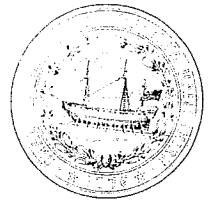




The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

**Proposed Wind Farm
 Iberdrola Renewables, Inc.
 Groton-Plymouth area, NH**

Convened at:

The Offices of the
 New Hampshire Department of Environmental Services
 Conference Room 113
 P. O. Box 95
 29 Hazen Drive
 Concord, NH 03302-0095

October 6, 2009
 1:00 to 3:00 PM

ATTENDANCE

<u>Name</u>	<u>Affiliation</u>	<u>Tel. No.</u>	<u>Email</u>
CAROL HENDERSON	NH Fish + Game	271-1138	CAROL.HENDERSON@wildlife.nh.gov
Mike Hansen	VHB	644-0888	mhansen@vhb.com
Pete Walker	"	"	Pwalker@vhb.com
ED CHERIAN	IBERDROLA	440-3127	ECHERIAN@IBERDROLAUSA.COM
Kristen Galand	Iberdrola Renewables	603-397-6155	Kristen.Galand@iberdrolausa.com
CRAIG RENNIE	NHDES	271-0676	CRAIG.RENNIE@DES.NH.GOV
Collis Adams	NHDES	271-4054	Collis.adams@des.nh.gov
Tina Drew	NHDES	271-3306	Tina.drew@des.nh.gov



**Meeting
Notes**

Attendees: See List

Date/Time: October 6, 2009
1:00 – 3:00 PM

Project No.: 52036.00

Place: NHDES, Concord, NH

Re: Groton Wind Farm

Notes taken by: Mike Hansen
Pete Walker

We met to review Groton Wind's proposal for a new commercial wind farm in the north central NH town of Groton. The following is a summary of the items discussed at the meeting:

1. We began with introductions of each member of the team: Ed Cherian, based out of Concord, is the project manager for Iberdrola for this project; Kristen Goland is from Iberdrola Renewables (IBR) Boston office and is responsible for environmental permitting; Pete Walker, from VHB's Bedford office is VHB's project manager, and Mike Hansen, also from VHB Bedford, is the assistant project manager.
2. Ed Cherian gave a brief overview of Iberdrola Renewables and the project and explained critical time lines as well as history of the Groton project. Iberdrola, based in Spain, is the largest renewable energy company in the world. They currently own and operate 40 wind farms in the US, and their core business is in wind, solar, and biomass energy production. IBR was responsible for development and construction of the Lempster Wind Farm which is now producing power.
3. Ed reviewed the key features of the Groton project using a color aerial photo base map as an overview plan. The site is about 3,900 acres currently owned by Green Acre Woodlands, a commercial timber operation. Active tree harvesting is ongoing, and the parcels have historically functioned as commercial woodland. Groton Wind has already coordinated with the town, and will be holding an open house with the community tomorrow evening. We have also met with Erika Marks at the US Army Corps of Engineers (USACE).
4. The project will consist of 25 turbines – 2 MW Gamesa units, the same as those used in Lempster, which will be placed in three strings along Tenney Mountain, Fletcher Mountain and an unnamed ridge north of Fletcher. The electricity will be delivered to the grid *via* a 12.5 mile, 34.5 kV interconnect with PSNH's existing substation in Ashland. Except for the site itself, this line will follow existing right-of-way, except that poles may need to be upgraded. A permanent Operations and Maintenance facility will be built at the site, which will be about 4,000 sq ft, with a small switchyard for the electrical interconnect. Unlike Lempster, Groton Wind cannot assume that a narrow track crane will be available, which means that roads would need to be wider to accommodate a standard crane, typically 38 ft wide along the ridgelines.

5. Ed explained that Groton Wind intends to submit a full NH Site Evaluation Committee (NHSEC) application this year, with construction scheduled for late 2010.
6. Pete Walker reviewed progress on wetland mapping and predicted impacts. Nancy Rendall and Jake Tinus have been two senior scientists for the project, but we also used CWSs from our Vermont and Watertown offices. The site has been flagged and a preliminary estimate of impacts is about 1.2 acres. This, however, does not include impacts associated with the interconnect line, as the on-site portion of the route has not been determined. However, overall, VHB believes the overall level of impacts is appropriate given the size of the project and the public benefit of having local, renewable energy produced in NH. In discussions with the USACE, it is possible that the project could be approved *via* the NH Statewide Programmatic General Permit.
7. Carol Henderson asked about the length of road needed for the project. Mike Hansen replied that the current plan has about 7.5 miles of new road. Additionally, there may be minor upgrades to about 4 or 5 miles of Groton Hollow Road.
8. Collis Adams requested that we follow the new stream guidelines in designing new and replacement stream crossings. This could be considered a form of mitigation.
9. Ed Cherian explained that Green Acre Woodlands is currently working with the Forest Society to put a conservation easement on up to 6,000 acres of land. Groton Wind is planning to assist the Forest Society to help make this happen. Collis Adams indicated that NHDES would consider this mitigation, depending on the details.
10. Craig Rennie, in reviewing the roadway layout as depicted on the overview plan, asked if access from Halls Brook Road had been considered. Access from Halls Brook Road was considered, but is problematic for a number of reasons. Most significantly, the road is too narrow and would need substantial upgrading which would cause substantial environmental impact.
11. With regard to threatened and endangered species, it was discussed that there are no Natural Heritage occurrences on the site – no known threatened or endangered species, nor exemplary natural communities. However, Kristen Goland had coordinated with Mike Marchand, who expressed some concern about native trout in Clarks Brook, and the possibility of Blandings Turtle being on the site, given that this species was known from the Baker River valley. Pete Walker and Kristen Goland explained that habitat evaluation for Blandings Turtle is ongoing, but that no such habitat had been found on the site itself. Clarks Brook does contain appropriate habitat for brook trout, and individual fish had been observed.
12. Tim Drew asked if Groton Wind has coordinated with the NH Division of Historical Resources (NHDHR). Kristen explained that NHDHR had been contacted and noted that portions of the site are sensitive for historical archaeological resources.
13. Carol Henderson from Fish & Game asked if Groton Wind looked at using bigger turbines to limit impact. Ed Cherian responded that bigger machines can actually cause bigger impacts due to the fact that they have longer blades. Additionally, the type of wind limits the size of the machine – larger turbines would not necessarily produce more electricity. The Gamesa G87 units planned for this project have the advantage that they have been used successfully in icy climates. Additionally, operations and maintenance would be simplified because these are the same units as Lempster.

14. Craig Rennie asked is there is any high elevation habitat, above el. 3,000 ft, associated with the project. We reviewed the project plans in explaining that the highest elevation is about el. 2,300 ft. so high elevation habitat should not be an issue.
15. Carol Henderson asked about visual analysis. Kristen outlined the scope of the visual analysis: a 10 mile radius had been assessed, with photosimulations completed and a full visual impact assessment would be completed. As many as 180 photographs of the site had been taken to support the VIA.
16. Kristen outlined some of the other ongoing environmental studies including sound modeling, which has been completed and cultural resource studies, which are still in progress.
17. With regard to bird and bat studies, Kristen explained that bird surveys are mostly complete, bat studies are still in progress. Groton Wind has collaborated with the NH Audubon Society on a survey for the peregrine falcon, which is known to nest outside of the project area within 5 miles of the proposed turbines.
18. We discussed application of the new Alteration of Terrain regulations to the project. Pete Walker expressed a concern that rules are geared more for traditional site design and that certain elements would be unrealistic to apply. It was agreed that the primary concern with the storm water would be sediment during construction, and that numerous measures will be implemented to ensure that no adverse effects happen during construction. Craig Rennie stated that application of the standards to the O&M site seemed reasonable, but many of the other provisions would not apply. Our AoT application should request waivers for certain pieces of the AoT regulations such as site-specific soil mapping and ground water recharge requirements. DES said this would be acceptable and to use the waiver forms explaining why.
19. When asked about key comments and issues, Collis Adams stressed the need for Groton Wind and VHB to address the new stream crossing regulations that are currently in draft form. Craig Rennie reminded us to identify all stockpile areas on the plans.
20. In closing, we discussed that Groton Wind and VHB would be meeting with the federal resource agencies at the USFWS Office in Concord on October 15th, and that Ed Cherian would be leading a site walk of the Lempster and Groton sites on October 21st. All are invited, and should contact Ed directly if that date does not work for them, since Ed is generally available at the resource agency's convenience.



Meeting Notes

Attendees: See List

Date/Time: October 15, 2009
1:00 – 3:00 PM

Project No.: 52036.00

Place: USFWS, Concord, NH

Re: Groton Wind Farm

Notes taken by: Peter J. Walker

We met to review Groton Wind's proposal for a new commercial wind farm in the north central NH town of Groton. The following is a summary of the items discussed at the meeting:

1. Ed Cherian gave a brief overview of Iberdrola Renewables (IBR) which is the parent company to Groton Wind. Iberdrola, based in Spain, is the largest renewable energy company in the world. They currently own and operate 40 wind farms in the US, and their core business is in wind, solar, and biomass energy production. Iberdrola Renewables was responsible for development and construction of the Lempster Wind Farm which is now producing power.
2. Ed reviewed the key features of the Groton project using a color aerial photo base map as an overview plan. The site is an active commercial timber operation. Timber harvesting is ongoing, and the parcels have historically functioned as commercial woodland.
3. The project will consist of 25 turbines – 2 MW Gamesa units, the same as those used in Lempster, which will be placed in three strings along Tenney Mountain, Fletcher Mountain and an unnamed ridge north of Fletcher. A permanent Operations and Maintenance facility will be built at the site, which will be about 4,000 sq ft, with a small switchyard for the electrical interconnect.
4. Groton Wind has had a number of meetings with the town, including with the Selectmen. Generally, the town appears to be supportive, which is important to Iberdrola Renewables as they do not propose projects in communities unless supported.
5. On October 21st, Ed will be touring the Lempster and Groton sites with Erika Mark. Others are invited to attend, or should contact Ed if another time is more convenient. On October 24th, Ed will be conducting a bus tour of the Lempster Wind Farm for Groton residents and other local interested parties.
6. Ed Cherian explained that Green Acre Woodlands is currently working with the Society for the Protection of NH Forests to put a conservation easement on up to 6,000 acres of land. Groton Wind is assisting with this effort by providing in-kind services and environmental information and potentially funding of the project. Ed is in contact with Brian Holtz and Will Abbott at SPNHF. Collis Adams and Mark Kern stated that the combination of upgraded stream crossings

and the proposed contribution to the SPNHF conservation easement over the leased lands could be considered as appropriate mitigation. In response to a suggestion from Maria Tur about performing stream restoration, Mark Kern stated that he felt that was unnecessary, and that the wetland impacts are very low given the project size. A discussion of USACE permit type was also held. Mark Kern indicated that the NH PGP might be applicable. Maria Tur stated that she could not state a view until she had further review. There was also a discussion of the trade-offs between using existing disturbed areas that are delineated as wetlands, or less disturbed areas that are not wetlands.

7. Groton Wind intends to submit state permit applications before the end of 2009, and intends to begin construction before the end of 2010. The timing is important because of the new investment tax credit for renewable energy, which requires that the project be vested before the end of 2010 in order to qualify.
8. Kristen Goland summarized the work Groton Wind is conducting to assess potential bird and bat issues. Groton Wind has conducted two seasons of raptor and nocturnal migrant studies – both spring and fall season as well as breeding bird surveys completed in summer. At the request of New Hampshire Fish and Game, Groton Wind is working with Stantec and the NH Audubon Society for Peregrine Falcon Surveys.
9. Bat studies are underway. Groton Wind is using acoustic detection equipment at, above and below the canopy, primarily mounting equipment on the three meteorological towers on the east ridge (*i.e.*, Tenney Mountain) and temporary towers on the west ridge. Ed Arnett of Bat Conservation International had reviewed the protocol. Adam Gravel of Stantec is the lead for this work.
10. Other habitat work is also on-going. With regard to threatened and endangered species, it was discussed that there are no Natural Heritage occurrences on the site – no known threatened or endangered species, nor exemplary natural communities. However, Kristen Goland had coordinated with Mike Marchand, who expressed some concern about native brook trout in Clarks Brook, and the possibility of wood turtle being on the site, given that this species was known from the Baker River valley. Additionally, the highest elevation at this site is about el. 2,300 ft, so the project would not impact sensitive high elevation habitat.
11. Pete Walker reviewed progress on wetland mapping and predicted impacts. Nancy Rendall and Jake Tinus have been two senior scientists for the project, but we also used CWSs from our Vermont and Watertown offices. The site has been flagged and a preliminary estimate of impacts is about 1.2 acres in about 55 locations throughout the site. This represented a reduction from 1.9 acres of impact based on an earlier plan set. Most of the wetlands on site are forested, and many of them have been logged over the last few decades as evidenced by stumps.
12. The environmental science group has worked very closely with the engineering group to reduce wetland impacts by steepening sideslopes (to as steep as 1:1 in most places) and by revising the roadway alignment and turbine placements to eliminate direct impacts. This process is on-going, but Peter Walker stated that he believed the impacts are reasonable given the size and importance of the project.
13. VHB conducted a thorough vernal pool study in April, May and June and found relatively few active vernal pools. Assessment data was collected for many of the pools and would be presented in the permit application. Peter explained that there are no direct vernal pool impacts, although there is one pool that is close to Turbine E-3 on the east ridge.

14. The 1.2 acre wetland impact total does not include impacts associated with the electrical interconnect, as the on-site portion of the route has not been determined. This will be added to the final impact assessment, but should be relatively minor. Erika Mark asked whether Groton Wind would be requesting jurisdictional determinations and Pete Walker indicated Groton Wind will likely assume all wetlands are jurisdictional, with a few possible exceptions.
15. We discussed the construction of the roads. Mike Hansen explained that access roads from the bottom of the valley to the ridgelines would be about 22 ft wide. Along the ridgelines, however, the roadway would be designed to be 36 ft wide, but would be retired to 16 ft after construction. The wider roads are necessary to allow crane access during construction. Ten feet on each side of the road would be loamed and seeded following construction, but maintained as a clear zone. Ed Cherian explained that Groton Wind could not count on having access to a narrow track crane, which was used in Lempster, to minimize the width of the road. There are very few of these cranes in the world, and they are in high demand.
16. We also discussed the six perennial stream crossings, all of which are located along Groton Hollow Road and all of which are existing crossings. We reviewed photographs of each, and discussed the likelihood that several of the crossings would be upgraded.
17. Maria Tur asked about the potential for habitat fragmentation. Peter replied that a discussion of habitat and the potential for fragmentation would be addressed as a potential indirect effect. Generally speaking, however, these types of roadways which are private and not paved should not have the same effect as public roadways which are generally much wider and which experience high levels of sound and light.
18. Mark Kern stressed the need to adequately address secondary effects in our application. We should be certain to complete Appendix B and to provide a discussion of secondary impacts including fragmentation. Indirect effects will be hard to quantify for this project. Mark suggested that Peter review the most recent guidance from the USACE on the subject.
19. Maria Tur requested that the application provide information of both on-site and off-site alternatives.
20. Ed Cherian briefly reviewed some of the changes to the project that have minimized impacts. For example, the original concepts for the project envisioned a larger project extending the entire length of Fletcher Mountain, and even along the saddle south of Fletcher Mountain. We also considered access from Halls Brook Road, and have attempted to minimize the amount of new road being constructed. Off-site alternatives are very limited, and Groton Wind cannot disclose proprietary information in the discussion. The on-site alternatives analysis will show plans of discarded alternatives.
21. The electricity will be delivered to the grid *via* a 12.5-mile, 34.5 kV interconnect with PSNH's existing substation in Ashland. Except for the site itself, this line will follow existing right-of-way, except that poles may need to be upgraded.
22. Maria Tur inquired about post-construction avian monitoring. Kristen Goland noted that Groton Wind will be conducting work in accordance with their national avian and bat protection plan, which has been approved by the USFWS. Ed Cherian noted that USFWS will be consulted in the creation of post-construction studies.

23. Maria Tur asked when the project would be expected to be operational. Groton Wind noted that plans are to complete the project in time for 2011 operation. Maria requested that the project consider single blade erection to minimize impacts.
24. We closed the meeting by discussing arrangements for the site walk on October 21st. Several meeting attendees commented that they could not participate on that date. Ed offered to visit the site at any point prior to snow fall. Individuals can email him a date and he will try to accommodate the request.

Participants:

Erika Mark, USACE
Maria Tur, USFWS
Mark Kern, USEPA
Collis Adams, NH Wetlands Bureau
Ed Cherian, Iberdrola Renewables
Kristen Goland, Iberdrola Renewables
Peter Walker, VHB
Mike Hansen, VHB