

**BEFORE
THE OHIO POWER SITING BOARD**

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

**HARDIN WIND LLC'S MEMORANDUM CONTRA
TO THE PETITION FOR LEAVE TO INTERVENE BY JAMES RUDOLPH**

I. INTRODUCTION

Petitioner James Rudolph (the "Petitioner") seeks leave to intervene in Case No. 14-1557-EL-BGA, claiming the proposed wind turbine models "raise additional questions regarding their impact on wild life, surrounding landscape, safety, noise levels, shadow flicker, and setbacks, to name a few." As a concerned "homeowner in the footprint of the wind farm," Petitioner claims an interest in ensuring the new turbine models satisfy Ohio Revised Code § 4906.10's criteria to receive proper certification. Petitioner also seeks to re-litigate the necessity of the 172 turbines authorized by the Certificate and questions why new turbines with less generation capacity should be permitted. Petitioner, however, lives well outside of the project's "footprint" and utilization of the new turbine models would result in less cumulative impact than what was studied in the Certificate. With these facts, Petitioner cannot show good cause justifying his intervention in this proceeding.

II. BACKGROUND

Petitioner owns two residences, a lake house situated on the eastern shore of Indian Lake (the "Lake House") in Stokes Township and a home near Lima, Ohio (the "Lima Residence"). On March 17, 2014, the Ohio Power Siting Board (the "Board") granted Hardin Wind LLC ("Hardin Wind"), a Certificate of Environmental Capability and Public Need to construct a wind-

powered electric generating facility in Case No. 13-1177-EL-BGN (the "Certificate"). The Certificate authorized Hardin Wind to construct a wind-powered electric generating facility consisting of 172 wind-powered electric turbines, along with access roads, an electrical interconnect, construction staging areas, operations and maintenance facilities, and a collection substation, all to be located in Hardin County and Logan County, Ohio and known as the Scioto Ridge Wind Farm.

As certificated, Hardin Wind is authorized to utilize eight different wind turbine models, the tallest being 492 feet in total height. As certificated, the project boundary is more than 2 miles from Petitioner's Lake House and the nearest wind turbine is over 2.5 miles from the Petitioner's Lake House. Further, Petitioner's Lima Residence is over 20 miles from the project boundary and nearest turbine. On April 16, 2014, Petitioner filed a motion to intervene in the Certificate proceeding. Petitioner's motion to intervene was subsequently denied on May 19, 2014 by Entry on Rehearing in Case No. 13-1177-EL-BGN.

On September 12, 2014, Hardin Wind filed an application to amend the Certificate, Case No. 14-1557-EL-BGA (the "Amendment"). The Amendment improves the overall project design by adding six new collection lines, shifting six collection lines, relocating ten access roads, adding two new access roads, relocating one of the four permitted met towers, slightly shifting five turbine locations, and relocating the project collector substation. The Amendment also proposed for consideration two new turbine models, those being the Suzlon S111 with a total height of 479 feet and the General Electric GE103 with a total height of 485 feet. Both new turbine models are shorter than the tallest turbine models initially certificated. (*See* Amendment application at pages 6 and 16 attached as Exhibit B). In fact, both new models are shorter than seven of the eight certificated models. (*See In re Hardin Wind LLC*, June 28, 2013 application at

pages 11-12, attached as Exhibit C). On September 22, 2014, Petitioner filed a Petition to Intervene in this proceeding.

III. ARGUMENT

A. Standard of Review

Petitioner's request for intervention is governed by Rule 4906-7-04 of the Ohio Administrative Code. Under that rule, Petitioner must show good cause for the intervention. OAC Rule 4906-7-04(B). In considering whether good cause exists, the Board or the administrative law judge may consider (a) the nature and extent of Petitioner's interest, (b) the extent to which the Petitioner's interest is represented by existing parties, (c) the Petitioner's potential contribution to a just and expeditious resolution of the issues involved in the proceeding, and (d) whether granting the requested intervention would unduly delay the proceeding or unjustly prejudice an existing party. *Id.*

B. Intervention is not Warranted

1. The nature and extent of Petitioner's interest do not support intervention.

Petitioner resides well outside of the project area. His Lake House, in which he resides seasonally, is over 2 miles from the project boundary and over 2.5 miles from the nearest turbine. See Exhibit A-1, attached. Petitioner's Lima Residence is over 20 miles from the project boundary. See Exhibit A-2, attached. None of the facility modifications in the Amendment will adversely impact Petitioner's Lake House or Lima Residence; the properties are simply too far away. Moreover, utilizing the Amendment's newly proposed turbine models would decrease the project's total impact from what was approved in the Certificate. On these facts alone, intervention should be denied as Petitioner has no interest in the Amendment to the Certificate that warrants his participation in this proceeding.

Petitioner claims intervention is necessary because the Amendment further impacts the environment, landscape, safety, noise levels, shadow flicker and setbacks, and that such further impact must be reviewed by the Board. This argument is without merit. The certificated project's total impact was modeled utilizing the largest wind turbine model and the turbine with the highest sound power output. The Certificate application essentially analyzed the project's overall impact under a worst case scenario. While the new turbine models have similar operating characteristics to what was analyzed in the Certificate, the new models are shorter in height and have shorter blade lengths. (See Amendment application at pages 6 and 16 attached as Exhibit B; *In re Hardin Wind LLC*, June 28, 2013 application at pages 11-12, attached as Exhibit C). The turbines also will not increase sound levels. (See Amendment application at pages 19-20 attached as Exhibit D). Utilizing these shorter turbines will also decrease setback requirements and reduce the project's environmental and overall visual impact from that considered in the Certificate. The Amendment raises no new issues with regard to the project's overall impact.

Petitioner's own statements show that he is not interested in the Amendment, but rather seeks intervention to re-litigate the Certificate. Petitioner states that "Hardin Wind has reopened the Board's review of the necessity" of certain turbines plotted throughout the project area. He claims Hardin Wind "may be targeting the maximum number of turbines (172) by using" the new turbine models with "significant[ly] lower capacity than the highest capacity turbines that have already been approved by the Board." The Board, however, has approved Hardin Wind's Certificate and allowed it to utilize any of the approved turbines, including the GE 100 – 1.7 MW turbine, which has the same capacity as the lowest capacity of the two proposed turbines, the GE 103 – 1.7 MW turbine. (See Exhibit C, page 6 of the Amendment Application.) Thus, Petitioner's concern that Hardin Wind may use all 172 turbine locations is moot because the

Certificate already allows Hardin Wind to utilize lower capacity turbines at all 172 locations. Accordingly, because the Board previously authorized Hardin Wind to construct up to 172 wind turbines, Petitioner should not be permitted to re-litigate that issue via intervention in this unrelated matter.

2. Even if Petitioner's interest was valid, it is represented by existing parties.

Petitioner argues that his interests will not be represented by existing parties. As noted above, Petitioner has no real interest in this Amendment proceeding. Moreover, Staff's review of the Amendment provides sufficient protection that Petitioner's claims (*i.e.*, that there will be additional "impact on wild life, surrounding landscape, safety, noise levels, shadow flicker, and setbacks, to name a few") will be represented. These facts do not support intervention.

3. Petitioner will not contribute to a just and expeditious resolution.

Petitioner's involvement in this proceeding is unnecessary. He has no interest in the Amendment that warrants intervention, and the Board can arrive at a just resolution without Petitioner's involvement. Further, Petitioner's opposition towards the project is well documented and his involvement will only cause delay. These facts do not support intervention.

4. Granting Petitioner's intervention in this Amendment will unduly delay the proceeding and cause unjust prejudice to Hardin Wind.

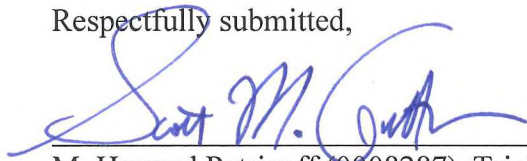
Petitioner's participation in this Amendment proceeding will cause unnecessary delay and prejudice to Hardin Wind. Petitioner previously sought intervention in the Certificate proceeding and was denied. Nevertheless, he again seeks intervention opposing Hardin Wind's plan to build a renewable energy facility. Petitioner's intervention in this proceeding will unduly delay the proceeding given the likely discovery that will occur, along with opposition by Petition at the hearing. Considering Petitioner has no real interest in the Amendment, intervention will cause Hardin Wind to suffer unjust prejudice in the form of needless litigation and the likely

administrative and Supreme Court appeal to follow. These facts do not support Petitioner's intervention in this proceeding.

IV. CONCLUSION

Petitioner has no interest in the Amendment and considering that he does not reside in any of the townships within the project area, should not be allowed to intervene in this proceeding. The Amendment proceeding includes the use of quieter and smaller turbines, and reduces the project's transmission line by at least two miles. The fact that Petitioner raises concerns about an Amendment that improves the project's design reinforces why the Board should deny his request to intervene in this proceeding.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served this 7th day of October 2014, via email on the parties listed below.


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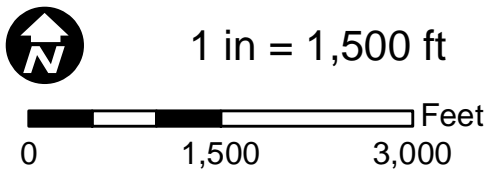


Scott M. Guttman



DISTANCE TO
RUDOLPH RESIDENCE
Scioto Ridge, Hardin &
Logan Co, OH

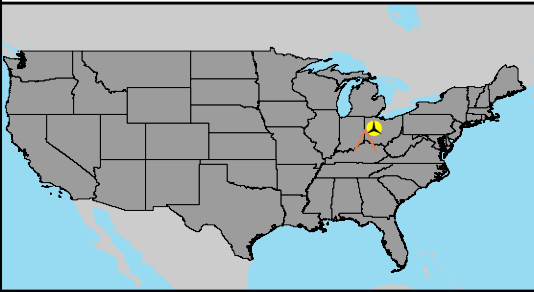
- James Rudolph Residence
- Distance to Nearest Turbine
- Distance to Project Boundary
- Project Area Boundary
- Project Infrastructure**
 - Turbine Layout
 - Collection Line
 - Access Roads



Map created by Everpower Wind Holdings, Inc. on
September 23, 2014
Using ESRI ArcGIS Desktop Standard 10.2.1

Projected Coordinate System:
NAD 1983 UTM Zone 17 North

Information on this map is provided for
purposes of discussion and visualization only.
Sources:
RSG, EverPower



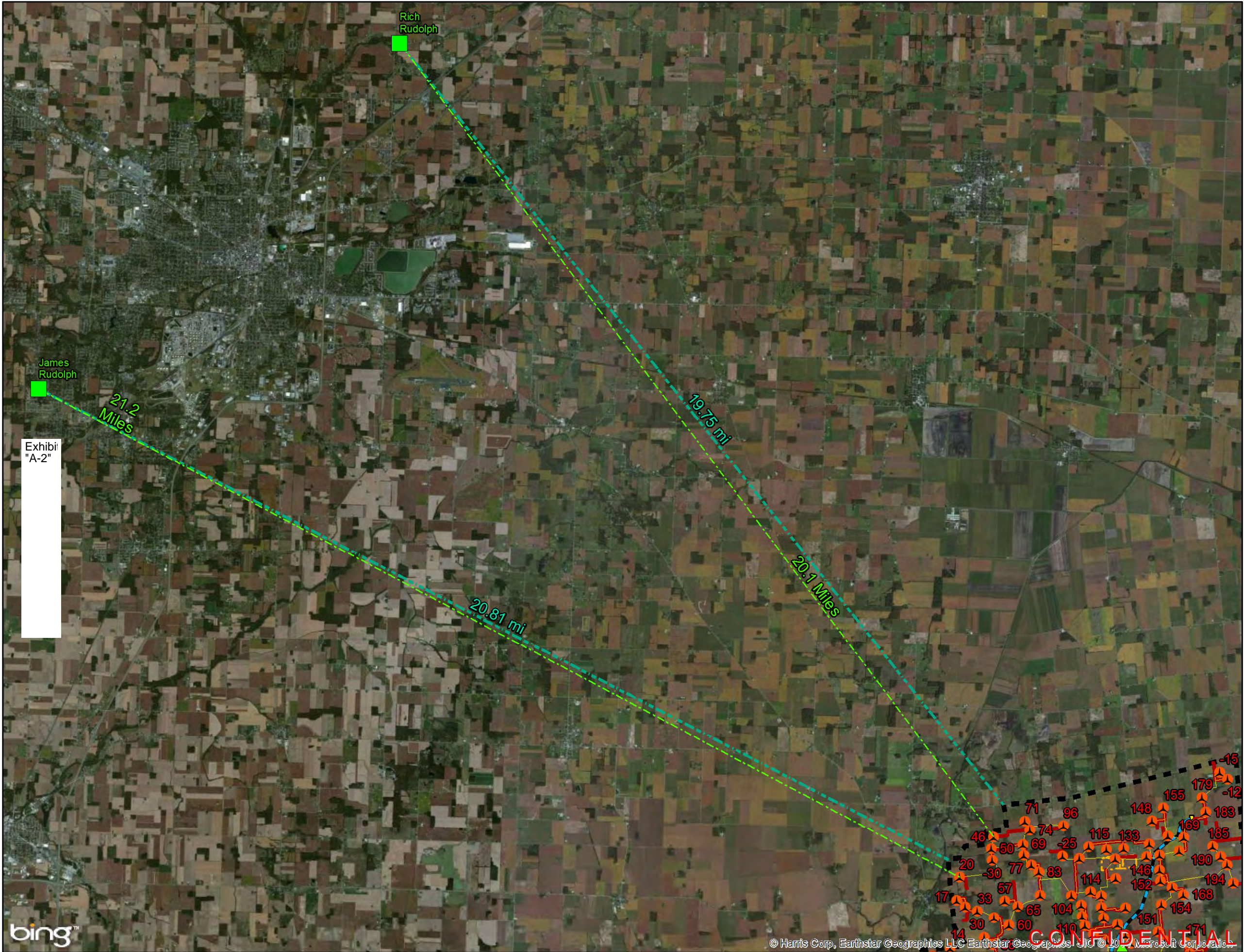
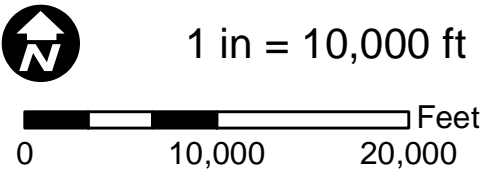


Exhibit
"A-2"



DISTANCE TO
RUDOLPH RESIDENCES
Scioto Ridge, Hardin &
Logan Co, OH

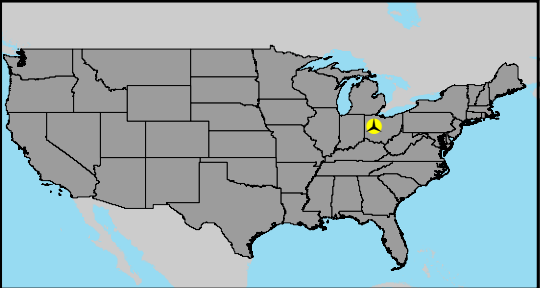
- RudolphResidences_20140923
- Distance to Nearest Wind Turbine
- Distance to Project Boundary
- Project Area Boundary



Map created by Everpower Wind Holdings, Inc. on
September 23, 2014
Using ESRI ArcGIS Desktop Standard 10.2.1

Projected Coordinate System:
NAD 1983 UTM Zone 17 North

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purposes of discussion and visualization only.
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CONFIDENTIAL

4906-17-03 PROJECT DESCRIPTION AND SCHEDULE**(A) DETAILED PROJECT DESCRIPTION**

The Applicant is permitted to construct, own, and operate a wind-powered electric generation facility, along with a transmission line and substation associated with the Facility. Due to landowner preferences, turbine shifts, and the relocation of the collector substation, the Applicant is proposing revisions and additions to the collection line system. Additionally, ten access roads are being relocated and two new access roads are being constructed for the reasons discussed in Section 4906-17-02(A)(2). Figure 05-4 has been updated to show the revised layout for the Facility.

(1) Description Details for the Project**(a) Type of Turbine**

Due to market factors such as availability and cost, a specific turbine model has not yet been selected for the Facility. A number of turbine models that were determined to be suitable for this site were described in the original Application. Two additional turbine models are under consideration in this Amendment: the Suzlon S111 (2.1 megawatts ["MW"]) and the GE103 (1.7 MW). Both have shorter rotor diameters and are less in total height than the maximum rotor diameter and maximum total height of the currently certificated turbines. Information about these turbines is included in Exhibit A of this Amendment. Table 03-1 presents the dimensions in feet and meters for each of the new models.

Table 03-1. Approximate Turbine Dimensions for New Models under Consideration

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Total Height
Suzlon S111	2.1 MW	90 meters (295 feet)	111 meters (364 feet)	146 meters (479 feet)
General Electric GE103	1.7 MW	96 meters (315 feet)	103 meters (338 feet)	148 meters (485 feet)

As previously mentioned, the Facility evaluated in the original Application consisted of up to 176 wind turbine sites (four of which were subsequently eliminated). The Certificate granted by the OPSB allows construction of up to 172 wind turbines. The actual number of turbines constructed will depend on the capacity of the turbine model selected, in order to reach a total generating capacity of 300 MW. If the 1.7 MW GE103 is selected, it is expected that up to 172 turbines will be constructed; if the 2.1 MW Suzlon S111 is selected, it is expected that up to 142 turbines will be constructed. As committed to in

(a) *Dimensions*

As described in 4906-17-03(A)(1)(a), this Amendment introduces two additional turbine models under consideration for the Facility. The dimensions of these turbines (see Table 03-1 of this Amendment) are within the range of dimensions presented in Table 03-1 of the original Application. The tallest hub height under consideration for the Facility is still 328 feet (100 meters), found on the REpower MM100 and Gamesa G97; the largest rotor diameter under consideration for the Facility is still 400 feet (122 meters), found on the REpower M122. The maximum total turbine height (i.e., height at the highest blade tip position) of all the models under consideration is still 492 feet (150 meters), which is associated with the MM100, M122, N117, V110, V117 and G114 models.

The dimensions of the O&M facility, collector substation, and meteorological towers remain as described in the original Application.

(b) *Construction Materials*

Construction materials are as described in the original Application.

(c) *Color and Texture*

Color and texture are as described in the original Application.

(d) *Photographic Interpretation or Pictorial Sketches*

The appearance of the Facility will remain as described in the original Application. The five minor turbine shifts, collector substation relocation, and the associated re-alignment of access roads and collection lines proposed in this Amendment will not change the visual character of the area or general visibility of the Facility when compared to the layout presented in the original Application. The proposed changes may be noticeable in some locations in the Project Area, particularly in the immediate vicinity of the proposed changes. For example, several of the access roads have been re-configured to be located further away from homes, which would reduce visual impact to those residents.

(e) *Unusual Features*

No unusual features are expected, as all Facility components are consistent with typical wind energy facilities. This remains as described in the original Application.

4906-17-03 PROJECT DESCRIPTION AND SCHEDULE**(A) DETAILED PROJECT DESCRIPTION****(1) Description Details for the Project**

The descriptions provided below apply to the proposed Project Area, as defined in OAC Section 4906-17-01(B)(1). No alternative Project Areas are proposed. In Case No. 08-1024-EL-ORD, Opinion and Order, October 28, 2008, p.21 at Finding 56, the OPSB determined that an applicant is not required to provide alternative sites for a proposed wind farm.

(a) Type of Turbine

As depicted in Exhibit N, each wind turbine consists of three major components: the tower, the nacelle, and the rotor. The nacelle sits atop the tower, and the rotor hub is mounted to the front of the nacelle. "Hub height" is the height of the center of the rotor, as measured from the base of the tower (excluding the subsurface foundation) to the top of the tower, while total turbine height is the height of the entire turbine, as measured from the tower base to the tip of the highest blade when rotated to the highest position. Facility construction is not scheduled to begin until 2014, and due to market factors such as availability and cost, a specific turbine model has not yet been selected for the Facility. However, turbine models that have been determined to be suitable for this site include the REpower MM100 (2.05 MW), Repower M122 (3.0 MW), Nordex N117 (2.4 MW), Vestas V110 (2.0 MW), Vestas V117 (3.3 MW), Gamesa G97 (2.0 MW), Gamesa G114 (2.0 MW), and General Electric GE100 (1.7 MW). Table 03-1 presents the dimensions in feet and meters for each of these models.

Table 03-1. Approximate Turbine Dimensions by Model

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Total Height
REpower MM100	2.05 MW	100 meters (328 feet)	100 meters (328 feet)	150 meters (492 feet)
REpower M122	3.0 MW	89 meters (292 feet)	122 meters (400 feet)	150 meters (492 feet)
Nordex N117	2.4 MW	91 meters (299 feet)	117 meters (384 feet)	150 meters (492 feet)
Vestas V110	2.0 MW	95 meters (312 feet)	110 meters (361 feet)	150 meters (492 feet)
Vestas V117	3.3 MW	91 meters (299 feet)	117 meters (384 feet)	150 meters (492 feet)
Gamesa G97	2.0 MW	100 meters (328 feet)	97 meters (318 feet)	149 meters (489 feet)

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Total Height
Gamesa G114	2.0 MW	93 meters (305 feet)	114 meters (374 feet)	150 meters (492 feet)
General Electric GE100	1.7 MW	96 meters (315 feet)	100 meters (328 feet)	146 meters (479 feet)

These models represent the tallest class of turbines under consideration at the time of this Application. Additional turbine detail is provided below in Section 4906-17-03(A)(2) of this Application.

As previously mentioned, the Facility evaluated in this Application consists of up to 176 wind turbine sites. The actual number of turbines constructed will depend on the capacity of the turbine model selected, in order to reach a total generating capacity of 300 MW. If the 1.7 MW GE100 is selected, it is expected that up to 176 turbines will be constructed; if the 2.0 MW Vestas V110, Gamesa G97, or Gamesa G114 is selected, it is expected that up to 150 turbines will be constructed; if the 2.05 MW REpower MM100 is selected, it is expected that up to 146 turbines will be constructed; if the 2.4 MW Nordex N117 is selected, it is expected that up to 125 turbines will be constructed; if the 3.0 MW REpower M122 is selected, it is expected that up to 100 turbines will be constructed; if the 3.3 MW Vestas V117 is selected, it is expected that up to 91 turbines will be constructed.

Preliminary analysis indicates that the turbines will have capacity factors of 30-38%. Accounting for the total generating capacity of 300 MW, anticipated operating times, and turbine capacity factors, the Facility will generate approximately 788,400 to 998,640 MWh of electricity each year. It is expected that the Applicant will develop, construct, own, and operate the Facility.

(b) *Land Area Requirements*

The Facility is located in Hardin County (within Roundhead, McDonald, Lynn, and Taylor Creek Townships) and Logan County (within Richland and Rushcreek Townships). The Facility is located within approximately 17,000 acres of leased private land. However, the Facility footprint will occupy a much smaller area. Table 03-2 presents the estimated footprint for each Facility component for the Project, based on the Applicant's experience with the construction and operation of other wind power facilities. The construction impacts presented throughout this Application were calculated using these assumptions.

4906-17-08 SOCIAL AND ECOLOGICAL DATA

(A) HEALTH AND SAFETY

(1) Demographic

Demographic information remains as presented in the original Application.

(2) Noise

Resource Systems Group, Inc. ("RSG") was retained by the Applicant to evaluate potential noise impacts from the proposed Facility (see Exhibit P of the original Application). To ensure that the proposed turbine shifts described in this Amendment do not cause sound levels at non-participating residences to exceed the Facility's 45 dBA (decibels, A-weighted) design goal, RSG performed modelling of the revised layout (see Exhibit B, attached to this Amendment). Background sound modeling remains as described in the original Application.

(a) *Construction Noise Levels*

Construction noise levels remain as described in the original Application.

(b) *Operational Noise Levels*

(i) *Assessment Criteria*

Assessment criteria remain as described in the original Application: the Applicant has voluntarily adopted a design goal of 45 dBA. In addition, the OPSB Staff, the Ohio Farm Bureau Federation, and the Applicant stipulated to, and the OPSB adopted, a condition regarding noise such that the facility noise contribution does not result in noise levels at the exterior of any currently existing non-participating sensitive receptor that exceed the project area ambient nighttime sound level of 42 dBA by 5 dBA. This stipulation became part of the Certificate granted March 17, 2014.

(ii) *Turbine Sound Level*

Since the specific make and model of turbine to be installed in the Project Area has not yet been determined, the sound characteristics of all turbines under consideration were reviewed. The Gamesa G97 model was used to model Facility noise in the original Application because it has the highest sound power level of the models under consideration at that time. The sound power level of the Gamesa G97 is 105.8 ± 2 dBA for wind speeds of 7 m/s and greater (measured at the 10-meter anemometer height). It should be noted that the GE103 turbine, now under consideration for the Facility as described above in Section 4906-17-03(A)(1)(a), has a slightly less maximum sound

power level than the Gamesa G97 with the addition of Low Noise Trailing Edge technology. Without the technology, the GE103 turbine has a slightly higher maximum sound power output than the Gamesa G97 turbine. However, for consistency in comparison between the original Application and this Amendment, the Gamesa G97 model was used to in the updated modeling of Facility noise (see Exhibit B of this Amendment) to allow for a direct comparison between the original Application layout and the layout proposed in this Amendment. Should the GE103 turbine ultimately be selected for the Facility, the Low Noise Trailing Edge technology will be employed to limit the maximum sound level to the 105.8 dBA level modeled herein. The second additional turbine being proposed in this Petition, the Suzlon S111, has a maximum sound power output less than the Gamesa G97 turbine (105 dBA).

(iii) Noise Modeling Methodology and Assumptions

Updated sound propagation modeling was performed according to the International Standards Organization ISO 9613-2 standard with Datakustik's Cadna/A modeling package. Updated modeling of turbine sound levels was performed with the same parameters and same methodology as is described in the original Application. The only difference in methodology is that sound from the collector substation has been included in the revised modeling. Because transformer sound pressure levels are louder when fans are running, sound emissions for the substation were modeled both with the fans off (ONAN) and the fans on (ONAF). See Exhibit B of this Amendment for additional information about transformer noise.

(iv) Model Results

Modeling results are shown as a sound contour map in Figures 2 and 3 in Exhibit B of this Amendment. The colored lines emanating from the wind turbines are color-coded isolines, where red represents the highest sound level and blue represents the lowest. The Facility design goal of 45 dBA is depicted in orange. Turbines that have been modeled in Noise Reduced Operations (NRO) mode are indicated by yellow, orange, or red symbols for sound emissions of 104 dBA, 103 dBA, and 102 dBA respectively. Full sound power for the modeled Gamesa G97 turbine is 105.8 dBA; these turbines are indicated by grey turbine symbols.

With the transformer under ONAN cooling, there are two non-participating residences that exceed 45 dBA. These residences are the exact same residences that exceeded 45 dBA in the permitted layout, submitted under the original Application. In both locations, this is due to sound level contributions from the Invenergy Hardin Wind turbine array. Sound emissions from only the Scioto

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in

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

Summary: Memorandum Hardin Wind LLC's Memorandum Contra to the Petition for Leave to Intervene by James Rudolph electronically filed by Mr. Scott M Guttman on behalf of Hardin Wind LLC