



April 15, 2004

Secretary Ellen Roy Herzfelder
EOEA, Attn: MEPA Office
Arthur Pugsley, EOEA # 13229
100 Cambridge Street, Suite 900
Boston MA 02114

Re: **Princeton Wind Farm Infrastructure Improvements**

Dear Secretary Herzfelder:

On behalf of Mass Audubon, I submit the following comments on the Expanded Environmental Notification Form (EENF) for the Princeton Wind Farm project.

Mass Audubon requests that a full Environmental Impact Report (EIR) be required for this project. The EENF does not adequately address the project's environmental impacts, alternatives to avoid and minimize impacts, and mitigation details. The EIR should provide further information on alternative sites that may be available for the project; road specifications for the heavy equipment needed to construct the project; impacts to and proposed mitigation for alteration and access easements across publicly owned parklands (Article 97 lands); and pre- and post-construction avian and bat studies and risk assessments. Mass Audubon staff met with and sent comment letters to representatives of Princeton Municipal Light Department (PMLD) and Community Energy on several occasions since the fall of 2002. While the EENF provides some new information and proposes mitigation for public lands impacts, several of our key comments and concerns have not been addressed. In particular, we note that:

- comments from Mass Audubon, MassWildlife Board, and the U.S. Fish and Wildlife Service (USFWS) regarding the inadequacies of pre-construction avian and bat risk assessments have not been addressed;
- information and alternatives analyses requests by DCR (then the Department of Environmental Management (DEM)), the DEM Board, and the Wachusett Mountain Advisory Council in several letters to PMLD in 2002 and 2003 have not been adequately fulfilled to date;
- the proposed removal of trees for access road improvements is inconsistent with the Biodiversity Significance Overlay Zone established in DCR's Resource Management and Protection Plan for Wachusett Mountain State Reservation;
- the provisions of the EOEA Article 97 Land Disposition Policy have not been fully addressed;
- the alternative access route on an existing PMLD easement is not in fact a viable alternative due to steep grades up to 40%;
- alternative sites not involving impacts to publicly owned parkland should be evaluated through the MEPA process;
- if the project does go forward under the preferred alternative, all details of mitigation should be subjected to public review, and as noted below some essential components of the mitigation are not fully defined in the EENF; and
- Article 97 mitigation should be approved by the Legislature before the Department of Conservation and Recreation (DCR) takes any irreversible action. We oppose issuance of a temporary license allowing construction to proceed prior to passage of the necessary Article 97 legislation.



General Wind Energy Planning Concerns

As noted in our letter to you dated March 4, 2004, Mass Audubon is becoming increasingly concerned about the lack of a well-defined program for siting, regulating, and conducting pre-construction environmental surveys for wind energy projects. Mass Audubon supports the responsible planning, permitting, and production of renewable energy resources including wind energy. We believe that renewable energy resources are essential to the environmental well being of our nation and planet. Such facilities, however, must be sited and conditioned to minimize adverse impacts. We were extremely disappointed with the MEPA decision allowing the Hoosac project to proceed without preparation of an EIR. We were particularly surprised by the findings in the MEPA Certificate stating that the pre-construction avian studies were adequate, as not only Mass Audubon but also the USFWS had submitted comments indicating they were not adequate. The situation is similar at Wachusett. The site is known to be a location where raptors and other birds concentrate, particularly during migration. The level of pre-construction studies recommended by the USFWS and the National Wind Coordinating Committee in such locations has not been completed. Without this information, it is impossible to conduct a valid risk assessment, and any conclusions reached thus far by project consultants are not supported by adequate data.

We are concerned that the lack of statewide wind farm siting criteria and a standardized review process, including preconstruction biological survey standards, is increasing the potential for impacts that otherwise might be avoided. These programmatic deficiencies are also increasing controversy over wind energy in general, which is not helpful for renewable energy development. **We urge you to develop a well-defined wind energy-siting program, through a Programmatic EIR or other broad public involvement process, to facilitate development of wind energy while minimizing environmental impacts.**

Project Comments

The proposal on Mount Wachusett would involve replacing eight existing, approximately 100 foot tall towers with two larger turbines that will be 364' in height to the tip of the blades. **The increased height of the towers significantly increases environmental impacts both during and after construction.** Road improvements would be necessary to get equipment to the site and erect the new turbines. There will be direct impacts to state owned parkland managed by DCR within the Wachusett Mountain State Reservation for either the preferred access route along Stage Coach Road or if a new roadway were constructed in the vicinity of the existing PMLD easement (presently undeveloped and fully forested). The tips of the blades on the proposed new towers extend to nearly the same elevation as the summit.

Because public lands will be impacted regardless of which access route is utilized (see comments below), an off-site alternatives analysis should be required. The EOEA Article 97 Land Disposition Policy calls for an alternatives analysis to avoid or minimize any proposed Article 97 land disposition. The policy states, "the scope of alternatives extends to any sites that were available at the time the proponent of the Article 97 disposition first notified the controlling agency of the Article 97 land, and which can be reasonably obtained...(b) within the appropriate city/town for municipal proponents."

DCR (then the Department of Environmental Management (DEM)), the DEM Board, and the Wachusett Mountain Advisory Council wrote several letters to PMLD in 2002 and 2003 requesting additional information and alternatives analyses on the project¹. The EENF does not provide complete and adequate responses to these requests. DEM/DCR indicated this information and alternatives analyses

¹ June 24, 2003 letter from Division of Forests and Parks Director Todd Frederick to Jonathan Fitch of PMLD; May 5, 2003 letter from Todd Frederick to Jonathan Fitch, March 28, 2003 letter from DEM Regional Director Don Stoddard to Jonathan Fitch; February 15, 2003 letter from Wachusett Mountain Advisory Council (WMAC) Chairman Thomas Sullivan to Todd Frederick with copy to Jonathan Fitch; January 29, 2003 letter from Todd Frederick to Jonathan Fitch, and November 12, 2002 letter from WMAC to Todd Frederick with copy to Jonathan Fitch.

were necessary before any decision could be made on granting of an access easement. These letters and complete responses to all points in the letters should be a part of the MEPA record. While we request that PMLD provide copies to MEPA, we are also willing to do so on request if you have any difficulty obtaining any of these letters.

Avian and Bat Risk Assessments:

Mount Wachusett is a significant biological reserve area. It is a well-documented flyway for migrating hawks, and is a designated Important Bird Area.

The annual bird collision rate for any particular structure may range from zero to thousands, depending on many factors that are difficult to quantify precisely in advance. Bird collisions at some sites may be limited to particular anomalous weather conditions, with long periods of intervening time when few or no collisions occur. Because of Mount Wachusett's unique ecological and geomorphic attributes, Mass Audubon is concerned about the potential for a significant bird kill anomaly involving nocturnal migrant songbirds and/or diurnal raptors. Mount Wachusett and is known for unusual weather, including colder temperatures, higher winds, more frequent ice storms, and heavier snowfall than surrounding areas. Weather conditions can change quickly on the mountain and birds migrating well above the summit may quickly descend near or land on the mountain as conditions deteriorate.

The fact that the proposed structures will be tall enough to require aviation warning lights increases the risk to night-migrating birds. Many migratory birds such as warblers and thrushes migrate at night and are attracted to lights, especially during inclement weather. At such times, these nocturnal migrants can become disoriented and strike tall structures on which lights are mounted. The towers' potential risks to bats also need to be evaluated based on site-specific studies of bat activity at this location. More than 400 bats died last autumn at a recently constructed wind farm on Backbone Mountain in West Virginia.² These bat deaths caught both the proponent and wildlife authorities by surprise, and illustrate the need for adequate preconstruction biological surveys to understand wildlife activity at a proposed site.

Dr. Paul Kerlinger's assessment of "Bird Risk at New Princeton, MA, Wind Turbines," dated September 10, 2002 concludes that the risk to birds at the Wachusett site is "likely to be low and not significant." As we have commented previously to PMLD, **there is inadequate information upon which to base this conclusion.** The Jacobs data regarding the existing windfarm on Wachusett was not gathered according to sufficiently rigorous protocols to ensure that the information is complete and valid. The national report Dr. Kerlinger refers to (Erickson et al. 2001) is probably the most comprehensive review of avian collision risks associated with wind turbines/power in the U.S., but the report itself recognizes shortcomings in the available data. The Ericson report estimates *average* avian mortality at wind turbines at "2.19 avian fatalities per turbine per year in the U.S. for all species combined." However, this same report states, "Making projections of the potential magnitude of windpower-related avian fatalities is problematic because of the relative youth of the wind industry and the resulting lack of long-term data."

Given the uncertainties in extrapolating avian risk values from limited data from a limited number of sites, new or expanding windfarms should: 1. evaluate risk based on site-specific parameters and conditions, and 2. if constructed, conduct monitoring that will provide useful data contributing to the overall understanding of bird/windfarm interactions.

Indeed, the National Wind Farm Coordinating Committee has produced, "Studying Wind Energy/Bird Interactions: A Guidance Document: Metrics And Methods For Determining Or Monitoring Potential Impacts On Birds At Existing And Proposed Wind Energy Sites" (Dec. 1999). Mass Audubon

² Williams, Wendy. *When Blade Meets Bat: Unexpected Bat Kills Threaten Future Wind Farms*, Scientific American. February 2004.

recommends that at a minimum a Level 1 study as outlined in this guidance document or equivalent level analyses should be undertaken for the Princeton upgrade project.

PMLD and Community Energy have expressed to Mass Audubon their willingness to conduct post-construction avian impact surveys. We appreciate this and have replied indicating that we would consider contracting with them to design and/or conduct such studies. Nevertheless, we remain concerned that adequate pre-construction surveys have not been conducted.

Tower Base Pads: The project plans call for a significant amount of grading to create level pads for placement of these large towers. The southwest pad in particular involves creation of relatively steep slopes that will need to be stabilized. We recommend that the final cover in these areas not be rocky riprap. At other wind power sites where rocks have been placed around turbine bases, this has created habitat for small mammals, attracting raptors close to the towers and contributing to bird mortality. At the Wachusett site, small mammals such as chipmunks and rabbits would likely colonize rock riprapping if placed around the towers, and could thereby increase risk to raptors. If rocks must be placed to stabilize slopes, they should be covered fully with soil and vegetated. Voids between rocks should be filled.

Public Land Impacts and Easements, Public Access and Safety

The proposed access for the project would require improvements to Stage Coach Road, an existing unpaved woods road on public parkland within the Wachusett Mountain State Reservation, managed by DCR. The present character of this road is historic and rustic, lined with mature trees and stone walls. It serves as a part of a major regional hiking trail, the Mid-State Trail. Improvements would be necessary to enable the use of this route for access by the many pieces of heavy equipment needed to construct the project. Alterations would include removal of mature trees, widening, and road base stabilization. Where the road intersects with the project site, an area of mature vegetation would be cleared and a stone wall temporarily removed in order to provide adequate turning radius for the trucks carrying 131' long turbine blades.

The area where trees would be removed is part of a Biodiversity Significance Overlay Zone established in DCR's Resource Management and Protection Plan (RMPP) for Wachusett Mountain State Reservation. This area is supposed to be an additional buffer to the Old Growth Forest area on the mountain, and removal of mature vegetation within this zone would not be consistent with the RMPP. The RMPP was approved through a full MEPA EIR process.

Any disposition of interest in publicly owned conservation lands requires approval of 2/3 of both houses of the state legislature, pursuant to Article 97 of the State Constitution. PMLD is offering several forms of potential mitigation for the proposed access easement and alterations, which is an improvement over earlier plans where no mitigation was offered. Nevertheless, we have some remaining concerns about the proposed alterations, easement, and ongoing effects of the project on public use and safety for the affected and adjoining parkland.

The EIR for the project should require an alternatives analysis and other information that meets all the requirements of the EOEA Article 97 Land Disposition Policy. The Policy requires that the disposition and proposed use must not "destroy or threaten a unique or significant resource (e.g. significant habitat, rare or unusual terrain, or areas of significant public recreation)." Further information on risks to birds and bats, and on the recreation impacts of the project, should be required in the EIR.

We request that the following items be addressed in an EIR before any action is taken allowing construction or granting any rights from DCR to PMLD.

Alternative Access Route Not Viable: PMLD owns a 40-foot wide access easement across another portion of the Reservation. The EENF states that if the proposed easement across and alterations of Stage Coach Road are not granted, then PMLD will construct a road on their existing easement. The

argument is presented that the Stage Coach Road option will have significantly less environmental impacts since it does not require removing as much forest nor would it create an entirely new opening that will fragment habitat.

However, it appears that **the existing PMLD easement does not in fact provide a viable accessway due very steep terrain.** Sheet 6 of 8 of the construction plans in the EENF shows that grades between Westminster Road and the project site along this right of way would be between 17 and 22% in most locations, with one area of existing ledge where the grade would be 40%! The heavy equipment required to construct this project cannot negotiate such steep grades. The ENF for the Hoosac project indicated that the maximum possible grade for access roads was 14% and that grades must be no more than 1% on curves. The turbines and associated construction equipment for the PMLD project are nearly identical to the Hoosac project. The only way to build a viable access road on the slope where PMLD's right of way is located would be to undertake extensive grading with one or more switchbacks. Since the right of way is only 40 feet wide, this would require use of adjoining DCR land within the Reservation. **Therefore, PMLD would need to obtain Article 97 approval for an access easement regardless of which route it selected to access the site.**

Alternative Sites: Because the project would require Article 97 easements and direct impacts to publicly owned parklands for any viable access to this site, PMLD should be required to present for public review an analysis of alternative sites in other locations not requiring use of public parklands. The EIR for the project should document other potential locations in Princeton, and should provide comparative cost estimates that take into consideration all construction costs including costs of access improvements and parkland related commitments for the lifetime of the project.

Article 97 Review and Mitigation: PMLD has utilized Stage Coach Road for the past twenty years without any formal legal easement or other agreement. This does not confer any legal rights or presumptions.

The EENF proposes that DCR grant a temporary license or permit allowing construction to proceed in the short term, followed by future final agreement on Article 97 mitigation details and passage of the necessary legislation through the Legislature. **Mass Audubon opposes the granting of construction permission prior to passage of the necessary Article 97 legislation.** Permanent impacts including removal of mature trees that cannot be replaced within a human lifespan will occur during construction. Issuance of a construction and access license by DCR would constitute an irreversible action. Once the license is issued and construction underway, DCR and the public would lose whatever leverage they may have to negotiate fair and appropriate mitigation. Mitigation details must not be left up to some future process after construction is approved. This would be contrary to the fundamental purposes of MEPA, which requires agencies to fully consider impacts of their actions, alternatives to avoid, minimize and mitigate impacts, and to provide opportunity for public review and comment prior to agency action.

First, an analysis of off-site alternatives for the project should be submitted for public review through MEPA. Only if PMLD is able to present compelling information that no alternative site is technically viable and financially similar (including DCR mitigation costs for the life of the project at the Wachusett site), should the Wachusett site and proposed mitigation be pursued further.

If this threshold test of need and the other conditions of the EOEA Article 97 Land Disposition Policy are met, then further details construction specifications should be presented to ensure that project impacts are fully minimized. The EENF presents a good deal of information on the project construction plans, certainly far more than has been made available to the public to date. Nevertheless some further details are needed such as the degree to which the road bed and surface of Stage Coach Road must be altered and details of revegetation and post construction monitoring protocols.

The mitigation package proposed in the EENF is substantive and provides for a net gain in conservation land. We want to make certain, however, that all details are addressed and made legally

binding, first through public review and then through Article 97 legislation. Only then should DCR convey permission to construct the project. Granting of the actual construction permit and easement should occur after or simultaneously with the conveyance of PMLD's compensatory lands. Any ongoing or future mitigation actions that cannot be implemented concurrent with the easement should be formalized through binding written commitments that ensure the mitigation will be provided at the appropriate future time (e.g. ongoing educational commitments; future new electric service to the summit when summit access road is repaired).

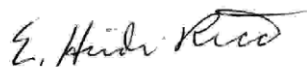
Further details are needed on both construction period and ongoing access for hikers along Stage Coach Road and trails adjacent to the project site. The EENF indicates that Stage Coach Road/Mid-State Trail will be closed to hikers for three separate 15-day periods during construction. This is a significant interference with a high use long distance trail. Posting of signage at the site where the trail is closed is necessary but not adequate notice. A plan for more extensive pre-construction outreach to groups affiliated with this trail should be provided in coordination with DCR. An alternative hiking route should be designated to provide a detour since this is a major long distance hiking trail.

The EENF dismisses concerns regarding potential safety issues of ice forming on and falling from the structures. A claim is made that the risk to hikers from ice from the turbines is less than that of ice from trees. Since large sheets of ice can form on the blades and turbine towers, then drop hundreds of feet, moving laterally with wind and potentially reaching areas well off the site, the risk is probably significantly greater than that from ice on trees. Ice on trees tends to be smaller chunks than sheets many feet in length that can form on blades and metal tower surfaces. Trees are also much shorter than the towers, so the ice will fall further both vertically and horizontally from the towers and blades. Further analysis of the issues of proximity of the towers to hiking trails should be evaluated objectively in the EIR.

Conclusion

A full EIR should be required for this project to address all aspects of alternatives to an impacts on public lands; avian and bat risks; and mitigation details. The state should also develop a comprehensive program and criteria for siting and regulation of wind farms statewide, to facilitate wind energy development while minimizing environmental impacts and reducing public controversy.

Sincerely,



E. Heidi Ricci
Senior Environmental Policy Specialist

cc: Stephen Barrett, Epsilon Associates
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