



United States Department of the Interior



FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045

January 12, 2016

Honorable Kathleen Burgess
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

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EXEC-FILES-ALBANY
PUBLIC SERVICE COMMISSION

Dear Ms. Burgess:

This letter informs the New York State Public Service Commission (Commission) of the U.S. Fish and Wildlife Service's (Service) review and comments on the Public Scoping Statement (PSS) for the Lighthouse wind energy project planned for the Town of Somerset, Niagara County, and Town of Yates, Orleans County, New York. The project sponsor, Apex Clean Energy Holdings, LLC (Apex), has submitted the PSS in preparation of an application for a Certificate of Environmental Compatibility and Public Need under Article 10 of the New York State Public Service Law.

The 201-megawatt project will consist of up to 71 wind turbines; however, the manufacturer and model have not yet been selected and, therefore, the size of the structures is currently unknown. Further, the PSS does not reveal the location of the proposed turbine locations, only the project boundaries. The project area encompasses approximately 24,000 acres parallel to and along 12 miles of the south shore of Lake Ontario.

Our review and comments are being provided pursuant to the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and Migratory Bird Treaty Act (MBTA) (40 Stat. 755; 16 U.S.C. 703-712). We may provide future comments under the BGEPA, ESA, and MBTA, as well as the Clean Water Act (CWA) of 1972 (33 U.S.C. §1251 et seq.), which is administered jointly by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency in coordination with the Service under the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), as applicable.

Previously, the Service had been contacted by Apex to discuss the proposed project and wildlife resources in the project area. Apex has requested information from the Service to better

understand resources of concern to our agency and discuss appropriate wildlife studies to determine potential impacts. On March 17, 2015, the Service hosted a meeting with Apex and staff of the New York State Department of Environmental Conservation (NYSDEC) to discuss these topics and to provide Apex staff with an overview of wildlife studies conducted by the Service within the western portion of the project area during the spring of 2013. Specifically, the Service's Midwest Regional Office conducted acoustic and mobile marine radar studies during a portion of spring migration to gain knowledge of bird and bat movement along the south shore of Lake Ontario. This was part of a larger effort by the Service to study sites around the Great Lakes Watershed to inform the siting of wind energy projects. A report summarizing the study is being finalized and will be forwarded to the Commission, NYSDEC, and Apex when completed.

In a letter dated May 6, 2015, to Apex, the Service summarized discussions of the meeting and informed the project sponsor that additional information was required to inform our agency of the project's potential impact and risk to wildlife. A copy of that letter is enclosed for your reference.

To summarize our letter and study, a preliminary review of the radar data shows very large scale movement of wildlife, most notably birds and bats flying north toward the project area during spring migration (Service 2015 unpub. data). Upon approaching Lake Ontario, many of the individuals turn east and follow the shoreline rather than crossing the lake. This west to east movement would force them to fly through the wind turbines, which are proposed parallel to the shoreline. This increases their potential exposure and risk if wind turbines were built within this area. Furthermore, the data indicate that those nocturnal migrants who approach the shoreline at dawn tend to "fall out" of the sky, looking for areas where they can stop to rest and feed until migration resumes the following evening. In the case of passerines, this could be a variety of habitats such as wooded areas, wetlands, and stream corridors. However, for waterfowl this could include open land such as pastures and crop fields as well as wetlands or the lake. This behavior of landing in and near the lake shoreline may put their path of flight from higher altitudes down to ground level and back each day directly through the rotor-swept zone of wind turbines constructed in the project area, also increasing the risk of collision.

A statement is made on Page 50 of the PSS that theorizes that waterfowl, waterbird, and shorebird mortality from wind turbines is uncommon and unlikely to occur. Site conditions and species distributions vary across sites and such a generalized statement should be removed. In contrast, the Service's radar data for the Lighthouse site show large aggregations of birds using the project area and may indicate flocks of these birds near potential turbine locations.

It is important to keep in mind that the Service's study was conducted during only one spring migration season and no similar fall study has yet been completed. However, avian migration has been previously studied around the Great Lakes and general trends are evident (Alerstam 1990, Diehl et al. 2003). Of the migrants that encounter the lakes, many birds fly around them rather than cross open water. Unfortunately, our understanding of bat migration is not as developed.

We encourage developers of existing and proposed wind energy projects to follow current Service recommendations on wind power siting and construction found in the *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines* (2012) found at <http://www.fws.gov/ecological-services/energy-development/wind.html>. The Service hopes to work cooperatively with wind developers to appropriately site wind projects, and consider fish and wildlife during the design, construction, and operation of these facilities.

Apex has prepared a plan titled, *Avian and Bat Study Plan for the Proposed Lighthouse Wind Project* (Plan). This Plan includes monitoring bald eagle (*Haliaeetus leucocephalus*) movement, migrant raptor movement, breeding bird surveys, bat acoustic monitoring, threatened and endangered species habitat surveys, and winter raptor surveys. The Service provided comments on the Plan in our May 6, 2015, letter.

Bald eagle surveys were started in December 2014 after consultation with the Service and NYSDEC on the study protocol, and continued for one full year in accordance with the 2007 National Bald Eagle Management Guidelines. However, the Service does not yet have the complete results of this study. It should be noted that since the surveys have started, an active bald eagle nest has been observed in the project area. Given that a nest was recently found in the project area, additional monitoring and information pursuant to the BGEPA may be needed. For example, monitoring of flight activity to and from the nest would give important information on bald eagle use of the project airspace and potential risk of turbine collision. Bald eagles are no longer federally-listed under the ESA; however, bald eagles, along with their foraging and winter roosting habitat, remain protected pursuant to the BGEPA. Any take¹ and/or disturbance of bald and golden eagles (*Aquila chrysaetos*) is strictly prohibited under the BGEPA.

Migratory raptor surveys were conducted by Apex during the spring and fall migration period. We currently do not have the complete results of the studies and, therefore, cannot comment on the adequacy of the data. As we previously stated in our May 6, 2015, letter, it is important to remember that with this and other seasonal surveys, weather conditions, as well as migration patterns, can greatly affect timing and location of wildlife movement. Therefore, one survey year may not be sufficient to document the temporal and spatial variation of wildlife use in the project area and additional surveys may be required. Given the location of the project area and importance as a migratory flyway, the may Service recommend at least one additional year of monitoring to gauge migration variation per our wind energy guidelines.

For breeding bird surveys, the Plan indicates the size of the transects but not the locations of proposed turbines. Therefore, it is unknown if the data collected is applicable to the potential

¹ The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” “Disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

turbine locations. It is predicted that most of the project turbines will be constructed in open fields and consequently where the transects are proposed. However, the forest, shrub, and riparian habitats are important as well and these areas should also be surveyed. Currently, the transects are located based on the dominant land cover types, but preliminary data indicate that equal or greater amounts of birds are using the minority cover types (areas with woody habitat). The transects should be established in both the project area and control areas to establish baseline conditions. If the project is built, all transects should be resurveyed once turbines are operating to determine any potential displacement effects.

It appears that the proposed project may affect species under the Service's jurisdiction pursuant to the MBTA. Migratory birds, such as waterfowl, passerines, and raptors, are Federal trust resources and are protected by provisions of the MBTA. The Service is the primary Federal agency responsible for administering and enforcing the MBTA. This Act prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests except when specifically authorized by the Service. The word "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The unauthorized taking of birds is a violation of the law. Neither the MBTA nor its implementing regulations, 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds that may be killed or injured by wind projects. However, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid it are implemented. Depending on the circumstances, the Service's Office of Law Enforcement may exercise enforcement discretion.

The northern long-eared bat (*Myotis septentrionalis*) (NLEB) was listed as a threatened species under the ESA on May 2, 2015. Additional information regarding NLEB can be found at (<http://www.fws.gov/midwest/endangered/mammals/nlba/index.html>). This species, which was previously documented in Niagara County, has been observed at the Iroquois National Wildlife Refuge approximately 16 miles to the south and is known to hibernate in mines approximately 22 miles south of the project area. It is important to note that several NLEBs have been killed by wind turbines in western New York in previous years.

To determine potential presence of the NLEB in the project area, bat acoustic surveys were conducted in July and August in the project area and followed the 2015 Range Wide Indiana Bat Summer Survey Guidelines (April 2015) found at <http://www.fws.gov/midwest/Endangered/mammals/inba/inbasummersurveyguidance.html>.

Preliminary acoustic data indicate that the NLEB is not found in the project area during the summer. However, the NLEB may migrate through the project area during the spring and fall. Operating wind turbines are known to kill and injure migrating bats (Cryan and Barclay 2009). Although the NLEB is protected from incidental "take"² under the ESA, provisions of the ESA allow for certain activities to be exempt from the take prohibition under section 4(d). An interim 4(d) rule for the NLEB was published in May 2015 and is currently being revised. Apex has

² Take is defined in Section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

indicated that it will wait to review the final NLEB 4(d) rule before deciding a course of action relative to potential take of NLEB during migration. The Service will continue to provide technical assistance to Apex regarding this issue.

If the project proceeds, the Service recommends that the site be monitored for impacts to wildlife following construction and during turbine operation. A post-construction bat and bird mortality monitoring plan should be developed and provided for review. Proposals for conducting monitoring should be coordinated with both the Service and the NYSDEC to ensure they are comprehensive, accurate, and correctly timed. Information gained from post-construction monitoring will continue to aid the Service and project sponsors as we learn more about potential impacts, or lack thereof, to wildlife in the project area. Monitoring should also be part of a strong adaptive management program for the project. We recommend that project approval not be given until after the details of the post-construction monitoring plan and adaptive management program have been reviewed and approved by the Service and the NYSDEC.

In conclusion, the Service is concerned about the proposed location of the Lighthouse wind energy project. Contrary to statements in the PSS, the Service's radar data indicate large numbers of flying animals using the project area. Based upon that information, the risk to wildlife from operating wind turbines could rise to severe levels. Previously, the Service has recommended that wind energy projects be constructed at least three miles from the shoreline of the Great Lakes to reduce this risk. While the Service's study indicates potential high risk, we have not yet seen complete reports of the Apex wildlife studies. We may recommend additional studies be conducted to account for annual variation in weather and migration patterns. Finally, we believe that Apex should consider the regulatory requirements of the ESA, BGEPA, and MBTA in determining whether this site constitutes an appropriate placement for this project in light of current wildlife activity at this site.

The Service will continue to provide technical assistance to Apex on this project. If you have any questions, please contact Tim Sullivan at the New York Field Office at 607-753-9334.

Sincerely,


for David A. Stilwell
Field Supervisor

Enclosure

cc: Apex Clean Energy, Inc. (Dan Fitzgerald)
NYSDEC, Albany, NY (B. Gary)
USFWS, Minneapolis, MN (J. Gosse)

Literature Cited

Alerstam, T. 1990. *Bird Migration*. Cambridge University Press, Cambridge.

Cryan, P.M. and R.M.R. Barclay. 2009. Causes of bat fatalities at wind turbines: hypothesis and predictions. *Journal of Mammalogy*. 90(6):1330-1340.

Diehl, R.H., R.P. Larkin, and J.E. Black. (2003) Radar observations of bird migration over the Great Lakes. *The Auk*: April 2003, Vol. 120, No. 2, pp. 278-290.

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United States Department of the Interior



FISH AND WILDLIFE SERVICE

3817 Luker Road
Cortland, NY 13045

May 6, 2015

Mr. Dave Phillips
Environmental and Wildlife Permitting Director
Apex Clean Energy, Inc.
246 East High Street
Charlottesville, VA 22902

Dear Mr. Phillips:

This letter is in regards to our meeting of March 17, 2015, to discuss the proposed Lighthouse wind energy project. The 200-megawatt project is planned for the Town of Somerset, Niagara County and Town of Yates, Orleans County, New York. Meeting attendees included you and Dan Fitzgerald of Apex Clean Energy, staff of the New York State Department of Environmental Conservation (NYSDEC), and staff of the U.S. Fish and Wildlife Service (Service). We appreciate the opportunity to discuss this project with you.

Our review and comments are being provided pursuant to the Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d), Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and Migratory Bird Treaty Act (MBTA) (40 Stat. 755; 16 U.S.C. 703-712). We may provide future comments under the BGEPA, ESA, and MBTA, as well as the Clean Water Act (CWA) of 1972 (33 U.S.C. §1251 et seq.), which is administered jointly by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency in coordination with the Service under the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), as applicable.

The purpose of the meeting was to provide Apex staff with an overview of wildlife studies conducted by the Service within the western portion of the project area during the Spring of 2013. Specifically, staff from the Service's Midwest Region's Regional Office conducted acoustic and mobile marine radar studies during a portion of spring migration to gain knowledge of bird and bat movement along the south shore of Lake Ontario. This was part of a larger effort by the Service to study sites around the Great Lakes Watershed to inform the siting of wind energy projects. Data from the study are still being analyzed and the information will be summarized in a report that will be released in the near future. A similar fall migration study has not been completed, but may provide important information on wildlife use at that time of year.

The Service indicated during the meeting that the preliminary review of the radar data shows very large scale movement of wildlife, most notably birds and bats flying north toward the project area during migration. However, upon approaching Lake Ontario, many of the individuals turn east and follow the shoreline rather than crossing the lake. This west to east movement would force them to fly through the wind turbines that are proposed parallel to the shoreline. This increases their potential exposure and risk if wind turbines were built within this area. Furthermore, the data indicate that those nocturnal migrants who approach the shoreline at dawn tend to “fall out” of the sky, looking for areas where they can stop to rest and feed until migration resumes the following evening. In the case of passerines, this could be a variety of habitats such as wooded areas, wetlands, and stream corridors. However, for waterfowl this could include open land such as pastures and crop fields as well as wetlands or the lake. This behavior of landing in and near the lake shoreline may put their path of flight from higher altitudes down to ground level and back each day directly through the rotor swept zone of wind turbines constructed in the project area, also increasing the risk of collision.

To study the wildlife in the project area, Apex has prepared a plan titled *Avian and Bat Study Plan for the Proposed Lighthouse Wind Project* (Plan). This Plan includes monitoring bald eagle (*Haliaeetus leucocephalus*) movement, migrant raptor movement, breeding bird surveys, bat acoustic monitoring, threatened and endangered species habitat surveys, and winter raptor surveys. The following are our comments on the Plan.

Bald Eagles

Bald eagles are known to use the project area during spring and fall migration and also during the winter for roosting. Bald eagle surveys were started in December 2014 after consultation with the Service and NYSDEC on the study protocol, and will continue for one full year in accordance with the 2007 National Bald Eagle Management Guidelines. This document, which can be found at <http://www.fws.gov/northeast/ecologicalservices/eagle.html>, was developed to assist with project planning and to minimize impacts to bald eagles. Measures to conserve eagles and their habitat have also been provided in guidance developed by the Service (for more information see http://www.fws.gov/windenergy/eagle_guidance.html). Please note that since the surveys have started, an active bald eagle nest has been observed in the project area. We recommend you contact NYSDEC staff in their Region 9 Office (Anne Rothrock; phone number 716-372-0645) for more information on this nest. Given that a nest was recently found in the project area, additional monitoring may be needed. Following the collection of the bald eagle surveys, the Service recommends that a meeting be held to discuss the results and potential risk to this species.

Bald eagles are no longer federally-listed under the ESA; however, bald eagles, along with their foraging and winter roosting habitat, remain protected pursuant to the BGEPA. Any take¹ and/or disturbance of bald and golden eagles (*Aquila chrysaetos*) is strictly prohibited under this Act.

¹ The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead,

Migratory Raptors

A migratory raptor survey will be conducted by Apex at 12 locations from March to early December. We previously requested that in addition to the data noted in the Plan, that the altitude of flying birds be recorded during these surveys. It should be noted with this and other seasonal surveys that weather conditions can greatly affect timing and location of wildlife movement. Therefore, one survey year may not be sufficient to document the temporal and spatial variation of wildlife use in the project area and additional surveys may be required.

Breeding and Migratory Birds

For breeding bird surveys, the Plan indicates the size of the transects used, but not the number of transects. This should be added to the Plan. We recommend breeding bird surveys be completed along transects at 50 meter intervals for a period of at least 5 minutes. The transects should be established in both the project area and control areas to establish baseline conditions. These surveys should be replicated at least three times during June. If the project is built, all transects should be resurveyed to determine any potential displacement effects. It is predicted that most of the project turbines will be constructed in open fields and consequently where the transects are proposed. However, as we stated above, the forest, shrub and riparian habitats are important as well and these areas should be surveyed too.

It appears that the proposed project may affect species under the Service's jurisdiction pursuant to the MBTA. Migratory birds, such as waterfowl, passerines, and raptors are Federal trust resources and are protected by provisions of the MBTA. The Service is the primary Federal agency responsible for administering and enforcing the MBTA. This Act prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests except when specifically authorized by the Service. The word "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The unauthorized taking of birds is legally considered a "take" under the MBTA and is a violation of the law. Neither the MBTA nor its implementing regulations, 50 CFR Part 21, provide for permitting of "incidental take" of migratory birds that may be killed or injured by wind projects. However, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid it are implemented. Depending on the circumstances, the Service's Office of Law Enforcement may exercise enforcement discretion.

or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Apex has proposed to use two acoustic detectors mounted on one meteorological tower in the project area to collect bat calls. One detector will be mounted at 3 meters above ground level, but the height of the other detector is not provided. No information is provided on the software to be used to screen the calls. We find that the protocol lacks sufficient details and should be revised. The bat acoustic surveys proposed for the project area should follow the 2015 Range Wide Indiana Bat Summer Survey Guidelines (April 2015) and can be found at <http://www.fws.gov/midwest/Endangered/mammals/inba/inbasummersurveyguidance.html>. Once the survey protocol has been revised, we recommend that Apex submit a copy to the NYSDEC and the Service for review.

Acoustic data was gathered by the Service in the Spring of 2013, but has not yet been provided to our office. We believe this could be important information particularly in light of the recent (April 2, 2015) listing of the Northern long-eared bat (*Myotis septentrionalis*) (NLEB) as a threatened species under the ESA. Additional information regarding NLEB can be found at (<http://www.fws.gov/midwest/endangered/mammals/nlba/index.html>). This species, which was previously documented in Niagara County, has been observed at the Iroquois National Wildlife Refuge approximately 16 miles to the south and is known to hibernate in mines approximately 22 miles south of the project area. It is important to note that several NLEBs have been killed by wind turbines in western New York in previous years. Additional coordination between Apex and the Service will be needed once studies have been completed and data analyzed on this species potential presence in the project area.

The ESA prohibits unauthorized “take”² of fish and wildlife species *listed* as endangered or threatened. The take prohibition for listed species applies to all individuals, companies, and organizations. The Service encourages all non-federal landowners and project developers to implement measures to avoid and minimize impacts to NLEB. Any unauthorized take is a violation of Section 9 of the ESA, and can be prosecuted. However, note that if take is unavoidable, a non-federal project proponent is advised to develop a habitat conservation plan (HCP) and apply for an incidental take permit from the Service, pursuant to section 10 of the ESA. The Service is available to provide technical assistance in the preparation of an HCP.

Appendix A of the Plan includes a *General Avian and Eagle Use Survey Protocol* which describes passerine and raptor plot surveys conducted during spring and fall migration. Eleven plots have been established in the project area and one outside along the lake shoreline. These surveys should be conducted twice per week during the survey period instead of the proposed weekly interval. The survey interval for each should be 5 minutes, commencing after a few minutes of quiet time to limit the influence of human disturbance.

² Section 3 of the ESA defines “Take” as, “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The term “Harm” is further defined by the FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. “Harass” is further defined by the FWS as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

In conclusion, the Service strongly recommends that Apex carefully consider the potential effects of the Lighthouse wind project design, construction, and operation on wildlife, including protected bats and migratory birds. The project is proposed in an area known to have very high avian activity as evidenced by the studies completed to date. Based upon that information, the risk to wildlife from operating wind turbines could rise to severe levels. Previously, the Service has recommended that wind energy projects be constructed at least three miles from the shoreline of the Great Lakes to reduce this risk. We believe that Apex should consider the regulatory requirements of the ESA, BGEPA, and MBTA in determining whether this site constitutes an appropriate placement for this project in light of current wildlife activity at this site. We request that Apex provide the Service with any revised protocols for our review. In addition, we suggest Apex, the NYSDEC, and the Service meet to discuss any data collected in the near future.

The Service will continue to provide technical assistance to Apex on this project. If you have any questions, please contact Tim Sullivan at the New York Field Office at 607-753-9334.

Sincerely,

for Patricia Cole
David A. Stilwell
Field Supervisor

cc: Apex Clean Energy, Inc. (Dan Fitzgerald)
NYSDEC, Avon, NY (M. Wasilco)
NYSDEC, Albany, NY (B. Gary)
NYSDEC, Buffalo, NY (C. Adams)
USFWS, Minneapolis, MN (J. Gosse)