Appendix L: Documentation relating to Beech Ridge Energy's request for modification to stipulation for operational adjustments for 67-turbine Project in 2012 and 2013, including U.S. Fish and Wildlife Service response letters and Court's Approvals

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	)	Civil Action
	)	No.: 09-cv-01519 (RWT)
Plaintiffs,	)	
v.	)	
BEECH RIDGE ENERGY LLC, *et al.*,	)	
Defendants.	)	

JOINT MOTION TO REOPEN

The parties, through undersigned counsel, hereby jointly move the Court to reopen this case for the purposes of (1) granting the parties' attached Joint Motion for Approval of Modification of Stipulation (Exhibit A), and (2) entering as an Order of the Court, the attached Modification of Stipulation (Exhibit B).

On January 26, 2010, the Court entered a joint Stipulation of the parties (Exhibit C) and entered an order modifying the Stipulation on November 15, 2011 (Exhibit D). The January 2010 Stipulation and November 2011 Modification were the result of negotiations between the parties that followed the Court's December 8, 2009 ruling in which the Court adopted certain restrictions on the Beech Ridge Wind Energy project (the "Project"), but "invite[d] the parties to confer with each other and return to the Court, if agreement can be reached," on terms for any additional turbine operation during the time that Defendants are pursuing an Incidental Take Permit ("ITP") for the project. Dkt. No. 62 at 71.

Paragraph 15 of the Stipulation provides that "[i]n the event either party believes that the terms of this Stipulation should be modified based on new circumstances or any other factors, the party

seeking such modification will provide written notice to below-signed counsel for the opposing parties. If the parties cannot agree within 30 days following receipt of such notice to seek joint modification of the Stipulation, the party seeking modification may petition the Court for appropriate relief." Pursuant to Paragraph 15 of the Stipulation, the parties agree that new circumstances and other factors justify further modification of the Stipulation.

Accordingly, the parties respectfully request that the Court grant this motion to reopen for the purpose of (1) granting the parties' attached Joint Motion for Approval of Modification of Stipulation (Exhibit A), and (2) entering as an Order of the Court, the attached Modification of Stipulation (Exhibit B).

DATED this15th day of February, 2012.

Respectfully submitted,

K&L Gates LLP

By: /s/_____

R. James Mitchell, Esq.
Bar No. 017752
K&L GATES, LLP
1601 K St. NW
Washington, DC 20006-1600
Ph: 202.778.9029
Fax: 202.778.9100
jamie.mitchell@klgates.com

Attorneys for Defendants

By: /s/_____
William S. Eubanks II (admitted pro hac vice)
Eric R. Glitzenstein (admitted pro hac vice)
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Avenue NW, Suite 700
Washington, DC 20009
Ph: 202.588.5206
Fax: 202.588.5049
beubanks@meyerglitz.com
eglitzenstein@meyerglitz.com

William K. Meyer
(Federal Bar No. 01214)
Zuckerman Spaeder LLP
100 East Pratt Street, Suite 2440
Baltimore, MD 21202
Ph: 410.332.1240
Fax: 410.659.0436
wmeyer@zuckerman.com

(*signed by R. James Mitchell, Esq. with permission of William S. Eubanks, Esq.*)

Attorneys for Plaintiffs

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	)	Civil Action
	)	No.: 09-cv-01519 (RWT)
Plaintiffs,	)	
v.	)	**ORDER TO REOPEN**
BEECH RIDGE ENERGY LLC, *et al.*,	)	
Defendants.	)	

This Court, having considered the parties' Joint Motion to Reopen, hereby GRANTS the Motion to Reopen and ORDERS that this matter be reopened for the purpose of (1) granting the parties' Joint Motion for Approval of Modification of Stipulation, and (2) entering as an Order of the Court, the parties' Modification of Stipulation.

DATED this ____ day of _____, 2012.

_____
U.S. District Judge

Index of Exhibits

Exhibit A – February 15, 2012 Joint Motion for Approval of Modification of Stipulation

Exhibit B – February 15, 2012 Proposed Modification of Stipulation

Exhibit C -- January 26, 2010 Stipulation

Exhibit D -- November 2011 Modification of Stipulation

Exhibit E – January 23, 2012 Letter from Invenergy to U.S. Fish and Wildlife Service

Exhibit F – January 30, 2012 Letter from U.S. Fish and Wildlife Service to Invenergy

EXHIBIT A

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	)	Civil Action
	)	No.: 09-cv-01519 (RWT)
Plaintiffs,	)	
v.	)	
BEECH RIDGE ENERGY LLC, *et al.*,	)	
Defendants.	)	

JOINT MOTION FOR APPROVAL OF MODIFICATION OF STIPULATION

The parties, through undersigned counsel, hereby jointly move the Court to approve, and enter as an Order of the Court, the attached [Proposed] Modification of Stipulation. The reasons for this motion and Modification are as follows.

On January 26, 2010, the Court entered, as an order, a joint Stipulation of the parties. On November 15, 2011, the Court entered, as an order, a Modification of Stipulation, which was requested jointly by the parties. The January 2010 Stipulation and November 2011 Modification were the result of negotiations between the parties that followed the Court's December 8, 2009 ruling in which the Court adopted certain restrictions on the Beech Ridge Wind Energy project (the "Project"), but "invite[d] the parties to confer with each other and return to the Court, if agreement can be reached," on terms for any additional turbine operation during the time that Defendants are pursuing an Incidental Take Permit ("ITP") for the project. Dkt. No. 62 at 71.

Under the parties' Stipulation and Modification, Defendants committed to take certain steps to ameliorate the overall impact of the Project on Indiana bats—including barring operation of wind turbines during nighttime hours from April 1 through November 15 each year (Stipulation, ¶ 2)—while being able to construct some additional turbines, and operate turbines during daylight hours when Plaintiffs' experts agreed that Indiana bat deaths are unlikely. In addition, the parties agreed on certain elements of the ITP process, which they believed would be consistent with the Court's admonition that the process should proceed "with reasonable promptness, but with necessary thoroughness." Mem. Op. at 74.

Paragraph 15 of the Stipulation provides that "[i]n the event either party believes that the terms of this Stipulation should be modified based on new circumstances or any other factors, the party seeking such modification will provide written notice to below-signed counsel for the opposing parties. If the parties cannot agree within 30 days following receipt of such notice to seek joint modification of the Stipulation, the party seeking modification may petition the Court for appropriate relief."

Pursuant to Paragraph 15 of the Stipulation, the parties believe that new circumstances and other factors justify further modification of the Stipulation. Defendants and Region 5 of the U.S. Fish and Wildlife Service ("FWS") have engaged in extensive technical discussions for approximately two years concerning the project during the development of an application for an ITP. These discussions have contributed to the development of a draft ITP and accompanying Habitat Conservation Plan ("HCP") that will, among other matters, guide construction of up to 33 additional turbines and project operations. As provided by the Stipulation (Paragraph 7(a)), Plaintiffs have also endeavored to "play a constructive, cooperative role" in the ITP process.

The parties now propose to further modify Paragraph 2 of the Stipulation to permit Defendants to operate its wind turbines during nighttime hours from April 1 through November 15, 2012, when wind speeds reach 6.9 meters per second (m/s). This is consistent with Defendants' agreement with FWS, which resulted from extensive discussions with the agency in an effort to achieve nighttime operation from April 1 to November 15, 2012 that will result in discountable effects to Indiana bats. *See* Exhibits E and F. In addition, the parties propose to modify Paragraph 2 to require intensive monitoring to detect whether any take of ESA-listed bat species has occurred during nighttime operations. Defendants will provide Plaintiffs with access to monthly monitoring reports and underlying data submitted by Defendants to FWS. In the event that the monitoring detects a take of an ESA-listed bat during the nighttime operations from April 1 to November 15, 2012, all nighttime operations during this period would cease until the final ITP is issued. Defendants will feather turbine blades, during all hours of operation and during all seasons, so there is only minimal rotation (<2 rpm) at wind speeds below the turbine cut-in speed of 6.9 meters per second. Finally, Defendants will contribute $30,000 to Bat Conservation International, Inc. (an environmental organization active in bat conservation activities) to fund research concerning White Nose Syndrome (a disease impacting bat populations within the range of the Project). As a result of these measures, the parties propose to modify the Stipulation to include a substitute Paragraph 2, setting forth new nighttime operating restrictions and the requirement to feather turbine blades during nighttime operation from April 1, 2012 through November 15, 2012.

More than two years of studies by FWS and Defendants' experts, and the ITP/HCP negotiations between FWS and the parties, have led the parties to conclude that limited nighttime operations at the proposed cut-in speed of 6.9 meters per second from April 1 to November 15, 2012, are justified and pose an unlikely risk of take to ESA-listed bat species at this particular project site. For these reasons,

the parties believe that it is appropriate to revise the Stipulation to substitute a new Paragraph 2 and to make clear that nothing in the Stipulation or the Court's Order approving it would, upon FWS's approval of an ITP/HCP, prohibit further adjustments to the nighttime operations as provided in the ITP/HCP.

Accordingly, the parties respectfully request that the Court approve the [Proposed] Modification of Stipulation and enter it as an Order of the Court. Counsel are, of course, happy to answer any questions the Court may have regarding the Modification of Stipulation or any other matters that may bear on it.

DATED this15th day of February, 2012.

Respectfully submitted,

_/s/_____
R. James Mitchell, Esq.
Bar No. 017752
K&L GATES, LLP
1601 K St. NW
Washington, DC 20006-1600
Ph: 202.778.9029
Fax: 202.778.9100
jamie.mitchell@klgates.com

Attorneys for Defendants

_/s/_____
William S. Eubanks II (admitted pro hac vice)
Eric R. Glitzenstein (admitted pro hac vice)
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Avenue NW, Suite 700
Washington, DC 20009
Ph: 202.588.5206
Fax: 202.588.5049

beubanks@meyerglitz.com
eglitzenstein@meyerglitz.com

William K. Meyer
(Federal Bar No. 01214)
Zuckerman Spaeder LLP
100 East Pratt Street, Suite 2440
Baltimore, MD 21202
Ph: 410.332.1240
Fax: 410.659.0436
wmeyer@zuckerman.com

(*signed by R. James Mitchell, Esq. with permission of William S. Eubanks, Esq.*)

Attorneys for Plaintiffs

EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	)	Civil Action
	)	No.: 09-cv-01519 (RWT)
Plaintiffs,	)	
v.	)	
BEECH RIDGE ENERGY LLC, *et al.*,	)	
Defendants.	)	

MODIFICATION OF STIPULATION

WHEREAS, on January 26, 2010, the Court entered as an Order the joint Stipulation of the parties;

WHEREAS, on November 15, 2011, the Court entered a Modification of Stipulation, requested jointly by the parties;

WHEREAS, Paragraph 15 of the Stipulation provides that "[i]n the event either party believes that the terms of this Stipulation should be modified based on new circumstances or any other factors, the party seeking such modification will provide written notice to below-signed counsel for the opposing parties. If the parties cannot agree within 30 days following receipt of such notice to seek joint modification of the Stipulation, the party seeking modification may petition the Court for appropriate relief.";

WHEREAS, the parties believe that new circumstances and other factors justify further modification of the Stipulation;

THEREFORE, the parties hereby stipulate as follows, subject to the approval and entry of an Order by the Court, that Paragraph 2 of the Stipulation will be replaced with the following Paragraph 2:

2. Pending receipt of an ITP, Defendants may operate the 40 turbines the construction of which was permitted by the December 8, 2009 Mem. Op. and Order, the 17 turbines authorized in Paragraph 3 of this Stipulation, and the 10 turbines authorized in Paragraph 4 of this Stipulation, during both the daylight and nighttime hours of the Indiana bat hibernation period (i.e., from November 16 to March 31 of each year). From April 1 to November 15 of each year, the turbines may operate during daylight hours (i.e., between one-quarter hour after sunrise and one-half hour before sunset, utilizing an agreed-upon published source for such times). From April 1 to November 15, 2012, the turbines may operate during nighttime hours, with cut-in speeds of 6.9 meters per second (i.e., between one-half hour prior to sunset until one-quarter hour after sunrise). At all times of the year, and during all hours of the day and night, Defendants will feather turbine blades so there is only minimal rotation (<2 rpm) at winds below cut-in speeds. Defendants will engage in the following adaptive management regime to monitor Project operations from April 1 to November 15, 2012:

a. Defendants will retain a qualified biologist to search all operating turbines every two days for bat carcasses. Before commencing with the new operation scheme, carcass searches, or carcass removal trials, Defendants will provide Plaintiffs with the names and affiliations of all qualified biologists that Defendants plan to involve in carcass searches and/or the carcass removal trials, so that Plaintiffs can timely raise any concerns they might have with specific individuals before such activities commence.

b. Defendants will conduct a carcass removal study prior to April 1, 2012, or as soon as weather permits, to determine carcass removal rates in the Project area. Defendants will adjust the search interval period if FWS determines it is necessary to do so in order to ensure that a sufficient opportunity exists to detect Indiana bat take.

c. Defendants will conduct removal trials throughout the April 1 through November 15, 2012, intensive monitoring period to monitor carcass removal rates, and Defendants will adjust the search interval if necessary to ensure that there is a sufficient opportunity to detect Indiana bat take.

d. Defendants will share results from carcass removal trials with FWS and Plaintiffs, and discuss with FWS any proposed adjustments to search intervals if FWS determines that more protective measures, such as a shortened search interval, are necessary.

e. Defendants will provide FWS and Plaintiffs with monthly monitoring reports from April 1 through November 15, 2012, identifying the approximate date, location, time, and species of any bat mortality occurring during the preceding month. The first monitoring report will be due on May 15, 2012, for the period of April 1

through April 30, with subsequent reports due on the 15th of each month for the preceding month.

f. Defendants will notify FWS and Plaintiffs within 24 hours of suspected identification of any endangered or threatened species injury or fatality.

g. All carcasses of the *myotis* genus will be preserved using industry protocols and provided to a qualified bat biologist at FWS or the West Virginia Division of Natural Resources ("WVDNR") for independent identification.

h. If, under the process outlined in Paragraph 2(g), FWS or WVDNR determines that an ESA-listed species has been killed or otherwise taken due to project operation, Defendants will cease all nighttime turbine operations from one-half hour prior to sunset until one-quarter hour after sunrise during the period of April 1 to November 15, 2012, until an ITP is issued.

i. Defendants will provide weekly reports to Plaintiffs verifying that all turbines operating during nighttime hours from April 1 to November 15, 2012 are operating at a cut-in speed of at least 6.9 meters per second.

j. Within thirty (30) days from the entry of a modified stipulation by the Court consistent with the terms identified above, Defendants will contribute $30,000 to Bat Conservation International, Inc. for the purpose of conducting scientific research to facilitate an increased understanding of White Nose Syndrome and its impacts on bat species.

Upon issuance of a final ITP, Defendants will implement the terms and conditions of the ITP and HCP, including operational requirements and monitoring protocols.

Respectfully submitted,

/s/

R. James Mitchell
Bar No. 017752
K&L GATES, LLP
1601 K St. NW
Washington, DC 20006-1600
Ph: 202.778.9029
Fax: 202.778.9100
jamie.mitchell@klgates.com

Attorneys for Defendants

_/s/_____
William S. Eubanks II (admitted pro hac vice)
Eric R. Glitzenstein (admitted pro hac vice)
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Avenue NW, Suite 700
Washington, DC 20009
Ph: 202.588.5206
Fax: 202.588.5049
beubanks@meyerglitz.com
eglitzenstein@meyerglitz.com

William K. Meyer
(Federal Bar No. 01214)
Zuckerman Spaeder LLP
100 East Pratt Street, Suite 2440
Baltimore, MD 21202
Ph: 410.332.1240
Fax: 410.659.0436
wmeyer@zuckerman.com

(*signed by R. James Mitchell, Esq. with permission of William S. Eubanks, Esq.*)

Attorneys for Plaintiffs

So Ordered:

_____
U.S. District Judge
Dated this ___ day of _____ , 2012

EXHIBIT E

Invenergy

January 23, 2012

Mr. Paul Phifer
Assistant Regional Director
U.S. Fish and Wildlife Service
Northeast Regional Office
300 Westgate Center Drive
Hadley, MA 01035-9589
Email: Paul_Phifer@fws.gov

RE: Beech Ridge Wind Energy Project; Request for Technical Assistance

Dear Mr. Phifer:

Thank you very much for the assistance that you and your staff have provided regarding the development of the Habitat Conservation Plan (HCP) for the Beech Ridge Wind Energy Project (Project). The purpose of this letter is to follow-up on our recent discussions concerning the Project, and to provide Beech Ridge Energy's (BRE) proposal and justification for limited Project operations at night during the period of April 1 through November 15 while avoiding take of listed species until such time that an Incidental Take Permit (ITP) is issued. Based upon the siting work and other avoidance actions BRE has built into its proposed action, and through the turbine operational protocols proposed herein, the Project is unlikely to "take" Indiana bats (*Myotis sodalis*) or Virginia big-eared bats (*Corynorhinus townsendii*). We therefore request that the U.S. Fish and Wildlife Service (USFWS) issue a technical assistance letter concurring with this determination.

By way of background, BRE commenced developing an application for an Endangered Species Act (ESA) Section 10 ITP with Region 5 of the USFWS in January, 2010.[1] BRE and USFWS staff have worked closely over the past two years during the development of the HCP that is the key component of the permit application and Environmental Impact Statement (EIS) currently being prepared by the USFWS. The HCP is a highly detailed document that contains BRE's proposal to construct and operate the wind project in a manner that avoids, minimizes and mitigates the effects of project construction and operations on listed Indiana bats and Virginia big-eared bats. Staff from BRE and USFWS have traded several drafts of the HCP, and have met on numerous occasions in person and via conference call throughout the HCP development process. Comments from USFWS staff have been incorporated into the HCP. Portions of the HCP have been peer reviewed by nationally-recognized bat experts and staff in other USFWS regions.

[1] BRE agreed in a judicially-approved settlement agreement to curtail nighttime operations of Project wind turbines that are already constructed during the period of April 1 through November 15 annually and to forego construction and operation of new Project turbines pending receipt of an ESA Section 10 ITP to resolve certain claims made in litigation concerning the Project. *See Animal Welfare Institute et al. v. Beech Ridge Energy LLC*, Case No.: RWT 09cv1519 (D. MA January 20, 2010) (Stipulation). BRE will obtain Court approval prior to implementing the terms of the pre-ITP avoidance strategy contained herein. In the event that the Court approves any adjustments to the current operating restrictions, BRE will work with the USFWS to determine the impact of such changes, if any, on the permitting process.

BRE entered into a Memorandum of Understanding (MOU) with USFWS in June, 2010, containing a schedule to complete the ESA Section 10 permitting process by March 30, 2011. The MOU provides that BRE will pay for contractor costs associated with developing an EIS to support potential issuance of an ITP. The present schedule for completing the EIS is somewhat uncertain; however, we understand that a final EIS may be completed in June, 2012, after consideration of public comments on the draft EIS. Issuance of the final ITP would follow issuance of the final EIS by at least 30 days, resulting in a final permit being issued by USFWS in July, 2012.

On June 30, 2011, BRE filed its ESA Section 10 permit application with Region 5 for review and processing. Thereafter, on July 26, 2011, the Elkins Field Office issued a letter stating the application was incomplete, and identifying several areas requiring additional discussion. BRE met with USFWS via teleconference on several occasions during the fall of 2011 to discuss these matters. As a result of these discussions, the parties reached agreement on modifications to the HCP. BRE received final comments from the Department of Interior Solicitor's Office on the application on January 6, 2012. BRE resubmitted its updated application, including an HCP (BRE LLC 2012), with USFWS on January 11, 2012.

The following limited-operation and monitoring proposal applies only to the existing 67 turbines; BRE would not allow the construction and operation of the additional 33 turbines discussed in Section 2.2.2 the HCP until after issuance of the final ITP.

BRE proposes the following limited operations and intensive monitoring for the existing 67 turbines for the period from April 1, 2012, until the final ITP is issued, at which time BRE will implement the terms of the final ITP and HCP.

(1) Beginning on April 1, 2012, implement turbine operations as follows:
   a) operate turbines with cut-in speeds of 6.9 m/s during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and
   b) feather turbine blades so there is only minimal rotation (<2 rpm) at wind speeds below turbine cut-in speeds.

(2) Implement intensive monitoring to detect the unlikely take of ESA-listed species; and

(3) In the event take is detected, discontinue nighttime operations described above during the period of April 1 to November 15 until the final ITP is issued.

The proposed turbine cut-in speed of 6.9 m/s is higher than the cut-in speed at which Indiana bat fatalities have been documented (see below and Section 8.2.5 in the HCP). Results of the 2010 acoustic data suggest that Indiana bats were potentially recorded on-site; however, potential calls were recorded in very low numbers. In addition, the Project is not located near any priority Indiana bat habitat, and the nearest hibernacula are over 9 miles away; site-specific mist netting surveys conducted in consultation with USFWS have not detected the presence of Indiana bat in the Project area; and monitoring studies have shown that the proportion of bat mortality that is of *Myotis* bats is generally small and on average in the Appalachian Region less than 9% of overall bat mortality (see below and Section 4.1.3 of the HCP). Consequently, BRE's proposed turbine

cut-in speed adjustment during the period of April 1 through November 15 reduces the already low risk of take to the point that take is unlikely to occur.

Thank you once again for your time and attention to this matter. Please feel free to contact me if you have any questions regarding information contained in this letter.

Sincerely,

David Groberg
Vice President
Beech Ridge Energy LLC

Enclosure (Take Avoidance Strategy)

Take Avoidance Strategy
Beech Ridge Wind Energy Project

(January 23, 2012)

The following take avoidance strategy[1] is based on the analysis presented in the Beech Ridge HCP submitted to USFWS on January 11, 2012 (BRE LLC 2012), and the expert views of BRE's scientific consultant Western EcoSystems Technology Inc.

Risk During the Spring Migration

Available scientific information indicates that take of Indiana bats is unlikely to occur at the Project during the months of April and May which is thought of as the spring migration period. Section 3.2.1 of the HCP documents that during spring emergence, typically in April and May, it is possible that Indiana bats fly through the project area on their way to a maternity area. However, since no summer maternity habitat occurs in the project area, the Project would not be a destination for spring migrating females. In the Appalachian region, bat activity and mortality at wind projects are generally low during spring, and collision risk to bats is low based on available data from regional wind projects. On a per turbine-search basis, bat mortality was lowest in April and May (Figure 1, Young et al., 2009b, 2010b, 2011b), and *Myotis* fatality rates are low throughout the entire bat-active period. There are no documented Indiana bat mortalities in April and May.

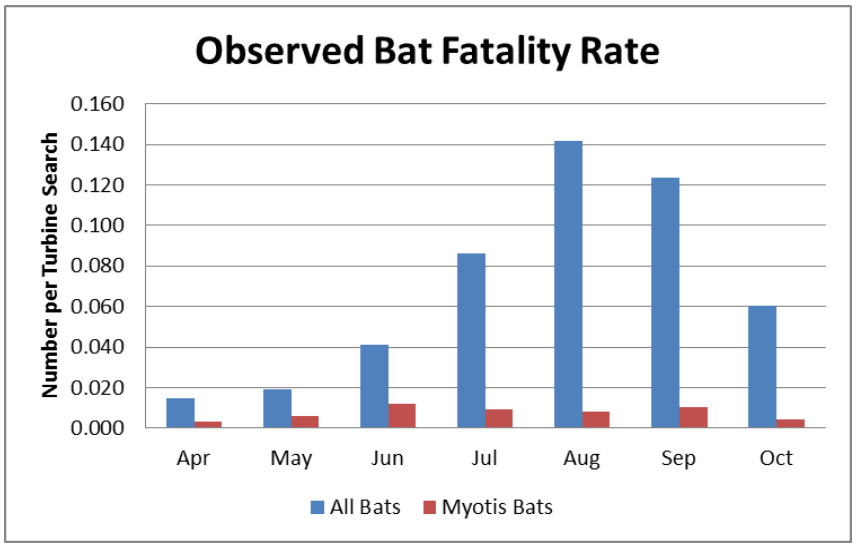

Figure 1. The average observed number of bat fatalities found per turbine search over a three year period (2009-2011) at the Mt. Storm Wind Project, Grant County, West Virginia.

[1] There have been no documented occurrences of Virginia big-eared bats in Greenbrier or Nicholas Counties, West Virginia, or at the Project site based upon the results of mist-netting or other surveys (BHE 2005, 2006; Young and Gruver 2011; C. Stihler, WVDNR, Pers. Comm.). The location of the Project is also at the edge of the species' range, making it unlikely the species would occur in the Project area (see HCP at 3.2.2). Therefore, the risk of Virginia big-eared take at the Project is low because of lack of occurrence in the Project area. Regardless, avoidance measures proposed in this avoidance strategy, while focused on Indiana bat, will likewise avoid the unlikely take of Virginia big-eared bat.

Risk during the Summer Maternity Season

Available scientific information indicates that take is unlikely to occur during June and the first two weeks of July, which is commonly referred to as the summer maternity season, because: (1) no Indiana bats were captured during summer mist-net surveys conducted according to USFWS protocol in 2005 and in 2010 (HCP Section 3.2.1.9); (2) the Project area's elevation results in cool summer temperatures that require female Indiana bats to use torpor to conserve energy and slow reproductive functions (HCP Section 3.2.1.9); and (3) as of the 2007 *Indiana Bat Draft Recovery Plan: First Revision* (USFWS 2007), there was very little information about Indiana bat maternity colonies in West Virginia;[2] however, the ecological conditions of the Project, high elevation deciduous forest, are not similar to those that are typically reported for maternity colonies (USFWS 2007).

Female Indiana bats in maternity colonies typically display restricted movement patterns as they remain relatively close to the maternity roost trees (USFWS 2007). The USFWS suggests that female Indiana bat activity is typically restricted to the area within a 2.5-mile radius of the primary roost trees (USFWS 2007). Male Indiana bats typically remain near the hibernacula year round, but they may occasionally visit maternity areas during the summer months (USFWS 2007). Risk to male Indiana bats from the Project during June and the first two weeks of July will be low because the nearest known hibernaculum is about 9.3 miles away, and there are no known maternity areas in the Project area.

Risk during the Fall Migration Period

Results of the 2010 acoustic data analysis suggest that Indiana bats were potentially recorded on-site during late July, but in very low numbers relative to the overall number of recorded calls (6 out of 12,431 calls, or 0.04%) (HCP Section 3.2.1.9).

Bat mortality is typically highest during the last two weeks of July, and the months of August and September (Figure 1). Female and young-of-the-year juvenile Indiana bats typically have less fidelity to the maternity areas as the young become volant and have migrated back to the hibernacula and swarming areas (USFWS 2007). During the fall migration/swarming period, male Indiana bats may travel great distances to visit other hibernacula, as described in Section 3.2.1 of the HCP. On a per turbine-search basis, bat mortality in the Appalachian Region peaks in August and September (Figure 1, Young et al, 2009a, 2010a, 2011a); however, *Myotis* bat mortality continues to remain low in general during all months of the year (Figure 1, Young et al., 2009b, 2010b, 2011b). The only three documented Indiana bat fatalities at wind energy projects were recorded in September (Good et al. 2011, Clint Riley, USFWS PA Field Office, pers. comm.).

[2] Only six West Virginia counties (Clay, Nicholas, Pendleton, Raleigh, Randolph, and Tucker) have summer records of Indiana bats other than reproductive females or maternity colonies. Three maternity colonies, located in Boone and Tucker counties, were recorded for West Virginia at the time of the Draft Recovery Plan and a fourth maternity colony has since been located in Ohio County. These are believed to represent a small portion of maternity colonies in West Virginia due to the limited nature of surveys for maternity colonies (USFWS 2007).

Bat mortality diminishes by mid-October because the swarming season is finishing, and bats begin to hibernate as nighttime temperatures get colder (USFWS 2007). By November 1, most bats will have either entered the cave or have become closely associated with the cave for the on-set of hibernation. Depending on weather conditions, Indiana bats could be active outside the caves until approximately November 15 but in decreasing numbers.

Turbine Operational Protocols

BRE proposes the following turbine operational protocols to avoid take of ESA-listed species up to the date on which the ITP is issued:

1) Operate turbines with cut-in speeds of 6.9 m/s during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and

2) Feather turbine blades so there is only minimal rotation (<2 rpm) at winds below cut-in speeds.

In the event take is detected, the limited nighttime operations described above will cease during the nighttime period from April 1 to November 15 until the ITP is issued. Upon issuance of a final ITP, BRE will commence implementing the terms and conditions of the ITP and HCP.

Justification for Turbine Operational Adjustments

Three recent studies have shown that increasing turbine cut-in speed significantly reduces bat fatalities caused by wind turbines (Table 1). All three research studies showed that turbines operated with raised cut-in speeds killed fewer bats than the normally operating turbines by 44 to 93% (Baerwald et al. 2009; Arnett et al. 2010; Good et al. 2011). A fourth study showed that controlling the rotational speed of the turbine rotor by feathering the turbine blades also significantly reduced bat mortality (Young et al. 2011a).

Table 1. Summary of Turbine Curtailment Study Results, Alberta, Canada; Casselman, Pennsylvania; and Fowler Ridge, Indiana

Alberta, 39 Vestas Turbines, July 15 – September 30, 2007, 171 ft (52 m) plot, weekly searches (Baerwald et al. 2009)			
Control	Treatment	Treatment	Results
8 turbines, normal operation 8.9 mph (4.0 m/s) cut-in speed	15 turbines, 12.3 mph (5.5 m/s) cut-in speed	6 turbines, idling blades pitched to reduce rotation in low wind speeds	Treatment turbines killed fewer bats Raised cut-in speed = 7.6 $\pm$ 2.0 bats/turbine Idling = 8.1 $\pm$ 3.1 bats/turbine control = 19.0 $\pm$ 2.7 bats/turbine No difference between experimental treatments
Casselman, PA, 23 GE Turbines, July 26 – October 9, 2008, July 26 – October 8, 2009; variable plots up to 197 ft (60 m), daily searches (Arnett et al. 2010)			
Control	Treatment	Treatment	Results
412 turbines, normal operation, 7.8 mph (3.5 m/s cut-in speed)	12 turbines, 11.2 mph (5.0 m/s) cut-in speed	12 turbines, 14.5 mph (6.5 m/s) cut-in speed	Treatment turbines killed fewer bats Raised 11.2 mph (5.0 m/s) cut-in speed = 0.27 (95% CI: 0.07-1.05) bats/turbine Raised 14.5 mph (6.5 m/s) cut-in speed = 0.53 (95% CI: 0.20-1.42) bats/turbine Control = 2.04 (95% CI: 1.19-3.51) bats/turbine No detectable difference between experimental treatments 11.2 mph (5.0 m/s) cut-in speed most cost-effective way to reduce bat mortalities at a wind farm

Fowler Ridge, IN; 182 Vestas V82 1.65-MW, 40 Clipper C96 2.5-MW turbines, 133 1.5-MW GE SLE Turbines; April 13 – October 15, 2010, variable plots, weekly and daily searches (Good et al. 2011)			
Control	Treatment	Treatment	Results
18 turbines, normal operation, 7.8 mph (3.5 m/s cut in speed)	9 turbines, 11.2 mph (5.0 m/s) cut-in speed	9 turbines, 14.5 mph (6.5 m/s) cut-in speed	Treatment turbines killed fewer bats Raised 11.2 mph (5.0 m/s) cut-in speed = 7.0 (95% CI: 7.0-9.1) bats/turbine Raised 14.5 (6.5 m/s) cut-in speed = 3.0 (95% CI: 1.8-4.2) bats/turbine Control = 14.0 (95% CI: 11.6-16.5) bats/turbine Experimental treatments showed approximately 50% and 78% reduction in bat mortality

Available scientific information (Arnett et al. 2008; Good et al 2011; Johnson 2005; Young et al. 2011a) indicates that *Myotis* mortality at wind projects is low in general. Of the three known fatalities, no take of Indiana bats has been observed at turbines with cut-in speeds above 5.0 m/s. Available data indicate that little brown bat mortality has occurred at a turbine with a cut-in speed of 6.5 m/s (Table 2) (Pers. Comm. Chris Hein, Bat Conservation International). The highest cut-in speed at which Indiana bat take has been documented is 5.0 m/s (Good et al. 2011).

Implementation of blade feathering below wind speed of 6.9 m/s to minimize blade rotation will reduce the risk of potential take because available information indicates that Indiana bat mortality is unlikely to occur above a cut-in speed of 6.9 m/s. In addition, most high frequency bat calls at the Project have been recorded below rotor swept area (see Section 3.2.1.9 in the HCP); no Indiana bats have been detected at the Project through mist netting surveys conducted in consultation with USFWS; the Project is located more than 70 miles from any known Indiana bat priority 1 or 2 hibernacula (Hell Hole Cave, and Trout Cave, respectively); the closest known hibernaculum is 9.3 miles from the Project (Snedegar Cave, priority 3); and overall, *Myotis* fatalities only comprise a small percentage of overall bat mortality at wind projects. In addition, it is known that bat mortality decreases with increasing wind speed, and therefore bat mortality is already expected to be low at wind speeds above 6.9 m/s. Feathering blades below this wind speed effectively eliminates the risk to listed bats at the Project up to wind speeds of 6.9 m/s.

Table 2. *Myotis* fatalities for which turbine cut-in speed is known

	Turbine Cut-in Speed/*Myotis* Fatalities[1]			
Project	Fully operational (3.5 or 4.0 m/s cut-in speeds)	5.0 m/s	5.5 m/s	6.5 m/s
Fowler Ridge (Indiana bat)[2]	0	1	na	0
Casselman (all little brown bats)[2]	3	0	na	1
Alberta (various species)[2]	8	na	5	na
Total	11	1	5	1

[1]Table reports *Myotis* fatalities for which the turbine treatment under which the fatality occurred is known; for Fowler Ridge and Casselman all such fatalities were Indiana bat and little brown bat, respectively.
[2] Sources: Fowler Ridge (Good et al. 2011); Casselman (Pers. Comm. Chris Hein); Alberta (Pers. Comm. Erin Baerwald).
na - cut-in speed was not tested in study
0 - cut-in speed was tested and no *Myotis* fatalities occurred

Proposed Period of Restricted Turbine Operations

BRE proposes to restrict turbine operations at night, from April 1 through November 15. This is the same period contained in a January 2010 settlement agreement. *See Animal Welfare Institute et al. v. Beech Ridge Energy LLC*, Case No.: RWT 09cv1519 (D. MA January 20, 2010).

Blades to Remain Feathered until Cut-in Wind Speeds are Reached

Young et al. (2011a) evaluated the effects of blade feathering on bat mortality at wind turbines. This study found that feathering the blades to minimize rotation prior to cut-in significantly reduced bat mortality. While the details of feathering and cut-in from the other studies that have analyzed the effects of raising cut-in speeds on bat mortality rates are unclear, cut-in speed means the wind speed at which a breaker "cuts in" and the generator begins generating power. Turbines require that the blades are already catching the wind and rotating steadily using wind power before the turbine will cut-in, so, without feathering, the risk to bats actually starts at some lower wind speed below cut-in when the blades begin to pitch into the wind and pick up speed. The blades are designed so that the pressure differential in front of and behind the blade creates lift which causes the rotor to turn. The low pressure zone created by the trailing of edge of the blade is thought to cause bat fatalities through barotrauma (Baerwald et al. 2008).

Under BRE's avoidance strategy, the turbine blades will remain feathered until the cut-in of 6.9 m/s is reached, and thus will not produce the large pressure differentials on the blades. When GE turbine blades are feathered, rotation is typically 1 to 2 rpm. The feathering strategy presented above will further reduce risk to bats using the Project area during fall migration season (Baerwald et al. 2009; Young et al. 2011a).

In summary, implementing turbine cut-in speed adjustments as described above will make the risk of take unlikely because ESA listed species have not been directly observed at the Project; the cut-in speed of 6.9 m/s is well above the level at which take of Indiana bats has been observed; turbine blades will be feathered below cut-in speeds; and the Project site is located over 9 miles away from known Indiana bat hibernacula.

Monitoring Actions

BRE proposes to implement intensive monitoring from April 1 through November 15 to detect if take is occurring. Intensive monitoring under this avoidance strategy will be conducted as follows:

1) BRE will retain a qualified biologist to search all operating turbines every three days. Based on other studies conducted in the region, average carcass removal rate is variable and has ranged from approximately 2.6 days at the Mount Storm project (Young et al. 2011a) to 31.9 days at the Casselman Project (Arnett et al. 2009). Therefore, a 3-day search interval provides a sufficient time period to find

Indiana bat fatalities if they have occurred because the 3-day interval is at the low-end of the range observed in existing studies;

2) BRE will conduct a carcass removal study prior to April 1, 2012, or as soon as weather permits, to determine carcass removal rates, and BRE will adjust the search interval if necessary to ensure that a sufficient opportunity exists to detect Indiana bat take; and

3) BRE will conduct removal trials throughout the intensive monitoring period to monitor carcass removal rates, and BRE will adjust the search interval if necessary to ensure that there is a sufficient opportunity to detect Indiana bat take.

Searcher efficiency trials and fatality monitoring data analysis will be conducted as described in Appendix C of the HCP (RMAMP). Results from carcass removal trials will be shared and discussed with USFWS prior to adjusting search intervals.

In summary, this intensive monitoring strategy is sufficient to detect if take is occurring during the period of April 1 through November 15 because (1) every operating turbine will be searched by a qualified biologist every 3 days; (2) available scientific information indicates that a 3-day search interval is sufficient to account for potential carcass removal; and (3) carcass removal rates will be evaluated and search intervals adjusted as necessary to account for site-specific conditions.

Reporting Actions

BRE will provide a monitoring report to USFWS within sixty (60) days after receiving a final ITP. The monitoring report will provide the results of intensive monitoring obtained during the period of April 1 to November 15.

Adaptive Management Actions

BRE will notify the USFWS within 24 hours of suspected identification of any endangered or threatened species injury or fatality and will handle carcasses in accordance with the wildlife handling procedures described in Section 3.2.2 in the RMAMP.

If take of an ESA-listed species is detected, BRE will cease all nighttime turbine operations from ½ hour prior to sunset to ¼ hour after sunrise during the period of April 1 to November 15 until an ITP is issued. Upon issuance of a final ITP, BRE will implement the terms and conditions of the ITP and HCP, including operational requirements and monitoring protocols.

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EXHIBIT F

United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 Westgate Center Drive
Hadley, MA 01035-9589

David Groberg
Vice President
Business Development – East Region
Invenergy LLC
51 Monroe Street, Suite 1604
Rockville, Maryland 20850

JAN 30 2012

Dear Mr. Groberg:

Thank you for your request for technical assistance and supporting information entitled *Take Avoidance Strategy* dated January 23, 2012, concerning the effects of the Beech Ridge Wind Energy Project (Project) in West Virginia on Endangered Species Act (ESA)-listed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). Your letter outlines Beech Ridge Energy's (BRE) proposal and justification for limited Project operations at night during the period of April 1 through November 15 while attempting to avoid take of ESA-listed species until such time that an Incidental Take Permit (ITP) is issued.

BRE is actively pursuing an ITP through collaborative development of a Habitat Conservation Plan (HCP) with the USFWS. The issues included in these documents are multiple and complex, entailing new analyses and requiring significant expenditure of time and resources by the applicant and USFWS.

The USFWS has made this project a top priority over the past two years, dedicating nearly the full time of several senior biologists. The USFWS has not and cannot commit to a specific deadline for the culmination of this ESA Section 10 permitting process. Our Memorandum of Understanding (MOU) with BRE acknowledges this; we entered into the MOU to define our respective roles and responsibilities, not to memorialize binding deadlines.[1] Not only are there multiple factors beyond our control that affect the timeline, we also cannot make *a priori* commitments to issue a permit. Rather, we can, and have, committed to working as diligently and effectively as possible with BRE. We have attempted to streamline this process so that we meet an applicant's needs while at the same time satisfying our own statutory and regulatory permit issuance criteria. Our goal is assisting BRE to develop a defensible HCP and application materials. Doing so, though, is the result of negotiation, which does not fit easily within pre-determined timeframes.

[1] The MOU reads: "USFWS shall, in cooperation with Beech Ridge Energy LLC and the CONTRACTOR, develop a Draft and Final EIS Preparation Schedule that projects key dates. Although the schedule is not binding, all Parties will use best efforts to adhere to, and assist each other in adhering to, the EIS Preparation Schedule, recognizing that completion of some tasks may be contingent on circumstances beyond any given Party's control." MOU at Section 5.D.3.

The USFWS has reviewed the information provided in your letter regarding the presence of Indiana bats (*Myotis sodalis*) and other ESA-listed species and their habitats in the vicinity of the Project, and the measures BRE proposes to significantly reduce the risk of take of such species. Specifically, we interpret BRE's proposal to include the following limited operations and intensive monitoring for the existing 67 turbines for the period from April 1, 2012, until November 15, 2012, or until the final ITP is issued, whichever date is earlier. The limited operations are:

> (1) Beginning on April 1, 2012, implement turbine operations as follows: a) operate turbines with cut-in speeds of 6.9 meters per second (m/s) during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and b) feather turbine blades so there is only minimal rotation (less than 2 revolutions per minute) at wind speeds below turbine cut-in speeds.
>
> (2) Implement appropriate monitoring to detect the unlikely take of ESA-listed species; and
>
> (3) In the event take is detected, discontinue nighttime operations described above during the period of April 1 to November 15 until the final ITP is issued.

The letter from BRE asks the USFWS to conclude the Project, with these proposed modifications, "will reduce the already low risk of take to a point that take is unlikely to occur." We have assessed the pertinent aspects of the information you provided in addition to the available scientific and commercial information and provide the following views on your proposal.

Based on our independent review of the best available scientific and commercial information, we believe the operational modifications you suggest during the time period you state will produce effects that are discountable and, therefore, not likely to adversely affect listed bat species.[2]

Data presented in BRE's proposed strategy indicates that there has not been an Indiana bat fatality recovered at a project implementing turbine cut-in speeds above 5.0 m/s. This is consistent with our interpretation of available post-construction monitoring studies conducted to date. In addition, BRE's strategy indicates there has not been a *Myotis* fatality recovered at a project implementing turbine cut-in speeds above 6.5 m/s. The wind speeds during the nights when these fatalities occurred were variable and we do not know what turbine blade start-up speed (the speed at which turbine blades begin to free wheel or begin to rotate up to the cut-in speeds) would have prevented bat fatality. However, current research does seem to suggest that implementing turbine feathering (adjusting pitch of turbine blades) or increasing turbine start-up speeds such that turbine rotation is ceased or minimal (less than 2 revolutions per minute) below

[2] The USFWS' Endangered Species Consultation Handbook defines "[i]s not likely to adversely affect" as "the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial." The Handbook further defines "discountable effects" to be: "those extremely unlikely to occur....Based on best judgment, a person would not...expect discountable effects to occur." Here, based on the analysis to follow, we conclude that the proposed operational changes will reduce the likelihood of take through collision or barotrauma to a point where it is highly unlikely.

6.9 m/s will significantly reduce bat mortality (Baerwald *et al.* 2009, Arnett *et al.* 2011, Good *et al.* 2011). Data from available post-construction monitoring reports, several of which are summarized in BRE's proposed strategy, suggest that bat mortality is generally low in the spring and summer and greatest during the fall. Studies show BRE's proposed turbine operation strategy should reduce those potential mortality levels by upwards of 80 percent (Arnett *et al.* 2011, Good *et al.* 2011). Given that Indiana bats are a relatively small proportion of the overall bat population, the USFWS believes there to be an unlikely risk of take during the short period during which BRE will implement this strategy. Additionally, white nose syndrome may be reducing the local Indiana bat population, as it has been found to occur in Snedegar's Cave, the hibernacula within 10 miles of the BRE project. Therefore, the number of Indiana bats potentially interacting with the turbine airspace is further reduced.

For example, based on the level of take estimated by BRE for their HCP development, the USFWS anticipates up to 2.3 Indiana bat fatalities may occur at the existing 67 turbines without modified turbine operations. Assuming that curtailment (*i.e.*, adjusted turbine operations) at 6.5 m/s may have up to 80 percent reduction in bat mortality, the USFWS anticipates that Indiana bat fatalities at the BRE project would be reduced below 0.5 annually. It is likely that there would be even greater reductions since BRE is actually increasing cut-in speeds to 6.9 m/s under the proposed strategy. Finally, based on the fact that wind facilities have only reported three Indiana bat fatalities since 2009, as summarized in BRE's proposed strategy, the overall potential for take through November 15, 2012 is unlikely therefore discountable.

BRE's proposal includes a monitoring strategy that entails retaining a qualified biologist to search all operating turbines every three days for signs of bat mortality. This periodicity differs from the monitoring scheme proposed in the draft HCP. Based on the nearby Mt. Storm monitoring data submitted in your letter showing a carcass removal rate of 2.6 days, we ask that you monitor each of the 67 turbines every 2 days to increase the likelihood of finding a dead Indiana bat. This monitoring rate may be changed in consultation with the USFWS based on the carcass removal studies and trials mentioned in your letter.

The USFWS asks that rather than the single submission of monitoring reports within sixty days after receiving a final ITP, as your letter suggests, BRE submit monthly reports from April 1 to November 15, 2012. These reports would be beneficial information as we finalize the HCP and associated National Environmental Policy Act (NEPA) documents.

We note that this proposal comes at a critical juncture in the permitting process. The USFWS is poised to begin the surname process to put the application and draft NEPA document out for public comment. If BRE elects to implement these proposed operational modifications during the time period specified, the USFWS will need additional time to modify its Draft Environmental Impact Statement, and for BRE to revise its HCP and associated documents to reflect the change in the status quo. These changes must be made prior to public comment, thereby extending the time before they are submitted for public review.

The USFWS recognizes that, notwithstanding this conclusion, BRE is currently pursuing an ITP. When an ITP is successfully obtained, the avoidance measures that BRE has committed to implement as the basis for this letter may be replaced by the avoidance, minimization, and

mitigation measures set forth in the HCP upon which the ITP is based.

We appreciate BRE's efforts to coordinate with our office in determining what measures can be implemented to avoid take of any ESA-listed species or their habitat at the project site.

Should any new information become available on the effects of your project on listed species, we request that you promptly notify the USFWS' West Virginia Field office at (304) 636-6586. If new information becomes available to us that other measures could be implemented to avoid take that would not require additional commitment by your company, such as wind speeds shown to preclude foraging by Indiana bats, we will notify you as soon as possible.

Sincerely,

Paul R. Phifer, Ph.D.
Assistant Regional Director
Ecological Services
Northeast Region

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	Civil Action
Plaintiffs,	No.: 09-cv-01519 (RWT)
v.	
BEECH RIDGE ENERGY LLC, *et al.*,	
Defendants.	

MODIFICATION OF STIPULATION

WHEREAS, on January 26, 2010, the Court entered as an Order the joint Stipulation of the parties;

WHEREAS, on November 15, 2011, the Court entered a Modification of Stipulation, requested jointly by the parties;

WHEREAS, Paragraph 15 of the Stipulation provides that "[i]n the event either party believes that the terms of this Stipulation should be modified based on new circumstances or any other factors, the party seeking such modification will provide written notice to below-signed counsel for the opposing parties. If the parties cannot agree within 30 days following receipt of such notice to seek joint modification of the Stipulation, the party seeking modification may petition the Court for appropriate relief.";

WHEREAS, the parties believe that new circumstances and other factors justify further modification of the Stipulation;

THEREFORE, the parties hereby stipulate as follows, subject to the approval and entry of an Order by the Court, that Paragraph 2 of the Stipulation will be replaced with the following Paragraph 2:

2. Pending receipt of an ITP, Defendants may operate the 40 turbines the construction of which was permitted by the December 8, 2009 Mem. Op. and Order, the 17 turbines authorized in Paragraph 3 of this Stipulation, and the 10 turbines authorized in Paragraph 4 of this Stipulation, during both the daylight and nighttime hours of the Indiana bat hibernation period (i.e., from November 16 to March 31 of each year). From April 1 to November 15 of each year, the turbines may operate during daylight hours (i.e., between one-quarter hour after sunrise and one-half hour before sunset, utilizing an agreed-upon published source for such times). From April 1 to November 15, 2012, the turbines may operate during nighttime hours, with cut-in speeds of 6.9 meters per second (i.e., between one-half hour prior to sunset until one-quarter hour after sunrise). At all times of the year, and during all hours of the day and night, Defendants will feather turbine blades so there is only minimal rotation (<2 rpm) at winds below cut-in speeds. Defendants will engage in the following adaptive management regime to monitor Project operations from April 1 to November 15, 2012:

a. Defendants will retain a qualified biologist to search all operating turbines every two days for bat carcasses. Before commencing with the new operation scheme, carcass searches, or carcass removal trials, Defendants will provide Plaintiffs with the names and affiliations of all qualified biologists that Defendants plan to involve in carcass searches and/or the carcass removal trials, so that Plaintiffs can timely raise any concerns they might have with specific individuals before such activities commence.

b. Defendants will conduct a carcass removal study prior to April 1, 2012, or as soon as weather permits, to determine carcass removal rates in the Project area. Defendants will adjust the search interval period if FWS determines it is necessary to do so in order to ensure that a sufficient opportunity exists to detect Indiana bat take.

c. Defendants will conduct removal trials throughout the April 1 through November 15, 2012, intensive monitoring period to monitor carcass removal rates, and Defendants will adjust the search interval if necessary to ensure that there is a sufficient opportunity to detect Indiana bat take.

d. Defendants will share results from carcass removal trials with FWS and Plaintiffs, and discuss with FWS any proposed adjustments to search intervals if FWS determines that more protective measures, such as a shortened search interval, are necessary.

e. Defendants will provide FWS and Plaintiffs with monthly monitoring reports from April 1 through November 15, 2012, identifying the approximate date, location, time, and species of any bat mortality occurring during the preceding month. The first monitoring report will be due on May 15, 2012, for the period of April 1

through April 30, with subsequent reports due on the 15th of each month for the preceding month.

f. Defendants will notify FWS and Plaintiffs within 24 hours of suspected identification of any endangered or threatened species injury or fatality.

g. All carcasses of the *myotis* genus will be preserved using industry protocols and provided to a qualified bat biologist at FWS or the West Virginia Division of Natural Resources ("WVDNR") for independent identification.

h. If, under the process outlined in Paragraph 2(g), FWS or WVDNR determines that an ESA-listed species has been killed or otherwise taken due to project operation, Defendants will cease all nighttime turbine operations from one-half hour prior to sunset until one-quarter hour after sunrise during the period of April 1 to November 15, 2012, until an ITP is issued.

i. Defendants will provide weekly reports to Plaintiffs verifying that all turbines operating during nighttime hours from April 1 to November 15, 2012 are operating at a cut-in speed of at least 6.9 meters per second.

j. Within thirty (30) days from the entry of a modified stipulation by the Court consistent with the terms identified above, Defendants will contribute $30,000 to Bat Conservation International, Inc. for the purpose of conducting scientific research to facilitate an increased understanding of White Nose Syndrome and its impacts on bat species.

Upon issuance of a final ITP, Defendants will implement the terms and conditions of the ITP and HCP, including operational requirements and monitoring protocols.

Respectfully submitted,

/s/

R. James Mitchell
Bar No. 017752
K&L GATES, LLP
1601 K St. NW
Washington, DC 20006-1600
Ph: 202.778.9029
Fax: 202.778.9100
jamie.mitchell@klgates.com

Attorneys for Defendants

/s/
William S. Eubanks II (admitted pro hac vice)
Eric R. Glitzenstein (admitted pro hac vice)
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Avenue NW, Suite 700
Washington, DC 20009
Ph: 202.588.5206
Fax: 202.588.5049
beubanks@meyerglitz.com
eglitzenstein@meyerglitz.com

William K. Meyer
(Federal Bar No. 01214)
Zuckerman Spaeder LLP
100 East Pratt Street, Suite 2440
Baltimore, MD 21202
Ph: 410.332.1240
Fax: 410.659.0436
wmeyer@zuckerman.com

(*signed by R. James Mitchell, Esq. with permission of William S. Eubanks, Esq.*)

Attorneys for Plaintiffs

So Ordered:

U.S. District Judge
Dated this 16th day of February, 2012

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	Civil Action No.: 09-cv-01519 (RWT)
Plaintiffs,	
v.	**ORDER TO REOPEN**
BEECH RIDGE ENERGY LLC, *et al.*,	
Defendants.	

This Court, having considered the parties' Joint Motion to Reopen, hereby GRANTS the Motion to Reopen and ORDERS that this matter be reopened for the purpose of (1) granting the parties' Joint Motion for Approval of Modification of Stipulation, and (2) entering as an Order of the Court, the parties' Modification of Stipulation.

DATED this 16th day of February, 2012.

U.S. District Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND
GREENBELT DIVISION

ANIMAL WELFARE INSTITUTE, *et al.*,	)	Civil Action
	)	No.: 09-cv-01519 (RWT)
Plaintiffs,	)	
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WHEREAS, on November 15, 2011, the Court entered a Modification of Stipulation, requested jointly by the parties;

WHEREAS, Paragraph 15 of the Stipulation provides that "[i]n the event either party believes that the terms of this Stipulation should be modified based on new circumstances or any other factors, the party seeking such modification will provide written notice to below-signed counsel for the opposing parties. If the parties cannot agree within 30 days following receipt of such notice to seek joint modification of the Stipulation, the party seeking modification may petition the Court for appropriate relief.";

WHEREAS, on February 16, 2012, the Court entered a second Modification of Stipulation ("2012 Modification"), requested jointly by the parties, which substituted a new Paragraph 2 of the Stipulation; and

WHEREAS, the parties believe that the circumstances and other factors in place at the time of the 2012 Modification continue in effect and justify extension of the 2012 Modification of the Stipulation, in its entirety;

THEREFORE, the parties hereby stipulate as follows, subject to the approval and entry of an Order by the Court, that Paragraph 2 of the Stipulation will be replaced with the following Paragraph 2:

> 2. Pending receipt of an ITP, Defendants may operate the 40 turbines the construction of which was permitted by the December 8, 2009 Mem. Op. and Order, the 17 turbines authorized in Paragraph 3 of this Stipulation, and the 10 turbines authorized in Paragraph 4 of this Stipulation, during both the daylight and nighttime hours of the Indiana bat hibernation period (i.e., from November 16 to March 31 of each year). From April 1 to November 15 of each year, the turbines may operate during daylight hours (i.e., between one-quarter hour after sunrise and one-half hour before sunset, utilizing an agreed-upon published source for such times). From April 1 to November 15, 2013, the turbines may operate during nighttime hours, with cut-in speeds of 6.9 meters per second (i.e., between one-half hour prior to sunset until one-quarter hour after sunrise). At all times of the year, and during all hours of the day and night, Defendants will feather turbine blades so there is only minimal rotation (<2 rpm) at winds below cut-in speeds. Defendants will engage in the following adaptive management regime to monitor Project operations from April 1 to November 15, 2013:
>
> a. Defendants will retain a qualified biologist to search all operating turbines every two days for bat carcasses. Before commencing with the new operation scheme, carcass searches, or carcass removal trials, Defendants will provide Plaintiffs with the names and affiliations of all qualified biologists that Defendants plan to involve in carcass searches and/or the carcass removal trials, so that Plaintiffs can timely raise any concerns they might have with specific individuals before such activities commence.
>
> b. Defendants will conduct a carcass removal study prior to April 1, 2012, or as soon as weather permits, to determine carcass removal rates in the Project area. Defendants will adjust the search interval period if FWS determines it is necessary to do so in order to ensure that a sufficient opportunity exists to detect Indiana bat take.
>
> c. Defendants will conduct removal trials throughout the April 1 through November 15, 2013, intensive monitoring period to monitor carcass removal rates, and

Defendants will adjust the search interval if necessary to ensure that there is a sufficient opportunity to detect Indiana bat take.

d. Defendants will share results from carcass removal trials with FWS and Plaintiffs, and discuss with FWS any proposed adjustments to search intervals if FWS determines that more protective measures, such as a shortened search interval, are necessary.

e. Defendants will provide FWS and Plaintiffs with monthly monitoring reports from April 1 through November 15, 2013, identifying the approximate date, location, time, and species of any bat mortality occurring during the preceding month. The first monitoring report will be due on May 15, 2013, for the period of April 1 through April 30, with subsequent reports due on the 15th of each month for the preceding month.

f. Defendants will notify FWS and Plaintiffs within 24 hours of suspected identification of any endangered or threatened species injury or fatality.

g. All carcasses of the *myotis* genus will be preserved using industry protocols and provided to a qualified bat biologist at FWS or the West Virginia Division of Natural Resources ("WVDNR") for independent identification.

h. If, under the process outlined in Paragraph 2(g), FWS or WVDNR determines that an ESA-listed species has been killed or otherwise taken due to project operation, Defendants will cease all nighttime turbine operations from one-half hour prior to sunset until one-quarter hour after sunrise during the period of April 1 to November 15, 2013, until an ITP is issued.

i. Defendants will provide weekly reports to Plaintiffs verifying that all turbines operating during nighttime hours from April 1 to November 15, 2013 are operating at a cut-in speed of at least 6.9 meters per second.

j. Within thirty (30) days from the entry of a modified stipulation by the Court consistent with the terms identified above, Defendants will contribute $10,000 to Bat Conservation International, Inc. ("BCI") for the purpose of conducting scientific research to facilitate an increased understanding of White Nose Syndrome ("WNS") and its impacts on bat species.

i. If Defendants have not received a final ITP by May 15, 2013, Defendants will contribute an additional $5,000 to BCI by June 15, 2013 for the purpose of conducting scientific research to facilitate an increased understanding of WNS and its impacts on bat species.

ii. If Defendants have not received a final ITP by July 1, 2013, Defendants will contribute an additional $5,000 to BCI by August 1, 2013, for the

purpose of conducting scientific research to facilitate an increased understanding of WNS and its impacts on bat species.

Upon issuance of a final ITP, Defendants will implement the terms and conditions of the ITP and HCP, including operational requirements and monitoring protocols.

Respectfully submitted,

By: /s/
R. James Mitchell
Bar No. 017752
K&L GATES, LLP
1601 K St. NW
Washington, DC 20006-1600
Ph: 202.778.9000
Fax: 202.778.9100
jamie.mitchell@klgates.com

Attorneys for Defendants

By: /s/
R. James Mitchell, Esq.
(*signed by R. James Mitchell with permission of William S. Eubanks II*)
William S. Eubanks II (admitted pro hac vice)
Eric R. Glitzenstein (admitted pro hac vice)
MEYER GLITZENSTEIN & CRYSTAL
1601 Connecticut Avenue NW, Suite 700
Washington, DC 20009
Ph: 202.588.5206
Fax: 202.588.5049
beubanks@meyerglitz.com
eglitzenstein@meyerglitz.com

William K. Meyer
(Federal Bar No. 01214)
Zuckerman Spaeder LLP
100 East Pratt Street, Suite 2440
Baltimore, MD 21202
Ph: 410.332.1240
Fax: 410.659.0436
wmeyer@zuckerman.com

Logan Hollers
Animal Welfare Institute
900 Pennsylvania Avenue, S.E.
Washington D.C. 20003
Ph: 202.446.2148
Fax: 202.446.2131
logan@awionline.org

Attorneys for Plaintiffs

So Ordered:

U.S. District Judge
Dated this 14th day of March, 2013

Invenergy

February 12, 2013

Paul Phifer, Assistant Regional Director
U.S. Fish and Wildlife Service
Northeast Regional Office
300 Westgate Center Drive
Hadley, MA 01035-9589
Email: Paul_Phifer@fws.gov

RE: Beech Ridge Wind Energy Project; Request for Technical Assistance

Dear Mr. Phifer:

The purpose of this letter is to renew Beech Ridge Energy's (BRE) request for technical assistance from the U.S. Fish and Wildlife Service (USFWS), and to reconfirm USFWS' concurrence that BRE may conduct limited nighttime operations at the Beech Ridge Wind Energy Project (Project) consistent with the terms of BRE's 2012 take avoidance strategy.

Background

By way of background, on January 23, 2012, BRE submitted a take avoidance strategy to USFWS in which BRE proposed to implement operational modifications at the Project to avoid the risk of taking Endangered Species Act (ESA)-listed Indiana bats (*Myotis sodalis*) or Virginia big-eared bats (*Corynorhinus townsendii*) (BRE 2012). Specifically, BRE proposed to increase turbine cut-in speeds at the Project to wind speeds of 6.9 meters per second (m/s) at night, from 0.5 hour before sunset until 0.5 hour after sunrise. A copy of BRE's January 23, 2012, correspondence and take avoidance strategy (BRE 2012) is enclosed for your reference.

On January 30, 2012, USFWS issued a letter concluding that BRE's proposed take avoidance strategy, including proposed operational modifications, would produce effects that are discountable, and, therefore, not likely to adversely affect listed bat species. In doing so, USFWS requested that BRE submit monthly monitoring reports from April 1 to November 15 to help inform the ongoing ESA Section 10 permit process. A copy of USFWS's January 30, 2012, correspondence is also enclosed for your reference.

During the period of April 1 through November 15, 2012, BRE implemented its take avoidance strategy in consultation with USFWS, including intensive carcass searches described in the strategy. Monthly reports were submitted to USFWS consistent with this strategy. As these reports indicate, no ESA-listed species were discovered during intensive carcass searches.

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Current Status of Permit Process

In January, 2010, BRE commenced working with the USFWS to develop an ESA Section 10 permit application for the Project. In January 11, 2012, BRE submitted an ESA Section 10 permit application to USFWS for review and processing. The application was developed through extensive interactions between BRE and USFWS.

In August, 2012, USFWS issued a Draft Environmental Impact Statement (DEIS) analyzing the effects of the proposed action on the environment. The public comment period on the DEIS and ESA Section 10 permit application closed on October 23, 2012. Numerous technical comments on the DEIS and ESA Section 10 permit application were received from the public, including several environmental organizations.

BRE and the USFWS are presently reviewing and discussing public comments. BRE is in the process of revising its ESA Section 10 permit application in response to public comments. In addition, USFWS is evaluating comments submitted on the DEIS, and is developing a final Environmental Impact Statement (FEIS) responding to such comments. BRE remains hopeful that a final ESA Section 10 permit will be issued in the spring of 2013.

Request for Concurrence

BRE and USFWS continue to make progress developing and finalizing an ESA Section 10 permit for the Project. However, given technical and other considerations, it appears that permit issuance may be delayed past April 1, 2013. In view of this situation, BRE proposes to implement its 2012 take avoidance strategy to permit limited nighttime operations at existing Project turbines during the period of April 1, 2013 through November 15, 2013. In doing so, BRE will conduct intensive monitoring consistent with what was previously proposed in 2012 (BRE 2012), and BRE will provide monthly monitoring reports to USFWS to help inform the ongoing permitting process.

For the reasons outlined above and those contained in BRE's January, 2012, correspondence, BRE requests USFWS's concurrence with this proposal.[1] Thank you very much for your ongoing assistance in the development of the ESA Section 10 permit for the Project. Please feel free to contact me if you have any questions regarding information contained in this letter.

Sincerely,

Bryan Schueler
Senior Vice President
Beech Ridge Energy LLC

Enclosures

[1] BRE agreed in a judicially-approved settlement agreement to curtail nighttime operations of Project wind turbines that are already constructed during the period of April 1 through November 15 annually and to forego construction and operation of new Project turbines pending receipt of an ESA Section 10 ITP to resolve certain claims made in litigation concerning the Project. *See Animal Welfare Institute et al. v. Beech Ridge Energy LLC*, Case No.: RWT 09cv1519 (D. MA January 20, 2010) (Stipulation). BRE previously obtained the approval of the Court in 2012 to implement limited operations at the Project during the period of April 1 through November 15 consistent with the avoidance strategy described herein. BRE will seek further approval from the Court in 2013 prior to implementing the terms of the avoidance strategy contained herein.

Invenergy

January 23, 2012

Mr. Paul Phifer
Assistant Regional Director
U.S. Fish and Wildlife Service
Northeast Regional Office
300 Westgate Center Drive
Hadley, MA 01035-9589
Email: Paul_Phifer@fws.gov

RE: Beech Ridge Wind Energy Project; Request for Technical Assistance

Dear Mr. Phifer:

Thank you very much for the assistance that you and your staff have provided regarding the development of the Habitat Conservation Plan (HCP) for the Beech Ridge Wind Energy Project (Project). The purpose of this letter is to follow-up on our recent discussions concerning the Project, and to provide Beech Ridge Energy's (BRE) proposal and justification for limited Project operations at night during the period of April 1 through November 15 while avoiding take of listed species until such time that an Incidental Take Permit (ITP) is issued. Based upon the siting work and other avoidance actions BRE has built into its proposed action, and through the turbine operational protocols proposed herein, the Project is unlikely to "take" Indiana bats (*Myotis sodalis*) or Virginia big-eared bats (*Corynorhinus townsendii*). We therefore request that the U.S. Fish and Wildlife Service (USFWS) issue a technical assistance letter concurring with this determination.

By way of background, BRE commenced developing an application for an Endangered Species Act (ESA) Section 10 ITP with Region 5 of the USFWS in January, 2010.[1] BRE and USFWS staff have worked closely over the past two years during the development of the HCP that is the key component of the permit application and Environmental Impact Statement (EIS) currently being prepared by the USFWS. The HCP is a highly detailed document that contains BRE's proposal to construct and operate the wind project in a manner that avoids, minimizes and mitigates the effects of project construction and operations on listed Indiana bats and Virginia big-eared bats. Staff from BRE and USFWS have traded several drafts of the HCP, and have met on numerous occasions in person and via conference call throughout the HCP development process. Comments from USFWS staff have been incorporated into the HCP. Portions of the HCP have been peer reviewed by nationally-recognized bat experts and staff in other USFWS regions.

[1] BRE agreed in a judicially-approved settlement agreement to curtail nighttime operations of Project wind turbines that are already constructed during the period of April 1 through November 15 annually and to forego construction and operation of new Project turbines pending receipt of an ESA Section 10 ITP to resolve certain claims made in litigation concerning the Project. *See Animal Welfare Institute et al. v. Beech Ridge Energy LLC*, Case No.: RWT 09cv1519 (D. MA January 20, 2010) (Stipulation). BRE will obtain Court approval prior to implementing the terms of the pre-ITP avoidance strategy contained herein. In the event that the Court approves any adjustments to the current operating restrictions, BRE will work with the USFWS to determine the impact of such changes, if any, on the permitting process.

BRE entered into a Memorandum of Understanding (MOU) with USFWS in June, 2010, containing a schedule to complete the ESA Section 10 permitting process by March 30, 2011. The MOU provides that BRE will pay for contractor costs associated with developing an EIS to support potential issuance of an ITP. The present schedule for completing the EIS is somewhat uncertain; however, we understand that a final EIS may be completed in June, 2012, after consideration of public comments on the draft EIS. Issuance of the final ITP would follow issuance of the final EIS by at least 30 days, resulting in a final permit being issued by USFWS in July, 2012.

On June 30, 2011, BRE filed its ESA Section 10 permit application with Region 5 for review and processing. Thereafter, on July 26, 2011, the Elkins Field Office issued a letter stating the application was incomplete, and identifying several areas requiring additional discussion. BRE met with USFWS via teleconference on several occasions during the fall of 2011 to discuss these matters. As a result of these discussions, the parties reached agreement on modifications to the HCP. BRE received final comments from the Department of Interior Solicitor's Office on the application on January 6, 2012. BRE resubmitted its updated application, including an HCP (BRE LLC 2012), with USFWS on January 11, 2012.

The following limited-operation and monitoring proposal applies only to the existing 67 turbines; BRE would not allow the construction and operation of the additional 33 turbines discussed in Section 2.2.2 the HCP until after issuance of the final ITP.

BRE proposes the following limited operations and intensive monitoring for the existing 67 turbines for the period from April 1, 2012, until the final ITP is issued, at which time BRE will implement the terms of the final ITP and HCP.

(1) Beginning on April 1, 2012, implement turbine operations as follows:
   a) operate turbines with cut-in speeds of 6.9 m/s during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and
   b) feather turbine blades so there is only minimal rotation (<2 rpm) at wind speeds below turbine cut-in speeds.

(2) Implement intensive monitoring to detect the unlikely take of ESA-listed species; and

(3) In the event take is detected, discontinue nighttime operations described above during the period of April 1 to November 15 until the final ITP is issued.

The proposed turbine cut-in speed of 6.9 m/s is higher than the cut-in speed at which Indiana bat fatalities have been documented (see below and Section 8.2.5 in the HCP). Results of the 2010 acoustic data suggest that Indiana bats were potentially recorded on-site; however, potential calls were recorded in very low numbers. In addition, the Project is not located near any priority Indiana bat habitat, and the nearest hibernacula are over 9 miles away; site-specific mist netting surveys conducted in consultation with USFWS have not detected the presence of Indiana bat in the Project area; and monitoring studies have shown that the proportion of bat mortality that is of *Myotis* bats is generally small and on average in the Appalachian Region less than 9% of overall bat mortality (see below and Section 4.1.3 of the HCP). Consequently, BRE's proposed turbine

cut-in speed adjustment during the period of April 1 through November 15 reduces the already low risk of take to the point that take is unlikely to occur.

Thank you once again for your time and attention to this matter. Please feel free to contact me if you have any questions regarding information contained in this letter.

Sincerely,

David Groberg
Vice President
Beech Ridge Energy LLC

Enclosure (Take Avoidance Strategy)

Take Avoidance Strategy
Beech Ridge Wind Energy Project

(January 23, 2012)

The following take avoidance strategy[1] is based on the analysis presented in the Beech Ridge HCP submitted to USFWS on January 11, 2012 (BRE LLC 2012), and the expert views of BRE's scientific consultant Western EcoSystems Technology Inc.

Risk During the Spring Migration

Available scientific information indicates that take of Indiana bats is unlikely to occur at the Project during the months of April and May which is thought of as the spring migration period. Section 3.2.1 of the HCP documents that during spring emergence, typically in April and May, it is possible that Indiana bats fly through the project area on their way to a maternity area. However, since no summer maternity habitat occurs in the project area, the Project would not be a destination for spring migrating females. In the Appalachian region, bat activity and mortality at wind projects are generally low during spring, and collision risk to bats is low based on available data from regional wind projects. On a per turbine-search basis, bat mortality was lowest in April and May (Figure 1, Young et al., 2009b, 2010b, 2011b), and *Myotis* fatality rates are low throughout the entire bat-active period. There are no documented Indiana bat mortalities in April and May.

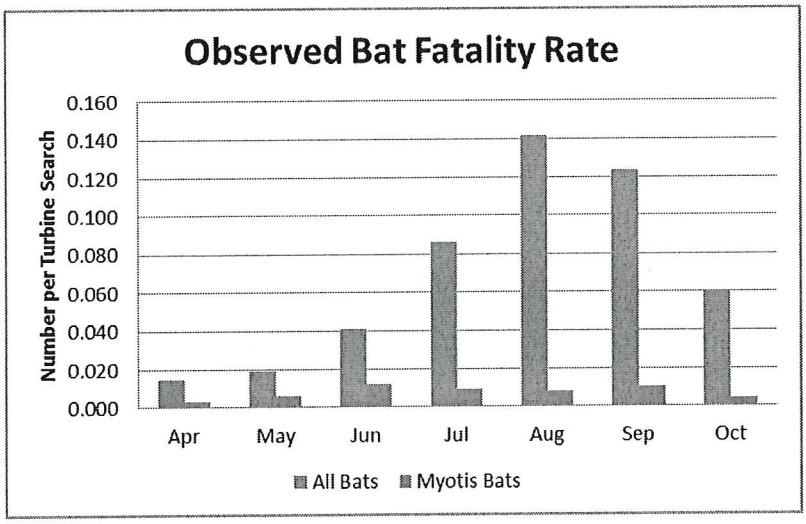

Figure 1. The average observed number of bat fatalities found per turbine search over a three year period (2009-2011) at the Mt. Storm Wind Project, Grant County, West Virginia.

[1] There have been no documented occurrences of Virginia big-eared bats in Greenbrier or Nicholas Counties, West Virginia, or at the Project site based upon the results of mist-netting or other surveys (BHE 2005, 2006; Young and Gruver 2011; C. Stihler, WVDNR, Pers. Comm.). The location of the Project is also at the edge of the species' range, making it unlikely the species would occur in the Project area (see HCP at 3.2.2). Therefore, the risk of Virginia big-eared take at the Project is low because of lack of occurrence in the Project area. Regardless, avoidance measures proposed in this avoidance strategy, while focused on Indiana bat, will likewise avoid the unlikely take of Virginia big-eared bat.

Risk during the Summer Maternity Season

Available scientific information indicates that take is unlikely to occur during June and the first two weeks of July, which is commonly referred to as the summer maternity season, because: (1) no Indiana bats were captured during summer mist-net surveys conducted according to USFWS protocol in 2005 and in 2010 (HCP Section 3.2.1.9); (2) the Project area's elevation results in cool summer temperatures that require female Indiana bats to use torpor to conserve energy and slow reproductive functions (HCP Section 3.2.1.9); and (3) as of the 2007 *Indiana Bat Draft Recovery Plan: First Revision* (USFWS 2007), there was very little information about Indiana bat maternity colonies in West Virginia;[2] however, the ecological conditions of the Project, high elevation deciduous forest, are not similar to those that are typically reported for maternity colonies (USFWS 2007).

Female Indiana bats in maternity colonies typically display restricted movement patterns as they remain relatively close to the maternity roost trees (USFWS 2007). The USFWS suggests that female Indiana bat activity is typically restricted to the area within a 2.5-mile radius of the primary roost trees (USFWS 2007). Male Indiana bats typically remain near the hibernacula year round, but they may occasionally visit maternity areas during the summer months (USFWS 2007). Risk to male Indiana bats from the Project during June and the first two weeks of July will be low because the nearest known hibernaculum is about 9.3 miles away, and there are no known maternity areas in the Project area.

Risk during the Fall Migration Period

Results of the 2010 acoustic data analysis suggest that Indiana bats were potentially recorded on-site during late July, but in very low numbers relative to the overall number of recorded calls (6 out of 12,431 calls, or 0.04%) (HCP Section 3.2.1.9).

Bat mortality is typically highest during the last two weeks of July, and the months of August and September (Figure 1). Female and young-of-the-year juvenile Indiana bats typically have less fidelity to the maternity areas as the young become volant and have migrated back to the hibernacula and swarming areas (USFWS 2007). During the fall migration/swarming period, male Indiana bats may travel great distances to visit other hibernacula, as described in Section 3.2.1 of the HCP. On a per turbine-search basis, bat mortality in the Appalachian Region peaks in August and September (Figure 1, Young et al, 2009a, 2010a, 2011a); however, *Myotis* bat mortality continues to remain low in general during all months of the year (Figure 1, Young et al., 2009b, 2010b, 2011b). The only three documented Indiana bat fatalities at wind energy projects were recorded in September (Good et al. 2011, Clint Riley, USFWS PA Field Office, pers. comm.).

[2] Only six West Virginia counties (Clay, Nicholas, Pendleton, Raleigh, Randolph, and Tucker) have summer records of Indiana bats other than reproductive females or maternity colonies. Three maternity colonies, located in Boone and Tucker counties, were recorded for West Virginia at the time of the Draft Recovery Plan and a fourth maternity colony has since been located in Ohio County. These are believed to represent a small portion of maternity colonies in West Virginia due to the limited nature of surveys for maternity colonies (USFWS 2007).

Bat mortality diminishes by mid-October because the swarming season is finishing, and bats begin to hibernate as nighttime temperatures get colder (USFWS 2007). By November 1, most bats will have either entered the cave or have become closely associated with the cave for the on-set of hibernation. Depending on weather conditions, Indiana bats could be active outside the caves until approximately November 15 but in decreasing numbers.

Turbine Operational Protocols

BRE proposes the following turbine operational protocols to avoid take of ESA-listed species up to the date on which the ITP is issued:

1) Operate turbines with cut-in speeds of 6.9 m/s during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and

2) Feather turbine blades so there is only minimal rotation (<2 rpm) at winds below cut-in speeds.

In the event take is detected, the limited nighttime operations described above will cease during the nighttime period from April 1 to November 15 until the ITP is issued. Upon issuance of a final ITP, BRE will commence implementing the terms and conditions of the ITP and HCP.

Justification for Turbine Operational Adjustments

Three recent studies have shown that increasing turbine cut-in speed significantly reduces bat fatalities caused by wind turbines (Table 1). All three research studies showed that turbines operated with raised cut-in speeds killed fewer bats than the normally operating turbines by 44 to 93% (Baerwald et al. 2009; Arnett et al. 2010; Good et al. 2011). A fourth study showed that controlling the rotational speed of the turbine rotor by feathering the turbine blades also significantly reduced bat mortality (Young et al. 2011a).

Table 1. Summary of Turbine Curtailment Study Results, Alberta, Canada; Casselman, Pennsylvania; and Fowler Ridge, Indiana

Alberta, 39 Vestas Turbines, July 15 – September 30, 2007, 171 ft (52 m) plot, weekly searches (Baerwald et al. 2009)			
Control	Treatment	Treatment	Results
8 turbines, normal operation 8.9 mph (4.0 m/s) cut-in speed	15 turbines, 12.3 mph (5.5 m/s) cut-in speed	6 turbines, idling blades pitched to reduce rotation in low wind speeds	Treatment turbines killed fewer bats Raised cut-in speed = 7.6 $\pm$ 2.0 bats/turbine Idling = 8.1 $\pm$ 3.1 bats/turbine control = 19.0 $\pm$ 2.7 bats/turbine No difference between experimental treatments
Casselman, PA, 23 GE Turbines, July 26 – October 9, 2008, July 26 – October 8, 2009; variable plots up to 197 ft (60 m), daily searches (Arnett et al. 2010)			
Control	Treatment	Treatment	Results
412 turbines, normal operation, 7.8 mph (3.5 m/s cut-in speed)	12 turbines, 11.2 mph (5.0 m/s) cut-in speed	12 turbines, 14.5 mph (6.5 m/s) cut-in speed	Treatment turbines killed fewer bats Raised 11.2 mph (5.0 m/s) cut-in speed = 0.27 (95% CI: 0.07-1.05) bats/turbine Raised 14.5 mph (6.5 m/s) cut-in speed = 0.53 (95% CI: 0.20-1.42) bats/turbine Control = 2.04 (95% CI: 1.19-3.51) bats/turbine No detectable difference between experimental treatments 11.2 mph (5.0 m/s) cut-in speed most cost-effective way to reduce bat mortalities at a wind farm

Fowler Ridge, IN; 182 Vestas V82 1.65-MW, 40 Clipper C96 2.5-MW turbines, 133 1.5-MW GE SLE Turbines; April 13 – October 15, 2010, variable plots, weekly and daily searches (Good et al. 2011)			
Control	Treatment	Treatment	Results
18 turbines, normal operation, 7.8 mph (3.5 m/s cut in speed)	9 turbines, 11.2 mph (5.0 m/s) cut-in speed	9 turbines, 14.5 mph (6.5 m/s) cut-in speed	Treatment turbines killed fewer bats Raised 11.2 mph (5.0 m/s) cut-in speed = 7.0 (95% CI: 7.0-9.1) bats/turbine Raised 14.5 (6.5 m/s) cut-in speed = 3.0 (95% CI: 1.8-4.2) bats/turbine Control = 14.0 (95% CI: 11.6-16.5) bats/turbine Experimental treatments showed approximately 50% and 78% reduction in bat mortality

Available scientific information (Arnett et al. 2008; Good et al 2011; Johnson 2005; Young et al. 2011a) indicates that *Myotis* mortality at wind projects is low in general. Of the three known fatalities, no take of Indiana bats has been observed at turbines with cut-in speeds above 5.0 m/s. Available data indicate that little brown bat mortality has occurred at a turbine with a cut-in speed of 6.5 m/s (Table 2) (Pers. Comm. Chris Hein, Bat Conservation International). The highest cut-in speed at which Indiana bat take has been documented is 5.0 m/s (Good et al. 2011).

Implementation of blade feathering below wind speed of 6.9 m/s to minimize blade rotation will reduce the risk of potential take because available information indicates that Indiana bat mortality is unlikely to occur above a cut-in speed of 6.9 m/s. In addition, most high frequency bat calls at the Project have been recorded below rotor swept area (see Section 3.2.1.9 in the HCP); no Indiana bats have been detected at the Project through mist netting surveys conducted in consultation with USFWS; the Project is located more than 70 miles from any known Indiana bat priority 1 or 2 hibernacula (Hell Hole Cave, and Trout Cave, respectively); the closest known hibernaculum is 9.3 miles from the Project (Snedegar Cave, priority 3); and overall, *Myotis* fatalities only comprise a small percentage of overall bat mortality at wind projects. In addition, it is known that bat mortality decreases with increasing wind speed, and therefore bat mortality is already expected to be low at wind speeds above 6.9 m/s. Feathering blades below this wind speed effectively eliminates the risk to listed bats at the Project up to wind speeds of 6.9 m/s.

Table 2. *Myotis* fatalities for which turbine cut-in speed is known

	Turbine Cut-in Speed/*Myotis* Fatalities[1]			
Project	Fully operational (3.5 or 4.0 m/s cut-in speeds)	5.0 m/s	5.5 m/s	6.5 m/s
Fowler Ridge (Indiana bat)[2]	0	1	na	0
Casselman (all little brown bats)[2]	3	0	na	1
Alberta (various species)[2]	8	na	5	na
Total	11	1	5	1

[1] Table reports *Myotis* fatalities for which the turbine treatment under which the fatality occurred is known; for Fowler Ridge and Casselman all such fatalities were Indiana bat and little brown bat, respectively.

[2] Sources: Fowler Ridge (Good et al. 2011); Casselman (Pers. Comm. Chris Hein); Alberta (Pers. Comm. Erin Baerwald).

na - cut-in speed was not tested in study

0 - cut-in speed was tested and no *Myotis* fatalities occurred

Proposed Period of Restricted Turbine Operations

BRE proposes to restrict turbine operations at night, from April 1 through November 15. This is the same period contained in a January 2010 settlement agreement. *See Animal Welfare Institute et al. v. Beech Ridge Energy LLC*, Case No.: RWT 09cv1519 (D. MA January 20, 2010).

Blades to Remain Feathered until Cut-in Wind Speeds are Reached

Young et al. (2011a) evaluated the effects of blade feathering on bat mortality at wind turbines. This study found that feathering the blades to minimize rotation prior to cut-in significantly reduced bat mortality. While the details of feathering and cut-in from the other studies that have analyzed the effects of raising cut-in speeds on bat mortality rates are unclear, cut-in speed means the wind speed at which a breaker "cuts in" and the generator begins generating power. Turbines require that the blades are already catching the wind and rotating steadily using wind power before the turbine will cut-in, so, without feathering, the risk to bats actually starts at some lower wind speed below cut-in when the blades begin to pitch into the wind and pick up speed. The blades are designed so that the pressure differential in front of and behind the blade creates lift which causes the rotor to turn. The low pressure zone created by the trailing of edge of the blade is thought to cause bat fatalities through barotrauma (Baerwald et al. 2008).

Under BRE's avoidance strategy, the turbine blades will remain feathered until the cut-in of 6.9 m/s is reached, and thus will not produce the large pressure differentials on the blades. When GE turbine blades are feathered, rotation is typically 1 to 2 rpm. The feathering strategy presented above will further reduce risk to bats using the Project area during fall migration season (Baerwald et al. 2009; Young et al. 2011a).

In summary, implementing turbine cut-in speed adjustments as described above will make the risk of take unlikely because ESA listed species have not been directly observed at the Project; the cut-in speed of 6.9 m/s is well above the level at which take of Indiana bats has been observed; turbine blades will be feathered below cut-in speeds; and the Project site is located over 9 miles away from known Indiana bat hibernacula.

Monitoring Actions

BRE proposes to implement intensive monitoring from April 1 through November 15 to detect if take is occurring. Intensive monitoring under this avoidance strategy will be conducted as follows:

1) BRE will retain a qualified biologist to search all operating turbines every three days. Based on other studies conducted in the region, average carcass removal rate is variable and has ranged from approximately 2.6 days at the Mount Storm project (Young et al. 2011a) to 31.9 days at the Casselman Project (Arnett et al. 2009). Therefore, a 3-day search interval provides a sufficient time period to find

Indiana bat fatalities if they have occurred because the 3-day interval is at the low-end of the range observed in existing studies;

2) BRE will conduct a carcass removal study prior to April 1, 2012, or as soon as weather permits, to determine carcass removal rates, and BRE will adjust the search interval if necessary to ensure that a sufficient opportunity exists to detect Indiana bat take; and

3) BRE will conduct removal trials throughout the intensive monitoring period to monitor carcass removal rates, and BRE will adjust the search interval if necessary to ensure that there is a sufficient opportunity to detect Indiana bat take.

Searcher efficiency trials and fatality monitoring data analysis will be conducted as described in Appendix C of the HCP (RMAMP). Results from carcass removal trials will be shared and discussed with USFWS prior to adjusting search intervals.

In summary, this intensive monitoring strategy is sufficient to detect if take is occurring during the period of April 1 through November 15 because (1) every operating turbine will be searched by a qualified biologist every 3 days; (2) available scientific information indicates that a 3-day search interval is sufficient to account for potential carcass removal; and (3) carcass removal rates will be evaluated and search intervals adjusted as necessary to account for site-specific conditions.

Reporting Actions

BRE will provide a monitoring report to USFWS within sixty (60) days after receiving a final ITP. The monitoring report will provide the results of intensive monitoring obtained during the period of April 1 to November 15.

Adaptive Management Actions

BRE will notify the USFWS within 24 hours of suspected identification of any endangered or threatened species injury or fatality and will handle carcasses in accordance with the wildlife handling procedures described in Section 3.2.2 in the RMAMP.

If take of an ESA-listed species is detected, BRE will cease all nighttime turbine operations from ½ hour prior to sunset to ¼ hour after sunrise during the period of April 1 to November 15 until an ITP is issued. Upon issuance of a final ITP, BRE will implement the terms and conditions of the ITP and HCP, including operational requirements and monitoring protocols.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 Westgate Center Drive
Hadley, MA 01035-9589

David Groberg
Vice President
Business Development – East Region
Invenergy LLC
51 Monroe Street, Suite 1604
Rockville, Maryland 20850

JAN 30 2012

Dear Mr. Groberg:

Thank you for your request for technical assistance and supporting information entitled *Take Avoidance Strategy* dated January 23, 2012, concerning the effects of the Beech Ridge Wind Energy Project (Project) in West Virginia on Endangered Species Act (ESA)-listed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS). Your letter outlines Beech Ridge Energy's (BRE) proposal and justification for limited Project operations at night during the period of April 1 through November 15 while attempting to avoid take of ESA-listed species until such time that an Incidental Take Permit (ITP) is issued.

BRE is actively pursuing an ITP through collaborative development of a Habitat Conservation Plan (HCP) with the USFWS. The issues included in these documents are multiple and complex, entailing new analyses and requiring significant expenditure of time and resources by the applicant and USFWS.

The USFWS has made this project a top priority over the past two years, dedicating nearly the full time of several senior biologists. The USFWS has not and cannot commit to a specific deadline for the culmination of this ESA Section 10 permitting process. Our Memorandum of Understanding (MOU) with BRE acknowledges this; we entered into the MOU to define our respective roles and responsibilities, not to memorialize binding deadlines.[1] Not only are there multiple factors beyond our control that affect the timeline, we also cannot make *a priori* commitments to issue a permit. Rather, we can, and have, committed to working as diligently and effectively as possible with BRE. We have attempted to streamline this process so that we meet an applicant's needs while at the same time satisfying our own statutory and regulatory permit issuance criteria. Our goal is assisting BRE to develop a defensible HCP and application materials. Doing so, though, is the result of negotiation, which does not fit easily within pre-determined timeframes.

[1] The MOU reads: "USFWS shall, in cooperation with Beech Ridge Energy LLC and the CONTRACTOR, develop a Draft and Final EIS Preparation Schedule that projects key dates. Although the schedule is not binding, all Parties will use best efforts to adhere to, and assist each other in adhering to, the EIS Preparation Schedule, recognizing that completion of some tasks may be contingent on circumstances beyond any given Party's control." MOU at Section 5.D.3.

The USFWS has reviewed the information provided in your letter regarding the presence of Indiana bats (*Myotis sodalis*) and other ESA-listed species and their habitats in the vicinity of the Project, and the measures BRE proposes to significantly reduce the risk of take of such species. Specifically, we interpret BRE's proposal to include the following limited operations and intensive monitoring for the existing 67 turbines for the period from April 1, 2012, until November 15, 2012, or until the final ITP is issued, whichever date is earlier. The limited operations are:

> (1) Beginning on April 1, 2012, implement turbine operations as follows: a) operate turbines with cut-in speeds of 6.9 meters per second (m/s) during the period from April 1 through November 15 from ½ hour prior to sunset until ¼ hour after sunrise; and b) feather turbine blades so there is only minimal rotation (less than 2 revolutions per minute) at wind speeds below turbine cut-in speeds.
>
> (2) Implement appropriate monitoring to detect the unlikely take of ESA-listed species; and
>
> (3) In the event take is detected, discontinue nighttime operations described above during the period of April 1 to November 15 until the final ITP is issued.

The letter from BRE asks the USFWS to conclude the Project, with these proposed modifications, "will reduce the already low risk of take to a point that take is unlikely to occur." We have assessed the pertinent aspects of the information you provided in addition to the available scientific and commercial information and provide the following views on your proposal.

Based on our independent review of the best available scientific and commercial information, we believe the operational modifications you suggest during the time period you state will produce effects that are discountable and, therefore, not likely to adversely affect listed bat species.[2]

Data presented in BRE's proposed strategy indicates that there has not been an Indiana bat fatality recovered at a project implementing turbine cut-in speeds above 5.0 m/s. This is consistent with our interpretation of available post-construction monitoring studies conducted to date. In addition, BRE's strategy indicates there has not been a *Myotis* fatality recovered at a project implementing turbine cut-in speeds above 6.5 m/s. The wind speeds during the nights when these fatalities occurred were variable and we do not know what turbine blade start-up speed (the speed at which turbine blades begin to free wheel or begin to rotate up to the cut-in speeds) would have prevented bat fatality. However, current research does seem to suggest that implementing turbine feathering (adjusting pitch of turbine blades) or increasing turbine start-up speeds such that turbine rotation is ceased or minimal (less than 2 revolutions per minute) below

[2] The USFWS' Endangered Species Consultation Handbook defines "[i]s not likely to adversely affect" as "the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial." The Handbook further defines "discountable effects" to be: "those extremely unlikely to occur....Based on best judgment, a person would not...expect discountable effects to occur." Here, based on the analysis to follow, we conclude that the proposed operational changes will reduce the likelihood of take through collision or barotrauma to a point where it is highly unlikely.

6.9 m/s will significantly reduce bat mortality (Baerwald *et al.* 2009, Arnett *et al.* 2011, Good *et al.* 2011). Data from available post-construction monitoring reports, several of which are summarized in BRE's proposed strategy, suggest that bat mortality is generally low in the spring and summer and greatest during the fall. Studies show BRE's proposed turbine operation strategy should reduce those potential mortality levels by upwards of 80 percent (Arnett *et al.* 2011, Good *et al.* 2011). Given that Indiana bats are a relatively small proportion of the overall bat population, the USFWS believes there to be an unlikely risk of take during the short period during which BRE will implement this strategy. Additionally, white nose syndrome may be reducing the local Indiana bat population, as it has been found to occur in Snedegar's Cave, the hibernacula within 10 miles of the BRE project. Therefore, the number of Indiana bats potentially interacting with the turbine airspace is further reduced.

For example, based on the level of take estimated by BRE for their HCP development, the USFWS anticipates up to 2.3 Indiana bat fatalities may occur at the existing 67 turbines without modified turbine operations. Assuming that curtailment (*i.e.*, adjusted turbine operations) at 6.5 m/s may have up to 80 percent reduction in bat mortality, the USFWS anticipates that Indiana bat fatalities at the BRE project would be reduced below 0.5 annually. It is likely that there would be even greater reductions since BRE is actually increasing cut-in speeds to 6.9 m/s under the proposed strategy. Finally, based on the fact that wind facilities have only reported three Indiana bat fatalities since 2009, as summarized in BRE's proposed strategy, the overall potential for take through November 15, 2012 is unlikely therefore discountable.

BRE's proposal includes a monitoring strategy that entails retaining a qualified biologist to search all operating turbines every three days for signs of bat mortality. This periodicity differs from the monitoring scheme proposed in the draft HCP. Based on the nearby Mt. Storm monitoring data submitted in your letter showing a carcass removal rate of 2.6 days, we ask that you monitor each of the 67 turbines every 2 days to increase the likelihood of finding a dead Indiana bat. This monitoring rate may be changed in consultation with the USFWS based on the carcass removal studies and trials mentioned in your letter.

The USFWS asks that rather than the single submission of monitoring reports within sixty days after receiving a final ITP, as your letter suggests, BRE submit monthly reports from April 1 to November 15, 2012. These reports would be beneficial information as we finalize the HCP and associated National Environmental Policy Act (NEPA) documents.

We note that this proposal comes at a critical juncture in the permitting process. The USFWS is poised to begin the surname process to put the application and draft NEPA document out for public comment. If BRE elects to implement these proposed operational modifications during the time period specified, the USFWS will need additional time to modify its Draft Environmental Impact Statement, and for BRE to revise its HCP and associated documents to reflect the change in the status quo. These changes must be made prior to public comment, thereby extending the time before they are submitted for public review.

The USFWS recognizes that, notwithstanding this conclusion, BRE is currently pursuing an ITP. When an ITP is successfully obtained, the avoidance measures that BRE has committed to implement as the basis for this letter may be replaced by the avoidance, minimization, and

mitigation measures set forth in the HCP upon which the ITP is based.

We appreciate BRE's efforts to coordinate with our office in determining what measures can be implemented to avoid take of any ESA-listed species or their habitat at the project site.

Should any new information become available on the effects of your project on listed species, we request that you promptly notify the USFWS' West Virginia Field office at (304) 636-6586. If new information becomes available to us that other measures could be implemented to avoid take that would not require additional commitment by your company, such as wind speeds shown to preclude foraging by Indiana bats, we will notify you as soon as possible.

Sincerely,

Paul R. Phifer, Ph.D.
Assistant Regional Director
Ecological Services
Northeast Region

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 Westgate Center Drive
Hadley, MA 01035-9589

In Reply Refer To:
FWS/Region 5/ES

FEB 15 2013

Bryan Schueler
Senior Vice President
Beech Ridge Energy LLC
One South Wacker Drive, Suite 1900
Chicago, Illinois 60606

Dear Mr. Schueler:

Thank you for your request for technical assistance and supporting information entitled, *Take Avoidance Strategy,* dated February 12, 2013, concerning the effects of the Beech Ridge Wind Energy Project (Project) in West Virginia on Endangered Species Act (ESA)-listed species under the jurisdiction of the U.S. Fish and Wildlife Service (Service).

Your letter outlines Beech Ridge Energy's (BRE) proposal and justification to repeat the limited Project operations at night during the period of April 1 through November 15, 2013, that were implemented during the same period in 2012. These measures were and will be implemented to reduce the risk of take of ESA-listed species to the point that take is unlikely to occur.

The Service has reviewed the information provided in your letter regarding the presence of Indiana bats (*Myotis sodalis*) and other ESA-listed species and their habitats in the vicinity of the Project, and the measures BRE proposes to significantly reduce the risk of take of such species. To be clear, we interpret BRE's proposal to include the following limited operations, intensive monitoring, and reporting for the existing 67 turbines for the period from April 1, 2013, until November 15, 2013, or until the final ITP is issued, whichever date is earlier:

(1) Beginning on April 1, 2013, implement turbine operations as follows: a) operate turbines with cut-in speeds of 6.9 meters per second (m/s) during the period from April 1, 2013, through November 15, 2013, from ½ hour prior to sunset until ¼ hour after sunrise; and b) feather turbine blades so there is only minimal rotation (less than 2 revolutions per minute) at wind speeds below turbine cut-in speeds;

(2) Implement appropriate monitoring, searching all operating turbines every 2 days, to detect the unlikely take of ESA-listed species;

(3) In the event take is detected, discontinue nighttime operations described above during the period of April 1, 2013, to November 15, 2013, until the final ITP is issued; and

(4) Provide monthly monitoring reports and a final report covering the entire period monitored in 2013, containing the same type of information as provided during the 2012 study.

We appreciate BRE's implementation of the interim turbine operational and monitoring measures implemented in 2012, as modified by the Service's January 30, 2012, letter. We are also pleased to acknowledge that no ESA-listed species mortality and no *Myotis* bat mortality were found through those surveys. Based on our past analysis in our January 23, 2012, letter (appended to February 12, 2013, letter) and the 7.5 months of monitoring data you provided monthly, and summarized in a final report by Tidhar et al. (2013), we continue to believe the interim operational modifications are likely to produce effects that are discountable, and therefore, not likely to adversely affect listed bat species. [1]

As you state in your letter, BRE and the Service are both working diligently toward an ITP. When an ITP is successfully obtained, the interim operational measures that BRE has committed to implement as the basis for this letter may be replaced by the avoidance, minimization, mitigation, and monitoring measures set forth in the HCP and associated ITP.

Should any new information become available on the effects of your project on listed species, we ask that you promptly notify the Service's West Virginia Field office, at 304-636-6586.

Sincerely,

Paul R. Phifer, Ph.D.
Assistant Regional Director
Ecological Services

Cc: Jim Lynch, K&L Gates LLP

[1] The USFWS' Endangered Species Consultation Handbook defines "[i]s not likely to adversely affect" as "the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial." The Handbook further defines "discountable effects" to be: "those extremely unlikely to occur .... Based on best judgment, a person would not ... expect discountable effects to occur." Here, based on the analysis provided herein and in our letter to BRE dated January 30, 2012, we continue to conclude that the proposed operational changes will reduce the likelihood of take through collision or barotrauma to a point where it is highly unlikely.

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