

**FILE**

**BEFORE  
THE OHIO POWER SITING BOARD**

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In the Matter of the Application of **HEARTLAND** )  
**WIND, LLC** for a Certificate to Site a Wind- )  
Powered Electric Generation Facility in Van Wert ) Case No. 09-1066-EL-BGN  
County, Ohio and Paulding County, Ohio. )

**DIRECT TESTIMONY OF**

**Dan Litchfield**

**on behalf of**

**Heartland Wind LLC**

**July 9, 2010**

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1. **Please state your name.**

My name is Dan Litchfield.

2. **Please give your business address.**

My business address is 110 North Brockway, Suite 340, Palatine, Illinois 60067.

3. **By whom are you employed?**

I am employed by Iberdrola Renewables, Inc. who is the sole member and manager of Heartland Wind, LLC.

4. **What is your position?**

I am a Business Developer and the lead developer for the Blue Creek Wind Farm (owned by Heartland Wind, LLC) to be located in Van Wert and Paulding Counties, Ohio.

5. **What is your role in this application before the Ohio Power Siting Board?**

I have been responsible for supervising the preparing the application, managing the project, including retaining consultants and coordinating the development of the Blue Creek Wind Farm project (the "Project").

6. **Please indicate the purpose of your testimony.**

I will provide summary and background information for the proposed Project, which is the subject of the Application as supplemented. I also will provide additional information about the Project that transpired after the Application was filed, and provide testimony regarding my sponsorship of certain exhibits. Then, I will respond to several comments made at the local public hearing on July 8, 2010. Next, and only in the event that the parties are unable to reach a stipulation, I will address the Company's concerns with respect to the wording, not the goal, of certain conditions in the Staff Report of Investigation dated June 23, 2010 ("Staff Report"). Assuming a stipulation is reached, I will supplement this testimony with the process resulting in the stipulation and give reasons why I believe the stipulation should be adopted in supplemental testimony. Stipulation discussions with the Staff and representatives of the Ohio Farm Bureau will be held early next week.

1     **7. Please provide some general background about the Project.**

2     The Application, as supplemented, proposes to construct up to 350 megawatts of wind  
3     generation capacity powered by approximately 159 Gamesa G-90 turbines. The Project is  
4     located within an approximately 44,000 acre area in Benton, Blue Creek and Latty  
5     townships in Paulding County and Tully, Union and Hoaglin townships in Van Wert  
6     County. If the Ohio Power Siting Board (the "Board") grants Heartland Wind, LLC a  
7     certificate, the company intends to begin preliminary activities, including a  
8     preconstruction conference, immediately so construction can begin in September 2010. It  
9     is anticipated that the Project will be placed in service starting at the end of 2011 and with  
10    all operations to begin by March 2012.

11    **8. Did Heartland Wind, LLC file an Application with the OPSB on December 21, 2009**  
12    **and an Application Supplement with the OPSB on March 31, 2010?**

13    Yes.

14    **9. Were you the person ultimately responsible for the preparation and contents of the**  
15    **Application and Application Supplement?**

16    Yes.

17    **10. Were the Application and Application Supplement prepared by you or under your**  
18    **direction and control?**

19    Yes.

20    **11. Are you sponsoring the Application and Application Supplement as exhibits in the**  
21    **above-captioned proceeding?**

22    Yes. The Application will be referred to as Company Exhibit 1 and the Application  
23    Supplement will be referred to as Company Exhibit 2.

24    **12. Were copies of the Application served on local public officials and libraries, and was**  
25    **a list of property owners and adjacent property owners filed with the OPSB?**

26    Yes. I directed a copy of the Proof of Service of the Application along with the list of  
27    property owners and adjacent property owners to be filed with the OPSB on February 19,  
28    2010. I am sponsoring the Proof of Service and list of property owners and adjacent  
29    property owners as Company Exhibit 3.

1 **13. Were copies of the Application Supplement served on local public officials and**  
2 **libraries, and was a list of property owners and adjacent property owners filed with**  
3 **the OPSB?**

4 Yes. I directed a copy of the Proof of Service of the Application Supplement along with  
5 the list of property owners and adjacent property owners to be filed with the OPSB on  
6 March 31, 2010. I am sponsoring the Proof of Service and list of property owners and  
7 adjacent property owners as Company Exhibit 4.

8 **14. Did Heartland Wind, LLC publish notices of the local public hearing held on July 8,**  
9 **2010 and the evidentiary hearing to be held on July 15, 2010?**

10 Yes. I directed that the Proofs of Publication describing the Application, Application  
11 Supplement and hearing dates to be filed with the OPSB on July 8, 2010. The specific  
12 notices were published on June 29, 2010 in *The Lima News*, on June 30, 2010 in  
13 *Paulding County Progress*, and on June 28, 2010 in the *Van Wert Times Bulletin*. I am  
14 sponsoring the Proofs of Publication as Company Exhibit 5.

15 **15. Will the Company be sponsoring additional witnesses in support of the Application**  
16 **and Application Supplement?**

17 Coincident with the filing of my testimony, Heartland Wind, LLC is filing a motion for  
18 extension of time to file supplemental testimony, if necessary, to establish a complete  
19 record. As of the date of the filing of my testimony, a decision as to whether additional  
20 testimony will be required has not been made.

21 **16. What additional information would you like to bring to the Board's attention that**  
22 **was not available when the Application and Application Supplement were filed?**

23 **Various additional studies and analyses**

24 Since December 2009 we have re-designed our wind turbine layout to lessen noise  
25 impacts to area residents and performed additional research on the Project, including:  
26 updated noise analysis including ambient noise monitoring; updated shadow flicker  
27 analysis; television reception analysis; completion of the wetland studies; and completion  
28 of the archaeological studies for the Project area. In addition, representatives of  
29 Heartland Wind, LLC have attended many local community meetings to answer questions  
30 about the Project.

**Road commitments, repairs**

The Company has been working with the county engineers of both Paulding and Van Wert Counties to work out road agreements pertaining to the construction of the wind farm and transportation of the wind turbines. I first met with the Paulding County Engineer and Van Wert County Engineer—in separate meetings—on January 15, 2009. This initial meeting served the purpose of providing the County Engineers with a summary of the Project as well as a map of our turbine layout at that time. We discussed our Company's experience with public roads during construction of wind farms in other states, and I gave them a copy of the type of road analysis typically performed in the past at other project sites. At this meeting, I also committed that we would be responsible for repairing any damage done to the roads during construction of the wind farm, and that we would work in good faith towards negotiating a mutually acceptable road agreement.

The second major meeting on road repair was in January 2010, and included the County Engineers, representatives from every township in the project area, and the Blue Creek Wind Farm Project Engineer, Jeromy Miceli. We made a presentation on wind farm construction with photographs of wind turbine component deliveries, crane crossings of public roads, and examples of damage done to roads during construction. Prior to the meeting, we presented a draft road agreement for their consideration, as well as an initial draft of the construction traffic routing plan for the Project. After our presentation, we discussed these two documents and received some very helpful feedback that resulted in changes to the draft road agreement and turbine routing plan.

On June 29, 2010, with an essentially finalized project layout, we met with both County Engineers to discuss an updated draft of the road agreement that incorporated some of the feedback received during the January 2010 meeting. In addition to Mr. Miceli and myself, Iberdrola Renewables Director of Project Management, Erik Lallum, and the likely Project Manager for the Project, Ray Olson, attended. We discussed the results of a detailed engineering analysis of the road conditions performed in May and June 2010. This analysis gave us detailed information on the exact subsurface conditions – and thus the potential load capacities – for every road we plan to use, and provided information on pre-construction upgrades that would be necessary for some roads in order to minimize the impact to the roads and lower the overall cost of using and repairing the roads.

1 In addition to these three major meetings, there have been numerous phone calls and  
2 emails to and from the County Engineers, and productive communication throughout the  
3 process. In late-July or early August 2010, we plan to host a group meeting with all  
4 townships in the project area and the County Engineers to discuss the road analysis, pre-  
5 construction upgrade plan, and move towards a final draft of the road agreement.

6  
7 **Property values**

8 In granting a certificate to Buckeye Wind LLC, the Ohio Power Siting Board  
9 acknowledged that “various studies have shown that similar [wind] projects in other  
10 locations have not affected property values in those areas” (emphasis added). Case No.  
11 08-666-EL-BGN (Opinion & Order, March 22, 2010). The Board’s conclusion is entirely  
12 consistent with a report prepared by the Ernest Orlando Lawrence Berkeley National  
13 Laboratory in December 2009, which used eight different hedonic pricing models to  
14 analyze approximately 7,500 sales of single-family homes located within 10 miles of  
15 existing wind facilities in nine (9) different states. That report, entitled *The Impact of*  
16 *Wind Power Projects on Residential Property Values in the United States: A Multi-Site*  
17 *Hedonic Analysis*, concluded that “neither the view of the wind facilities not the distance  
18 of the home to those facilities is found to have any consistent, measurable, and  
19 statistically significant effect on home sales prices”—and, “if these impacts do exist, they  
20 are either too small and/or infrequent to result in any widespread, statistically observable  
21 impact.” And, perhaps most notable, some of the pricing models demonstrated that  
22 property values *increased* after construction of wind turbines. For these reasons, it is  
23 inaccurate to state that the location of wind turbines decreases property values.

24 **17. Were you present during the local public hearing set by the Ohio Power Siting**  
25 **Board for the evening of July 8, 2010 in Van Wert, Ohio?**

26 Yes.

27 **18. Were you present when Brett Heffner and Sherri Randall testified?**

28 Yes.

29 **19. Do you have any response to the testimony of Brett Heffner or Sherri Randall at the**  
30 **local public hearing?**

31 Yes. Neither Mr. Heffner nor Ms. Randall lives in the Project area or even in a  
32 neighboring county. Mr. Heffner is from Shelby, Ohio in Richland County and

acknowledged having no issues with the Blue Creek Wind Farm in Van Wert and Paulding Counties. He indicated specifically that he was not “from around here” and that it was appropriate for those affected to “hash this out.” He then proceeded to talk about his opposition to the wind industry in general and with another wind project by another developer in Richland County.

Likewise, Ms. Randall is from the State of Idaho with no connection to Ohio other than the fact that her parents grew up in Van Wert County. Ms. Randall, who maligned the wind industry in general, lacked even a basic understanding of the Blue Creek Wind Farm, the power siting process, and Ohio law. For these reasons, the testimony of both Mr. Heffner and Ms. Randall should be completely disregarded.

**20. Were you present when Wayne L. Warren testified?**

Yes.

**21. Do you have any response to the matter or concerns mentioned by Mr. Warren at the local public hearing?**

Yes. Mr. Warren previously filed a letter with the Board on June 23, 2010 – the contents of which were read, nearly word for word, in his testimony at the local public hearing. On behalf of Heartland Wind I filed a detailed response to Mr. Warren’s letter on June 28, 2010 addressing his concerns. I would like to incorporate by reference this letter in this testimony. Primarily, Mr. Warren testified regarding general concerns pertaining to wind development in Ohio, including the cost of wind power, rather than specific issues with the Project. The issue of wind development in Ohio, however, has been repeatedly addressed by the Ohio General Assembly through Senate Bill 221 (establishing renewable portfolio standards), House Bill 562 (establishing a siting process for wind farms), and Senate Bill 232 (adopting changes to the taxation of wind farms).

Additionally, Heartland explained in its letter that:

- Consistent with a report prepared by the Ernest Orlando Lawrence Berkeley National Laboratory in December 2009, the Ohio Power Siting Board recently recognized that wind turbines in close proximity to residences have not negatively affected property values;
- Impacts to the bald eagle and other threatened or endangered species are not expected in the project area; and will adequately be addressed in the conditions identified in the Staff Report; and

- The Staff Report adequately addressed construction and operational noise levels.

Finally, it is important to note that Mr. Warren raised no specific issues with the Project.

**22. Were you present when Charles Stephen Rusk testified?**

Yes. Mr. Rusk made short comments to the effect that he believed the public should have been more involved in the siting process. Heartland Wind has been working in the area for approximately three years. In that time, company representatives have spoken with literally hundreds of residents in Paulding and Van Wert Counties. In addition, representatives have held meetings with many groups in the counties and have made presentations to many more. Our Application and the Application Supplement detailed 48 meetings and other events (as of March 31, 2010) with residents, school districts, public officials and civic associations. The documentation of these meetings was given on a table (Revised Table 8-12) in the Application Supplement. Since March 2010, there have been more meetings with individual residents and groups who reside in the two counties where the Project will be located. We have established a strong local presence as evidenced by our office in the heart of downtown Van Wert where people can drop in, view maps and ask questions. I do not believe that Mr. Rusk had the facts when he claimed that the public should be more involved. Heartland Wind, LLC has done its utmost to engage the residents in both counties.

**23. Were you present when Milo Schaffner and Jason L. Gray testified?**

Yes.

**24. Do you have any response to the concerns regarding the alleged health effects from wind turbines mentioned by Mr. Schaffner and Mr. Gray at the local public hearing?**

Yes. The same health claims raised by Messrs. Schaffner and Gray were also raised in another case, Buckeye Wind LLC, Case No. 08-666-EL-BGN. The applicant in that case presented the testimony of an epidemiologist who rebutted the claims of Dr. Nissenbaum and others regarding alleged health issues. In its decision in that case, the Board stated that there exists a "lack of scientific evidence on potential health impacts associated with utility scale wind projects." Buckeye Wind LLC, Case No. 08-666-EL-BGN (*Opinion, Order, and Certificate*, March 22, 2010 at 62). In its decision in the Buckeye case, the Board added that it found the studies relied upon to "make noise associated health claims

1 to affect such a small portion of the available population, inconclusive, or based on self-  
2 reported claims as to be an insufficient basis on which to make a decision that serious  
3 health impacts will result from the proposed project.” *Id.* See also Clean Energy Council  
4 press release dated July 2, 2010 attached to my testimony as Exhibit A, noting that an  
5 independent study by the National Health and Medical Research Council “found no  
6 evidence that wind turbines had a direct effect on people’s health.” In addition to the  
7 lack of hard scientific evidence to support the claims of Mr. Schaffner and Mr. Gray  
8 (who relied primarily on various Internet sites), the residential setbacks used by  
9 Heartland (which exceed the statutory minimum) and conditions in the Staff Report  
10 requiring Heartland to operate its wind farm within certain noise parameters adequately  
11 address Mr. Schaffner and Mr. Gray’s concerns. To the extent that that any noise would  
12 exceed the agreed upon standard for this case, the Company will also undertake  
13 mitigation measures, approved by the Staff.  
14

15 **25. Do you have any response to the concerns regarding the impact of wind turbines on**  
16 **television reception mentioned by Mr. Gray at the local public hearing?**

17 Yes. Mr. Gray referred to the Comsearch studies and communications with NTIA that  
18 were filed as Appendix BB to the Application Supplement on March 31, 2010. As part of  
19 Comsearch’s analyses, television reception was examined. Mr. Gray mischaracterized  
20 the conclusions of this analysis when he asserted that the report “pretty much says it  
21 [television reception] will be affected.” However, the conclusions of Comsearch stated  
22 that “reception issues may be encountered” once turbines are installed and that “the  
23 resolution to these issues will have to be handled on a case by case basis.” The  
24 conclusion to the report went on to state that if there are areas experiencing degraded off-  
25 air television receptions, investigations will be necessary to determine that the wind  
26 turbines are the actual cause of the problem—and that if they are, “a number of  
27 mitigation strategies may be implemented to restore the homes and businesses in the area  
28 to at least that same television coverage that existed prior to the installation of the wind  
29 turbine facilities.”  
30

31 In addition, Heartland Wind will mitigate adverse reception effects and has agreed with  
32 the Staff’s proposed condition # 48 which states:

33 That the Applicant must meet all recommended and prescribed  
34 Federal Communications Commission and other federal agency

requirements to construct an object that may affect communications and, subject to OPSB Staff approval, mitigate any effects or degradation caused by wind turbine operation. For any residence that is shown to experience degradation of TV reception due to the facility operation, the Applicant shall provide, at its own expense, cable or direct broadcast satellite TV service.

Therefore, if Mr. Gray's television reception were to be affected after operation of the wind turbines and after determining that the cause is the wind turbines, the Company will mitigate the degradation and seek Staff approval of the mitigation.

Mr. Gray also criticized Comsearch's methodology in conducting their studies because they elevated the test antenna to a height of 6 feet above ground level. Comsearch is an expert consultant in this field and that is why the Company engaged them for the study. They explained that a 6 foot height is a conservative height and is representative of the likely configuration of some television antennas in the project area, including some situated on the TVs themselves. It is practical or reasonable to expect a baseline television reception analysis to incorporate all possible television antenna configurations.

Mr. Gray also stated that he was unable to determine how close his house was to the nearest turbine. His house is nearest to turbine #31, which is 1,269 feet away. A second turbine, #32, is 2,384 feet from his house. Both of these turbines are well beyond the statutory requirement of 750 feet plus the length of the blade perpendicular to the ground, or 898 feet. The experience of the Company shows that the maximum ice throw observed at other projects is 492 feet.

Mr. Gray also conjectured about the value of his house, but admitted that for other reasons the value had decreased. For the reasons given earlier in my testimony, I do not believe that wind farms decrease the value of homes.

**26. Were you present when John Grubaugh, testified?**

Yes. While apparently supporting the concept of alternative energy sources, Mr. Grubaugh attempted to compare the Project to an experience he had 30 years ago with the oil and gas industry where the placement of a test well on his family's property allegedly resulted in the crops today not growing in the old site as well. He implied that crops would not grow around wind turbines, but he presented no facts and apparently ignored the testimony of several other witnesses who had visited wind farms located in agricultural areas where crops were thriving. This anecdote does not take into account

possible different construction practices between that oil company 30 years ago and the Company's plan for this wind farm. In addition, the terms of the Company's Wind Energy Lease require the Company to compensate landowners for any lost crop production due to the construction or operation of the wind facility. Though unlikely, even if the construction of the Facility results in soil compaction that does not naturally recover for a period similar to what Mr. Grubaugh referenced, the Company would be responsible for compensating the affected landowner throughout the entire period of the lease and duration of crop damage or reduced crop yield.

Mr. Grubaugh declined to sign the Company's Good Neighbor Agreement and indicated that he just had "general reservations" about wind turbines. It is difficult to respond to unnamed issues, but the positive testimony of others at the hearing is an eloquent rebuttal.

**27. Were you present when Monte Bollenbacher testified?**

Yes. Mr. Bollenbacher stated that he moved outside the city of VanWert so that he could enjoy the "country." He alleged that if the Project were constructed, he would have three wind turbines that would be located between 600 yards (1,800 feet) and 800 yards (2,400 feet) from his house. Our final turbine layout plan demonstrates that the nearest turbine to his house, # 103, is 1,319 feet away; the second nearest, # 101, is 2,240 away; and the third nearest is 3,022 feet away. The Company will be presenting a plan to mitigate shadow flicker from those turbines in excess of 30 hours per year, and Mr. Bollenbacher's house has already been selected to be included in the plan, which could include mitigation in the form of trees that will screen the view of one or more turbines.

**28. Are you familiar with the 61 recommended conditions listed on pages 51-61 of the Staff Report of Investigation dated June 23, 2010?**

Yes.

**29. Was a joint issues list filed with the OPSB by the Company and Ohio Farm Bureau Federation?**

Yes.

1   **30.   What did the joint issues list state?**

2       The joint issues list indicated that both the Company and Ohio Farm Bureau Federation  
3       anticipate being able to enter into a stipulation with the OPSB Staff resolving any issues  
4       pertaining to the 61 recommended conditions in the Staff Report.

5   **31.   Would you identify the conditions in the Staff Report that the Company is**  
6   **concerned with in the event that the negotiations with the OPSB Staff are**  
7   **unsuccessful, and a stipulation cannot be reached?**

8       Overall, the Company agrees that the goals to be achieved through the conditions in the  
9       Staff Report are appropriate for the Blue Creek Wind Farm. However, the Company has  
10      concerns about the wording, time frames, and details in some of the conditions in the  
11      Staff Report and is seeking modification and/or clarification of those conditions to make  
12      them workable for the Blue Creek Wind Farm project. More specifically, the Company  
13      presents testimony seeking modifications to Conditions 6, 9, 16, 17, 20, 26, 28, 37, 38,  
14      45, 57, and 59; and seeking clarification regarding Conditions 5, 12, 30, 41, 42, and 43.

15  **32.   Please identify your concerns with the above-referenced conditions in the Staff**  
16  **Report.**

17      As noted above, the Applicant proposes modifications to Conditions 6, 9, 16, 17, 20, 26,  
18      28, 37, 38, 45, 57, and 59 in the Staff Report. The specific modifications are included on  
19      Exhibit B to my testimony, and the rationale for the proposed modifications are set forth  
20      below.

21  
22      **Condition 6:** Representatives of Heartland Wind discussed with the OPSB Staff early in  
23      the certification process that it intended to ask for the pre-construction conference  
24      immediately after the issuance of the certificate, which was tentatively set for August 18.  
25      A sixty day requirement for notification has already passed. The Company is in the  
26      process of ordering the Gamesa G90 turbines for the Blue Creek Wind Farm project.

27  
28      **Condition 9:** The process of obtaining a final Interconnection Service Agreement  
29      ("ISA") is lengthy and it is a standard practice to execute an interim ISA until the final  
30      ISA and Construction Services Agreement ("CSA") are executed in order to proceed with  
31      long lead time activities until the ISA and CSA can be finalized. We are working with  
32      both PJM and AEP towards final ISA and CSA agreements, but it may not be possible to  
33      have both in final form prior to commencement of construction. An "interim ISA" is a

1 simplified form of the standard ISA that still gives us the contractual obligation –  
2 including the requirement to provide a letter of credit – to fund the necessary system  
3 upgrades required for the project.

4  
5 **Condition 16:** The language needs to be changed to allow for mulching so that the  
6 methods used will be consistent with the filed SWPPP.

7  
8 **Condition 17:** The proposed modification is consistent with Condition #13 set forth in  
9 the Joint Stipulation of Paulding Wind Farm, LLC dated June 30, 2010, and agreed upon  
10 by the OPSB Staff that references “as weather permits.” Applicant’s proposed language  
11 is more narrow than the Paulding Wind Farm language.

12  
13 **Condition 20:** The project has received clearance letters from US Fish and Wildlife  
14 Service and ODNR for all federal and state listed species (See Appendix W to the  
15 Application). Therefore, the requirement to have a specialist onsite does not appear to be  
16 appropriate. The Staff Report reflects these findings by indicating the CH2M HILL  
17 ecological review confirmed that habitats for these species would not occur onsite. The  
18 relocation of the overhead transmission line away from potential roost trees to open  
19 agricultural field with only limited hedgerow tree trimming (none identified as roost  
20 trees) would also preclude the need for an onsite specialist for animals.

21  
22 During our May 27, 2010 meeting with ODNR and OPSB Staff we discussed engaging  
23 Dr. Michael Hoggarth, a mussel specialist, to be onsite if a frac-out were to occur or a  
24 mussel relocation were to be required during construction. Dr. Hoggarth will not be  
25 onsite during all in-stream construction activities since relocations have already occurred  
26 and the remaining sites were determined to have conditions not suitable for mussels.  
27 Nevertheless, Dr. Hoggarth will be available to travel to the project site on an as-needed  
28 basis.

29  
30 **Condition 26:** We request that this condition be removed based on the transmission line  
31 being shifted to an open field with only minimal tree clearing being necessary along a  
32 hedgerow where no roost trees were identified. The USFWS and ODNR both provided  
33 clearance for the Indiana Bat indicating that potential habitat for Indiana Bats would not  
34 be affected within proposed project construction area because the project has incorporated  
35 avoidance measures as requested by the USFWS and ODNR.

1  
2 **Condition 28:** This condition needs to be modified to make it consistent with the  
3 Application Supplement. The Application Supplement stated that no turbines would be  
4 located within the 100 year flood plain and Applicant has configured its turbine plan on  
5 that basis. Application Supplement (at page 5-5) stated that portions of access roads and  
6 overhead transmission lines are located within the 100-year flood plain and that the  
7 statement about "no permanent fill material" would be added to the "Civil Engineering  
8 drawings for any turbine located within 50 feet of the 100 year floodplain." The  
9 Application Supplement intended to convey that the statement would be placed only on  
10 those drawings for turbines within 50 feet of the flood plain, not that the Applicant did  
11 not propose any turbine locations within 50 feet of the floodplain.

12  
13 Applicant's proposed change makes this condition consistent with the Application  
14 Supplement. Applicant has no wind turbines planned within the flood plain, but does  
15 have at least one planned within 50 feet of the flood plain, and has some portions of  
16 access roads planned within the flood plain.

17  
18 **Condition 37:** Applicant proposes that this condition be eliminated. Information was  
19 provided in Applicant's 6/18/2010 response to Staff's 6/10/2010 data request and  
20 Applicant requests the opportunity to thoroughly discuss this condition. On July 8, 2010,  
21 Applicant received site-specific recommendations from GE stating that their generic ice  
22 throw setback guidance that was cited by the OPSB Staff as a reason for this condition  
23 would not be applicable for the Blue Creek Wind Farm site and they agree that  
24 Applicant's initially proposed setbacks are appropriate. With respect to turbine #48,  
25 which is near the Stoneco facility, recent information shows that Stoneco employees are  
26 not on site in weather below 40 degrees or in high winds. With respect to the turbines  
27 located near state or federal highways, ODOT's safety requirements are that the turbines  
28 do not overhang the roads. Furthermore, the 150% of the sum of tower height and rotor  
29 diameter guideline was recommended as a default guideline for GE turbines if the  
30 Applicant did not study the area to arrive at a recommendation based on a specific study  
31 of the area. Now that study has been completed and the 150% of the sum of tower height  
32 and rotor diameter has been deemed unnecessary. Therefore, Applicant's proposed  
33 turbine locations are in accordance with both turbine manufacturers' safety standards and  
34 there is no reason to require additional setbacks. We did our own study of the need for  
35 setbacks and concluded that a 131% standard was sufficient. Finally, now that Applicant

1 has chosen the Gamesa G90 turbine, it should be guided by Gamesa safety standards not  
2 GE default guidelines. Gamesa does not recommend a 150% guideline.

3  
4 **Condition 38:** Applicant is reliant upon its turbine supplier to prepare the final delivery  
5 route. A turbine supplier will not be able to prepare a *final* delivery route until a time  
6 much closer to turbine delivery, after the turbine company has selected a specialized  
7 trucking contractor. Because turbine deliveries will not commence for approximately one  
8 year, until June 2011, Applicant requests a different date for submission of the final  
9 delivery route plan that is based on the date for the turbine delivery – as proposed above.

10  
11 In the alternative, if the condition was modified so that it was clear that there would be  
12 more than one pre-construction conference and the preconstruction conference pertinent  
13 to this condition were held closer to June 2011, Applicant could meet this condition.  
14 Another (second) preconstruction conference is also pertinent to Condition 56.

15  
16 **Condition 45:** The proposed modification makes this condition nearly identical to  
17 Condition #37 set forth in the Joint Stipulation of Paulding Wind Farm, LLC dated June  
18 30, 2010, and agreed upon by the OPSB Staff. The time during which construction  
19 activities are allowed will be critical to the construction of the Blue Creek Wind Farm.  
20 Night time erection work will likely be required to maintain the project's construction  
21 schedule if high winds during day time prevent safe erection work. The Company  
22 believes that night time erection work should be allowed unconditionally, as it does not  
23 substantially increase sound or light above ambient levels at residences or other sensitive  
24 receptors, and the minor increases that may occur would only be for one night at a time in  
25 any given area.

26  
27 **Condition 57:** Heartland Wind is already on a schedule that does not permit any delays.  
28 Applicant needs certainty that engineering drawings will be reviewed and approved  
29 promptly. With respect to minor changes, a three day period seems more than reasonable.  
30 This condition is substantively identical to Condition # 4 in the Hardin case, Case No. 09-  
31 479-EL-BGN.

32  
33 **Condition 59:** This condition should be changed so that it is identical to Condition #50  
34 set forth in the Joint Stipulation of Paulding Wind Farm, LLC dated June 30, 2010, and

1 agreed upon by the OPSB Staff. Such a change would also consistent with Condition #58  
2 in the Hardin Wind, Case No. 09-479-EL-BGN.

3 **33. Does this conclude your testimony?**

4 Yes, it does, but I respectfully reserve to supplement this testimony once the parties have  
5 had the opportunity to work on a stipulation in this matter.



Clean Energy Council

## Media & Events

2 July 2010

### Wind turbines get clean bill of health - again

**NATIONAL:** An independent study released today should put to rest claims that wind farms can make people sick, according to Australia's peak clean energy body.

The study, by the National Health and Medical Research Council, found no evidence that wind turbines had a direct effect on people's health.

Clean Energy Council Policy Director Russell Marsh said that more than 100,000 turbines had been installed across the world in over three decades, delivering clean power to millions of homes in more than 80 countries.

"There have been claims over the last couple of years from opponents of wind farms that noise and other factors associated with wind turbines can make people sick," Mr Marsh said.

"As this latest independent research has shown, there is no credible evidence that wind turbines have a direct effect on people's health."

"The study is consistent with a statement several months ago from Veterans' Chief Medical Officer Dr John Currie, after international studies and acoustic research which repeatedly show wind turbines do not produce enough noise to directly affect humans," he said.

The NHMRC review of the scientific literature found support for the statement: "there are no direct pathological effects from wind farms and that any potential impact on humans can be minimised by following existing planning guidelines".

Mr Marsh said the Federal Government, the Coalition and the Greens have supported a commitment to delivering 20 per cent of our electricity from renewable sources by the end of the decade.

"Wind energy will be a key part of the clean energy revolution. A recent survey conducted by the Clean Energy Council found that approximately 90 per cent of Australians want to see more renewable energy."

"Wind turbines are quiet and make about as much noise as a kitchen refrigerator from 500 metres away. If people find the noise is bothering them, there are simple steps that can be taken to reduce the levels of sound in their homes. However, it's worth noting that Australia has some of the most stringent noise standards in the world."

"We welcome more research in this area, but the current evidence reflects that wind turbines are the safest and cleanest way of generating electricity," he said.

For media enquiries please call Mark Weatherston 0413 956 981 or 03 9629 4111

**Heartland Wind, LLC**

Case No. 09-1066-EL-BGN

**Proposed modifications to recommended certificate conditions***As proposed in the Staff Report:*

- (6) That at least sixty (60) days before the pre-construction conference, the Applicant shall file a letter with the Board that identifies which of the turbine models listed in the application has been selected.

*With recommended edits from Heartland Wind:*

- (6) That at least **thirty (30)** days before the pre-construction conference, the Applicant shall file a letter with the Board that identifies which of the turbine models listed in the application has been selected **if it is not the Gamesa G90.**

*Heartland Wind Rationale:*

Representatives of Heartland Wind had discussed with the Board Staff early in the certification process that it intended to ask for the pre-construction conference immediately after the issuance of the certificate, which was tentatively set for August 18. A sixty day requirement for notification is already past. Applicant is in the process of ordering the Gamesa G90 turbines.

*As proposed in the Staff Report:*

- (9) That the Applicant shall not commence construction of the facility until it has a signed Interconnection Service Agreement with PJM, which includes construction, operation, and maintenance of system upgrades necessary to reliably and safely integrate the proposed generating facility into the regional transmission system. The Applicant shall provide a letter stating that the Agreement has been signed or a copy of the signed Interconnection Service Agreement to the OPSB Staff.

*With recommended edits from Heartland Wind:*

- (9) That the Applicant shall not commence construction of the facility until it has a signed Interconnection Service Agreement **or interim Interconnection Service Agreement** with PJM, which includes construction, operation, and maintenance of system upgrades necessary to reliably and safely integrate the proposed generating facility into the regional transmission system. The Applicant shall provide a letter stating that the Agreement has been signed or a copy of the signed Interconnection Service Agreement to the OPSB Staff.

*Heartland Wind Rationale:*

The process of obtaining a final Interconnection Service Agreement ("ISA") is lengthy and it is a standard practice to execute an interim ISA until the final ISA and Construction Services Agreement ("CSA") are executed in order to proceed with long lead time activities until the ISA and CSA can be finalized. We are working with both PJM and AEP towards final ISA and CSA agreements, but it may not be possible to have both in final form prior to commencement of construction. An "interim ISA" is a simplified form of the standard ISA that still gives us the contractual obligation – including the requirement to provide a letter of credit – to fund the necessary system upgrades required for the project.

*As proposed in the Staff Report:*

- (16) That the Applicant shall employ the following erosion and sedimentation control measures, construction methods, and best management practices when working near environmentally sensitive areas and/or when in close proximity to any watercourses, in accordance with the Ohio NPDES permit(s) and SWPPP obtained for the project:
- (a) During construction of the facility, seed all disturbed soil, except within actively cultivated agricultural fields, within seven (7) days of final grading with a seed mixture acceptable to the appropriate County Cooperative Extension Service. Denuded areas, including spoils piles, shall be seeded and stabilized within seven (7) days, if they will be undisturbed for more than twenty-one (21) days. Re-seeding shall be done within seven (7) days of emergence of seedlings as necessary until sufficient vegetation in all areas has been established. . . .

*With recommended edits from Heartland Wind:*

- (16) That the Applicant shall employ the following erosion and sedimentation control measures, construction methods, and best management practices when working near environmentally sensitive areas and/or when in close proximity to any watercourses, in accordance with the Ohio NPDES permit(s) and SWPPP obtained for the project:
- (a) During construction of the facility, seed **or mulch** all disturbed soil, **in accordance with the OEPA-approved SWPPP**, except within actively cultivated agricultural fields, within seven (7) days of final grading with a **seed or mulch** mixture acceptable to the appropriate County Cooperative Extension Service. Denuded areas, including spoils piles, shall be seeded **or mulched** and stabilized within seven (7) days, if they will be undisturbed for more than twenty-one (21) days. Re-seeding shall be done within seven (7) days of emergence of seedlings as necessary until sufficient vegetation in all areas has been established. **Mulched areas will be monitored for erosion and re-stabilized within 24 hours or prior to a predicted storm event, as deemed necessary by the environmental monitor. . . .**

*Heartland Wind Rationale:*

The language changes are suggested so that the methods used will be consistent with the filed SWPPP.

*As proposed in the Staff Report:*

- (17) That the Applicant shall remove all temporary gravel and other construction staging area and access road materials after completion of construction activities and no later than sixty (60) days after the start of commercial operation, unless otherwise directed by the landowner. Impacted areas shall be restored to pre-construction conditions in compliance with the Ohio NPDES permit(s) obtained for the project and the approved SWPPP created for this project.

*With recommended edits from Heartland Wind:*

- (17) That the Applicant shall remove all temporary gravel and other construction staging area and access road materials after completion of construction activities and no later than sixty (60) days after the start of commercial operation, unless otherwise directed by the

landowner or unless removal is delayed by weather or the winter season, and in no event later than August 31, 2012. Impacted areas shall be restored to pre-construction conditions in compliance with the Ohio NPDES permit(s) obtained for the project and the approved SWPPP created for this project.

***Heartland Wind Rationale:***

The proposed modification is consistent with Condition #13 set forth in the Joint Stipulation of Paulding Wind Farm, LLC dated June 30, 2010, and agreed upon by the OPSB Staff that references "as weather permits." Applicant's proposed language is more narrow than the Paulding Wind Farm language.

***As proposed in the Staff Report:***

- (20) That the Applicant shall have an environmental specialist on site during construction activities, including vegetation clearing, being performed in sensitive areas such as a designated wetland or stream, or in the vicinity of identified mussels (common or federal/state-listed) and threatened or endangered species or their identified habitat. The environmental specialist shall be familiar with water quality protection issues and able to field-identify mussels (common or federal/state-listed) and potential threatened or endangered species of plants and animals that may be encountered during project construction.

***With recommended edits from Heartland Wind:***

- (20) That the Applicant shall have an environmental **monitor** on site during construction activities, being performed in sensitive areas such as a **federal or state jurisdictional** wetlands or stream, or in the vicinity of identified mussels (common). The environmental **monitor** shall be familiar with water quality protection issues and **have specialized staff available** to field-identify mussels (~~common or federal/state-listed~~) and ~~potential threatened or endangered species of plants and animals~~ that may be encountered during project construction.

***Heartland Wind Rationale:***

The project has received clearance letters from US Fish and Wildlife Service and ODNR for all federal and state listed species. Therefore, the requirement to have a specialist onsite does not appear to be appropriate. The Staff Report reflects these findings by indicating the CH2M HILL ecological review confirmed that habitats for these species would not occur onsite. The relocation of the overhead transmission line away from potential roost trees to open agricultural field with only limited hedgerow tree trimming (none identified as roost trees) would also preclude the need for an onsite specialist for animals.

During our May 27, 2010 meeting with ODNR and OPSB Staff we discussed engaging Dr. Michael Hoggarth, a mussel specialist, to be onsite if a frac-out were to occur or a mussel relocation were to be required during construction. Dr. Hoggarth will not be onsite during all in-stream construction activities since relocations have already occurred and the remaining sites were determined to have conditions not suitable for mussels. Nevertheless, Dr. Hoggarth will be available to travel to the project site on an as-needed basis.

***As proposed in the Staff Report:***

- (26) That the Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for removal of suitable Indiana bat habitat, if avoidance measures cannot be achieved.

***Recommended changes by Heartland Wind and Rationale:***

We request that this condition be removed based on the transmission line being shifted to an open field with only minimal tree clearing being necessary along a hedgerow where no roost trees were identified. The USFWS and ODNR both provided clearance for the Indiana Bat indicating that potential habitat for Indiana Bats would not be affected within proposed project construction area because the project has incorporated avoidance measures as requested by the USFWS and ODNR.

***As proposed in the Staff Report:***

- (28) That the Applicant shall not place permanent fill material within 50 feet of the 100-year floodplain in association with any turbine. The Applicant will place the following plan note in the final engineering drawings: "No permanent fill material will be placed within the limits of the 100-year floodplain."

***With recommended edits by Heartland:***

- (28) That the Applicant shall not place permanent fill material within the 100-year floodplain in association with any turbine. The Applicant will place the following plan note in the final engineering drawings: "No permanent fill material will be placed within the limits of the 100-year floodplain."

***Heartland Wind Rationale:***

This change makes the condition consistent with the Application Supplement. The Application Supplement stated that no turbines would be located within the 100 year flood plain and Applicant has configured its turbine plan on that basis. Application Supplement (at page 5-5) stated that portions of access roads and overhead transmission lines are located within the 100-year flood plain and that the statement about "no permanent fill material" would be added to the "Civil Engineering drawings for any turbine located within 50 feet of the 100 year floodplain." The Application Supplement intended to convey that the statement would be placed only on those drawings for turbines within 50 feet of the flood plain, not that the Applicant did not propose any turbine locations within 50 feet of the floodplain.

Applicant's proposed change makes this condition consistent with the Application Supplement. Applicant has no wind turbines planned within the flood plain, but does have at least one planned within 50 feet of the flood plain, and has some portions of access roads planned within the flood plain.

***As proposed in the Staff Report:***

- (37) That the Applicant shall relocate and/or resize turbines E4, 19, 30, 48, 128, 135, 137, and 147 to conform to a setback distance that equals 150 percent of the sum of the hub height and rotor diameter from roads and structures.

*With recommended edits from Heartland Wind:*

Applicant proposes that this condition be eliminated. Information was provided in Applicant's 6/18/2010 response to Staff's 6/10/2010 data request and Applicant requests the opportunity to thoroughly discuss this condition. With respect to turbine #48, which is near the Stoneco facility, recent information shows that Stoneco employees are not on site in weather below 40 degrees or in high winds. On July 8, 2010, Applicant received site-specific recommendations from GE stating that their generic ice throw setback guidance that was cited by the OPSB Staff as a reason for this condition would not be applicable for the Blue Creek Wind Farm site and they agree that Applicant's initially proposed setbacks are appropriate (e-mail sent to Messrs O'Dell and Conway). With respect to the turbines located near state or federal highways, ODOT's safety requirements are that the turbines do not overhang the roads. . Furthermore, the 150% of the sum of tower height and rotor diameter guideline was recommended as a default guideline for GE turbines where the Applicant did not study the area to arrive at a recommendation based on a specific study of the area. Now that study has been completed, the 150% of the sum of tower height and rotor diameter has been deemed unnecessary. Therefore, Applicant's proposed turbine locations are in accordance with both turbine manufacturers' safety standards and there is no reason to require additional setbacks. Applicant did such a study and concluded that a 131% standard was sufficient. Finally, now that Applicant has chosen the Gamesa G-90 turbine, it should be guided by Gamesa safety standards not GE default guidelines. Gamesa does not recommend a 150% guideline.

*As proposed in the Staff Report:*

- (38) That the Applicant shall provide the final delivery route plan and the results of any traffic studies to OPSB Staff, the Ohio Department of Transportation District 1 Office, and to the county engineers thirty (30) days prior to the pre-construction conference. The Applicant shall complete a study on the final equipment delivery route to determine what improvements will be needed in order to transport equipment to the wind turbine construction sites. The Applicant's study and delivery route plan shall consider, but not be limited to, the following: . . .

*With recommended edits from Heartland Wind:*

- (38) That the Applicant shall provide the final delivery route plan and the results of any traffic studies to OPSB Staff, the Ohio Department of Transportation District 1 Office, and to the county engineers **sixty (60) days prior to the delivery of any turbines. At the option of the OPSB Staff, a pre-construction meeting can be held sixty (60) days prior to the delivery of any turbines.** The Applicant shall complete a study on the final equipment delivery route to determine what improvements will be needed in order to transport equipment to the wind turbine construction sites. The Applicant's study and delivery route plan shall consider, but not be limited to, the following: . . .

*Heartland Wind Rationale:*

Applicant is reliant upon its turbine supplier to prepare the final delivery route. A turbine supplier will not be able to prepare a *final* delivery route until a time much closer to turbine delivery, after the turbine company has selected a specialized trucking contractor. Because turbine deliveries will not be commenced for approximately one year, until June 2011, Applicant requests a different date for submission of the final delivery route plan that is based on the date for the turbine delivery – as proposed above.

In the alternative, if the conditions were modified so that it was clear that there would be more than one pre-construction conference and the preconstruction conference pertinent to this condition were held closer to June 2011, Applicant could meet this condition. Another (second) preconstruction conference is also pertinent to Condition 56.

*As proposed in Staff Report:*

- (45) That construction activities shall generally be limited to daylight hours. Impact pile driving and blasting operations, if needed, shall be limited to the hours between 7:00 a.m. to 7:00 p.m., Monday through Friday. Construction activities that do not involve noise or light increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary.

*With recommended edits from Heartland Wind:*

- (45) That construction activities shall generally be limited to daylight hours. **This limitation shall not apply to nacelle, tower, and rotor erection activities which may need to be carried out during low wind, nighttime hours for safety reasons.** Impact pile driving and blasting operations, if needed, shall be limited to the hours between 7:00 a.m. to 7:00 p.m., Monday through Friday. Construction activities that do not involve **significant** noise or light increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. **The Applicant shall notify property owners or affected tenants within the meaning of OAC Rule 4906-5-08(C)(3) of upcoming construction activities including potential for nighttime construction activities**

*Heartland Wind Rationale:*

The proposed modification makes this condition nearly identical to Condition #37 set forth in the Joint Stipulation of Paulding Wind Farm, LLC dated June 30, 2010, and agreed upon by the OPSB Staff. This is a condition that is critical to our construction activities. Applicant would like to discuss the potential for night time erection work and try to clarify a potential ambiguity in this condition's language. Night time erection work will likely be required to maintain the project's construction schedule if high winds during day time prevent safe erection work. We think night time erection work should be allowed unconditionally, as it does not substantially increase sound or light above ambient levels at residences or other sensitive receptors, and the minor increases that may occur would only be for one night at a time in any given area.

*As proposed in the Staff Report:*

- (57) That if any changes are made to the project layout after the submission of final engineering drawings, all changes shall be provided to OPSB Staff in hard copy and as geographically referenced electronic data. All changes will be subject to OPSB Staff review and approval prior to construction.

*With recommended edits from Heartland Wind:*

- (57) That if any changes are made to the project layout after the submission of final engineering drawings, all changes shall be provided to OPSB Staff in hard copy and as geographically referenced electronic data. All changes will be subject to OPSB Staff review and approval prior to construction. **The OPSB Staff will complete the approval process of major layout changes within ten (10) business days of the date Applicant**

submits the drawings. The OPSB Staff will complete the approval process within three (3) days of the date Applicant submits the drawings for minor changes.

***Heartland Wind Rationale:***

Heartland Wind is already on a schedule that does not permit any delays. Applicant needs certainty that engineering drawings will be reviewed and approved promptly. With respect to minor changes, a three day period seems more than reasonable. This condition is substantively identical to Condition # 4 in the Hardin case, Case No. 09-479-EL-BGN.

***As proposed in the Staff Report:***

- (59) That within sixty (60) days after the commencement of commercial operation, the Applicant shall submit to the OPSB Staff a copy of the as-built specifications for the entire facility. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.

***With recommended edits from Heartland Wind:***

- (59) That within sixty (60) days after the commencement of commercial operation, the Applicant shall submit to the OPSB Staff a copy of the as-built specifications for the entire facility. **If the Applicant demonstrates that good cause prevents it from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request an extension of time for the filing of such as-built specifications.** The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.

***Heartland Wind Rationale:***

The proposed modification makes this condition identical to Condition #50 set forth in the Joint Stipulation of Paulding Wind Farm, LLC dated June 30, 2010, and agreed upon by the OPSB Staff. It is also consistent with Condition #58 in the Hardin Wind, Case No. 09-479-EL-BGN.

**Conditions to be discussed for clarification:**

***Clarification requested:***

- (5) That the Applicant shall conduct a pre-construction conference prior to the start of any construction activities, which the OPSB Staff shall attend, to discuss how environmental concerns will be satisfactorily addressed. OPSB Staff shall be notified of any modifications to the final project design at this time.

***With recommended edits from Heartland Wind:***

- (5) That the Applicant shall conduct a pre-construction conference prior to the start of any construction activities **except those pertaining to Conditions 38 and 56 (a)**, which the OPSB Staff shall attend, to discuss how environmental concerns will be satisfactorily addressed. OPSB Staff shall be notified of any modifications to the final project design at this time.

***Heartland Wind Rationale:***

In accordance with preliminary discussions with OPSB Staff, Applicant proposes a second pre-construction conference in the Spring of 2011 to address the final turbine delivery route (Condition 38) and detailed engineering drawings of the final project design (Condition 56a).

*As proposed in the Staff Report:*

- (8) That the concrete batch plant shall be located at the Stoneco quarry site if available for lease to the Applicant. At least thirty (30) days prior to the pre-construction conference, the Applicant shall submit to the OPSB Staff, for review and approval, the location of any concrete batch plant that will be built for construction of the facility.

*With recommended edits from Heartland Wind:*

- (8) That the concrete batch plant shall be located at **either the O&M facility or the Stoneco quarry site**. At least thirty (30) days prior to the pre-construction conference, the Applicant shall submit to the OPSB Staff, for review and approval, the location of any concrete batch plant that will be **temporarily built by the Applicant or its general contractor** for construction of the facility.

*Heartland Wind Rationale:*

As written, the condition requires Applicant to obtain a lease from a specific landowner. The Application proposed two specific ways to address the concrete needs for the project. By mandating that the Applicant lease from Stoneco, the Staff has inadvertently added financial costs to obtaining the lease by announcing to the parcel owner that the Applicant is limited to that one location.

Moreover, the other alternative, O&M and substation parcel on Fife Road was studied to be a prime location being near the contractor laydown area. The Applicant has previously committed to utilizing this location only after evaluating potential effects to adjacent landowners' drinking water wells and mitigating these effects through trucking in water from outside sources such as the Stoneco quarry. Applicant suggests that its proposed language is consistent with the Applicant and Application Supplement and assuming the Stoneco quarry is selected, gives Applicant the ability to negotiate a fair lease if the Stoneco quarry site is the one that it ultimately selected.

- (12) That the Applicant shall develop a screening plan acceptable to OPSB Staff for the substations, O&M building, and potential concrete batch plant site along Fife Road.

Will the OPSB Staff provide guidelines of what should be included in a screening plan?

*Clarification requested:*

- (30) That the Applicant shall complete a full geotechnical investigation to confirm that there are no issues to preclude development of the wind farm. The geotechnical investigation shall include borings at each turbine location to provide subsurface soil properties, static water level, rock quality description (RQD), percent recovery, and depth and description of the bedrock contact and recommendations needed for the final design and construction of each wind turbine foundation, as well as the final location of the transformer substation and interconnection substation. The Applicant must fill all boreholes, and borehole abandonment must comply with state and local regulations. The Applicant shall provide copies of all geotechnical boring logs to the OPSB Staff and to the ODNR Division of Geological Survey prior to construction.

*With recommended edits from Heartland Wind*

- (30) That the Applicant shall complete a full geotechnical investigation to confirm that there are no issues to preclude development of the wind farm. The geotechnical investigation shall include borings at each turbine location to provide subsurface soil properties, static water level, rock quality description (RQD) **for 45 of the 159 turbines**, percent recovery, and depth and description of the bedrock contact and recommendations needed for the final design and construction of each wind turbine foundation, as well as the final location of the transformer substation and interconnection substation. The Applicant must fill all boreholes, and borehole abandonment must comply with state and local regulations. The Applicant shall provide copies of all geotechnical boring logs to the OPSB Staff and to the ODNR Division of Geological Survey prior to construction.

*Rationale by Heartland Wind:*

Heartland Wind's geotechnical study did not include a RQD description. Currently RQDs are available for 45 of the 159 turbine locations. Applicant's consultant, Barr, did borings at every turbine location but in most cases stopped when they hit bedrock. They did so because once they hit bedrock they knew that they had a good surface to build a foundation on. It is their belief that one doesn't really get much additional information from coring deeper. That being said, they did do coring at 45 turbine locations to take bedrock samples and to verify that it was consistent throughout the site (and that it actually WAS bedrock they were hitting and not a big boulder or something). Applicant has the RQD and percent recovery for those samples; they're on the bore logs. Applicant's consultants believe that the 45 RQDs are sufficient for this project.

*As proposed in the Staff Report:*

- (41) That the Applicant comply with all of the requirements of the county engineers on upgrading and/or repairing damage to roads and bridges caused by construction activity. Any roads and bridges that are not adequate for construction traffic must be improved to handle those loads. Any damage will be repaired promptly to its pre-construction state by the Applicant, under the guidance of the appropriate regulatory agency. Any temporary improvements will be removed unless the county engineer(s) request that they remain. The Applicant will provide financial assurance to the counties that it will restore the public roads it uses to their pre-construction condition. The Applicant will also enter into a Road Agreement with both county engineers. The Road Agreement will contain three main components:
- (a) A pre-construction survey of the conditions of the roads.
  - (b) A post-construction survey of the condition of the roads.
  - (c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.

*With recommended edits from Heartland Wind:*

- (41) That the Applicant comply with all of the requirements of the county engineers on upgrading and/or repairing damage to roads and bridges caused by construction activity. Any roads and bridges that are not adequate for construction traffic must be improved to handle those loads. Any damage will be repaired promptly to its pre-construction state by the Applicant, under the guidance of the appropriate regulatory agency. Any temporary improvements will be removed unless the county engineer(s) request that they remain.

The Applicant will provide financial assurance to the counties that it will restore the public roads it uses to their pre-construction condition. The Applicant ~~will also plans~~ to enter into a Road Agreement with both county engineers. **In any event, Applicant agrees that any road plan** will contain three main components:

- (a) A pre-construction survey of the conditions of the roads.
- (b) A post-construction survey of the condition of the roads.
- (c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.

***Heartland Wind Rationale:***

Applicant has had a number of meetings with the engineers of both counties and has exchanged several versions of draft agreements with each. Applicant expects to reach agreements. However, as written by Staff, this condition could compel Applicant to execute whatever agreement the county engineers want because it states that Applicant "shall" sign a Road Agreement. Applicant is concerned that there may be onerous provisions that the engineers will be in a position to force Applicant to accept onerous provisions unrelated to the three elements that Staff requires in a road plan. Applicant agrees that the three elements should be in a road plan, whether or not a Road Agreement is ultimately reached with the county engineers.

*Clarification requested:*

- (42) That any turbine forecasted prior to construction to exceed the ambient LEQ by greater than five dBA under any operating conditions at the exterior of any non-participating residence within one mile of the project area shall be subject to further study of potential impact and possible mitigation prior to construction. If required, the Applicant shall propose mitigation consisting of either reducing the impact so that the ambient LEQ is not exceeded by greater than five dBA, or other measures acceptable to OPSB Staff in consultation with the affected receptor(s).

Will any turbines (as currently proposed) require additional study based upon this condition relating to noise levels?

*Clarification requested:*

- (43) That after construction, any turbine validly measured to exceed the ambient LEQ by greater than five dBA under any operating conditions at the exterior of any non-participating residence within one mile of the project area shall be subject to further review of the impact and possible mitigation. If required, the Applicant shall propose mitigation consisting of either reducing the impact so that the ambient LEQ is not exceeded by greater than five dBA, or other measures acceptable to OPSB Staff in consultation with the affected receptor(s).

***Heartland Wind Rationale:***

Applicant would like to confirm that the way this issue will be brought to the attention of the applicant is upon property owners or their tenants registering a complaint.