



## Department of Energy

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January 19, 2005

Mr. Bill Wichers  
Deputy Director  
Wyoming Game and Fish Department  
5400 Bishop Blvd  
Cheyenne, WY 82002

**RE: Response to Wyoming Game and Fish Department (WGFD) Comments on Draft Environmental Assessment for the Proposed Clipper Windpower, Inc. Low Wind Speed Turbine Demonstration Project, Carbon County, Wyoming. DOE/EA-1516**

Dear Mr. Wichers:

Pursuant to your comment letter to Mr. Steve Blazek dated January 7, 2005, please accept this letter as the Department of Energy's (DOE's) response to your comments concerning the above referenced Draft Environmental Assessment (DEA). Our responses are presented in the same order as your comments.

### **WGFD Comment 1**

We provided comments on the scoping of this project in a letter dated November 10, 2004, and those concerns still exist.

### **DOE Response to Comment 1**

Please see responses below.

### **WGFD Comment 2**

Major unresolved issues raised during scoping include the justification for siting the demonstration project at this site, the lack of detail in comparing how the Clipper low speed turbine differs from existing turbines that have been evaluated for environmental consequences, the lack of adequate baseline, construction and post-construction monitoring, and minimal commitment to avoid impacts or implement mitigation.



## **DOE Response to Comment 2**

DOE is very concerned about minimizing potential environmental impacts of the proposed Clipper Low Wind Speed Demonstration project and takes its regulatory responsibilities seriously. Clipper Windpower Inc. (Clipper) has used the U.S. Fish & Wildlife Service Guidance document, *Interim Guidance on Avoiding and Minimizing Impacts to Wildlife from Wind Turbines* (Service Guidance), in the planning phase of this project and the preparation of the DEA. As a result, several potential sites for the proposed project were evaluated by Clipper and eliminated from detailed analysis in the DEA because they ran contrary to many of the siting recommendations presented in the Service Guidance and would have resulted in more potential environmental impacts than the proposed project. Clipper determined the best available site by identifying potential project areas that conform to as many of the siting recommendations presented in the Service Guidance document as possible, while still meeting other technical, economic, and administrative restrictions.

DOE agrees with WGFD that pre-construction monitoring may be warranted in areas that receive high use by bats and/or avian species. In the same light, DOE also agrees that pre-construction monitoring is likely not warranted in areas that receive low use by bats and/or avian species. Based on TRC-Mariah's analysis, it is DOE's opinion that the bat and/or avian species use of the project area is low. This position is based on the fact that the project area has been utilized for wind energy projects for more than 20 years, relevant bat and avian information has been collected from other projects conducted in the general area including the Foote Creek and Simpson Ridge Wind Farm projects, and the Carbon Basin Coal Mine project, and the lack of known important habitats such as nesting and breeding areas, migration routes, sensitive habitats (wetlands) for bats and/or avian species within or near the project area. Mr. David Young, Jr. with Western EcoSystems Technology, Inc. (WEST) (of Cheyenne, Wyoming) and project biologist for bat and avian studies that were conducted at the Foote Creek Rim Windpower Project, agrees that pre-construction monitoring would not be very useful given the very small project area, the specific habitats near the project area, and the existence of the Medicine Bow Wind Farm Project (personal communication between Scott Kamber, TRC-Mariah and David Young, WEST, January 7, 2005).

Mr. Young also noted that the result of pre-construction monitoring conducted at the Foote Creek Rim Windpower Project did not correlate with the results from post-construction bat and avian species mortality surveys conducted for the same area (personal communication, Kamber/Young, January 7, 2005). For example, as noted in Young et al. (2003) golden eagle use of the Foote Creek Rim wind farm represented 40% of all documented raptor use of the study area. Utilizing the pre-construction use survey method to predict impacts and mortalities, it would have been logical to predict that golden eagles would represent approximately 40% of the mortalities. However, no golden eagle mortalities were recorded during the 3.5-year study period. Like wise, American kestrels accounted for only 5% of the total raptor use of the study area, but

they accounted for 60% of the raptor mortalities. It may be useful for the Service to review this research that was conducted within 10 mi of the proposed project area. Copies of Young et al. (2003) can be obtained at [http://www.west-inc.com/wind\\_reports.php](http://www.west-inc.com/wind_reports.php).

As result of this apparent low use of the project area by bats and/or avian species, it is DOE's professional opinion that additional pre-construction bat and avian use surveys of the project area are not necessary or warranted for this project. However, despite the low use of the project area by bats and/or avian species, DOE would require Clipper to conduct post-construction mortality surveys for bats and avian species during the first 12 months of operation. DOE contends the post-construction monitoring is justified and important to document actual impacts to bat and/or avian species due to the operation of the larger Clipper wind turbine. DOE would also require Clipper to conduct raptor and passerine bird use surveys at the project site during the first 12-month period of operation using methods and protocols presented in Thomas et al. (1997) and used at the nearby Foote Creek Rim Windpower Project. All surveys would be conducted by qualified biologists. Detailed survey methods would be included in a survey protocol document to be prepared for the project and submitted to DOE, USFWS, and WGFD for review and comment.

Based on the review of the Clipper wind turbine and recommendation by Mr. David Young, Jr. (with WEST of Cheyenne, Wyoming), DOE has increased the mortality search distance from 250 ft to 325 ft. This change is expected to be adequate to capture the mortalities associated with the larger wind turbine design. The 325-ft survey distance for the mortality surveys is included in the Errata Document for the DEA.

Based on the recommendation of Mr. Young, the frequency of surveys will be changed from once every two weeks to a time period based on the results of on-site seasonal carcass removal trials that will be conducted at the project site (personal communication between Scott Kamber, TRC-Mariah, and David Young, West, January 7, 2005). The objective of the carcass removal trials is to estimate the length of time avian and bat carcasses remain in the search areas prior to being removed. Carcass removal eliminates the possibility of detection during mortality surveys and includes removal by predators, scavengers, or other means; it is directly related to level of use of the project area by local scavengers. The carcass removal trials would be conducted utilizing protocol presented in the *Final Report: Avian and Bat Mortality Associated with the Initial Phase of the Foote Creek Rim Windpower Project, Carbon County, Wyoming* (Young et al. 2003). This document can be found at [http://www.west-inc.com/wind\\_reports.php](http://www.west-inc.com/wind_reports.php). The trials would be conducted at the beginning of each of the following seasons: spring migration (February 15 – April 15), summer breeding season (April 16 – August 31), fall migration (September 1 – October 31), and winter (November 1 – February 14) and would be used to statistically determine the amount of time between each survey. The carcass removal trials will document scavenger use of the immediate project area and will be used to determine the frequency of mortality surveys. In addition, a commitment to conduct carcass removal trials will replace the two-week survey period and is reflected in the Errata Document for the DEA.

### **WGFD Comment 3**

The EA does not fully address the cumulative impacts (Section 4.9, pp75ff), particularly the existing and proposed wind plants in the vicinity, and fails to disclose the potential for windpower expansion at the proposed site. Figure 4.1 and the related discussion are incomplete and do not show many of the projects.

### **DOE Response to Comment 3**

DOE has made every effort to fully address cumulative impacts in the DEA, including the existing wind farm, and proposed wind farms and other industrial development in the general project area known to DOE, Clipper, and TRC-Mariah staff.

In addition, the Proposed Action only calls for the construction and operation of the single Clipper demonstration wind turbine and as stated in the DEA, there are no reasonably foreseeable plans to place more wind turbines at this site. If additional turbines were to be located at this site as part of a federally-funded project, additional environmental analysis would likely be conducted. Therefore, this portion of the WGFD comment is outside the scope of this NEPA analysis.

### **WGFD Comment 4**

A considerable amount of wildlife information has been gathered in the vicinity and at nearby windplants over the years. We suggest that these be specifically reviewed and referenced in the EA. If the EA is going to base assumptions on other studies (e.g., SeaWest), then it needs to present the similarities and differences between sites and projects. A single, nonquantified reconnaissance survey is inadequate as a baseline for the projects (e.g., p 41).

### **DOE Response to Comment 4**

The DEA currently discusses and cites numerous baseline environmental studies that have been conducted over the past several years including the Environmental Impacts Statements (EISs) for the Foote Creek Rim and Simpson Ridge wind farm project, the EIS for the Carbon Basin Coal Mine, and post-construction monitoring conducted at the Foote Creek Rim and Simpson Ridge project areas. The DEA states that the environmental analysis includes the existing baseline studies supplemented with a reconnaissance survey.

Detailed information regarding the methods used to estimate bat and avian mortality is currently included in Section 4.8.1 of the DEA. Additional detail has been added, and is provided in the Errata document which is a component of the Final EA.

Clipper has committed to conduct avian use surveys and post-construction mortality surveys for bats and avian species during the first 12 months of operation. DOE feels

these various surveys are justified and important to document actual impacts to bat and/or avian species due to the operation of the larger Clipper wind turbine. Information concerning additional surveys has been included in the Errata document for the DEA.

#### **WGFD Comment 5**

Measures to reduce impacts incorporated into the project are vague and appear to be solely at the discretion of the operator, despite federal funding and involvement. For example, we recommended during scoping that construction not occur from November 15 – April 30, to prevent disturbance on crucial big game range. However, construction would start in December of 2004 and continue for about 2 months during this sensitive period (pp. 15, 21, 60-62).

#### **DOE Response to Comment 5**

In addition to the applicant-committed practices currently listed in Section 2.1.5 of the DEA, please reference the additional applicant committed measures regarding raptor and passerine avian use surveys, as described in the attached Errata document. Clipper Windpower will be contractually bound to all of these applicant-committed practices.

Section 4.8.1.1 includes a discussion of potential environmental impacts to pronghorn antelope and the applicant-committed practice included in the project to minimize impacts. Additional information concerning the timing and extent of construction operations has been included in the Errata Document for the DEA.

#### **WGFD Comment 6**

Measures to mitigate sage-grouse concerns are inadequate (p. 21). The immediate construction of the project does not allow of any baseline data gathering and may discourage sage-grouse from even initiating strutting in the event these decide to reoccupy close lek sites. NREL or Clipper WindPower should commit to monitoring. If leks are active, additional mitigation would be required.

#### **DOE Response to Comment 6**

Construction will begin in mid- January 2005, and is expected to last for about 2 months. Construction activities are expected to be completed by the middle of March 2005, which is before the prime breeding season for greater sage-grouse. In addition, seasonal mitigation measures for greater sage-grouse are listed on page 21 of the DEA.

#### **WGFD Comment 7**

The provision for only monitoring mortality for only 1 year (p. 21) is grossly inadequate and does not negate the project from obligations under the Migratory Bird Treaty Act and other laws. One year's monitoring may mask actual impacts due to seasonal and annual variation. DOE should require monitoring for at least three

years. Results should be compared to other nearby projects. Mortality monitoring does not address scavenging and decomposition (pp. 64-65).

### **DOE Response to Comment 7**

Clipper Windpower has agreed to conduct surveys of avian use of the immediate project area by raptors and passerine birds along with the mortality surveys discussed in the DEA. The avian use surveys will be based on survey methods and protocols used at the nearby Foote Creek Rim Windpower Project. The Errata to the DEA includes a commitment to these site use surveys.

One year of post-construction mortality surveys will provide some information on the potential impacts of the Proposed Action on bat and/or avian species and further characterize the impacts of this wind turbine.

As discussed under *DOE Response to Comment 2*, Mortality surveys would be conducted in accordance with *Final Report: Avian and Bat Mortality Associated with the Initial Phase of the Foote Creek Rim Windpower Project, Carbon County, Wyoming* (Young et al. 2003); these survey procedures do address issues of scavenging and decomposition. This document can be found at [http://www.west-inc.com/wind\\_reports.php](http://www.west-inc.com/wind_reports.php).

### **WGFD Comment 8**

We suggest that the design and characteristics of the proposed low-speed wind turbine be contrasted with other existing designs, including height of rotor-swept area, blade tip speeds, and potential wildlife mortalities. Implications of the differing height of the rotor-swept area from the Clipper design to conventional turbines should be discussed in detail (p. 64).

### **DOE Response to Comment 8**

Design specifications for the Clipper wind turbine are discussed in the DEA on pages 9 – 14. Relevant design specifications for the Clipper wind turbine are also compared to conventional wind turbines on pages 63-64 of the DEA. The DEA also presents an analysis that estimates bird and bat mortalities for the Clipper wind turbine compared to the existing wind turbines that are located at the Foote Creek Rim Windpower Project and the Medicine Bow Wind Project. Clipper has also committed to additional monitoring in an attempt to better define relative impacts to wildlife of the larger turbine compared with smaller turbines.

### **WGFD Comment 9**

Individual met towers can cause as much wildlife mortality as working turbines, especially if these are lattice towers with guy wires. We recommend using current met tower by the Platte River Power Authority and other since they are already monitoring wind speeds in the area.

### **DOE Response to Comment 9**

As stated above, Clipper has utilized and incorporated the recommendations stated in the Service Guidance document into the planning phase of this project, wherever possible. DOE and Clipper recognize that tall, guy-wired meteorological towers can result in numerous bat and avian mortalities. However, as stated in the DEA, one of the primary purposes of the proposed research project is international certification of the demonstration wind turbine. These certification standards specify the location and height requirements of meteorological towers relative to turbines being certified. Meteorological data is needed to correlate wind velocities seen by the turbine with the power output generated. This correlation is required to predict the rated power output of the turbine. According to the international standards, meteorological tower height must be within 2% of hub height of the turbine (the hub height will be 75 meters, or 246 feet), and a maximum of 2 to 4 rotor diameters from the turbine, with the accepted practice being 2.5 rotor diameters away from the turbine (about 760 feet in this case). DOE has discussed with Clipper the potential use of the existing meteorological towers associated with the Medicine Bow Wind Project, and Clipper has determined that these towers are too far away from the proposed turbine site and not tall enough to be utilized for the proposed research project. While utilization of an existing meteorological tower would result in significant cost savings, it would not meet the technical data standards that are required for this project. In addition, the tower must be 240 ft tall, and a guyed-lattice tower is the only practical and reasonable method that can be used to erect a tower of that height.

### **WGFD Comment 10**

The assumptions about impacts to Bald Eagles (p.35, p.54) are understated. An active Bald Eagle nest is within 8 miles of the preferred site and is directly in the flight line to East Allen Lake, where waterfowl, fish and other preferred prey occur.

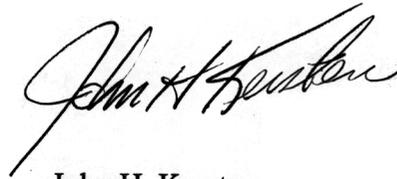
### **DOE Response to Comment 10**

The analysis included in Section 4.4.1.2 does not understate potential impacts to bald eagles (a federally listed and protected species). The document clearly states that migrating bald eagles may occasionally forage or fly through the project area. The DEA also states that there is a chance that bald eagles might collide with the operating wind turbine or meteorological tower and guy wires. When asked for their comments and concerns about wildlife species in the area during the scoping period prior to preparation of the DEA, neither the WGFD nor the USFWS identified the project area as a migratory pathway for bald eagles. There are no data to indicate that the project area is located in a migratory flight path. The Wyoming Natural Diversity Database (coordinated by the University of Wyoming) also does not note any sightings of bald eagles within 6 miles of the project area including the area around East Allen Lake and no bald eagle mortalities have been documented at the Medicine Bow Wind Project. The DEA concludes that the

Proposed Action may affect, but would not adversely affect bald eagles that might utilize the project area.

DOE appreciates WGFD's review of the Proposed Clipper Windpower, Inc. Low Wind Speed Turbine Demonstration Project Environmental Assessment. If you have further questions regarding DOE's response to your comments, please contact Steve Blazek at 303-275-4723. Mr. Blazek will contact you in the near future to coordinate review and comment of the survey protocol documents.

Sincerely,

A handwritten signature in black ink, appearing to read "John H. Kersten". The signature is written in a cursive style with a long, sweeping underline that extends to the left.

John H. Kersten  
Manager

Enclosure