

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

**In the Matter of the Application of Hardin Wind, LLC     )**  
**for a Second Amendment to its Certificate to Install and     )**  
**Operate a Wind-Powered Electric Generation Facility     )** **16-0725-EL-BGA**  
**in Hardin and Logan Counties, Ohio.                             )**

Members of the Board:

Chairman, Public Utilities Commission	Ohio House of Representatives
Director, Development Services Agency	Ohio Senate
Director, Department of Health	
Director, Department of Agriculture	
Director, Environmental Protection Agency	
Director, Department of Natural Resources	
Public Member	

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

## OPSB STAFF REPORT OF INVESTIGATION

**Case Number:** 16-0725-EL-BGA (amends 13-1177-EL-BGN and 14-1557-EL-BGA)  
**Project Name:** Scioto Ridge Wind Farm  
**Project Location:** Hardin and Logan counties  
**Applicant:** Hardin Wind, LLC  
**Application Filing Date:** April 8, 2016  
**Report Date:** May 3, 2016  
**Applicant's Waiver Requests:** one  
**Staff Assigned:** J. Whitis, A. Conway, M. Bellamy

### Application Description

In case number 13-1177-EL-BGN, the Ohio Power Siting Board (Board) authorized Hardin Wind, LLC (Applicant) to construct, operate, and maintain a wind-powered electric generation facility consisting of up to 105 wind turbines, with a maximum nameplate capacity of 300 megawatts (MW). The turbine manufacturers and types approved for this project are listed as follows, with the capacity of each model detailed in the subsequent parenthetical: REpower MM100 (2.05MW) and M122 (3.0 MW); the Nordex N117 (2.4 MW); the Vestas V110 (2.0 MW) and V117 (3.3 MW); the Gamesa G97 (2.0 MW) and G114 (2.0 MW); the General Electric GE100 (1.7 MW) and GE103 (1.7 MW); and the Suzlon S111 (2.1 MW).

In this application, the Applicant proposes a capacity increase to the Gamesa G114 turbine model from 2.0 MW to 2.5 MW. The turbine model capacity increase is the result of technological improvements to the turbine, including the gearbox. The G114 turbine's dimensions, including rotor diameter and hub height, remain the same. Further, the range of potential blade velocities and cut-out speeds for both the certificated and the proposed turbine model are the same, thereby resulting in similar probabilities for blade shear and ice throw associated with this turbine model at both a 2.0 MW and a 2.5 MW capacity. The Applicant is not proposing to revise any turbine locations through this application. The Applicant further states that the Gamesa G114 (2.5 MW) has the same operational maximum sound power output as the 2.0 MW version. The overall maximum nameplate capacity of 300 MW approved in case number 13-1177-EL-BGN would not change.

On April 8, 2016, Hardin Wind, LLC filed a motion for waiver from Rule 4906-3-011(B)(2)(a)(iii) of the Ohio Administrative Code. The Applicant proposed to provide notice by publication rather than individual mailings to reduce expenses associated with a mass mailing. On April 25, 2016, an Administrative Law Judge granted the motion for waiver.

### Application Review

#### *High Winds*

Wind turbines are designed to withstand high wind speeds. The Gamesa G114 (2.5 MW) proposed by the Applicant for this project, is designed to meet the standards of the International

Electrotechnical Commission (IEC)-61400 series. The IEC is an organization that prepares and publishes international standards for all electrical, electronic, and related technologies including wind turbines. The Gamesa G114 (2.5 MW) is a Class IIa wind turbine designed to withstand at least annual average wind speeds of up to 8.5 meters/second (m/s) or (19 mph) and extreme 10-minute average wind speeds of up to 42.5 m/s (95 mph). Both the 2.0 MW and the 2.5 MW version of the Gamesa G114 turbine model are designed to automatically shut down and stop producing energy at their cut-out speed, which is 25 m/s (56 mph) for both versions.

The Applicant states that the turbines have the following safety features in the event of high winds: a supervisory control and data acquisition control system to monitor weather, anemometers on each turbine and two independent braking systems. Installing and utilizing these safety control mechanisms minimizes potential impacts from high winds.

The conditions of the original Certificate adequately address potential issues related to high wind speeds.

#### *Safety Manual*

Staff reviewed the safety manual for the Gamesa G114 (2.0 MW). Following its discussions with the turbine manufacturer, the Applicant anticipates the safety manual for the Gamesa G114 (2.5 MW) turbine model to be the same as or substantially similar to the safety manual for the Gamesa G114 (2.0 MW) turbine model. The Applicant reiterated that it will adhere to Condition 4 from the Certificate issued in case number 13-1177-EL-BGN and submit the safety manual for the turbine selected for the project to Staff prior to construction.

Staff finds that Conditions 1, 4, and 17 of the original Certificate adequately address safety considerations. Staff also finds that the Applicant's request to increase the capacity from 2.0 MW to 2.5 MW for the previously certificated Gamesa G114 turbine model does not result in a material increase in environmental impact when compared to the original project.

#### **Conclusion**

Staff's review of the Applicant's request focuses solely on the potential impacts associated with the increase in capacity from 2.0 MW to 2.5 MW for the previously certificated Gamesa G114 turbine model and whether this request would impact any of the stipulated conditions or result in a material increase in environmental impact when compared to the original project.

Upon review, the Application establishes that the increase in capacity from 2.0 MW to 2.5 MW for the Gamesa G114 would not result in any change to the turbine's dimensions including rotor diameter and hub height. With no change to turbine dimensions and blade velocities, the potential for impacts such as shadow flicker and ice throw would remain unchanged. Because the Gamesa G114 (2.5 MW) would have essentially the same operational sound output levels as the 2.0 MW version, noise impacts would not change.

Staff finds, if the Applicant increased the capacity from 2.0 MW to 2.5 MW for the previously certificated Gamesa G114 turbine model, the original conditions of the certificate are adequate to ensure that adverse environmental impacts would continue to be minimized for this project.

**Recommended Findings**

Staff recommends that the Board approve the application, provided that the certificate continues to include all conditions specified in the Opinion, Order, and Certificate for case number 13-1177-EL-BGN.

**Recommended Condition**

1. The Applicant shall adhere to all conditions of the Opinion, Order, and Certificate for the Scioto Ridge Wind Farm in case number 13-1177-EL-BGN.

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**5/3/2016 3:18:33 PM**

**in**

**Case No(s). 16-0725-EL-BGA**

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