



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
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Meg Mitchell, Forest Supervisor
Green Mountain National Forest
231 North Main Street
Rutland, Vermont 05701

**RE: Deerfield Wind DEIS Comments
Deerfield Wind Project
Green Mountain National Forest, Bennington County, VT**

Dear Ms. Mitchell:

The Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Deerfield Wind Project, and offers the following general and specific comments.

General Comments

The Department commends the Forest Service for taking the initiative to prepare an environmental impact statement for the Deerfield Wind Project. We believe Forest Service's action in this regard helps to identify and establish meaningful criteria to assist other agencies decide when an EIS is necessary and/or appropriate to support decisions for similar permit or license applications. In addition, we also appreciate the extensive efforts by the Forest Service to identify significant issues and to discuss them openly.

However, as described in detail below, the Department has concerns with the DEIS and how the outcome of related issues may affect the NEPA process. Importantly, the pending decision by the Public Service Board on the Act 250 criteria for the western expansion area may strongly affect the applicant's proposal/preferred alternative. Concerning the DEIS, we find that the alternatives analysis has been constrained by the siting criteria used, and by the lack of a rigorous evaluation of alternatives; particularly, representative sites for wind power development on and off Forest Service land.

Specific Comments

Need for the proposed project is described on pages 4-9 using a number of generic and specific sources of information developed at the federal, state, and regional levels. Specifically, pages 6, 8, and 9 describe the need for a reliable source or supply of power. Because wind projects are an

intermittent source of power, we suggest that in the last series of bullets in section 1.2.3.5, the first bullet should be revised (if carried forward to the Final EIS) to indicate that the project will help supply Vermont's demand for renewable energy.

On page 25, a statement is made that the scope of reasonable alternatives is defined by the purpose and need statement. We note some apparent discrepancies with this statement in the screening analysis, Tables 2.1-1 to 2.1-4, pages 26-30. In particular, the DEIS uses the location for this site-specific proposal in the land use application, page 9, as a siting criterion to eliminate alternatives such as hydro, nuclear, and wave from further consideration in the initial screening, Table 2.1-1. At the same time, other off-site alternatives, such as wind projects off Forest Service lands, are retained on Table 2.1-1 for further evaluation. Setting aside possible inconsistencies within the screening analysis, we are concerned that the DEIS uses the applicant's proposed site as a fatal flaw criterion in the initial screening analysis for at least some alternatives. By extension, this would likely mean that other alternatives, including wind projects on or off the forest could also be eliminated from consideration by this fatal flaw criterion, resulting in a very constrained alternatives analysis.

The DEIS does not present a definition of the screening criteria used in Tables 2.1-1 to 2.1-4 and, of equal importance, an explanation of how the Forest Service intended to use the criteria for screening alternatives. For example, solar generation was eliminated because it did not meet the commercial viability and possibly technical feasibility and electric production requirement, pages 26 and 28. These brief comments on Tables 2.1-1 and 2.1-2 would benefit from additional detail, and should be expanded in the FEIS. Similarly, on page 32, the eastern expansion alternative is retained for detailed analysis when it would appear to have similar issues with commercial viability, technical feasibility, and electric production criteria. It is not clear from the data presented whether the eastern expansion alternative is an economically feasible alternative. We recommend that the FEIS clearly define the screening criteria and include an explanation on how they were used consistently in the screening process. The discussion under Decision Criteria on page 31 may have been intended to help clarify the screening process, but the lack of clear definition and the unequal weight concept between and within the criteria add to the uncertainty and lack of clarity in the entire screening analysis.

We are particularly concerned with the "ripe for consideration" concept discussed on page 32, as this applies to alternative sites for wind projects on and off the forest, Table 2.1-4. The DEIS for the Green Mountain National Forest Management Plan 2006 identified 37 sites on the forest with a wind resource rating of four or higher as having potential for wind energy development. During the scoping process for the current DEIS, the Forest Service identified four significant issues to drive the analysis and develop the range of alternatives, page 23. Two of these issues involve wildlife: Issue 2 – Mortality to Birds and Bats, and Issue 3 – Impacts to Black Bears. However, the potential wind sites on and off the forest have only been described conceptually in Tables 2.1-1 and 2.1-4. Moreover, section 2.4.1, paragraph 4, states as follows:

"Alternative areas on Forest Service land in the GMNF for wind energy development were considered in the initial screening analysis (Section 2.1.2). Of the MAs [Management Areas] listed in the Forest Plan as viable for development, no extensive site-specific testing or ecological surveying has been done to determine wind resources or estimate risk of environmental impacts, nor have any definitive proposals development of these areas been accepted."

The DEIS does not appear to comply with the NEPA mandate to rigorously explore and objectively evaluate all reasonable alternatives. Representative wind energy sites from the forest and private lands should be carefully evaluated by the Forest Service so as to provide the analysis necessary to indicate if development of representative sites might result in the avoidance of mortality impacts to birds and bats and/or result in avoidance of impacts to important bear habitat. By not fully evaluating potential wind energy sites on and off the forest, the DEIS does not appear to meet the purpose of NEPA, 40 CFR 1502.1, in particular, “It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts...”

The FEIS should include an evaluation sufficient to indicate if 1) some of the 37 potential sites could be developed for wind energy and avoid impact to important bear habitat and/or mortality to birds and bats, and 2) if some of the 37 sites could be developed for wind energy and result in fewer impacts to bears, birds, or bats than the proposed action. The same logic applies to sites off the forest on private land.

The DEIS uses different scales of measurement for evaluating impacts to various resources which makes it difficult to compare effects within and among alternatives and resource categories. For example, on pages 204 and 213, the loss of vegetation from project construction at the site, 84.1 acres, is described using a percentage of the total calculation based on the size of the project area (9,523 acres) for a figure of 0.9%. For impacts to other resources such as birds, the scale of comparison is shifted from the project area to a regional or larger geographic area. Other similar examples can be found on pages 219 (raptors), 225 (bird mortality), 235 (forest-interior birds), 259 (bats), 271 (beech trees), and 272 (bear). We recommend that this discussion be revised in the FEIS, applying a consistent scale of measurement such that reviewers are better able to judge the relative importance of the impacts.

On page 203, the DEIS discusses sedimentation and siltation impacts to amphibian and reptile aquatic habitat. The DEIS does not address the project effects on the terrestrial habitats for these species groups, including those that have site fidelity and/or other uses of aquatic habitats outside the footprint of the project. These effects should be presented in the FEIS. A necessary precursor to this analysis would be to document which herptile species use both the aquatic and upland habitats in and adjacent to the project site.

On page 213, the DEIS states that most or all wildlife would be expected to return to their habitats at some point after construction ends. This statement seems to be contradicted by the following statement on page 216: “Whether forest interior birds have returned to the Searsburg Wind Facility after revegetation is not known.” In prior scoping comments, dated August 15, 2005, the U.S. Fish and Wildlife Service recommended that additional data be collected to map the breeding bird territories so as to allow for area and/or graphical predictions of the impact of habitat fragmentation on this group of area-sensitive birds. None of this important data has been collected. The DEIS relies on a general discussion of habitat fragmentation on page 230 which has questionable relevance to the proposed project.

As an example, on page 231, the discussion on habitat fragmentation includes references to forest-interior species utilizing early successional habitats, especially during post-fledging periods. As written, these statements could be interpreted as suggesting that forest-interior

species do not need forest-interior habitat. Most forest-interior breeding birds are territorial only during the critical breeding/nesting period. The discussion and evaluation of habitat fragmentation impacts to forest-interior breeding birds should be confined to the breeding/nesting period or other critical periods when birds exhibit territorial and/or area-sensitive behaviors.

The DEIS devotes portions of pages 220 and 221 to a discussion and evaluation of the radar surveys conducted at the project site and concludes that the data are comparable to those collected at other inland radar studies. Other findings in the DEIS include: 1) no obvious areas of concentrated migration activity, and 2) topography does not appear to affect movement patterns of migrants through the project area. In our review of the radar reports, we believe data exist to indicate a response of migrants to topography. This is evidenced by differences in mean flight elevation of migrants at the three study locations and by data indicating flight paths in the Yaw Pond Brook valley (fall 2004), and the valley between the east and west ridgelines (spring 2006). The fall 2004 radar report indicates that the migrants were about 100 meters lower in mean elevation between the low elevation radar site and western expansion area and between western and eastern sites. The DEIS should evaluate the limited radar data to describe insofar as possible the dates, times, and conditions when the various radar targets (flying vertebrates) are following valleys, being compressed when they fly over ridges, or are flying unimpeded above the topographic features in the project area. We think a result from this analysis would be a conclusion that more data are needed to adequately describe the baseline condition of how flying vertebrates migrate through this area in different years, seasons, wind, weather, and other conditions.

Our review of the radar and the limited supporting information such as weather data indicates that events occur during nightly migration that may result in numbers of birds/bats suddenly flying at rotor-swept zone elevations which could potentially subject them to injury or mortality risk, Appendix A and B of the radar reports. Examples occur on 4/28, 5/1, 5/6, and 10/23/2005. The data in these appendices would be more useful if, in addition to providing hourly, nightly, or seasonal means, the results are also reported as median values with whisker plots to better indicate how targets are distributed.

In our view, important weather data for the project area are lacking for each of the radar studies. No data are available on an hourly or other incremental basis for cloud ceiling height; percent cloud cover; wind gusts, speed and direction at ground level and various elevations aloft; and similar data for the air temperature profile at the study sites. The absence of this data and that mentioned above makes it difficult or impossible to determine which variables are closely correlated with nightly or episodic events when birds/bats or insects are present in or near the rotor-swept zone elevations.

Rather than evaluating the applicant's radar data, which we do not believe are adequate to demonstrate the spatial and temporal distribution of biological targets in the air space above these proposed sites, the DEIS relies on comparisons with radar surveys at other projects, other risk assessments, and comparisons of bird mortality estimates at various man-made structures. The Department does not agree that these analyses inform the discussion of the impacts to migratory birds at this site, considering that such effects are site-, species-, and season-specific. We continue to recommend that the studies identified in the U.S. Fish and Wildlife Service's August 15, 2005, scoping comments be completed.

Additionally, we do not believe that potential bird, bat, or insect injury or mortality at the proposed project can be adequately addressed until an analysis and discussion of wind wake effects on biological resources are completed for the type of turbine proposed to be used. The FEIS should describe in detail the likely effects on birds, bats, and insects that attempt to enter, actually fly into, or are entrained in any part of the turbulent air mass described as the wind wake area. Specifically, for the turbines being proposed, the EIS needs to identify the three-dimensional space over the range of operating conditions where birds, bats, or insects could be injured.

We believe this information is a prerequisite to evaluating collision mortality risk, to properly scope pre- and post-construction monitoring studies, and to determine if completed pre- and post-construction monitoring reports may contain data that could be transferable to the Deerfield Project. To our knowledge, none of the monitoring reports relied upon on page 224, et al., were based on known danger zones in the wind wake area for the full range of operating conditions for the turbines. All of the post-construction monitoring reports that we are aware of are based on the assumption of bird/bat strikes or injury at or near the rotors, and this may not be valid.

On page 234, the DEIS states that the U.S. Fish and Wildlife Service concurred that the risk to avian species was low to moderate at this particular site, and that adaptive management likely would be the most effective approach to minimize avian mortality over time. We do not know the source or the context from which these statements were drawn. These statements should be removed, as they do not represent U.S. Fish and Wildlife Service's views on this project in accordance with the present discussion and our prior scoping comments. Given the clear lack of adequate information to demonstrate the spatial and temporal use of the air space, the wind wake zone and collateral wind and weather data in this DEIS, we do not believe reasonable projections of risk to avian species are possible.

The DEIS devotes a considerable section on pages 240 to 261 to the discussion of bats and potential project effects to this species group. The summary section on page 256 contains two overly broad statements as follows: pre-construction surveys were not good indicators of bat mortality after construction; and both agencies concurred that this site likely has low bat activity. The first statement is problematic because acoustic detectors were the primary survey tool used to determine if bats were present. The radar surveys were not conducted in August when bat migration would likely be more concentrated. While it is generally not possible to distinguish between birds and bats with the type of radar used, it would be reasonable to suspect, assuming that targets would be detected, that some of the radar targets in August could be bats. The Service recommended verification techniques be conducted during the radar surveys to confirm target identity. The second statement referring to low bat activity suffers from similar data limitations. The acoustic detectors have a limited range (about 175 ft.) and only collect data when bats echolocate. Consequently, if bats are not making calls or are doing so in or above the rotor zone, then they would be unlikely to be detected with acoustic detectors. Data are lacking for bat migration over this project site, which creates uncertainty concerning the potential for adverse interactions with the proposed project.

On page 255, a summary statement is made predicting the estimated level of risk of bat mortality to be low to moderate. Previously, on the same page of the DEIS, the following statement appears: "No reliable method exists for predicting bat mortalities at wind farms." These

statements appear to be internally inconsistent, given the lack of data to demonstrate the spatial and temporal distribution of migrating bats through the project area, and lack of information on hazard zones in the wind wakes of the proposed turbines. This inconsistency needs to be resolved in the FEIS.

One additional issue that needs to be factored into the analysis is the effect of white nose syndrome on bat species most at risk for mortality at wind projects. The DEIS does address white nose syndrome on pages 253 and 260, and concludes that overall cumulative effects are difficult to predict. While we can agree that the cumulative effects of this malady to bats are difficult to predict, the EIS should consider providing additional information by evaluating a range of possible impact scenarios. For instance, what may have been considered by the Forest Service or others to be a moderate level of risk or impact two years ago could potentially be a much higher risk today because of the mortality and uncertainty created by white nose syndrome. This would be especially so for the migratory tree (red, hoary and silver-haired) bats if they are or become affected by white nose syndrome, since they are most often implicated with interactions at wind projects.

Similarly, on pages 240, 260, and 282 for birds, bats, the DEIS discusses some of the post-construction monitoring studies that could be implemented, but stops short of making a commitment to require such efforts, and does not include draft or conceptual monitoring plans for review. We believe the FEIS should at the minimum explain why none are included, and whether or not the Forest Service intends to require any such monitoring programs. It is our recommendation that the FEIS contain a commitment to require post-construction monitoring and at least a conceptual plan for review.

On pages 261 to 283, the DEIS provides a discussion on the habitat fragmentation effects of the proposed project on black bear habitat located on both the eastern and western expansion areas. Based on our knowledge of the project and as evidenced by the lengthy discussion in the DEIS and Public Service Board proceedings, a substantial effort has been expended on this controversial issue. On page 262, the DEIS identifies the sections in Vermont's Act 250 Land Use and Development Control Law (Act 250) that authorize protection for "necessary wildlife habitat decisive to the survival" of a species. The Vermont Agency of Natural Resources (VT ANR) has identified three types of black bear habitat for Act 250 protection: 1) stands of bear scarred beech, 2) wetlands, and 3) travel corridors. VT ANR considers the western expansion area to fall into this Act 250 protection because of the high concentration of beech, including bear scarred beech on this ridgeline.

The DEIS has evaluated the western expansion area as a reasonable alternative, even though VT ANR considers the site "unacceptable" and subject to Act 250 protection.

Given this outstanding issue, it is not clear that the western expansion area is a practicable alternative under the circumstances that have existed for the past several years. A closely-related issue presented concerns the lack of a rigorous analysis in the DEIS of the 37 sites, or a subset of them, on Forest Service lands that have been identified as being potentially suitable for wind development, to determine if one or more of these sites, if developed, would avoid or minimize impacts to black bear habitat, and other resource issues as well. If such sites are available on or off the forest, this information should be made known to decision makers at all levels, since the issue falls under various sections of NEPA, e.g., purpose 40 CFR 1502.1, alternatives 1502.14,

and state law 1506.2(d). The initial and subsequent steps in the screening analysis for reasonable alternatives could be modified to include the bear scarred beech and other Act 250 protection criteria to filter out sites that would likely be deemed unacceptable under state environmental criteria.

Another potential option to handle this issue would be to institute a time sequence between the state and federal review processes. For instance, in this unique set of circumstances, the Forest Service could decide to extend the comment period on the DEIS until some period of time after the Public Service Board reaches its decision on the Act 250 protection criteria for the western expansion area. If the Board upholds the Act 250 criteria, then the western expansion area would clearly not be a practicable alternative. Agency and public comments could then be directed to the remaining alternatives. If the applicant's position is upheld, then the Forest Service would be in a different position, but still required to consider the extensive information and public comments on the bear habitat issue. Because this issue is so contentious, we believe the Forest Service and the NEPA process would be best served by conducting a rigorous alternatives analysis as discussed above in these comments to determine if these adverse effects could be avoided or greatly minimized at alternative sites on or off the forest.

Thank you for providing the Department with the opportunity to comment on the DEIS. For questions regarding comments on fish and wildlife resources, please contact Mr. Vernon Lang, U.S. Fish and Wildlife Service, at 603-223-2541.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew L. Raddant", is written over a light blue rectangular background.

Andrew L. Raddant
Regional Environmental Officer