Proposed Work Plan for Avian and Bat Studies at the proposed Groton Wind Project Grafton County, New Hampshire

March 2, 2009

Proposed Project Background

Groton Wind, LLC, proposes to construct up to 20 wind turbines, each with an estimated nameplate capacity of 2.0 megawatts (MW), for a total project capacity of about 22 - 40 MW on Tenney and Fletcher Mountains in Grafton County, New Hampshire. The proposed project would consist of turbines, access roads, buried and aboveground interconnection lines, a substation with one or more transformers, an operation and maintenance facility and storage area, and one or two permanent meteorological towers. The wind turbines would have a hub height of about 78 meters (256 feet) above ground level (agl) and rotor diameters of about 87 m (286 feet). With the rotor tip in the 12 o'clock position, the wind turbines would reach a maximum height of about 120.5 m (398 feet). Turbines would be mounted on steel tubular towers and all or a subset of them would be lit according to Federal Aviation Administration (FAA) guidelines.

Early stage consultation with relevant agencies and NGOs is an important first step to identify appropriate pre-project environmental studies. Letter consultation has already occurred with United States Fish and Wildlife Service (USFWS) and New Hampshire Department of Fish and Game (NHF&G). Additionally, a live discussion with both USFWS and NHF&G has been requested. In concert with Iberdrola Renewables Avian and Bat Protection Plan (ABPP) initial discussions will take place at USFWS New England Field office on March 4, 2009. The following proposed study plan is the basis for those discussions.

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Study Objectives

The studies included in this work plan have been designed to determine the avian and bat use of the Project Area throughout the year with an emphasis on migratory and breeding periods. Overall, the main objectives are to:

- Determine whether suitable habitat for threatened or endangered species is found within the Project area;
- Collect baseline information on flight directions, passage rates, and flight altitudes of birds and bats recorded day or night throughout the migration seasons;
- Collect information on the occurrence and distribution of bird species including threatened or endangered species in the project area during migratory and breeding seasons; and
- Analyze baseline data and other available studies and data to evaluate potential impacts on birds and bats from the proposed Project.

Methodologies

Phase 1 Avian Risk Assessment (2008)

Curry & Kerlinger was retained to perform a Phase 1 Avian Risk Assessment which included a literature review, site visit, written agency consultation and habitat assessment. The purpose of the Phase I Avian Risk Assessment is to determine potential collision and displacement risk to birds from construction and operation of the proposed Groton Wind Project.

Radar studies (2008)

Stantec was retained to perform one full year of Nocturnal Radar Migration Surveys consisting of one spring (April 15 to May 31) and one fall (August 15 to October 15) migration season to yield a full year of nocturnal migration data. Both the spring and fall seasons have spanned a 45 night study period.

Diurnal Raptor Migration Surveys (2009)

Despite very low raptor mortality rates observed at existing wind projects, Groton Wind will contract with a third party to conduct spring and fall raptor migration surveys. Fall Migratory Raptor surveys will be conducted in the Project Area approximately once a week between August 15 and October 15, 2009. The selection of the sampling location will be dependent upon observation views afforded from the top of the ridges. All observations will be recorded on Hawk Migration Association of North America datasheets and methodologies will be based on HMANA methods. It is expected that spring surveys will repeat methodologies of the fall surveys but with a longer migration period ranging from April 15 – May 31, 2010.

Breeding Bird Surveys (2009)

Groton Wind intends to contract with a third party to complete one season of breeding bird surveys. Breeding bird surveys will be conducted twice in the Project Area during the primary breeding season (June) of 2009. Surveys will use USGS Breeding Bird Survey techniques with an observer recording all birds identified by sight or sound in 5minute periods at each survey point. Birds observed flying through the area will also be documented and noted separately on the datasheets because they are less likely to be breeding or associated with the surrounding habitat but tend to live in the general area. An estimated flight altitude will be collected for those flying through the project area. All surveys will be conducted between sunrise and 10:30am during two consecutive days. The data from these surveys will also help identify the presence/absence of listed species on the site.

Acoustic Monitoring for Bats (2009, 2010)

Acoustical monitoring via anabat will be conducted for the spring and fall migratory periods as well as the summer activity period, typically April 15 through October 31. Groton Wind will consult with bat experts to deploy acoustic monitoring equipment on meteorological equipment at on the Project site. Two or three detectors sampling a horizontal plane will be installed on a single meteorological tower. The first will be installed as high on the tower as possible approximately 50 meters above the ground. The other one or two units will be installed between that unit and the ground. Acoustic detectors will document the presence/absence of bat species in the Project Area. Call rates by species, as well as total detections and trends in species' presence in the data set will be reported. Additionally the call rates and species composition of the detectors will be compared.

Peregrine Falcon Survey (2006, 2009)

Stantec performed 4 Peregrine Falcon Surveys from Rattlesnake Mountain in Rumney, New Hampshire during the summer and early fall of 2006. Although activity was documented, the nest failed for the first time in 2006 and no fledglings were observed however adult behavior was documented and area was delineated. Although no adults were seen flying or using the airspace within the project area, Iberdrola anticipates repeating the survey in 2009.

Avian and Bat Risk Assessment (2010)

At the conclusion of all studies, a final Avian and Bat Risk Assessment will be prepared and presented as part of the Site Evaluation Committee Application. It is anticipated that these study results will be discussed with USFWS and NHF&G upon completion. Additionally, these studies will inform a project-specific Avian and Bat Protection Plan (ABPP) which incorporates the company wide best practices ABPP endorsed by the USFWS in October 2008.