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PUCO EXHIBIT FILING

Date of Hearing:
Case No. 14-1557-EL-86A
PUCO Case Caption:
In the Matter of the : Application of Hardin : Wind LLC Regarding its : Certificate to Construct : Case No. 14-1557-EL-BGG a Wind-Powered Electric : Generation Facility in : Hardin and Logan : Counties, Ohio. :
List of exhibits being filed:
Staff Exis 1-2
Company Ex's 3
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Reporter's Signature: Danston & Wey

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BEFORE THE POWER SITING BOARD OF OHIO

In the Matter of the Application of Hardin Wind LLC Regarding its Certificate to Construct : Case No. 14-1557-EL-BGA a Wind-Powered Electric Generation Facility in Hardin and Logan Counties, Ohio.

PROCEEDINGS

Before Scott Farkas, Administrative Law Judge, at the Public Utilities Commission of Ohio, 180 East Broad Street, Room 11-C, Columbus, Ohio, called at 10:00 a.m. on Tuesday, September 29, 2015.

> ARMSTRONG & OKEY, INC. 222 East Town Street, Second Floor Columbus, Ohio 43215-4620 (614) 224-9481 - (800) 223-9481 Fax - (614) 224-5724

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application of Hardin Wind LLC)	
Regarding its Certificate to Install and Operate a)	Case Number:
Wind-Powered Electric Generation Facility in Hardin)	14-1557-EL-BGA
and Logan Counties, Ohio.)	

Members of the Board:

Chairman, Public Utilities Commission

Director, Development Services Agency

Director, Department of Health

Director, Department of Agriculture

Director, Environmental Protection Agency

Director, Department of Natural Resources

Public Member

Ohio House of Representatives Ohio Senate

To the Honorable Power Siting Board:

Please review the attached Staff Report of Investigation, which has been filed in accordance with Ohio Power Siting Board rules. The application in this case is subject to an approval process as required by Section 4906.03 of the Ohio Revised Code.

Sincerely,

Patrick Donlon

Director, Rates and Analysis

Public Utilities Commission of Ohio

STALL EX.

OPSB STAFF REPORT OF INVESTIGATION

Case Number: 14-1557-EL-BGA

Project Name: Scioto Ridge Wind Farm

Project Location: Hardin and Logan counties

Applicant: Hardin Wind, LLC

Application Filing Date: September 11, 2014

Inspection Date: February 20, 2015; April 30, 2015; August 26, 2015

Report Date: September 3, 2015

Applicant's Waiver Requests: none

Staff Assigned: J. Whitis, M. Bellamy, G. Zeto

Application Description

On March 17, 2014, in case number 13-1177-EL-BGN, the Ohio Power Siting Board (Board) authorized Hardin Wind, LLC (Applicant) to construct a major utility facility, specifically a wind-powered electric generating facility consisting of up to 172 turbine sites with a combined generation capacity of 300 megawatts (MW).

In this application, the Applicant proposes to relocate five turbine sites (sites 25, 54, 62, 129, and 198), one meteorological tower, 13 access roads, and six collection lines. Additionally, the Applicant proposes to relocate the project collection substation onto a participating land owner's parcel closer to the interconnection substation. The reference to a participating land owner is a person who owns land and agrees to lease it to the Applicant for the purpose of development and use as part of the major utility facility site. The Applicant also proposes two new access roads and seven new collection lines. Finally, the Applicant proposes new technologies in the form of two additional turbine models.

The new turbine models proposed are the Suzlon S111 (2.1 MW) and the General Electric 103 (1.7 MW). The proposed Suzlon turbine would have a rotor diameter of 111 meters, a hub height of 90 meters, and an overall tip-height of 479 feet. The proposed GE turbine would have a rotor diameter of 103 meters, a hub height of 96 meters, and an overall tip-height of 486 feet. The overall project nameplate capacity of 300 MW approved in the original case would not change. Therefore, the actual number of turbines constructed would depend on the capacity of the turbine model selected in order to reach the total generating capacity of 300 MW.

As amended, the electric collection system would consist of approximately 86 miles of underground cable and the access roads would span 59.4 miles. The project collection substation would be relocated approximately two miles northeast of the originally certificated site, just west of County Road 75 and north of Township Road 200.

Application Review

Additional Turbine Models

The Applicant proposes to add two new turbine models to the list of acceptable turbines for this project. Staff's review of the Applicant's request regarding these additional turbine models focuses solely on the potential impacts associated with the turbine models. Based on Staff's review, adding the two new turbine models to the previously approved list of turbine models for the project would not require modifications or additions to the conditions in the original certificate and would not result in a material increase in environmental impact as compared to the original project.

As established in the original certificate in case number 13-1177-EL-BGN, the minimum setback determined by statute is equal to a horizontal distance, from the turbine's base to the property line of the wind farm property, equal to 1.1 times the total height of the turbine structure as measured from its base to the tip of its highest blade and be at least 750 feet in horizontal distance from the tip of the turbine's nearest blade at 90 degrees to the exterior of the nearest, habitable, residential structure, if any, located on an adjacent property.

Staff reviewed the safety manuals for the Suzlon S111 (2.1 MW) and GE 103 (1.7 MW) turbine models. Staff believes that the original conditions of the certificate adequately address safety considerations.

New Turbine Locations

The Applicant proposes to relocate five of the original 172 turbines. Turbine site 25 would be moved approximately 430 feet to the east, turbine site 129 would be moved approximately 490 feet to the north, and turbine site 198 would be moved approximately 200 feet to the west. Each of these relocations is proposed based upon the request of the original participating landowners who had the aforementioned turbine sites located on their property. In each instance, the turbine site would move from the property of the original participating landowner to the property of another participating landowner. Turbine sites 54 and 62 would be relocated east approximately 1,000 and 260 feet, respectively, to improve turbine spacing.

Staff notes that Ohio Revised Code sections 4906.20 and 4906.201 have been revised several times with regard to turbine setback requirements. In each version of the statute, if the location of a wind turbine does not meet the required setback, it may not be constructed unless the Applicant secures an executed waiver of the minimum setback requirement.

Collection Lines

The Applicant proposes to relocate six segments of underground collection line and install seven new collection line segments. These relocations would result in a reduction in length by nearly 744 feet, while the new collection line segments will add approximately 11,716 feet of collection line. Staff has reviewed the newly proposed collection line locations and additional collection line segment locations. The new locations would pose no material increase in environmental impact.

Access Roads

The Applicant proposes to relocate 13 access roads and to construct two additional access roads. The net result of the relocations and access road additions would be an overall reduction of access road distance by approximately 6,700 feet. Staff has reviewed the newly proposed access road locations and additional access road locations. The new locations would pose no material increase in environmental impact.

Meteorological Tower

The Applicant proposes to relocate one of its meteorological towers approximately 1.4 miles to the northeast. With this relocation, there would be no change in the number of meteorological towers associated with the project. Staff has reviewed the newly proposed meteorological tower location. The new location would pose no material increase in environmental impact.

Collector Substation

The Applicant proposes to relocate the project collector substation approximately two miles to the northeast. The new location would be next to the transmission line that has already been approved for the project. As a result of this revision, the Applicant would be able to avoid construction of approximately 2.2 miles of overhead 345 kilovolt transmission line. Staff has reviewed the newly proposed project collector substation location. The new location would pose no material increase in environmental impact.

Conclusion

The proposed addition of two new turbine models to the list of authorized models would not impact the location of any turbine sites or non-turbine associated facilities. Further, by adding these two new turbine models, the number of turbines installed would not exceed the number of turbine locations or the 300 MW maximum nameplate capacity certificated by the Board in the original application. Staff believes, if either of the two new turbine models were selected, the original conditions of the certificate are adequate to ensure that adverse environmental impacts would continue to be minimized for this project.

With the proposed relocation of five turbine sites and the relocation and addition of non-turbine associated facilities, the Applicant introduces substantial change in the location of these portions of the facility. However, none of the project revisions proposed by the Applicant result in a material increase in socioeconomic or environmental impact of the facility compared to the original certificate. The Applicant has modified the facility layout in a manner that continues to minimize impacts associated with the project.

Recommended Findings

Staff recommends that the Board approve the Application related to the two new wind turbine models and the new and relocated meteorological tower, collector substation, access roads, and collection lines, provided that the certificate continues to include the 28 conditions specified in the Opinion, Order, and Certificate for case number 13-1177-EL-BGN. Staff also recommends that the Board approve the relocation of the five turbines, subject to the Applicant's compliance with the applicable statutory setback requirements, as determined by the Board.

Recommended Conditions

1. The Applicant shall continue to adhere to all conditions of the Opinion, Order, and Certificate for the Scioto Ridge Wind Farm Project in case number 13-1177-EL-BGN, with the Suzlon S111 and the General Electric 103 turbines to be added as acceptable turbine types, and the new and relocated meteorological tower, collector substation, access roads, and collection lines.

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in

Case No(s). 14-1557-EL-BGA

Summary: Staff Report of Investigation electronically filed by Mrs. Yvonne W Cooper on behalf of Staff of OPSB

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of Hardin :

Wind LLC Regarding its Certificate to : Case No. 14-1557-EL-BGA

Construct a Wind-Powered Electric

Generation Facility in Hardin and Logan

counties, Ohio.

PREFILED TESTIMONY OF **JON WHITIS OHIO POWER SITING BOARD STAFF**

Staff Exhibit 2

1	1.	Q.	Please state your name and your business address.
2		A.	My name is Jon Whitis, and my business address is 180 East Broad Street,
3			Columbus, OH 43215.
4			
5	2.	Q.	By whom are you employed and what is your position?
6		A.	I am employed by the Public Utilities Commission of Ohio (Commission)
7			as a Utility Specialist 2 in the Siting, Efficiency and Renewable Energy
8			Division of the Commission's Rates and Analysis Department. My posi-
9			tion includes assigned duties by the Chairman of the Ohio Power Siting
10			Board (Board) to investigate applications filed with the Board and assist in
11			preparing reports on such investigations.
12			
13	3.	Q.	Please summarize your educational background.
14		A.	I hold a Bachelor's Degree from The Ohio State University in Business
15			Administration. Additionally, I received a Master's Degree from Ashland
16			University in Business Administration.
17			
18	4.	Q.	How long have you been employed by the Commission and in what capac-
19			ity?
20		A.	I have been employed by the Commission since 1987. I have worked on
21			power siting activities since 2002. I have developed analysis for over 50
22			cases before the Ohio Power Siting Board (Board). My responsibilities

1			typically include application review and the preparation of analysis for
2			major utility facilities in Ohio. I have been the lead analyst in more than 30
3			applications, responsible for the preparation of staff reports and coordina-
4			tion of Staff review and field work for major utility facilities.
5			
6	5.	Q.	Have you testified in prior proceedings before the Ohio Power Siting
7			Board?
8		A.	Yes. I testified in Buckeye Wind LLC, Case No. 08-666-EL-BGN.
9			
10	6.	Q.	What is the subject matter of the present case?
11		A.	In Case No. 14-1557-EL-BGA, the Applicant proposes to amend its Certif-
12			icate of Environmental Compatibility and Public Need issued in Case No.
13			13-1177-EL-BGN, known as the Scioto Ridge Wind Farm, by relocating
14			and adding facility components.
15			
16	7.	Q.	What is the purpose of your testimony in this proceeding?
17		A.	I am sponsoring the Staff Report of Investigation (Staff Report) that was
18			filed in the docket of this case on September 4, 2015. I was the Staff pro-
19			ject lead on this case, and managed the Staff investigation and preparation

20

21

of the Staff Report. Consistent with the Board's September 9, 2015 Entry,

my testimony addresses the relocated and new facilities that the Board

1			identified to be within the scope of the issues that can be addressed in the
2			hearing of this matter.
3			Specifically, Staff notes that the Applicant proposes to relocate five turbine
4			sites in addition to the relocation and addition of non-turbine associated
5			facilities. Staff stated within the Staff Report that these proposals introduce
6			substantial changes in the location of these portions of the facility.
7			
8	8.	Q.	Do you have any changes or corrections to make to the Staff Report of
9			Investigation?
10		A.	No.
11			
12	9.	Q.	What is Staff's general role in this case?
13		A.	Staff's role in this case is to evaluate the project proposal and develop con-
14			ditions to minimize impacts to the proposed project site and surrounding
15			landowners.
16			
17	10.	Q.	How did Staff perform the evaluation in this case?
18		A.	Staff reviewed the application, issued data requests to the Applicant to
19			gather and supplement project information, as needed. Staff also made
20			multiple visits to the project site.

Following its evaluation in this case, Staff prepared the aforementioned

Staff Report for the Board, stating the facts necessary for the Board to make

its determination on whether to approve the Applicant's application.

4

- Within the Staff Report, Staff references 13 access road shifts and 7 new collection lines. Did the Applicant agree with Staff's calculation of the number of access road shifts and new collection lines being proposed for this case?
- 9 A. Yes, the application states there would be 10 access roads road shifts and 6
 10 new collection lines. However, based on Staff's GIS data review and other
 11 supplemental information provided by the Applicant, Staff correctly calcu12 lated there would be 13 access road shifts and 7 new collection lines. The
 13 Applicant agreed with Staff's calculation of the number of access road
 14 shifts and new collection lines being proposed for this case.

15

- 16 12. Q. You mentioned conditions. What are these?
- A. Staff develops and recommends conditions designed to minimize various impacts and disruptions to the project area and to surrounding landowners.

 The conditions establish a cooperative framework that promotes good communications among the applicant, landowners, local governmental authorities, and the Staff to address issues that may arise during all phases of the project.

- 1 13. Q. As a result of its evaluation, what did the Staff conclude in this case?
- A. Staff believes that the conditions approved by the Board in Case No. 13-
- 3 1177 as part of Hardin Wind's certificate are adequate to address and to
- 4 mitigate reasonably anticipated impacts of this amendment. Staff therefore
- 5 recommends approval by the Board.

6

- 7 14. Q. Does this conclude your testimony?
- 8 A. Yes, it does. However, I reserve the right to submit supplemental testi-
- 9 mony as described herein, as new information subsequently becomes avail-
- able or in response to positions taken by other parties.

PROOF OF SERVICE

I hereby certify that a true copy of the foregoing Prefiled Testimony of **Jon Whitis** submitted on behalf of the Staff of the Ohio Power Siting Board, was served via electronic mail or U.S. Mail upon the parties listed below this 24th day of September, 2015.

/s/ John H. Jones

John H. Jones

Assistant Attorney General

Parties of Record:

Gretchen L. Petrucci
Michael J. Settineri
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Chad A. Endsley
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cendsley@ofbf.org

William E. Campbell 9523 Heron Way Belle Center OH 43310

Anthony & Devin Elsasser 6051 Twp Rd 200 Belle Center, OH 43310 This foregoing document was electronically filed with the Public Utilities

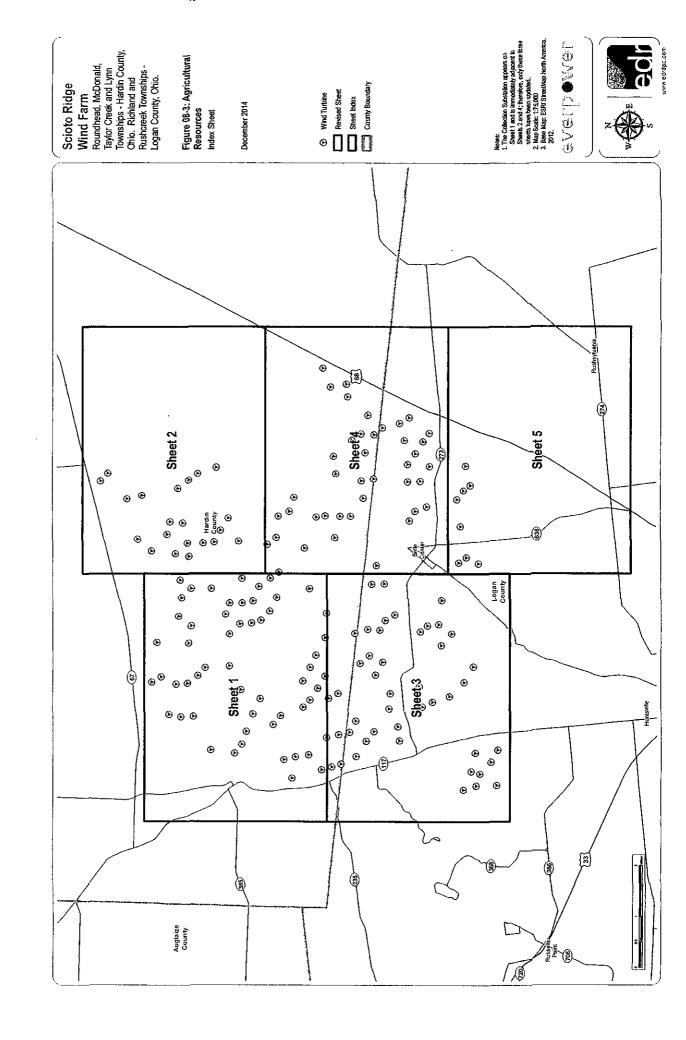
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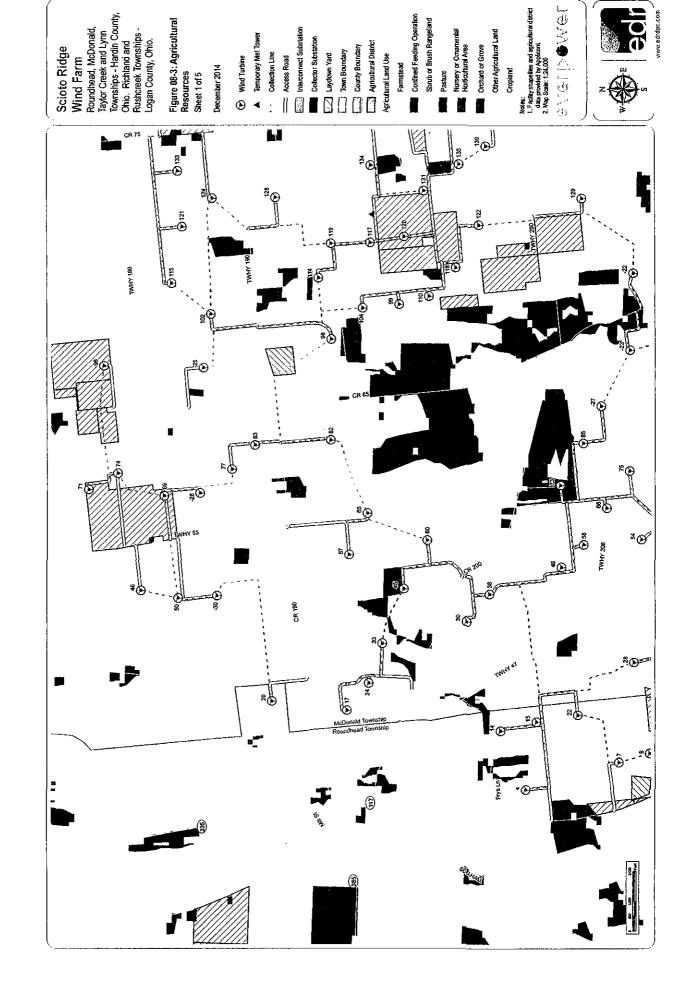
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in

Case No(s). 14-1557-EL-BGA

Summary: Testimony Prefiled Testimony of Jon White submitted by Assistant Attorney General John Jones on behalf of the Staff of the Ohio Power Siting Board. electronically filed by Kimberly L Keeton on behalf of Ohio Power Siting Board







Scioto Ridge Wind Farm

Roundhead, McDonald, Taylor Creek and Lynn Townships - Hardin County, Ohio. Richland and Rushcreek Townships -Logan County, Ohio.

Figure 08-3: Agricultural Resources Sheet 2 of 5

Wind Turbine

▲ Temporary Met Tower

· · · Collection Line

强强 Interconnect Substation

Collector Substation

ZZ Laydown Yard

Town Boundary

Agricultura District

Agricultural Land Use

Farmstead

Confined Feeding Operation

Shrub or Brush Rangeland

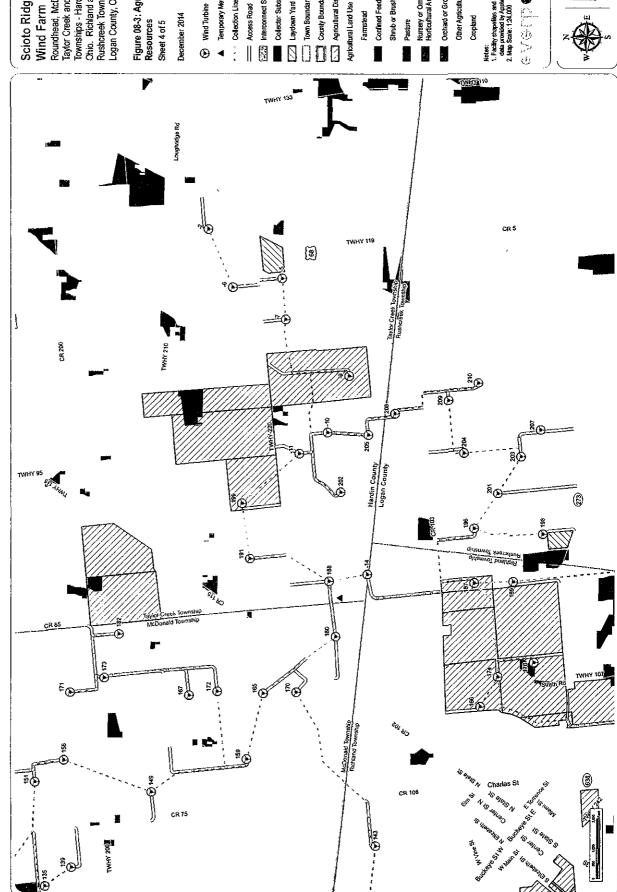
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Other Agricultural Land Orchard or Grove

STOPPONCE! Notes:
1, Facility shapefiles and agricultur
data provided by Applicant.
2. Map Scale: 1.24,000







Scioto Ridge
Wind Farm
Roundhead, McDonald,
Tayfor Creek and Lynn
Townships - Hardin County,
Ohio. Richland and
Rushcreek Townships Logan County, Ohio.

Figure 08-3: Agricultural Resources Sheet 4 of 5

Wind Turbine

Temporary Met Tower r v · Collection Line

Interconnect Substation

Collector Substation

ZZ Laydown Yard

County Boundary Town Soundary

Agricultural District

Agricultural Land Use

Confined Feeding Operation Farmslead

Shrub or Brush Rangetand

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Other Agricultural Land Orthard or Grove

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Notes:
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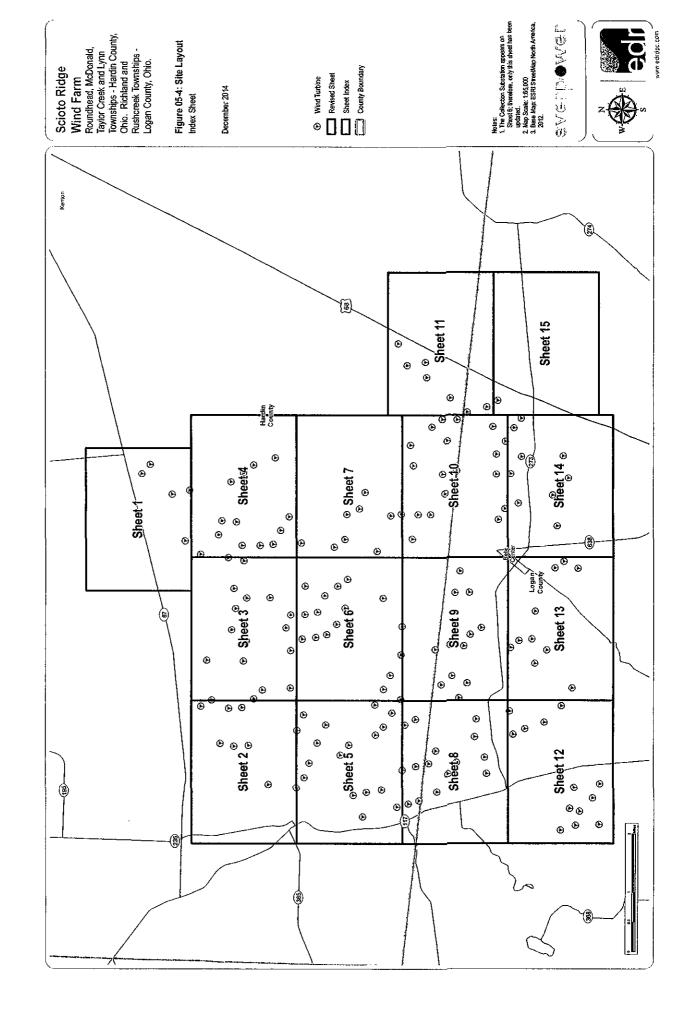
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in

Case No(s). 14-1557-EL-BGA

Summary: Notice Regarding Minor Shift in Proposed Location of Collector Substation - Figure 08-3 electronically filed by Mr. Michael J. Settineri on behalf of Hardin Wind LLC

. . .





Scioto Ridge Wind Farm

Roundhead, McDonald, Taylor Creek and Lynn Townships - Hardin County, Ohio. Richland and Rushcreek Townships -Logan County, Ohio.

Figure 05-4: Site Layout Sheet 6 of 15

December 2014

Supplement Layout

- Colection Line

Collector Substation

Amendment Layout Access Road

Collector Substation

Unchanged

Wind Turbine

-- Colection Line

Base Map: NAP 1-meter resolution ordoringgen, 2011.
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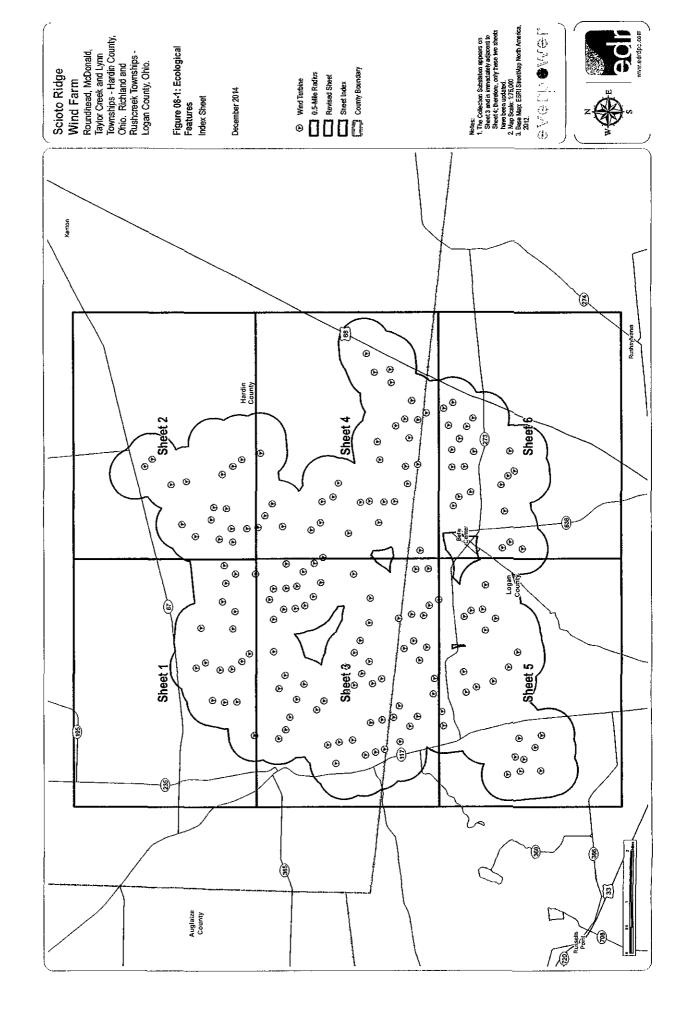
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Case No(s). 14-1557-EL-BGA

Summary: Notice Regarding Minor Shift in Proposed Location of Collector Substation - Figure 05-4 electronically filed by Mr. Michael J. Settineri on behalf of Hardin Wind LLC





Scioto Ridge
Wind Farm
Roundnead, McDonald,
Taylor Creek and Lynn
Townships - Hardin County,
Ohio. Richland and
Rushcreek Townships Logan County, Ohio.

Figure 08-1: Ecological Features Sheet 3 of 6

December 2014

- Wind Turbine
- Temporary Met Tower
- 7 . Collection Line Access Road

 - Collector Substation
 - ZZ Laydown Yard
- Defineated Stream/Wetland Ohio Wetland Inventor
 - 100-Year Floodplain

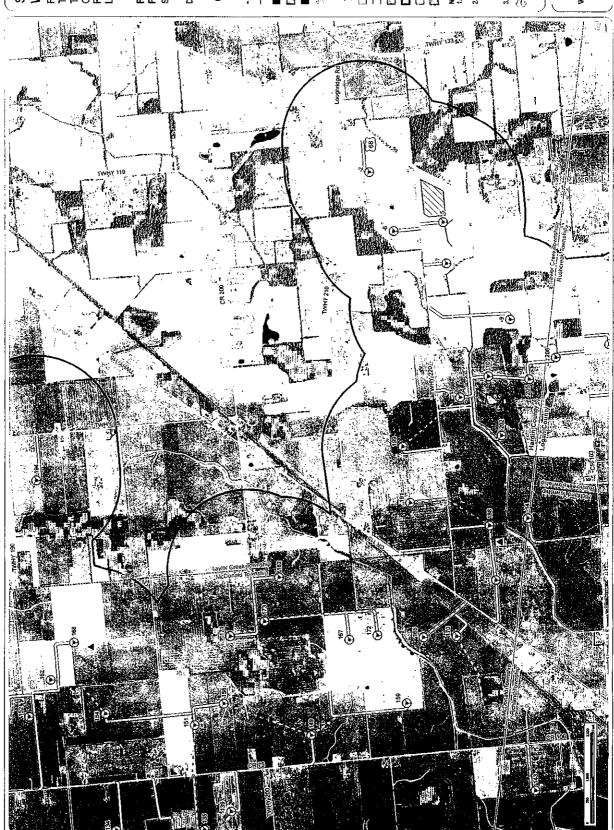
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 - - LocalPark
- O.5-Mile Radius
- Town Boundary
 County Boundary
- Notes:
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 2. Deimealed werbands and stream











Scioto Ridge Wind Farm

Roundhead, McDonald, Taylor Creek and Lynn Townships - Hardin County, Ohio. Richland and Rushcreek Townships -Logan County, Ohio.

Figure 08-1: Ecological Features Sheet 4 of 6

December 2014

- Wind Turbine
- Temporary Met Tower
- Collection Line

 - Access Road
- Collector Substation
- ZZ Laydown Yard
- Delineated Stream/Wetland
 - Ohio Wetland Invento
 - 100-Year Floodplain

 - Golf Course

 - Local Park

 - State Nature Preser
 - State Park
- 0.5-Mile Radius
 Town Boundary
 County Boundary

Notes:

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2. Deficiented wellshies and stemstry provided by Cantro ENTRIX. Facility shapiles provided by Applicant. Other data obtained from putilic sources by oil.

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in

Case No(s). 14-1557-EL-BGA

Summary: Notice Notice Regarding Minor Shift in Proposed Location of Collector Substation - Figure 08-1 electronically filed by Mr. Michael J. Settineri on behalf of Hardin Wind LLC



Vorys, Sater, Seymour and Pease LLP Legal Counsel 52 East Gay Street P.O. Box 1008 Columbus, Ohio 43216-1008

614.464.6400 | www.vorys.com

Founded 1909

Scott M. Guttman
Direct Dial (614) 464-6272
Direct Fax (614) 719-4871
Email smguttman@vorys.com

October 30, 2014

Ms. Barcy F. McNeal, Secretary Public Utilities Commission of Ohio 180 E. Broad St., 11th Floor Columbus, OH 43215-3793

Re:

OPSB Case No. 14-1557-EL-BGA

Hardin Wind LLC Proof of Publication

Dear Ms. McNeal:

Please find attached a copy of an affidavit and a newspaper tear sheet indicating that "Notice of Amendment to Major Utility Facility" was published on September 22, 2014 in *The Kenton Times*, a newspaper of general circulation in Hardin County, Ohio.

Thank you for your consideration.

Very truly yours

Scott M. Guttman

M. Cuthra

SMG/crm Enclosures

cc: All parties of Record

EXHIBIT

Co 4

Proof of Publication

The State of Ohio, Hardin County, ss:

Personally Appeared Before Me, a Notary

Public in and for said County, Jeff Barnes a representative of The Kenton Times, a news paper printed and in general circulation in the County and State aforesaid, who, after being sworn, deposeth and saith that the Advertisement, a true copy of which is hereunto annexted, was

published in the said paper for one (1) consecutive week from and after the 22nd day of September 2014.

Jeff Barnes, Publisher

Subscribed and sworn to me, this

Notary Public, Hardin County, Ohio

My commission expires June 27 Calle

Printers Fee: \$264.60

Net Due 15th of the month

NOTICE OF AMENDMENT TO MAJOR UTILITY **FACILITY**

Hardin Wind LLC has made a filing with the Ohio Power Siting Board in Case No. Case No. 14-1557-EL-BGA seeking to amend its certificate of environmental compatibility and public need issued on March 17, 2014 in Case No. 13-1177-EL-BGN to construct the Scioto Ridge Wind Farm, a wind-powered electric generation facility to be located in Hardin and Logan counties. The purpose of the new filing is to amend the certificate of environmental compatibility and public need to (i) shift the location of five turbines, one meteorological tower, ten access roads, and six collection lines, (ii) relocate the project collector substation, (iii) propose two new access roads and six new collection lines, and (iv) propose two new turbine models as turbines suitable for this project. More information may be obtained by writing to the offices of the Ohio Power Siting Board, 180 E. Broad Street, Columbus, Ohio 43215 or calling the Ohio Power Sitting Board at 1-866-270-6772. A copy of the filing is available at the Ohio Power Siting Board's main office at 180 E. Broad Street, 11th Floor, Columbus, Ohio 43215; the Knowlton Logan County District Library at 220 N. Main St., Bellefontaine, Ohio 43311; the Belle Center Library, 103 S. Elizabeth Street, Belle Center, Ohio 43310 and the Mary Lou Johnson-Hardin County District Library at 325 E. Columbus St., Kenton, Ohio 43326, or online on the Power Siting Board's website at https://dis.puc.state.oh.us/CaseRecord.aspx?Caseno=14-1557&link=DIVA.

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in

Case No(s), 14-1557-EL-BGA

Summary: Proof of Pub Proof of Publication electronically filed by Mr. Scott M Guttman on behalf of Hardin Wind LLC

Co. 6

BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application)
of Hardin Wind LLC to Amend) Case No. 14-1557-EL-BGA
its Certificate Issued in)
Case No. 13-1177-EL-BGN)

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

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.

O.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 five access roads, six collection lines and the collector substation — as well as the addition of two access roads and sevensix new collection lines. I will also discuss the deletion of five wind turbines

(25. 54. 62. 129 and 198) which were initially proposed to be shifted under the application. 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 as initially proposed in the application 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.

Since the date of filing my testimony. Hardin Wind has made a decision to drop turbines 25, 54, 62, 129 and 198 from the project along with the access road associated with each of the turbines. All collection line relocations and new collection line segments remain as proposed in the application with the exception of the short stretches of collection line to turbines 129, 62, 54 and 198 that are no longer needed.

- 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. As indicated above. Hardin Wind has elected to drop 5 turbines. Also, as I am familiar with noise modeling of wind turbine projects including the modeling for this project, the noise modeling performed by and the conclusions in the

direct testimony of Ken Kaliski of Resource Systems. Inc. (RSG) remain valid regardless that turbines are being dropped. Less turbines in the project means less operational noise impacts, so if anything, the noise modeling results would show less impact if the modeling was performed without the five dropped turbines.

Hardin Wind also confirmed in its application for this proceeding that the relocations of the turbines will not result in additional impacts from shadow flicker. That conclusion remains valid with the drop of the turbines. 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 presented in the application 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. Moreover, the dropping of the turbines will result in less shadow flicker. 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 as presented proposed 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 as initially proposed in Hardin Wind's application. 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 With the deletion of five turbines, five of the relocated access roads to each turbine (25, 54, 62, 129 and 198) are no longer required. As to the remaining access road relocations, the changes in access roads were made to accommodate landowner requests, turbine shifts and the new collector substation site. The specific details on the remaining relocated access roads and the two new access roads are stated at pages 13 to 14 of the application. Overall, the changes in the access road shifts design including the deletion of the access roads for the dropped turbines will 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?
 - heen eliminated. The Elsassers raised concerns in their motion to intervene regarding the use of pesticides on thea nearby access road, going to turbine 129, 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 utilizingtheir farm ground for organic farming purposes. This avoids The deletion of turbine 129 means that there will be no access road on the property (although an underground collection line will remain as proposed in the application) and eliminates 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 field. The turbine deletion also eliminates any concerns that the access road will lead to damage to the new drainage tile referenced in the Elsassers' petition to intervene. While the installation of access roadsthe substation 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.
 - The details on each collection line change are listed at pages 14 to 15 of the application, and none of the collection lines are changing today as a result of the dropping of the five turbines with the exception of the short segments of collection line connecting to turbines 129, 62, 54 and 198. 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. Note, although the Staff report states that seven new collection line segments are being added. Hardin Wind confirmed with Staff that the difference in count between the application (6 new collection line segments) and the Staff report (7 new collection line segments) is simply a result of Staff of counting one section of collection line as two segments, so there is no change in the collection line design proposed in the application to what Staff has recommended approval of in its Staff report. 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-, as supplemented by the December 12, 2014 Notice Regarding Minor Shift in Proposed Location of Collector Substation and my testimony today regarding the decision to drop wind turbines 25, 54, 62, 129 and 198,
- 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?
 - A.18 I recommend the Ohio Power Siting Board approve Hardin Wind's application as presented including the relocation of the project substation described in the December 12.

 2014 Notice Regarding Minor Shift in Proposed Location of Collector Substation.
- Q.19. Does this conclude your direct testimony?
 - A.19 Yes.

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The following exhibit(s) were prefiled and can be located with the pleadings:

Exhibits	Date Filed
COMPANY EXHIBIT 2	9/11/14
- Application to Amend the Hardin Wind LLC Certificate	
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