BEFORE THE OHIO POWER SITING BOARD			2015	RECEIN
In the Matter of the Application of Hardin Wind LLC to Amend its Certificate Issued in Case No. 13-1177-EL-BGN) Case No. 14-1557-EL-BGA)	PUC0	SEP 24 PM 4: 46	ED-DOCKETING DI

DIRECT TESTIMONY OF MICHAEL SPEERSCHNEIDER

Q.1. Please state your name, title and business address.

A.1. My name is Michael Speerschneider. I am the Chief Permitting and Public Policy Officer for EverPower Wind Holdings Inc., and an officer of Hardin Wind LLC which is a company within the corporate structure of EverPower. Hardin Wind LLC holds the certificate for the Scioto Ridge Wind Farm which was issued in Case No. 13-1177-EL-BGN. My business address is 1251 Waterfront Place, 3rd Floor, Pittsburgh, Pennsylvania, 15222.

Q.2. What are your duties as Chief Permitting and Public Policy Officer?

A.2. I am responsible for all aspects of the permitting necessary to construct and operate EverPower's utility scale wind energy projects, including management of an internal permitting team and external consultants. I am responsible for coordinating the permitting processes with state and federal agencies. I am also responsible for governmental affairs, communicating with state and federal agencies to develop and maintain relationships and manage political risks for EverPower's business. I was involved in the preparation of the initial application by Hardin Wind for the Scioto Ridge Wind Farm, Case No. 13-1177-EL-BGN, as well as the application by Hardin Wind in this proceeding. I have previously testified at length before the Ohio Power Siting Board

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in the Buckeye II and Scioto Ridge wind farm proceedings, Case Nos. 12-160-EL-BGN and 13-1177-EL-BGN.

Q.3. What is your educational and professional background?

A.3. I received a B.S. in Physics and a B.A. in environmental studies from the University of Pittsburgh. I received a M.S. in Technology and Policy and a M.S. in Materials Science and Engineering from the Massachusetts Institute of Technology. Prior to attending MIT, I worked for Cambridge Energy Research Associates developing models for demand, supply and pricing in North American natural gas markets. I joined EverPower in 2004 and have been involved in all facets of its developed projects and operations. While my focus has been on development, permitting, policies and siting or zoning regulations, I have worked closely with our financial, commercial and operations teams to help ensure efficient development, construction and operation of our projects. I have worked closely with project operators to engage local officials and residents, as well as state and federal regulators, regarding what few issues have arisen as a result of project operations.

Q.4. On whose behalf are you offering testimony?

A.4. I am testifying on behalf of the applicant, Hardin Wind LLC.

Q.5. What is the purpose of your testimony?

A.5. To describe the proposed amendments to the Scioto Ridge certificate granted on March 17, 2014, and to discuss the factors behind the relocation of certain features of the wind farm – five wind turbines, a meteorological tower, thirteen access roads, six collection lines and the collector substation – as well as the addition of two access roads and seven new collection lines. As my testimony will highlight, these minor changes

present no concerns or adverse impacts. I will also sponsor the admission of the application into evidence along with related exhibits and the proof of publication.

Q.6. Please provide an overview of the project changes in the application in this proceeding.

A.6 The Scioto Ridge Wind Farm consists of 172 wind-powered electric turbines along with access roads, collection lines, staging areas, operation and maintenance facilities and a collection substation. To prepare for the final design of the project, Hardin Wind identified certain revisions to the approved project design that were necessary including revisions to access roads and collection lines at the request of landowners. Hardin Wind also determined that the collector substation could be relocated closer to the main transmission interconnect, eliminating over 2.2 miles of overhead 345 kilovolt transmission line.

The specific revisions to the certificate are as follows:

- (1) Shifting the location of six segments of collection lines that will result in a net decrease of 2,960 feet of collection lines;
- (2) Adding 12,463 feet of new collection lines to accommodate turbine shifts, landowner requests and the new collector substation location;
- (3) Relocating certain access roads and installing new access roads mostly at the request of landowners and also to accommodate the new collector substation location;
- (4) Relocation one of the four permitted meteorological towers;
- (5) Making minor shifts in the locations of five turbines either at the request of landowners or to improve turbine spacing; and

(6) Relocating the project collector substation approximately 2 miles closer to the main interconnect switchyard which will reduce transmission line length by approximately 2.2. miles and allow more flexibility in final design.

Pages 11 through 15 of the application, marked as Company Ex. 2, provide additional detail on the proposed changes in the project's design.

Q.7. Please explain the shifts of five wind turbines – sites 25, 54, 62, 129 and 198 – proposed in the application?

A.7 The reasons for the turbine shifts are stated at page 12 of the application, marked as Company Exhibit 2. Turbine 25 was shifted 433 feet to the east at a landowner's request to the parcel of another participating landowner. Turbines 54 and 62 were shifted 1,014 feet and 260 feet respectively to the east to improve turbine spacing. Turbines 129 and 198 were shifted 491 feet and 203 feet respectively to other participating landowner parcels at the request of landowners. All turbine relocations comply with the setback requirements under the certificate.

Hardin Wind also confirmed that the relocations of the turbines will not result in additional impacts from shadow flicker. Shadow flicker is the phenomenon whereby the turbine's blades come between the sun and a receptor. Shadow flicker is characterized by the on/off modulation of the sun's light and can cause a nuisance when the shadow being cast by the blades passes through a window in a residential structure. In my experience, shadow flicker outside buildings, in open field or along roads is less distinctive and has generally not caused impacts on human activity. The shadow flicker report completed for this amendment application utilizes industry standard modeling methodologies and

provides an accurate representation of the potential occurrence of shadow flicker at residential locations.

The model uses conservative assumptions so that the modeled result would err on the side of over-predicting the impact. Factors such as the blocking effect of buildings and trees (landscaping and individual trees are not inputted in the model), the assumed presence of humans at all times when flicker would occur (the majority of the time shadows would be cast on homes are in daylight morning or evening hours, and in the winter) and omni-direction modeling (shadow flicker impacts are accounted for all sides of a receptor building, with no consideration for location of windows and orientation of more highly used rooms). I have reviewed the results of the shadow flicker report in the application. The revised project layout results in three less non-participating receptors predicted to receive more than 30 hours of shadow flicker per year (52 versus 55).

Because the modeling presents a worst-case scenario, it is very likely that shadow flicker impacts on non-participating and pending receptors will be significantly reduced prior to construction, and may possibly be entirely eliminated at some receptors.

Importantly, Hardin Wind will adhere to the shadow flicker condition (condition 14) in the certificate granted March 17, 2014 and the shadow flicker commitments filed December 13, 2013, in Case No. 13-1177-EL-BGN. Also, a preconstruction shadow flicker analysis as required by condition 14 in the certificate will be conducted to determine the actual shadow flicker effects based on the final turbine model selected, and the associated turbine sites.

Q.8. Please explain the relocation of a meteorological tower.

A.8 One of the project's four meteorological towers was relocated to a different participating parcel. The relocation puts the tower in a more central location within the project area which will improve data collection.

Q.9. Please explain the proposal to relocate certain access roads and to add two new access roads.

A.9 The application proposes to relocate ten access roads and add two new proposed segments of access road. I would like to note that the Staff report characterizes the changes as the relocation of 13 access roads versus a relocation of ten access roads.

During Staff's review process, Hardin Wind confirmed with Staff that the difference in count was simply a result of Staff breaking certain access roads into segments - so the access road changes proposed in the application are no different than what Staff reviewed and has recommended approval of in the Staff Report for this project.

The changes in access roads were made to accommodate landowner requests, turbine shifts and the new collector substation site. The specific details on the relocated access roads and the two new access roads are stated at pages 13 to 14 of the application. Overall, the access road shifts reduce the total linear feet of total access roads for the project and all relocated and new access roads remain on lands leased by Hardin Wind. As well, because access roads are in agricultural areas, no environmental impacts will result from these relocations.

Q.10. Will the proposed access road relocation adjacent to the Elsasser organic farm create any adverse impacts?

No. The Elsassers raised concerns in their motion to intervene regarding the use of pesticides on the nearby access road, the removal of fencing between their farm property and the access road property and impacts on existing drainage. I am not aware of any current organic licensure standard that would cause an existing or planned organic field to lose its certification based on a road being built adjacent to the organic field. Hardin Wind also is willing to commit to not using pesticides or herbicides to maintain the access road so long as the Elssassers are utilizing their farm ground for organic farming purposes. This avoids the Elsassers' concerns about any drift from chemical sprays onto their farm fields. Also, the installation of the access road will not result in any removal of the tree barriers between the two properties which the Elsassers called a fence in their petition to intervene. Installation of the access road will not damage the new drainage tile referenced in the Elsassers' petition to intervene. While the installation of access roads and collection lines will require ground disturbance and potentially create different drainage conditions than what is existing, the required stormwater pollution prevention plan under the National Pollutant Discharge Elimination System (NPDES) permit will contain a stringent soil erosion and sediment control measures to prevent flooding and drainage issues on lands adjacent to disturbed areas. Lastly, Hardin Wind will work closely with participating landowners to ensure drainage of fields is not affected by construction.

Q.11. Why does the application propose relocating the collector substation?

A.11 In reviewing the project design, Hardin Wind identified an opportunity to improve design flexibility and avoid 2.2 miles of overhead transmission line by relocating the project's collector substation to a more central location within the project area. After consideration of the concerns of a local property owner (Herbert Stevenson), Hardin Wind chose to shift the substation slightly to the southwest and behind a stand of trees from the location initially proposed in the application. Hardin Wind then filed a Notice Regarding Minor Shift in Proposed Location of Collector Substation on December 12, 2014 documenting the shift (914 feet on the same parcel). A copy of that notice with attachments has been marked as Company Ex. 3.

Q.12. Please describe the proposed addition of collection line routes in the application.

A.12 The details on each collection line change are listed at pages 14 to 15 of the application. Hardin Wind is proposing to shift six collection lines as a result of landowner requests, the collector substation relocation and turbine shifts. Hardin Wind is also proposing to add six new collection lines also as a result of the collector substation shift, landowner requests, turbine shifts and turbines that were previously removed. Importantly, no new permanent impacts will occur as a result of the revised collection line system.

Q.13. Are there any environmental concerns with the proposals in the application?

A.13 No. The proposed changes overall reduce the impact of the facility. For example, less stream crossings are required as a result of the collection line system. Also, 2.2 miles of overhead transmission line can be dropped as a result of the collector substation relocation. Overall, the proposed amendments are an improvement to the project design.

- Q.14. Are there any social or ecological concerns with the proposed access road changes?
 - **A.14** No. The amendment will result in fewer linear feet of access roads thus reducing the permanent and temporary disturbance of access roads at the facility.
- Q.15. Is the application filed September 11 and 14, 2014, including all appendices and exhibits, true and accurate to the best of your knowledge and belief?

 A.15 Yes.
- Q.16. Did Hardin Wind have notices of the application to amend published in a newspaper of general circulation in Hardin County and Logan County?
 - **A.16** Yes. A copy of those notices have been marked as Company Ex. 4.
- Q.17. Are the proposals in the application consistent with the terms and conditions in the Opinion, Order and Certificate issued to Hardin Wind on March 17, 2014?
 A.17 Yes. Hardin Wind will continue to comply with all of the terms and conditions of the project's certificate and the amendment does not require any modification of the project's conditions.
- Q.18. What do you recommend that the Ohio Power Siting Board do in this case?

I recommend the Ohio Power Siting Board approve Hardin Wind's application.

- Q.19. Does this conclude your direct testimony?
 - A.19 Yes.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the following parties of record via electronic mail this 24th day of September, 2015.

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