



Mill Howard
Vice President Wind Development
Duke Energy Renewables

HILLSDALE WINDPOWER PROJECT
122 South Main Street
PO Box 715
READING, MI 49274

December 30, 2011

Dear Reading Township Board and Planning Commission:

Duke Energy Renewables continues to make progress in developing the Hillsdale Windpower Project. Recent accomplishments include:

- Landowners representing more than 10,000 acres have joined the project and endorse the economic boost it will bring to the area. In Reading Township, over 4,200 acres of land are currently under lease.
- Working with the U.S. Fish and Wildlife Service, Duke has completed a full season of environmental study, with encouraging results.
- We are in the final stages of our electric transmission studies and are very close to signing an agreement for connection to the electric grid.
- Duke has gathered more than two years of excellent wind data in the project area.
- We have undertaken significant marketing efforts to secure a long-term agreement to sell the electricity from the project.

Although substantial progress has been made, the purpose of this letter is to address a potential barrier to the project that has become apparent as we study possible turbine locations in Reading Township. Specifically, for wind energy systems, the Township has adopted a 35-40-45 dB(A) sound limit, which, on the whole, is very restrictive. In comparison, for example, in 2007, the State of Michigan recommended a 55 dB(A) sound limit. Gratiot County, which will be home to Michigan's largest wind project (currently under construction), also recently adopted a sound limit of 55 dB(A).

We initially hoped that we would be able to work within the confines of the Reading Township ordinance. However, upon more in-depth analysis, that has not turned out to be possible. During the development phase of a wind power project, we look at numerous locations within the general project footprint to site wind turbines. A host of factors are considered in the siting process, such as the amount and location of land leased by participating landowners; wind data; setbacks (from homes, roads, power lines, property lines, etc.); ability to mitigate "shadow flicker"; environmental constraints; and projected sound levels from the turbines. Upon modeling the sound requirements in Reading Township's wind energy ordinance, we have found that the current sound limits, coupled with the "buffer area" that was subsequently added to the ordinance, effectively preclude siting turbines in Reading Township. This, in turn,

impacts the viability of the entire project. We do not believe this was the intent or desire of the Township Board, Planning Commission, or the people of Reading. Accordingly, we wanted to advise the Board and Planning Commission with this letter.

We believe this is a fixable issue. We understand that the Township intends to look at amending its wind energy system ordinance, in particular, the permit application process. We respectfully ask that, at the same time, the Township Planning Commission and Board formally consider amending the sound limits in the ordinance in order to allow prudent wind energy development in Reading Township, while still protecting health, safety and welfare. Attached please find suggested language (and explanatory text) that we believe fairly balances the interests and needs of Reading Township residents, but also enables us to build a wind power project that will benefit Reading and the surrounding townships.

The proposed language adopts a uniform 45 dB(A) sound limit at residences within the wind overlay district. This is consistent with the wind ordinance recently adopted by Allen Township to the north and collaborative planning between Duke Energy and Cambria Township to the east (Cambria Township does not have a wind ordinance). Consistency across the project footprint makes sense and is helpful for planning and siting purposes.

At the same time, we want to listen to all of the voices in the community. In this case, we recognize and respect the fact that a number of property owners on the lakes in the western half of Reading Township have expressed concerns about wind farm development, especially near the lakes. This is an important perspective. Accordingly, our suggested language:

- Does not change or alter any of the “buffer areas,” including the buffer area along the western edge of the wind overlay district (i.e., in the direction of the lakes). In accordance with the current ordinance language, no turbines will be sited or built in this area. This effectively creates a one mile “no turbine” zone around the lakes.
- Keeps 35 dB(A) as the sound limit applicable outside the wind overlay district to the west. Note that this is significantly quieter than the average sound level currently experienced most of the time along Long Lake Road, as shown by sound studies that we conducted earlier this year. Please see attached. Accordingly, the project can be expected to have no or very little

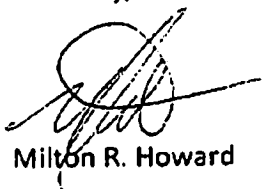
effect on sound outside the overlay district. (For example, if the average ambient sound level is 45 dB(A), and the project generates 35 dB(A), the total sound would be about 45.4 dB(A), a change that is imperceptible to the human ear).

We have also kept the sound limits *within* the wind overlay district as strict as possible, while still giving us just enough flexibility to site a portion of the proposed project in the Township. In the end, we probably cannot completely satisfy absolutely everyone. However, our suggested changes attempt to balance all of the interests involved, including the lake owners to the west, non participating landowners within the wind overlay district, and the farmers and landowners who have joined our project and who want to see the benefits that the project will bring.

The project, if it comes to fruition, will not only generate clean, renewable, and inexhaustible energy, but will also provide a significant economic boost for your Township, including valuable tax revenue, direct and indirect job creation, and new income streams for participating landowners. Much of this new income will get spent in the community, having a ripple effect.

Thank you for your time and for considering this request, and, as always, I remain at your disposal should you have any questions or concerns. Please let me or Graham Furlong know if there is additional information that we can provide to the Board or Planning Commission. In particular, we would be happy to make one of our sound experts available to you to answer your questions, if that would be helpful.

Sincerely,



Milton R. Howard

Vice President Wind Development

Duke Energy Renewables

**ATTACHMENT 1. Proposed Amendments to the Zoning Ordinance of Reading Township
Large Scale Wind Energy Systems**

(18)(c) Definitions:

~~4. "L_{Amax}": The maximum sound level reading when the instrument is set to measure A-weighted sound levels and 'fast' response. It is a single event, not to exceed limit when used as part of this ordinance.~~

4. "Leq": is the average sound level measured over the course of a minimum one hour noise compliance test.

Comment: Duke requests that the Township replace "L_{Amax}" with "Leq." Leq represents the *average* sound level over a period of time, such that the variation of the sound level over the period is taken into account. L_{Amax} represents an *instantaneous maximum* sound level. The Township's current ordinance uses L_{Amax}, but then confusingly sets a period of time for compliance (six minutes in any one hour). Because turbine sound can briefly fluctuate higher or lower under certain conditions, a strict L_{Amax} limit of 45 dBA would be a barrier to wind development. On the other hand, this change to the ordinance will not materially and perceptibly change noise levels.

(18)(d)3.E. Noise:

1. Within the Energy Overlay District, audible noise or the sound pressure level from the operation of the Wind Energy Facility shall not exceed: (i) forty five (45) dBA (Leq_{Amax}); at any dwelling or mobile home existing at the time that the application for the Wind Energy Facility is submitted. the

Comment: Duke requests that the 45 dBA limit apply to dwellings (which is a defined term in the Reading Township ordinance), not property lines. Strict sound limits, such as 45 dBA, are typically set with quiet nighttime hours and sleeping in mind. People sleep in their homes, which are usually offset from a given property line and may be a significant distance from the nearest property line, making a property line limit overly restrictive. Further, it is easier for us to demonstrate compliance at a dwelling, which represents one geographic point, than it is at property lines, which represent almost an infinite number of points along a linear line. This reduces the chance for disagreement and complaints in the future.

~~boundary of any property participating in the Wind Energy Facility or forty (40) dBA (L_{Amax}) at the boundary of any nonparticipating property. Audible noise or the sound pressure level from the operation of the Wind Energy Facility shall not exceed or (ii) thirty five (35) dBA (Leq_{Amax}) at the property line of any property outside the external western edge of the Wind Energy Overlay District, including the edge of the Wind Energy Overlay District located in Township sections 3 and 4 to the south and east of Round Lake.~~

Comment: Recognizing the concerns of property owners along the lakes to the west, this change keeps the 35 dBA limit at the western outer edge of the wind overlay district (i.e., toward the lakes). This proposed change would remove from the 35 dBA limit the commercial and industrial property in the middle of the Overlay District. It is generally expected that commercial and industrial areas will be noisier than residential ones, and there is likely no commercial or industrial area anywhere that could comply with a 35 dBA sound limit. This change is important because the small commercial and industrial areas in Reading Township are located in the middle of the Wind Energy Overlay District, therefore, applying a 35 dBA standard to those areas effectively precludes wind development in a very large vicinity. The proposed change also means that the small residentially-zoned areas along the eastern edge of the township -- specifically, the mobile home park at the corner of Bankers Road and South Sand Lake Road and the residential zone north of Bigelow Road -- would be subject to the same sound standard as residences in the Wind Overlay District (45 dBA), not 35 dBA as currently adopted. This change is especially important near the mobile home park because the Overlay District narrows in this area (around Round Lake), and requiring 35 dBA to the west and east effectively precludes siting any turbines in this area.

The applicant shall be able to provide sound pressure level measurements from a reasonable number of sampled locations to demonstrate compliance with this standard. ~~Non-compliance shall be established when the LAmax limit is exceeded for more than six (6) minutes in any one hour period.~~

Comment: The compliance period is now included in the definition of Leq, above. Leq, by definition, is an average sound energy level measurement over a stated period of time. In this case, we have adopted the one hour period of the current standard. One hour is long enough to record and take into consideration a representative range of sound, but not so short as to be overly influenced by anomalous fluctuations, either higher or lower.

~~2. Operation of the Wind Energy Facility is prohibited when audible tones are present if such tones result in a complaint.~~

Comment: We respectfully suggest that the complaint provision needs to be deleted before any project can be sited and built in Reading Township. Legally, ordinances must provide clear and objective standards (such as the sound provisions above) that give the regulated party fair notice of what is required. No developer could construct a wind project if a citizen could shut it down simply by complaining, for whatever reason. On the other hand, deleting the complaint provision does not prevent a citizen from claiming a violation of the ordinance's specific noise provisions or any applicable Michigan laws if he or she so chooses.

~~23. Any noise level falling between two whole decibels shall be the lower of the two.~~

~~43. In the event the noise levels resulting from the Wind Energy Facility exceed the criteria listed above, a waiver to~~

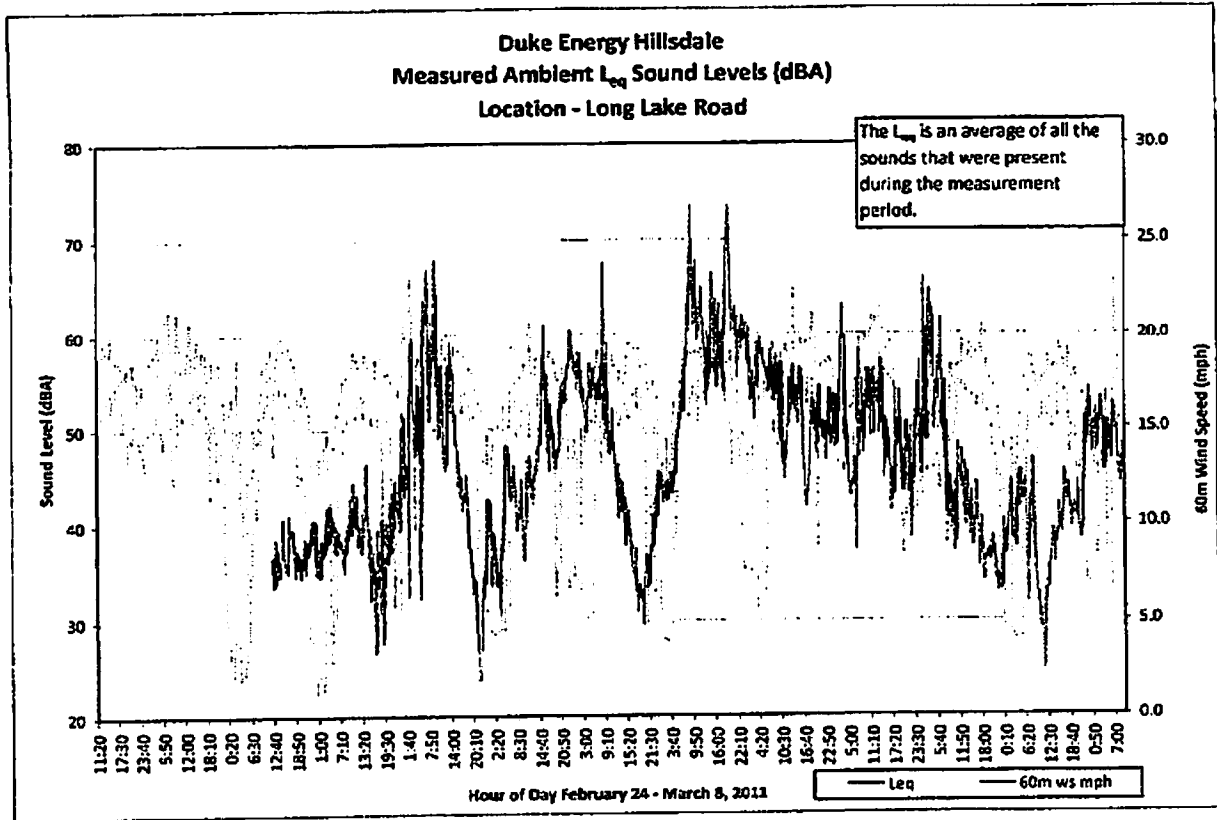
| said levels ~~may~~shall be approved provided that the following has been accomplished:

- i. Written consent from the affected property owner(s) has been obtained stating that they are aware of the Wind Energy Facility and the noise limitations imposed by this article; and the consent is granted to allow noise levels to exceed the maximum limits otherwise allowed;
- ii. If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent noise impact easement must be recorded in the Hillsdale County Register of Deeds office which describes the benefited and burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those otherwise permitted by the ordinance may exist on or at the burdened property.

Comment: If the property owner in question consents, as required by (i), then there seems to be no reason why a waiver would not be granted. Therefore, we respectfully request that "may" be changed to "shall." If "may" is kept, then additional language should be added to explain under what circumstances a waiver would not be granted in such a case.

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ATTACHMENT 2. Sound Data: Long Lake Road (South of Quackenbush Road)



Adding sound levels dB (examples):

Existing	+	Additional turbine sound		
35	+	35		38.0
40	+	35		41.2
45	+	35		45.4
50	+	35		50.1
55	+	35		55.0

Note: Changes below 5 dB are difficult to perceive with the human ear.

