United States Department of the Interior

FISH AND WILDLIFE SERVICE

West Virginia Field Office
694 Beverly Pike
Elkins, West Virginia 26241

November 16, 2007

Ms. Wendy Tidhar
WEST, Inc.
2003 Central Avenue
Cheyenne, Wyoming 82001

Re: Proposed Construction and Operation of a Wind Power Facility, in Pendleton and Hardy Counties, West Virginia

Dear Ms. Tidhar:

This responds to your letter dated October 5, 2007, requesting information on the presence of rare/sensitive habitat or natural features and communities within the vicinity of the proposed construction and operation of a wind power facility. The project is located in Pendleton and Hardy Counties, West Virginia. A portion of the project appears to enter Rockingham County, Virginia, according to the map provided in the letter. We have reviewed the information you supplied and are providing comments on it in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*)(ESA), the Migratory Bird Treaty Act (16 U.S.C. 703-712)(MBTA), and the Golden Eagle Protection Act (16 U.S.C. 668-668d) (Eagle Act). For reasons explained in more detail in this letter, we recommend that you consider alternative locations for this wind power facility because the proposed site is a high risk site, and wind power operations at this location pose a reasonable likelihood of take[3] of species protected by the ESA, MBTA and Eagle Act.

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[3] Take under the ESA means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (16 U.S.C 1532(19)). Except as otherwise permitted, it is unlawful for "any person subject to the jurisdiction of the United States to take any [federally listed] species within the United States..." (16 U.S.C. § 1538(a)(1)(B)). Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill;...(16 U.S.C. §§ 703-712).

We are concerned about the proximity of these species occurrences to the proposed project. Given the significance of these occurrences, we provide more extensive comments and identify information needs, which when satisfied, will enable both the project proponent and the U.S. Fish and Wildlife Service (Service) to discuss the baseline conditions, examine risk and, if necessary, determine a proper course of action to avoid and minimize any impacts. We also address possible impacts to migratory birds and bats. As plans progress, you should contact us regarding alternative sites and any additional proposals for power lines, roads, and other ancillary facilities as these have the potential to affect wildlife in the area. Finally, we reserve the right to revise our position if the scope of the project changes, or if new information about species presence or interactions with turbines becomes available.

Threatened and endangered species known to occur near the project area which may be affected by the construction and operation of the project include the Indiana bat (*Myotis sodalis*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*), and shale barren rock cress (*Arabis serotina*). Under section 9 of the ESA, a project proponent is responsible for ensuring that its actions do not result in unauthorized take of a federally-listed species. The Service is available to assist you in this regard. We are also concerned with the possible effects of this project to migratory birds and non-endangered bat species.

A known bald eagle (*Haliaeetus leucocephalus*) nest is also located near the proposed wind power facility. Eagle Act prohibits the take of bald and golden eagles unless pursuant to regulations. In the case of bald eagles, take can only be authorized under a permit. The Eagle Act defines the "take" of an eagle to include a broad range of actions: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, or molest or disturb"; the broadest of these terms is "disturb." "Disturb" has now been defined by the Service in regulations at 50 CFR 22.3 as: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." The Eagle Act does allow for incidental take of bald eagles associated with the disturbance of nesting or foraging eagles. The bald eagle is also protected by the MBTA, which prohibits the taking of any migratory bird or any part, nest, or egg, except as permitted by regulation. At this time, neither the Eagle Act nor the MBTA permits incidental mortality of a bald eagle due to collisions with wind towers.

Indiana bat (*Myotis sodalis*)

The federally-listed endangered Indiana bat hibernates in caves or mine shafts in the winter and roosts in trees in the summer. Indiana bats migrate between hibernacula and summer maternity habitat, with records ranging from less than 30 miles to over 300 miles. There is one Indiana bat hibernacula located within 10 miles of the proposed wind power facility (WVDNR 2006). The Indiana bat may use the project area for roosting and foraging between April 1 and November 15 (USFWS 1999).

Data collected during a two-year study tracking spring emerging females to their summer roost sites in the Lake Champlain valley of New York and in a separate Vermont study suggest that females do not remain in the area surrounding the hibernacula after emerging from hibernation, but leave for summer habitat soon after emergence from hibernation (Britzke et al. 2004). Data indicate that the area within an approximate 5-mile radius of a hibernaculum is important

foraging and roosting habitat for the Indiana bat at the time of spring emergence (staging) and prior to hibernation (swarming), although males have been found almost 10 miles from the hibernacula in Indiana (U.S.D.A 2000).

Females dispersing from a Kentucky hibernaculum in the spring moved 4 to10 miles within 10 days of emergence, eventually traveling more than 300 miles from the hibernaculum to the maternity area (Gardner et al. 1996; Gardner and Cook 2002). However, maternity colonies have been also located within 10 to 25 miles of the hibernaculum (Butchkoski and Hassinger 2002; Britzke et al. 2004). Less is known about the male migration pattern, but many males summer near the hibernacula (Whitaker and Brack 2002). Some males disperse throughout the range and roost individually or in small numbers in the same types of trees and in the same areas as females.

It has been suggested that bats orient in response to landscape features during migration (Humphrey and Cope 1976). The mountain ridges of West Virginia may serve as corridors for bats migrating between their summer and winter habitats. Several bat species, including Indiana bats are known to follow linear features in the landscape when traveling between roosting and foraging sites (Verboom and Huitema 1997; Verboom and Spoelstra 1999; Murray and Kurta 2004). However Indiana bats are also known to cross high Appalachian ridges as demonstrated in an electronic tracking study (Chenger 2003).

Indiana bats feed exclusively on flying insects, and forage in riparian, bottomland, or upland forests (including ridge-tops), preferring a mosaic of open and forested areas (USFWS 1999). Such habitat conditions are likely to result from forest clearing associated with the proposed construction of turbines. While such clearing may appear to benefit bats, it may also attract bats after the turbines have been constructed, increasing the potential for bat mortality.

Virginia big-eared bat (*Corynorhinus townsendii virginianus*)
The federally-listed endangered Virginia big-eared bat lives in caves year round, and moves between winter hibernation sites and summer maternity sites. These movements may be within the same cave, but are more commonly between caves. Migration distances are usually less than 40 miles. There are four Virginia big-eared bat hibernacula located within 10 miles of the project area shown on your map. This includes Hoffman School Cave, Cliff Cave, Sinnitt-Thorn Cave, and Minor Rexrode Cave. Hoffman School Cave and Sinnitt-Thorn Cave have been designated as critical habitat for the Virginia big-eared bat. The Virginia big-eared bat uses all of these caves as hibernacula in the winter.

The Virginia big-eared bat may use the area for foraging between April 1 and November 15. They feed exclusively on flying insects, with the majority of their diet consisting of moths. Foraging habitat includes woodlands, old fields and hay fields (USFWS 1995). In summer, Virginia big-eared bats may forage more than six miles from their cave, and will cross ridges to reach foraging areas. Preferred foraging areas for Virginia big-eared bats consist of a mosaic of open and forested habitat. Such habitat conditions are likely to result from the construction of the proposed wind power facility.

SUMMARY OF BAT CONCERNS

The wind power facility is proposed along a mountain ridge in West Virginia and could pose a risk to Indiana and Virginia big-eared bats, as well as many non-endangered bat species foraging or migrating through the area. Since bats are long-lived and have low reproductive rates, high mortality levels could have serious impacts on populations.

Bat mortality at wind turbine sites in North America has been documented to occur during summer foraging activities, as well as during migration (Keeley *et. al* 2001, Erickson *et. al* 2002, Johnson *et. al* 2003, Johnson 2003, Kerns and Kerlinger 2004). An estimated 2,092 bats, representing at least six species, were reported killed between August 18th and November 9th of 2003 at the Mountaineer Wind Energy Center, located on Backbone Mountain in Tucker County, West Virginia (Kerns and Kerlinger 2004). An important field study conducted during 2004 by the Bats and Wind Energy Cooperative (BWEC) (Bat Conservation International, Inc. 2004) at the Mountaineer and Meyersdale Wind Energy Centers found similar results (Arnett 2005). Both projects are located along ridges of the Appalachian plateau in West Virginia and Pennsylvania, respectively. This study is relevant to the proposed project due to geographic proximity, location on forested ridges with comparable forest composition, bat species, similarity of turbine and project design, and perhaps other factors. Therefore, we will go to some length below to recount some salient points reported by Arnett (2005):

- Mountaineer has 44 and Meyersdale has 20 NEG Micron 1.5 MW turbines.
- Mountaineer began operation in December 2002; Meyersdale exactly one year later.
- Fatality searches were conducted at both sites between July 31 and September 13, 2004.
- Half of the turbines at each site were searched daily and the other half weekly.
- Human search efficiency was 42% at Mountaineer and 14% at Meyersdale, while the search efficiency of trained dogs was 71% at Mountaineer and 81% at Meyersdale.
- Trained dogs consistently found higher proportions of carcasses in high, medium, and low visibility habitats than humans.
- Thermal imaging cameras were used to assess bat activity at turbines at Mountaineer, which provided video of bats coursing between moving blades in foraging behavior, chasing blades, being struck by blades, and falling to the ground.
- Most bat activity was observed within 2-hours after sunset.
- Six species were found killed at Mountaineer and 7 at Meyersdale: hoary bats, eastern red bats, eastern pipistrelles, little brown bats, silver-haired bats, big brown bats, and northern long-eared bats (only found at Meyersdale) (from highest to lowest number found).
- While no endangered species were found dead, no hibernacula were reported in the project areas. There are hibernacula in the proposed project area.
- Bat fatalities were highly variable and periodic throughout the study.
- Fatality was distributed across all turbines, although higher than average numbers of bats generally were found at turbines located near an end or center of the string on both sites.
- At both locations, the majority of bats were killed on low wind nights when power production appeared insubstantial, but turbine blades were still spinning and often at or close to full operational speed (17 rpm).
- Of the 64 turbines studied, one turbine was non-operational throughout the study period and this was the only turbine where no fatalities were found.
- Timing of bat fatalities at Mountaineer and Meyersdale were highly correlated, providing

evidence that broader landscape patterns, perhaps regional in scope, dictated by weather and prey abundance/availability or other factors influenced mortality events.

- FAA lighting had no detectable impact on bat fatality.
- At Mountaineer, 1,364 to 1,980 bats are estimated to have been killed by the 44 turbines during the 6-week study. Based on daily searchers, 38 bats per turbine were killed during this study (90% confidence interval = 31-45).
- At Meyersdale, 400-660 bats are estimated to have been killed by the 20 turbines during the 6-week study. Based on daily searches, 25 bats per turbine were estimated killed during this study (90% confidence interval = 20-33).
- The estimates of mortality are among the highest ever reported in the world, and support the contention that forested ridges are locations of especially high risk for bat fatality at wind energy facilities.
- The findings reflect an emerging pattern of bat fatality associated with wind turbines located on forested ridges and suggest that similar fatality rates could be expected at sites with comparable forest composition and topography, especially in the eastern U.S.

Results of a pilot study designed to investigate bat mortality associated with wind turbines in Sweden indicated that migratory and non-migratory aerially-hunting bats will forage on insects that concentrate near wind turbines (Ahlén 2003). This behavior was observed at facilities sited within flight corridors of migrating bats and/or foraging habitat of non-migrating bats. Ahlén (2003) also reported finding dead migratory and non-migratory species of bats near the turbine structures. The project site may be within the migration path or serve as a foraging area for several bat species, including Indiana and Virginia big-eared bats.

We strongly encourage you to determine the temporal and spatial use of the project area by bats so that such use by bats can be reported to us and others prior to filing an application with the West Virginia Public Service Commission. The spatial areas of greatest concern include the ridgelines, side slopes, and valley sections. We are interested in the seasonal and annual variability of bat use of these areas, which occurs for a variety of reasons, including weather. So that variability can be accounted for with some reliability, we recommend conducting multi-year studies (usually for three years). Radar, thermal imaging, acoustical studies, mist-netting and other appropriate sampling techniques should be employed. With respect to Federally-listed species, we recommend conducting springtime emergence studies to detect when and where species from nearby hibernacula travel. We also suggest that you review the scientific literature and data and consult with species experts with experience in this[4] to develop a study plan. The Service is available to review and comment on the draft study plan, and the results of the studies. We are interested to learn how you propose to avoid and minimize fatality of endangered and non-endangered bats should the project be constructed and operated.

Shale Barren Rock Cress (*Arabis serotina*)

The project boundary overlaps with known locations and potential habitat of shale barren rock cress in West Virginia. Shale barren rock cress is a member of the mustard family, Brassicaceae,

[4] For example, Al Hicks with the New York Department of Environmental Conservation, Office of Endangered Species, in Albany has been directing the spring emergence project in New York. He may be the first to successfully locate maternity colonies of bats, in this case Indiana bats, by tracking them from their hibernacula to their summer range. He can be reached at 518-402-8854 office; or 518-461-4632 cell; or at achicks@gw.dec.state.ny.us.

and is one of several endemic species restricted to the mid-Appalachian shale barrens of the Ridge and Valley province of the Appalachian Highlands (USFWS 1991). Shale barren vegetation occurs on eroding shale formations. Mid-Appalachian shale barren is a designation for a shale slope of the region with an open, scrubby growth of pine, oak, red cedar, and other woody species adapted to xeric conditions. Shale barren rock cress is a biennial herb.

The primary threat to listed plants is habitat alteration. Factors that contribute to this threat include natural forest succession and subsequent canopy closure, changes in hydrology (either more water or less water), competition by invasive plant species, and catastrophic disturbance such as development or road construction. The construction of access roads and support facilities may result in loss of shale barren rock cress populations.

Migratory Birds

Most birds migrate – from hundreds to thousands of miles each year – in their quest for food. Many bats also migrate. The season and weather conditions affect when and where the migratory path will go. Birds and bats may converge along distinct landforms that are either barriers or aids to migration. Some birds congregate along the shores of large water bodies as they migrate. Some songbirds and soaring birds, like eagles and hawks, migrate along Appalachian Mountain ridge lines. Thermal updrafts along the ridges provide lift, allowing the birds to conserve energy. Inclement weather can force birds to fly lower than usual, where they can collide with human-made structures. Coping with storms or obstacles causes an increase in energy expenditure, and can reduce the birds' lifespan and ability to reproduce. The majority of birds that migrate over North America do so east of the Mississippi River, including the Northeast and the ridges of the Appalachian plateau.

We are concerned about potential impacts of wind power facilities on migratory birds, a Federal trust resource the Service is mandated to protect. Birds have been killed by rotating turbine blades and/or by striking turbines structures at the Mountaineer Wind Energy Center (Arnett 2005) and other projects. Wind energy generation facilities may also affect bird movements, breeding, and habitat use (USFWS 2003). Take (i.e., killing) of migratory birds by any person without authorization constitutes a violation of the Migratory Bird Treaty Act (MBTA), which is a strict liability statute.

While the MBTA has no provisions for allowing unauthorized take, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid take are implemented. The Service's Office of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. Although it is not possible under the MBTA to absolve individuals, companies, or agencies from liability (even if they implement avian mortality avoidance or similar conservation measures), the Office of Law Enforcement focuses on those individuals, companies, or agencies that take migratory birds with disregard for their actions and the law, especially when conservation measures have been developed but are not properly implemented.

We recommend that multiple years of pre-construction monitoring of birds be conducted at the proposed project site in order to determine the spatial and temporal uses of the project area by migratory birds. Radar and other appropriate sampling techniques should be employed. For

example, one study performed at Mt. Storm in the fall of 2003, estimated that nearly 16% or 300,000 birds and bats flew low enough (below 125 meters above ground level and the height of proposed wind turbines) to collide with the turbine's tower or blades during fall migration. Radar technology was used to track birds in flight. The relevant paragraph follows:

> "...it is estimated that approximately 1,830,800 birds may have passed over the study area during the fall migration below 1.5 kilometers agl [199 targets per kilometer per hour x 10 kilometers of migratory front x 10 hours per night x 92 nights] and approximately 292,928 (16%) would pass though the area below 125 meters agl."

The study conducted in the fall of 2004 at Liberty Gap in Pendleton County concluded that the average flight altitude above the vertical radar was 583 m (mean varying from 284 m to 781 m), with 8% of the targets flying below an altitude of 125 m, or the height of the proposed turbines (Roy et al 2004). However, the range of targets flying below the 125 m altitude mark was 2% to 26% (Roy et al 2004), or 88 to 1,144 of the targets (n=4,402) identified in the vertical radar. The vertical radar was set to identify bird and bat targets. A similar study conducted in the spring of 2005 found that the total migratory activity appeared to be approximately twice as high during the spring sampling period compared to the previous fall (Woodlot Alternatives 2005). We suggest that you review the scientific literature and other data as well as consulting with species experts to develop a study plan. As previously mentioned for bats, the Service is available to review the draft plan, as well as study results.

We recommend that studies be conducted over a three-year period to help ensure that year-to-year variability would be included in the data. For example, data only from one year or even one season on nocturnal migrant passage will not likely accurately represent the passage during other years and thus may fail to account for annual variation in numbers, species, weather, altitude, etc. The three-year duration was chosen for the proposed site as a compromise between five-or seven-year sampling periods and single-year studies.

Bald Eagle (*Haliaeetus leucocephalus*)

A bald eagle nest is located within 6.9 km (4.3 miles) of the project boundary. Bald eagles are a North American species that historically occurred throughout the contiguous United States and Alaska. Bald eagle distribution varies seasonally. Bald eagles that nest in southern latitudes frequently move northward in late spring and early summer, often summering as far north as Canada. Most eagles that breed at northern latitudes migrate southward during winter, or to coastal areas where waters remain unfrozen. Migrants frequently concentrate in large numbers at sites where food is abundant and they often roost together communally. In some cases, concentration areas are used year-round: in summer by southern eagles and in winter by northern eagles.

During the breeding season, bald eagles are sensitive to a variety of human activities. However, not all bald eagle pairs react to human activities in the same way. Some pairs nest successfully just dozens of yards from human activity, while others abandon nest sites in response to activities much farther away. This variability may be related to a number of factors, including visibility, duration, noise levels, extent of the area affected by the activity, prior experiences with humans, and tolerance of the individual nesting pair. The relative sensitivity of bald eagles during various stages of the breeding season is outlined in the following table:

Nesting Bald Eagle Sensitivity to Human Activities

Phase	Activity	Sensitivity to Human Activity	Comments
I	Courtship and Nest Building	Most sensitive period; likely to respond negatively	Most critical time period. Disturbance is manifested in nest abandonment. Bald eagles in newly established territories are more prone to abandon nest sites.
II	Egg laying	Very sensitive period	Human activity of even limited duration may cause nest desertion and abandonment of territory for the breeding season.
III	Incubation and early nestling period (up to 4 weeks)	Very sensitive period	Adults are less likely to abandon the nest near and after hatching. However, flushed adults leave eggs and young unattended; eggs are susceptible to cooling, loss of moisture, overheating, and predation; young are vulnerable to elements.
IV	Nestling period. 4 to 8 weeks	Moderately sensitive period	Likelihood of nest abandonment and vulnerability of the nestlings to elements somewhat decreases. However, nestlings may miss feedings, affecting their survival.
V	Nestlings 8 weeks through fledging	Very sensitive period	Gaining flight capability, nestlings 8 weeks and older may flush from the nest prematurely due to disruption and die.

If agitated by human activities, eagles may inadequately construct or repair their nest, may expend energy defending the nest rather than tending to their young, or may abandon the nest altogether. Activities that cause prolonged absences of adults from their nests can jeopardize eggs or young. Depending on weather conditions, eggs may overheat or cool too much and fail to hatch. Unattended eggs and nestlings are subject to predation. Young nestlings are particularly vulnerable because they rely on their parents to provide warmth or shade, without which they may die as a result of hypothermia or heat stress. If food delivery schedules are interrupted, the young may not develop healthy plumage, which can affect their survival. In addition, adults startled while incubating or brooding young may damage eggs or injure their young as they abruptly leave the nest. Older nestlings no longer require constant attention from the adults, but they may be startled by loud or intrusive human activities and prematurely jump from the nest before they are able to fly or care for themselves. Once fledged, juveniles range up to ¼ mile from the nest site, often to a site with minimal human activity. During this period, until about six weeks after departure from the nest, the juveniles still depend on the adults to feed them.

Disruption, destruction, or obstruction of roosting and foraging areas can also negatively affect bald eagles. Disruptive activities in or near eagle foraging areas can interfere with feeding,

reducing chances of survival. Interference with feeding can also result in reduced productivity (number of young successfully fledged). Migrating and wintering bald eagles often congregate at specific sites for purposes of feeding and sheltering. Bald eagles rely on established roost sites because of their proximity to sufficient food sources. Roost sites are usually in mature trees where the eagles are somewhat sheltered from the wind and weather. Human activities near or within communal roost sites may prevent eagles from feeding or taking shelter, especially if there are not other undisturbed and productive feeding and roosting sites available. Activities that permanently alter communal roost sites and important foraging areas can altogether eliminate the elements that are essential for feeding and sheltering eagles.

In addition to the threat of disturbance, bald eagles may forage in the project area, increasing their chance of colliding with moving blades. Raptors can become acclimated to new structures in their territory. However, until that happens, bald eagles may focus on catching their prey and be unaware of the rotating blades. This has been an on-going concern at the Altamont Pass wind power facility in California.

Wildlife Impacts including Habitat Fragmentation

Habitat fragmentation is an issue for many species of wildlife, particularly for deep forest birds. Habitat fragmentation can result as a consequence of clearing forests for roads or corridors to accommodate vehicular access and transmission lines and site clearing to accommodate wind turbines. Effects could include direct loss of deep forest habitat; an increase in edge habitat; increased nest parasitism and predation; a decrease in abundance and diversity of area-sensitive species with a concurrent increase in habitat suitability for edge and generalist species; and interruption of travel corridors, displacement, and other behavioral effects.

Summary

In summary, the Service is supportive of electricity generation from renewable sources and encourages efficient wind energy projects that are sited and operated to be bird-and-bat friendly. With that in mind, we are concerned about the potential risk that construction and operation of the proposed wind power facility may pose to ESA-listed species, Eagle Act-protected species, MBTA-protected bird species, and non-listed bats residing and migrating through the area, and the resultant cumulative impacts of wind power facilities on ridge tops throughout the eastern United States. There have been few studies in the U.S. that document nocturnal avoidance of wind turbines by songbirds and bats. We, therefore, find a compelling need for these data at the site-specific scale. It would be an unusual situation where data would not be needed to assess the suitability of a site for a proposed commercial-scale wind project in consideration of birds and bats. We strongly encourage you to perform the recommended pre-construction studies at the proposed project site in order to identify use by threatened and endangered species, eagles, and migratory birds and bats. This information will be critical in assessing possible risks to these species as well as designing means to avoid and minimize any impacts. It will also be helpful in designing the scope of post-construction monitoring efforts, which the Service believes should be phased over the life of the project because one hibernaculum for two Federally-listed endangered species of bats and three Virginia big-eared bat locations are within 10 miles of the proposed turbine line. We are not able to know how the bats will use the project space in the future.

The Service strongly recommends further coordination with regard to the Endangered Species Act (ESA). If it is determined that a federal agency is involved in the funding, permitting, or authorization of a proposed project, further consultation between that agency and the Service will be necessary, pursuant to section 7 of the ESA. Absent a federal nexus, if a federally-listed threatened or endangered species may be taken as a result of the construction or operation of the project, a project prospect may opt to apply to the Service to obtain an incidental take permit pursuant to section (10)(a)(1)(B) of the ESA. The Service may issue such a permit upon completion of a satisfactory habitat conservation plan (HCP) for the listed species that would be taken by the project. Outside of a HCP, a bald eagle disturbance permit may be required if the buffers to avoid disturbance cannot be implemented during project construction. It should be noted that the West Virginia Public Service Commission often includes coordination with the Service as part of their Order granting certification.

The Service offers Interim Guidelines to avoid and minimize wildlife impacts from wind turbines. The Service's Interim Guidelines are applicable to terrestrial projects in the Northeast with few exceptions. The Interim Guidelines include recommendations for 1) proper evaluation of wind resource areas; 2) proper siting and design of turbines within development areas; and 3) pre- and post-construction research and monitoring to identify and/or assess impacts to wildlife. We encourage you to reference these guidelines at http://www.fws.gov/habitatconservation/wind.pdf and incorporate as many of the design recommendations as possible. We also recommend that you refer to the U.S. Fish and Wildlife Service's "Birds of Conservation Concern 2002" list in order to identify birds of conservation concern that may breed or migrate through the project area. This list may be accessed on-line at http://migratorybirds.fws.gov/reports/BCC02/BCC2002.pdf.

RECOMMENDATIONS

While the fatalities at Mountaineer and Meyersdale were not predicted during the site evaluation phase or prior to construction, we are predicting them now for the Pendleton and Hardy Counties project. We recommend that wind projects be sited to effectively avoid harm to wildlife.

Based on the available information, it is our opinion that the fatality rates reported by Arnett (2005) for bats at wind turbines should be applied to the proposed project, including for the two endangered bat species known to be in that area. This, and other factors such as the proximity to a known Bald Eagle nest, lead us to conclude that proposed project is proposed on a high risk site. Therefore, we recommend that a wind power facility not be constructed at this site.

However, should your client intend to pursue the construction and operation of a wind power facility at this location, 3 years of pre-construction surveys including mist net surveys, radar studies, acoustic monitoring, as well as surveys for bald eagle foraging areas and shale barren rock cress, should be conducted prior to submitting a site certificate application to the West Virginia Public Service Commission.

If Federally-listed species are found to be present within the project boundaries, or otherwise likely to be affected by the project, then the Service recommends that your client apply for an incidental take permit and affiliated Habitat Conservation Plan.

The Service also recommends that your client coordinate with the U.S. Forest Service (USFS) regarding the need for a special use permit or similar permit for access to the site and potential impacts to USFS resources. The address is U.S. Department of Agriculture, U.S. Forest Service, George Washington and Jefferson National Forests, 5162 Valleypointe Parkway, Roanoke, VA 24019. The project boundary crosses into Virginia. For that reason, we recommend that you contact the Service's Virginia Field Office, as well. The address is U.S. Fish and Wildlife Service, Virginia Field Office, 6669 Short Lane, Gloucester, VA 23061.

We appreciate the opportunity to provide information relative to wildlife issues, and thank you for your interest in these resources. If you have any questions, please contact Christy Johnson-Hughes of my office at (304) 636-6586.

Sincerely,

Laura Hill

for Thomas R. Chapman
Field Supervisor

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