

Ohio Power Siting Board

Staff Investigation Report and Recommendation

Case No.: 11-1995-EL-BGA

Project: Amendment to Blue Creek Wind Farm Certificate of Environmental Compatibility and Public Need

Applicant: Blue Creek Wind Farm, LLC

Report Date: 17 June 2011

Waiver Requests: None

Inspection Date(s): 6 May 2011

Staff Assigned: J. O'Dell

Summary of Staff Recommendations (see report text for discussion):

Application: ☐ Approval ☐ Disapproval ☒ Approval with Conditions
Waiver: ☐ Approval ☐ Disapproval ☒ Not Applicable

Project Amendment Description

The proposed project amendment involves the construction and operation of eight additional Gamesa G-90 model 2.0 Megawatt (MW) wind turbines at the Blue Creek wind farm. Blue Creek wind farm is currently under construction in accordance with the Opinion, Order, and Certificate (Case No. 09-1066-EL-BGN) that was issued on August 23, 2010. The locations of these eight additional turbines and associated facilities are shown on the map in this report.

The turbines are within the same project area that has been extensively studied by the Applicant and investigated by OPSB staff during the original application process. Also, the Applicant will construct and operate these turbines in the same manner as the 159 turbines that are currently being built in accordance with the August 23, 2010 certificate.

This amendment increases the total number of wind turbines at the Blue Creek wind farm project to 167. The amended project would have an aggregate generating capacity of up to 334 MW with an annual production between 520,000 to 1,170,000 megawatt hours. The Applicant's August 23, 2010 certificate indicates it plans to build up to 350 MW of installed generation. Turbine units installed beyond the 167 designated locations within the project boundaries would require the filing of an additional amendment to the application.

Project Area

The amended project area covers the same 40,500 acres located in Blue Creek, and Latty townships in Paulding County and Tully, Union, and Hoaglin townships in Van Wert County that were identified in the original certificate. The facilities in the amended project area will be located on approximately 24,900 acres of leased private land with approximately 200 participating landowners. The original certificate identified 17,000 acres of leased private land and 106 participating landowners. The locations of these eight additional turbines and associated facilities are shown on the map in this report.

Land Use

The amendment is not expected to have any significant impact on land-use within the project area. The project is located in an agricultural area and all agricultural activities could continue upon completion of the facility. All eight turbines in the amendment would be located at least 1,200 feet from the nearest habitable residence and no closer to the nearest uncontrolled property boundary than in the original application (624 feet). Both of these distances are compliant with minimum setback requirements. One residence will be within 100 feet of an access road and underground collection line. This collection line will not be visible from the residence, and upon completion of construction, the access road will be reduced from 40 feet wide, to a maximum of 20 feet wide.

Cultural resources

The Applicant has previously completed archaeological and architectural surveys for the project area, and, in October, 2010 entered into a Memorandum of Agreement (MOA) with the Ohio Historic Preservation Office (OHPO) and US Army Corps of Engineers (USACE). This MOA stipulated certain mitigation measures for effects of the wind farm on local cultural resources. On April 15, 2011, the Applicant submitted a draft Phase I archaeological analysis for the additional turbine footprints in the amended area. No additional impacts to cultural resources are anticipated as a result of construction and operation of the eight turbines as proposed in the amendment.

Wind Turbines

The Applicant indicated that it had selected the Gamesa G-90 model with a nameplate capacity of 2.0 MW for the project. The total maximum height of the wind turbines would be 476 feet (145 meters). The hub height for the turbines would be 328 feet (100 meters). The maximum rotor diameter would be 295 feet (90 meters). At the base of the wind turbine tower, there will be a crane pad area of 100 feet by 75 feet. After construction this will be restored level with permanent gravel around the base of the turbine.

Concrete Batch Plant No Longer Required

The August 23, 2010 certificate indicated a possibility of a temporary concrete batch plant. This temporary concrete batch plant is no longer necessary, because the Applicant's general contractor is purchasing concrete from a local supplier.

Electric Collection System

An electric collection system would be installed to transfer energy from the wind turbines to the collector substations and then interconnection to the electric transmission grid. The 34.5 kilovolt

(kV) collection system would consist of 97.7 miles of underground cable buried to a minimum depth of 48 inches and 7.8 miles of aboveground lines. The August 23, 2010 certificate indicated 103.2 miles of underground cabling and 5.4 miles aboveground. There would also be an overhead 115 kV collection system whose length has decreased since the original certificate from 7.4 to 1.8 miles of aboveground lines.

Access Roads

Where possible, the Applicant would upgrade existing roads for use as access roads during construction and for wind farm maintenance after construction is complete. These roads would include appropriate drainage and culverts, while still allowing passage of farm equipment. Local landowners have been consulted during the siting of the roads. The project would require 42.9 miles of permanent access roads with a width of up to 100 feet during construction, reduced to a width of 16 feet after construction is complete with 10 feet wide compacted shoulders.

Ecological Review

The Applicant has stated that a few wetland ditches and one stream would be impacted by the addition of eight turbines. No ponds, lakes, wildlife, or woodlots are expected to be impacted. Additionally, no impacts to public or private water supplies are anticipated from the proposed project. The Applicant would conduct unanticipated spill response training for construction and O&M staff as needed to limit the potential for impact.

The Applicant has stated that no turbines would be located within the Federal Emergency Management Authority 100-year floodplain. A small portion of access roads, the crane route, and/or the electric collection system would be constructed within the floodplain, but would not change the contours within the floodplain, impact the floodway, or increase the 100-year flood base elevation discharge. No permanent fill material would be placed within the limits of the 100-year floodplain.

Agricultural Review

Temporary impacts to agricultural land would total 1,650.5 acres. This is a reduction of 65.5 acres from the original application, of which 1,239.6 acres would occur in Van Wert County and 410.9 acres in Paulding County. Permanent impacts would total 166.3 acres, of which 140.6 acres would occur in Van Wert County and 25.7 acres in Paulding County.

The project area contains or intersects 25 agricultural district parcels, 12 of which would be directly impacted by turbines, electric collection lines, access roads, and/or the crane route. A total of 86.9 acres of temporary impacts and 5.8 acres of permanent impacts would occur to agricultural district parcels. Of the temporary impacts, 55.6 acres would occur in Van Wert County and 31.3 acres would occur in Paulding County. Of the permanent impacts to agricultural district parcels, 3.0 acres would occur in Van Wert County and 2.8 acres in Paulding County. Because of the small amount of impacts to agricultural land associated with this project, designated agricultural district parcels would not be adversely affected.

Shadow Flicker

The Applicant provided updated non-cumulative shadow flicker model results for Staff review. A total of 643 receptors were identified within 1,000 meters of the project boundary. Each receptor was modeled in “worst-case” (*i.e. glass house, no obstructions*) and “realistic mode” (*i.e. with obstructions*). The “worst-case” analysis modeled 11 receptors to receive shadow flicker in excess of 30 hours per year. 10 of the 11 are participating receptors. Receptor 224 is the only non-participating receptor to be in excess of 30 hours per year. The Applicant offered to make this receptor party to the project through a “Good Neighbor Agreement”, but an agreement was not reached. The Applicant has shown through modeling that this receptor’s exposure can be reduced to below 30 hours by curtailing operation. The curtailment includes not operating the turbine from the hours of 0600 – 0700 EST between July 1 and August 7, for all winds except for those originating from the azimuths of 15 and 195 degrees. 195 and 15 degrees azimuth are allowable as the sun’s azimuth would be parallel with the rotor plane. The Applicant will be subject to the previously conditioned mitigation regarding any shadow flicker in excess of 30 hours per year, as measured at a non-participating receptor. Staff believes that a reduction through curtailment can be met and that the developer has done its due diligence in reducing impacts to any non-participating receptors.

Aviation

As of the date of preparation of this report, all turbine locations at the new hub height have been submitted for FAA review and have received determinations of *no hazard* to aviation.

Communication/Radar

The Applicant has not evaluated the impacts which an increase in the number of turbines could cause on microwave paths, radio/television/PCS reception, and military radar systems, or submitted the new turbine coordinates to the National Telecommunications and Information Administration (NTIA) for review. Staff spoke with the Chairman of the NTIA and he advised that while notification of these new turbine locations is not required, it would be best practice and advisable. The new locations would not be subject to the same review period as previously imposed by the NTIA; this would rather serve as notice for concerned federal agencies. Staff believes that the new turbine locations will most likely not affect the aforementioned systems. However, Staff does concur with the NTIA in the belief that filing all new turbine coordinates with the NTIA would be advisable and best practice.

Decommissioning

The Applicant made no changes to the original application’s language in regard to decommissioning. As such, Staff believes that they should proceed with the conditions contained in the original certificate with the caveat that these eight turbines (if constructed) shall be incorporated into all estimates.

Other Potential Impacts

Staff reviewed pertinent data regarding the layout and impacts of the eight additional turbines in conjunction with the project that is currently under construction:

- 1) *High Winds*. Staff reviewed the amended application regarding the nature of probable impact from high winds. Staff believes that the recommended conditions of the August 23, 2010 certificate adequately address this issue and no changes are warranted.
- 2) *Blade Shear*. Staff reviewed the amended application regarding the nature of probable impact from blade shear. Staff believes that the recommended conditions of the August 23, 2010 certificate adequately address this issue and no changes are warranted.
- 3) *Ice Throw*. Staff reviewed the amended application regarding the nature of probable impact from ice throw. Staff believes that the recommended conditions of the August 23, 2010 certificate adequately address this issue and no changes are warranted.

Recommended Conditions

- 1) The Applicant shall adhere to all conditions of the original Certificate for the Blue Creek Wind Farm (Case No. 09-1066-EL-BGN).
- 2) The owner and operator of the Facility shall curtail the operation of turbines influencing receptor 224 so as to not exceed 30 hours per year of shadow flicker until such time that this receptor becomes a project participant. If this receptor should become a project participant, Staff shall be immediately notified of this change. The Applicant may also propose other mitigation measures acceptable to the OPSB Staff in consultation with the affected receptor.
- 3) Prior to construction the Applicant shall provide the coordinates of these eight turbines and a summary of the additions/changes to the NTIA. Should the Applicant receive adverse notification from the NTIA, Staff shall be immediately notified.
- 4) Prior to the commencement of construction, the Applicant shall obtain and comply with all applicable permits and authorizations as required by federal and state laws and regulations for any activities where such permit or authorization is required. Copies of permits and authorizations, including all supporting documentation, shall be provided to staff within seven days of issuance or receipt by the Applicant.
- 5) At least seven days before the preconstruction conference, the Applicant shall submit to Staff a copy of an updated NPDES permits, including its approved SWPPP, approved SPCC procedures, and its erosion and sediment control plan for review and approval. Any issues must be addressed through proper design and adherence to the Ohio EPA BMP's related to erosion and sedimentation control.
- 6) The applicant shall not place permanent fill material within the 100-year floodplain in association with any turbine. The applicant will place the following plan note in the final engineering drawings: "No permanent fill material will be placed within the limits of the 100-year floodplain."
- 7) To maintain updated and accurate records of archaeological field work performed for this project, the Applicant shall submit a copy, when finalized, of the Phase I archaeological survey for this amended portion of the project to Staff and all signatories of the October, 2010 MOA regarding cultural impacts.

- 8) Should site-specific conditions warrant blasting, the Applicant shall submit a blasting plan to Staff for review and acceptance at least 30 days in advance of blasting.
- 9) At least 30 days before the preconstruction conference, the applicant shall submit to staff, for review and approval, the following updated documents:

(a) One set of detailed engineering drawings of the final project design, including all turbine locations, collection lines, access roads, crane routes, permanent meteorological towers, substations, construction staging areas, and any other associated facilities and access points, so that the staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and also as geographically referenced electronic data. The final plan shall include both temporary and permanent access routes, as well as the measures to be used for restoring the area around all temporary sections, and a description of any long-term stabilization required along permanent access routes. The plan shall consider the location of streams, wetlands, wooded areas, and sensitive plant species as identified by the ODNR, Division of Natural Areas and Preserves, and explain how impacts to all sensitive resources will be avoided or minimized during construction, operation, and maintenance.

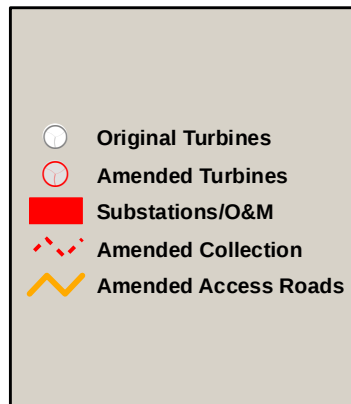
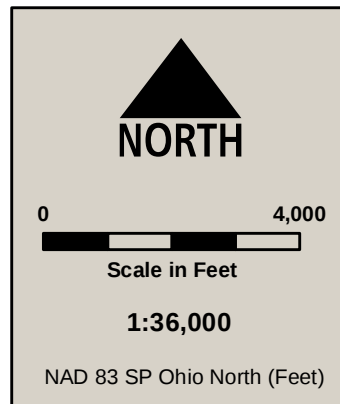
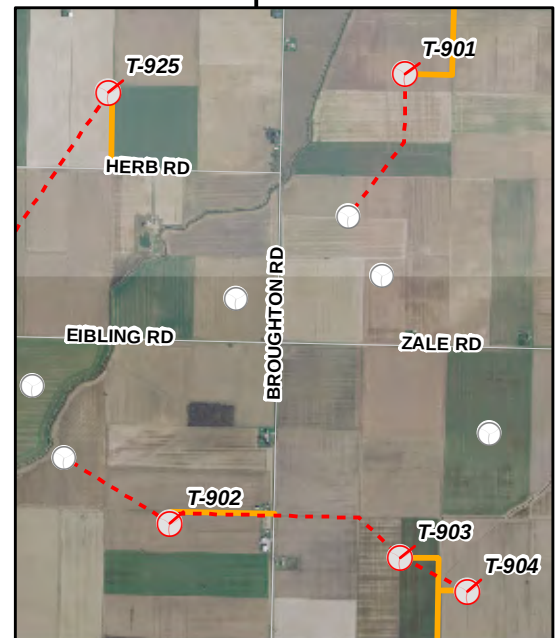
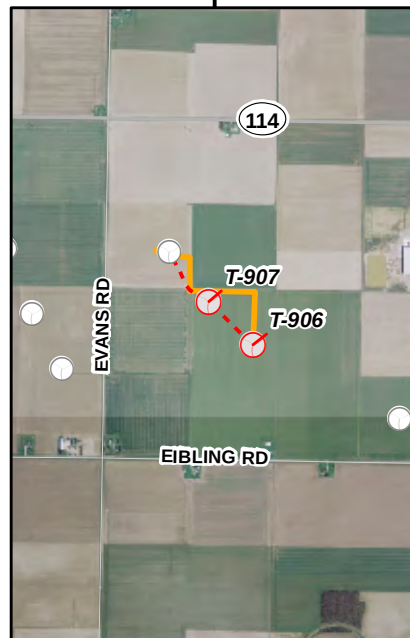
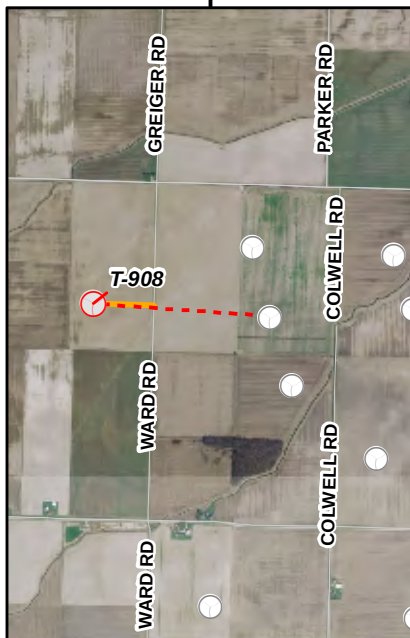
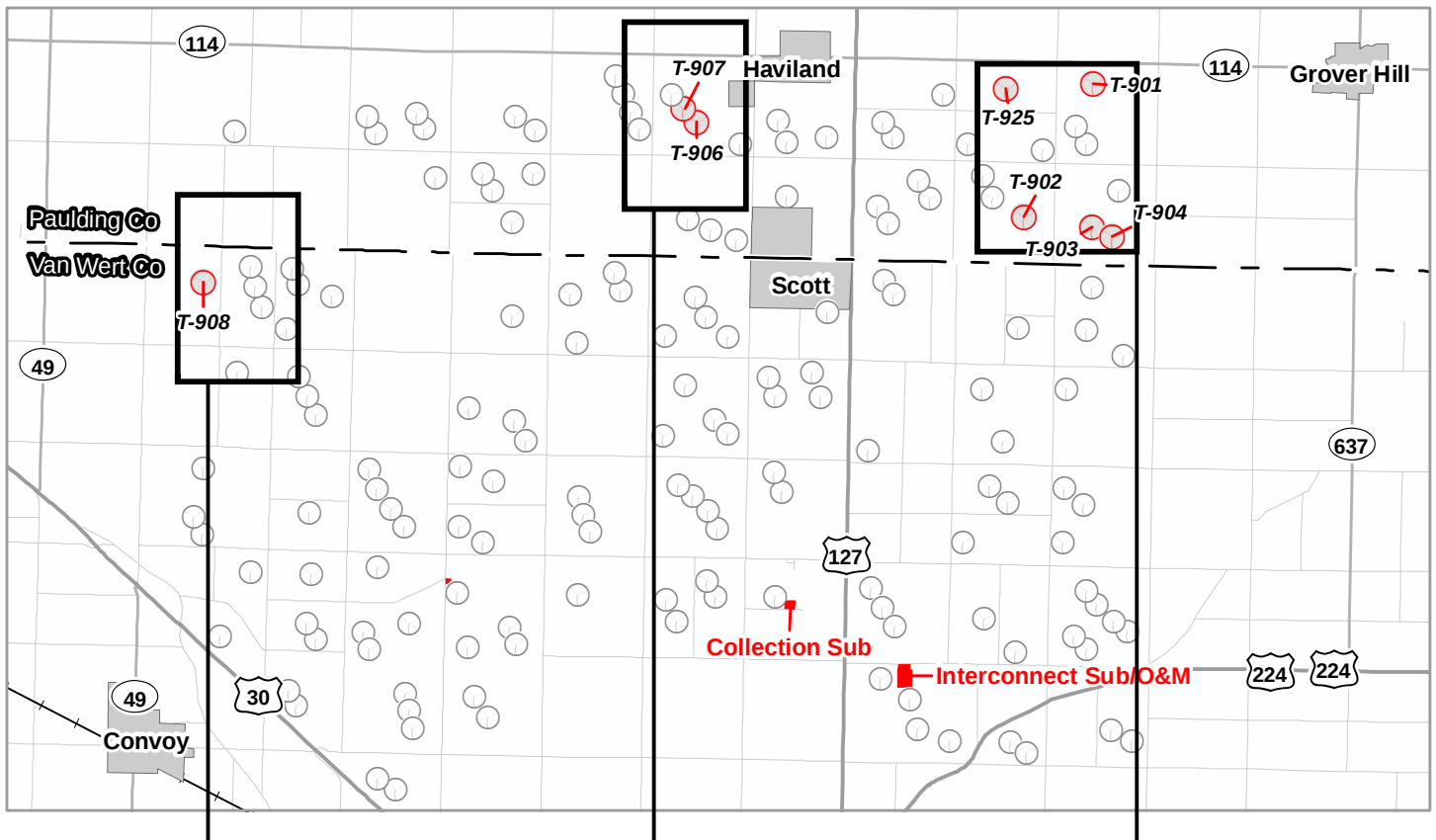
(b) A stream and/or ditch crossing plan including details on specific streams and/or ditches to be crossed, either by construction vehicles and/or facility components (e.g., access roads, electric collection lines), as well as specific discussion of proposed crossing methodology for each stream crossing and post-construction site restoration. The stream crossing plan shall be based on final plans for the access roads and electric collection system.

(c) A detailed frac-out contingency plan for stream and ditch crossings that are expected to be completed via HDD. Such contingency plan may be incorporated within the required stream and/or ditch crossing plan.

(d) A tree clearing plan that describes how trees and shrubs around turbines, along access routes, in electric collection line corridors, at construction staging areas, and in proximity to any other project facilities will be protected from damage during construction; and, where clearing cannot be avoided, how such clearing work will be done so as to minimize removal of woody vegetation. Priority should be given to protecting mature trees throughout the project area, including all woody vegetation in wetlands and riparian areas, both during construction and during subsequent operation and maintenance of all facilities.

Recommended Findings

Staff recommends that the Board find that the proposed amendment to the Certificate poses minimal social and environmental impact, provided that the amendment include the conditions specified in the section of this report entitled Recommended Conditions.



11-1995-EL-BGA
amendment to
09-1066-EL-BGN
Blue Creek Wind Farm

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.

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Summary: Staff Report Filed electronically filed by Mr. James S. O'Dell on behalf of Staff of OPSB