



Illinois Department of Natural Resources

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Pat Quinn, Governor
Marc Miller, Director

April 18, 2014

Mr. Wayne Hartel
Dept. of Commerce and Economic Development
500 East Monroe Street
Springfield, IL 62701-1509

**RE: Project Legacy Wind Turbine, Chicago, Cook County
Endangered Species Consultation Program
EcoCAT Review #1407426**

Dear Mr. Hartel:

The Department has received a submission from Ecover, Inc., for the purpose of consultation with the Department in accordance with the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action entails the construction and operation of a 750-kW NEG Micon Wind Turbine in association with a manufacturing facility in the Pullman Park Neighborhood on Chicago's South Side.

The proposed facility is located approximately one-quarter mile west of the **Lake Calumet Illinois Natural Areas Inventory (INAI) Site**. This action is unlikely to adversely modify the INAI Site, itself, but the character of the INAI Site poses issues for the proposal.

Lake Calumet and its environs provide essential habitat for many wildlife species, a number of which are listed by Illinois as endangered or threatened species. Many of the species are migratory birds present only during migration seasons, while others are also summer or year-round residents. Lake Calumet is an important staging area on the Lake Michigan Coastal Flyway, which means literally millions of birds pass through this vicinity twice a year. Most avian species present in the Lake Calumet area are also protected under federal laws, specifically the *Migratory Bird Treaty Act*.

The construction of a wind turbine in close proximity to Lake Calumet poses a higher-than-usual risk of avian and bat mortality resulting from collision with the turbine's rotor blades. Elsewhere in Illinois, where avian migration occurs over a broad front (as opposed to a narrow corridor), utility-scale turbines, most of which are larger and taller than the turbine proposed by Ecover, produce avian mortalities which average between four and six birds per turbine per year, with losses distributed across many species. On three occasions birds listed as endangered have been injured or killed. The main recommendation for reducing avian mortality is to avoid placing turbines in a high-risk high-bird-use area.

While the Department has been unable to locate mortality data derived from a turbine of this size, we anticipate a turbine in this location will produce a greater number of avian mortalities, if not due to operational characteristics of this machine (its higher rpm), then due to the concentration of birds in the vicinity which may be exposed to this hazard. Because no fewer than twenty-three of the thirty birds listed in Illinois as endangered or threatened are known to migrate through or breed near Lake Calumet, the Department believes the risk of a prohibited taking is high.

Bats are also subject to collision mortality due to wind turbines. Bat losses elsewhere in Illinois range from zero to more than 40 bats per turbine per year. However, for bats, a number of operational characteristics have been identified which can be manipulated to reduce bat deaths. At the present time, no bats listed as endangered or threatened are known to be present in the vicinity of the proposed turbine. However, in October 2014, the US Fish & Wildlife Service intends to list as “endangered” the **Northern Long-Eared Bat**, *Myotis septentrionalis*. This species is believed to be present in Cook County, although its local abundance and distribution are not known. Hence, soon after its inauguration, the turbine may be at risk of “taking” this species.

Several non-volant endangered or threatened species are present in the vicinity. These are the **Blanding’s Turtle**, the **Franklin’s Ground Squirrel**, and the **Banded Killifish**. The Killifish is limited to Lake Calumet and adjacent waters; the Blanding’s Turtle is limited to Lake Calumet, associated marshes, and adjacent uplands; and the Franklin’s Ground Squirrel is found in the non-manicured areas of the nearby golf course. The Department believes the Bishop Ford Expressway poses an effective barrier to the Ground Squirrel and Turtle, while any vibrations produced by the turbine which might affect fish in a more rural setting will be subsumed in the general noise of the Expressway. The Department believes the turbine will have no adverse effect on the habitats of the Killifish, the Turtle, or the Ground Squirrel.

The Department has also evaluated the proposal with regard to the Interagency Wetland Policy Act of 1989 and Part 1090, and finds the proposal is unlikely to adversely modify any wetlands subject to that statute.

After considering the technical and operating characteristics of the proposed wind turbine in conjunction with its placement relative to Lake Calumet and other important habitats in the vicinity, the Department offers the following recommendations.

Recommendation #1: Consider a grant condition requiring the grantee to consult with the U.S. Fish & Wildlife Service pursuant to regulations under the federal Bald and Golden Eagle Protection Act.

At least two active nests of the Bald Eagle are located within a three-mile radius of the proposed wind turbine location. One of these is no more than 1.5 miles away, and a third abandoned nest location also exists within this distance which could become active again. Fish & Wildlife Service guidelines call for owners and operators of wind turbines within ten miles of an Eagle activity area to consult the Service about risks to Eagles. A nest constitutes an important activity area, as do sites where hunting and foraging routinely occur. Lake Calumet constitutes such a location. Fewer than half a dozen Bald Eagles have been documented as killed by wind turbines in North America. None of these have occurred in Illinois, but Illinois has the highest winter population of Bald Eagles in the lower 48 States,

and has a rapidly expanding breeding population in the summer. The local population is likely to expand over the life of the turbine.

Golden Eagles do not breed in Illinois, but are often sighted during the winter. Once restricted to the northern third of Illinois, this species has been reported in recent years from Southern Illinois. Their occurrence at Lake Calumet is possible. Unlike the Bald Eagle, hundreds of Golden Eagles have been killed in collisions with wind turbines, mainly in the West. It is likely important differences in hunting ecology account for the higher mortality of Golden Eagles at wind turbines.

Recommendation #2: Consider a grant condition requiring the grantee to exert a good-faith effort to obtain from the Department of Natural Resources an Incidental Take Authorization pursuant to Section 5.5 of the Illinois Endangered Species Protection Act for the avian species listed in the Attachment to this letter.

As of this date, thirty avian species are listed by Illinois as endangered or threatened; twenty-three of these species have been documented to breed at or near Lake Calumet or are believed to migrate through the area in significant numbers. Of these twenty-three, one (the **Peregrine Falcon**) is being considered for de-listing by the Illinois Endangered Species Protection Board later in 2014 as part of its routine listing and review process. Two, the **Osprey** and **Black-Billed Cuckoo**, have been documented as wind turbine mortalities elsewhere in Illinois, and have a proven vulnerability.

It is unlikely that all of these species are equally at risk of wind turbine collision, but insufficient data are available to dismiss the risk of death or injury to any species present during breeding or migration. Statistically, passerines and raptors are at greater risk of collision than are shorebirds and waterfowl. The presence of an urban “forest” just north of the wind turbine location, sure to constitute a staging area for migrating passerines, increases the risk of taking a listed member of that group.

Recommendation #3: Consider a grant condition requiring at least two years of monitoring for avian and bat mortality.

It is inappropriate to generalize potentials for wildlife mortality on the basis of results from other locations. Given a turbine in a unique ecological context, on-site measurements provide the most reliable indicators of a turbine’s threat to wildlife. Elsewhere, two years of monitoring have provided information about mortality resulting from normal operations and about mortality following implementation of minimization or avoidance measures. In this location, mortality monitoring should demonstrate whether concerns about wildlife mortality are justified or exaggerated.

Recommendation #4: Consider a grant condition requiring acoustic monitoring of bat activity at both ground level and hub-height.

Analysis of acoustic recordings of bat calls can provide an indirect measure of relative bat activity at the turbine location. Experience has shown that bat activity varies considerably by species and with elevation, as well as with air temperature and wind speed. Some species can be identified with reasonable confidence from calls alone, while other groups of species are difficult to distinguish. The *Myotis* genus is of greatest interest, since it contains the bats most likely to be listed as endangered or threatened, or already listed. The presence of the nearby urban “forest,” which likely provides day

roosts for bats, increases the probability bats may be present near the turbine throughout the active season (April 1 – November 15). Mist-netting, a technique for capturing live bats for purposes of tagging and identification, is likely impractical in an urban setting, so that acoustic recordings offer the best alternative to identify bat species which are least likely to die through collision.

Recently, the Department has become aware of field trials at two Illinois wind farms of ultrasonic devices, installed on turbine nacelles, intended to deter bats from the near vicinity of operating wind turbines. Results are very encouraging in terms of their effectiveness, especially regarding bats of the *Myotis* genus. No bats of this genus were killed at turbines equipped with this technology; the carcass of a Northern Long-eared Bat was recovered beneath a “control” turbine. The applicant may wish to evaluate whether this technology would be appropriate for installation in this situation.

Consultation on the part of the Department is closed, unless the Department of Commerce and Economic Opportunity desires additional information or advice related to this proposal. In accordance with 17 Ill. Adm. Code 1075.40(h), the Department should notify IDNR of its decision regarding these recommendations, whether it will:

- Proceed with the action as originally proposed;
- Require the action to be modified per Department recommendations (please specify which measures if not all will be required); or
- Forgo the action.

This consultation is valid for two years unless new information becomes available which was not previously considered; or the proposed action is modified; or additional species, essential habitats, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review primarily reflects the information existing in the Illinois Natural Heritage Database at the time of this consultation, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments.

If additional protected resources are encountered during the project’s implementation, the applicant must comply with the applicable statutes and regulations. Also, note that closure of consultation does not imply IDNR's authorization or endorsement of the proposed action. Please contact me if you have questions regarding this review.

Sincerely,



Keith M. Shank
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Attachment: State-listed Birds at Lake Calumet

Short-Eared Owl, *Asio flammeus*
Barn Owl, *Tyto alba*
Osprey, *Pandion haliaetus*
Peregrine Falcon, *Falco peregrinus*
Upland Sandpiper, *Bartramia longicauda*
Black-Billed Cuckoo, *Coccyzus erythrophthalmus*
Cerulean Warbler, *Dendroica cerulea*
Loggerhead Shrike, *Lanius ludovicianus*
American Bittern, *Botaurus lentiginosus*
Little Blue Heron, *Egretta caerulea*
Snowy Egret, *Egretta thula*
Yellow-Crowned Night Heron, *Nyctanassa violacea*
Black-Crowned Night Heron, *Nycticorax nycticorax*
Common Moorhen, *Gallinula chloropus*
Least Bittern, *Ixobrychus exilis*
Piping Plover, *Charadrius melodus***
Black Tern, *Chlidonias niger*
Wilson's Phalarope, *Phalaropus tricolor*
King Rail, *Rallus elegans*
Least Tern, *Sterna antillarum***
Forster's Tern, *Sterna forsteri*
Common Tern, *Sterna hirundo*
Yellow-Headed Blackbird, *Xanthocephalus xanthocephalus*

**Also listed as “endangered” under the federal Endangered Species Act.