The EENF is unclear as to whether the 16.46 acres of land to be covered by gravel roads includes the construction of the new gravel road near Brier Road. The square footage covered by this new road should be included.

- The EENF improperly characterizes the 16.46 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.

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.

Water Resources

The project site contains a number of wetlands. The proposed project will directly impact a wetland 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.

- The EENF provides no information, documentation or plans showing how the proponent plans to mitigate or avoid direct impacts to the wetland resource area.

- The EENF contains no discussion of wetland replication as required by the Wetlands Protection Act.

- The EENF calculation of 1,153 square feet of new bordering vegetated wetland alteration does not include the anticipated multiple impacts on the wetland buffer zones.

The proposed project will make multiple intrusions into the wetland buffer zones. The staging or lay down area at the top of the hill will be cleared intruding into the wetland buffer zone. A 300' diameter clear area is required at the base of each turbine. This clear area will intrude on wetland buffer areas for turbines # 2 and # 4. A Notice of Intent will be filed with the Savoy Conservation Commission.

- The EENF provides no information, documentation or plans showing how the proponent plans to mitigate or avoid direct impacts to the wetland buffer areas.

- The discussion in the EENF narrative involving turbine # 4 seems to contradict the site plan. According to the site plan, turbine # 4 appears to protrude into the wetland itself and the 300' clear area is clearly within the wetland buffer as mapped, but the narrative indicates that "construction activity will likely be 100' or more from wetlands. The proponent should clarify whether the 300' clear area around turbine # 4 intrudes into the wetland resource area or wetland buffer zone.

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.

- 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 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.

- 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)

- 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 wetlands will be impacted.

- The proponent should ensure that drainage systems at the existing intersections are not disturbed or changed.

- The EENF indicates that the gravel road near Brier Road is temporary, but does not include any plans for its removal.

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.

- The EENF did not contain a discussion of whether or not the project site was used for recreational purposes or might impact nearby recreational resources, such as cross country ski areas or snowmobile trails.

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.

Other

- Due to the proximity of the project to the Savoy-Hawley town line and the Berkshire County-Franklin County town line, the proponent, although not legally required, should have submitted the EENF to the Town of Hawley and to the Franklin Regional Council of Governments.

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

COMMENTS AND RECOMMENDATIONS:

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.

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.

- Any 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.

- Any 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 strongly recommends that:

1. The proponent withdraw the current EENF and resubmit a subsequent EENF with a much greater level of detail and additional information;

2. The proponent voluntarily extend the review period and submit additional information to all parties, ensuring that all parties have thirty (30) days to review the additional information before comments are due; or

3. The Secretary require the proponent to submit an EIR with a much greater level of detail and containing 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.

- A detailed action plan to mitigate or avoid shadowing/flickering impacts on affected residences.

- Revised calculations for disturbed land, structures, and impervious surface taking into account all structures and anticipated off-site impacts.

- A breakdown of the calculations in chart form for disturbed land and impervious surfaces, which shows all on-site impacts and off-site impacts caused by the project including work done by others such as Western Massachusetts Electric.

- 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.

- A summary of the anticipated noise levels during the construction phase of the project.

- 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 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 wetland buffer 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.

- 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 date.