



November 12, 2020

Woodford County Zoning Board of Appeals  
115 North Main St, Room 100  
Eureka, IL 61530

**RE: Woodford County Zoning Petition 20-11-S**

Dear Board Members,

Tri-County Regional Planning Commission staff submit the following to help the Board in its deliberation of this case.

## I. APPLICATION

This special use is to allow for the use of property for a wind energy conversion system (WECS). Included in the application are 86 wind turbine locations in Woodford County that are zoned Agricultural (AG). Turbine sites are located in Clayton, Greene, Minonk, and Panola Townships. Zero turbine sites fall within the 1.5-mile planning boundaries of nearby municipalities, which are Benson, El Paso, Minonk, Panola, Roanoke, and Secor.

## II. CONSIDERATIONS

**Current Land Use.** The subject property is agricultural. The leased parcels total approximately 22,000 acres, most of which are in agricultural production. The total area to be used for the WECS—including turbine towers, equipment, and access roads—is approximately 84 acres.

**Adjacent Land Use Trends.** The subject parcels are bordered almost entirely by agricultural uses. Exceptions are farmsteads and other rural residences. Residences are either located inside participating parcels or are a required distance from the nearest proposed turbine.

**Zoning Ordinance.** The proposed WECS is allowed as a special use under Section 24 Subsection 7 of the Woodford County Zoning Ordinance and regulated under Section 28 of the ordinance.

**Comprehensive Plan.** All or almost all the land identified for special use is classified as “Agriculture” in the Future Land Use Map of the Woodford County Comprehensive Plan. The plan offers the following principles relevant to the case.

- Agriculture is preserved and supported through mutual respect and balance among agriculture, development, and the environment.
- Diversification in the agricultural economy is encouraged by supporting non-traditional and value-added agricultural products, and agriculture-related industry.

### III. FINDINGS OF FACT

**The Zoning Board of Appeals shall make a finding that the granting of the special use:**

**A. Will not be detrimental to the public health, safety, and welfare.**

(POSITIVE) Most scientific, peer-reviewed studies conclude that there is no evidence to demonstrate a causal link between proximity to wind turbines and serious health effects. This includes external effects such as electromagnetic fields (EMF), shadow flicker, audible noise, low-frequency noise, and infrasound. Per the application, the applicant will provide necessary public safety measures including fencing, controlled access, and signage. Turbine blades are designed, built, and operated to withstand severe weather and high wind. Moreover, the project will not interfere with airplane navigational radar, weather radar, or wireless communication. Therefore, the special use should not be detrimental to the public health, safety, and welfare.

**B. Will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purpose already permitted. The applicant need not demonstrate complete compatibility, but the applicant shall demonstrate reasonable efforts to minimize incompatibility.**

(NEUTRAL) Property in the immediate vicinity of the project sites is mostly used for agriculture, exceptions being farmsteads and other rural residences. Turbine towers will impact the project area and beyond visually. Individual residents and property owners may have negative feelings toward the sight of turbine towers in the area. Additionally, rotating turbine blades in other WECS projects have infrequently cast shadows into homes or other inconvenient locations near the project area. Per the application, the project will comply with the shadow flicker requirements of the Woodford County Zoning Ordinance. Appendix M of the application includes a shadow flicker study showing that no non-participating, inhabited dwelling will exceed 30 hours of shadow flicker per year.

The operation of wind turbines will generate audible noise, which some studies have found can be annoying for some people. Location and setback restrictions are put in place to limit audible noise exposure. The towers identified in the special use application meet the setback requirements of the Woodford County Zoning Ordinance. Allowable limits for turbine noise are set by the State of Illinois, specifically the Illinois Pollution Control Board (IPCB). Appendix T of the application states that all turbines are located to meet IPCB audible noise requirements for all non-participating residential structures at all times of day and night.

**C. Will not be injurious to the district in which it shall be located.**

(POSITIVE) The project locations included in the application are in the Agriculture (AG) zoning district. Per the application, the permanent footprint of the turbine platforms and access roads will take up about 0.3 percent of the total leased acreage. The land surrounding the turbines will remain in agriculture production. Therefore, the special use should not be injurious to the district in which it is located.

**D. Will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the districts.**

(POSITIVE) Surrounding property is identified for agriculture in the Woodford County Future Land Use Map. Wind power installations are generally compatible with agriculture, and the special use should not interfere with current or future agriculture uses. Therefore, the special use should not impede the normal and orderly development and improvement of the surrounding property for uses permitted.

**E. That adequate utilities, access roads, drainage and/or other necessary facilities have been or are being provided.**

(POSITIVE) Per the application, all adequate utilities, access roads, drainage, and other necessary facilities will be provided.

**F. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public roads.**

(POSITIVE) Per the application, all necessary ingress and egress will be provided. After construction is completed, traffic generated by the project should not attribute to traffic congestion on public roads.

**G. Is consistent with the Woodford County Comprehensive Long Range Plan.**

(POSITIVE) The Woodford County Comprehensive Plan offers the following principles relevant to the case.

- Agriculture is preserved and supported through mutual respect and balance among agriculture, development, and the environment.
- Diversification in the agricultural economy is encouraged by supporting non-traditional and value-added agricultural products, and agriculture-related industry.

Both principles listed above relate to agriculture, from a conservation viewpoint and an economic viewpoint, respectively. Approximately 21,916 of the 22,000 acres leased as part of the project will be preserved for agriculture. The approximately 84 acres of farm ground removed from production will provide an alternative source of revenue for property owners while not interfering with agriculture activities on the remaining acres. Therefore, the special use is consistent with the principles of the Woodford County Comprehensive Plan.

#### **IV. OTHER COMMENTS**

Section 28 of the Woodford County Zoning Ordinance lists regulations pertaining to WECSs. Subsection 5 includes seventeen (17) requirements for a WECS. They are listed below with the applicant's responses.

1. **Design Safety Certification.** Panther Grove will illustrate compliance with this requirement in the building permit application. Furthermore, the wind turbines that Panther Grove will install in the

Project will be manufactured by General Electric, Vestas, or Nordex, whom are all top tier wind turbine manufacturers.

2. **Installation Certification.** Panther Grove will comply with this requirement and will illustrate compliance in the building permit application.
3. **Controls and Brakes.** Panther Grove will illustrate compliance with this requirement in the building permit application.
4. **Electrical Components.** The underground cables connecting the wind turbines or wind turbines to the substation will all be a minimum of five (5) feet below grade and at least one (1) foot below any agriculture drain tiles that are encountered in the construction of the Project. All electrical components that are installed in the Project including but not limited to the wind turbines, substation, underground electrical cabling, and overhead electrical cabling, will be designed, installed, and operated in a manner to conform to all applicable local, state, national, and international standards. Compliance with this requirement will be further illustrated as part of the County permit application.
5. **Color.** All of the wind turbine's towers and blades that are installed in the Project will be a non-reflective white color that is standard on most all utility scale wind energy projects.
6. **Lighting.** Panther Grove commits to installing the Aircraft Detection Lighting System ("ADLS"), similar to the Terma ADLS product to which its specifications are provided for in Appendix GG. The ADLS system will replace the traditional wind turbine FAA lighting that typically blinks on and off all night with a system that only begins blinking if an aircraft is within 3 miles (the "warning zone") of the Project, as per the FAA standards. The ADLS system will reduce the lighting at night all while maintaining proper aviation safety to FAA standards. The ADLS system consists of an on-site radar system which communicates with the FAA lights on top of the wind turbine nacelles. The lights remain on as long as there is a valid target within the warning zone. For the rare chance the radar loses the target while inside the warning zone, the FAA has a 30-minute "time-out penalty" to which Panther Grove would have to adhere to. Meaning, the lights must stay on for a full 30 minutes to ensure the plane has enough time to exit the wind project. By FAA regulation, the lights enable automatically and remain lit if there's any glitch detected in the system, whether it be the radar itself, the lights, or in the communications.
7. **Compliance with FAA.** To date Panther Grove has received Determinations of No Hazard Permits ("DNHs") for a height of 649 feet from the FAA for the following wind turbine locations included in this Application:

Wind Turbine Locations: T5, T11, T12, T13, T15, T16, T17, T18, T19, T20, T22, T24, T25, T26, T27, T28, and T29.

To date Panther Grove has received DNHs at a height of 699 feet within 1,000 feet from the FAA for the following wind turbine locations included in this Application:

Wind Turbine Locations: T2, T8, T10, T14, T19, T24, T32, T35, T37, T38, T39, T40, T41, T42, T43, T45, T46, T52, and T62. Panther Grove has filed for modifications to these DNHs to move them to their current location and down to a height of 698 feet. Panther Grove will supply these DNHs to the County once received which is expected to be in December 2020.

Panther Grove filed for DNHs for the remaining turbine locations included in this Application and not listed above for up to a height of 698 feet. Panther Grove will supply these DNHs once received which is expected to be in December 2020.

As described in Section 4.10 of this Application Panther Grove commits to installing the ADLS in the Project instead of traditional FAA lights. The ADLS lights will remain off unless a plane gets within 3 miles of a wind turbine. The FAA must approve the installation of the ADLS, which Panther Grove will supply as part of the building permit application.

8. **Compliance with Zoning Laws.** Panther Grove will comply with all applicable local zoning laws included but not limited to the conditions set forth in the Ordinance and this Application.
9. **Compliance with Additional Regulations.** See Section 9 for the permits that are required for the construction of the Project. Panther Grove will obtain all necessary permits that are required for the construction and operation of the Project and all preconstruction related permits will be supplied as part of the building permit application.
10. **Warnings.** Panther Grove will comply with this requirement.
11. **Climb Prevention.** The wind turbine tower access doors will remain locked at all times unless maintenance personnel are inside the tower. In addition, Panther Grove will install either a six-foot-high (minimum) fence or anti-climbing device around the tower. Further compliance with this requirement will be provided as part of the County building permit application.
12. **Setbacks.** See the Site Maps in Appendix D and Project Map in Appendix C and Tables 11-1 and 11-2 for compliance with the setbacks listed above. Further compliance with these setbacks will be provided with a field survey which will be provided to the County as part of the building permit application. In addition to the setbacks listed above Panther Grove will maintain the following setbacks:
  - Setbacks listed in Section 31 (§154.31) of the Ordinance, except for the wind turbines in the vicinity of the Unzicker fixed-wing RLA.
  - One thousand feet (1,000') from most of the participating residences
  - One thousand feet (1,000') from suitable bat habitat as defined in the Site Characterization Report that is provided in Appendix G and also shown in the Site Maps in Appendix D.
  - One-half (1/2) mile from the Illinois Natural Areas Inventory Site (Mackinaw River watershed) at the recommendation of the IDNR.
13. **Heights.** To date Panther Grove has received Determinations of No Hazard Permits (“DNHs”) for a height of 649 feet from the FAA for the following wind turbine locations included in this Application:

Wind Turbine Locations: T5, T11, T12, T13, T15, T16, T17, T18, T19, T20, T22, T24, T25, T26, T27, T28, and T29.

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miles of a wind turbine. The FAA must approve the installation of the ADLS, which Panther Grove will supply as part of the building permit application.

14. **Roads.** Panther Grove initiated the road use agreements process with the County and Townships in February 2020. Barring any unforeseen events Panther Grove intends to have the agreements executed prior to the start of the public hearings in November 2020. The executed agreements including the approved local traffic flow maps showing the approved roads will be supplied to the County during the special use permit hearings.
15. **Migratory Birds/ Illinois DNR.** See Stantec’s Bat Presence or Probable Bat Absence Survey in Appendix II, Stantec’s Raptor Nest Survey in Appendix JJ, and Stantec’s Avian/Eagle Use Survey Results in Appendix KK for the avian/bat study results that have been performed to date. Panther Grove intends to continue the preconstruction avian/bat studies until 2 years’ worth of surveys are collected as per the USFWS typical recommendation, which will be until May 2021. The data will be presented to the IDNR for their review. In addition, Panther Grove will comply with the IDNR’s 3 year post construction monitoring plan which is outlined in Stantec’s letter that was drafted in response to the IDNR’s EcoCat letter both of which are provided in Appendix J. Panther Grove will seek the IDNR’s approval for this 3 year post construction monitoring plan and will present the IDNR’s approval as part of the County building permit application. Panther Grove will also present its Bird and Bat Conservation Strategy Plan (“BBCS”) at the permit public hearings.

Pursuant to this condition Panther Grove filed for consultation with the IDNR through the IDNR’s online Ecological Compliance Assessment Tool (“EcoCat”) on Sept 30, 2019. A copy of the EcoCat filing is provided in Appendix J. The IDNR responded with a letter addressed to Lisa Jording on January 24, 2020. A copy of this letter is included in Appendix J as well.

Panther Grove agrees to comply with all recommendations listed in the IDNR’s letter. However, Panther Grove requests the County consider allowing Panther Grove to limit the fall bat migration (July 15 – Oct 15, dusk till dawn) curtailment to 4.0 m/s as compared to 5.0 m/s and when temperatures are above 50°F. Detailed support for this requested change is provided in Stantec’s letter that’s included in Appendix J. In addition, Panther Grove’s 3 year’s post construction monitoring plan is provided in Appendix J, which will be shared with the IDNR for their approval. The IDNR approved 3-year post construction monitoring plan will be provided to the County as part of the Project’s building permit application. Panther Grove will also present its Bird and Bat Conservation Strategy Plan (“BBCS”) at the public hearings.

16. **Shadow Flicker.** Panther Grove will maintain compliance with this requirement. See the Shadow Flicker Study prepared by Burns and McDonnell provided in Appendix M which lists a conservative estimate for the expected maximum shadow flicker hours that the Project is estimated to generate. A final shadow flicker report, illustrating shadow flicker levels at or below those found in Appendix M will be submitted for the final layout as part of the County building permit application. Panther Grove will maintain compliance with this requirement for non-participating dwellings existing as of the date of this Application.

17. **Agreement in Lieu of Taxes (AILOT).** Panther Grove will comply this requirement.

Section 28 of the Zoning Ordinance also includes provisions for the following.

1. Maintenance and Operation.
  - a. Annual Inspection.
  - b. Interference
  - c. Fire Risk and Emergency Response

- d. Waste
- e. Field Tile
- 2. Noise Levels
- 3. Public Participation, Complaints, and Resolution
- 4. Certificate of Liability Insurance
- 5. Decommissioning Plan

## V. RECOMMENDATION

In summary, the application meets the criteria adopted by the Woodford County Board and detailed in Section 28 of the Woodford County Zoning Ordinance, with the following conditions.

- Compliance with requirements #1-4 of §154.28.5, demonstrated in the building permit application.
- Approval of remaining Demonstration of No Harm permits (DNHs) for wind turbine locations and approval of Aircraft Detection Lighting System (ADLS) from the Federal Aviation Administration (FAA).
- Approval of the Archaeology and Historic Preservation study by the Illinois Historic Preservation Agency (IHPA).
- Execution of road use agreements the County Engineer and Township Road Commissioners.
- Annual submission of a report to the Woodford County Zoning Enforcement Officer certifying the completion of annual inspections, including a summary of inspection results for the operating life of the project.
- Compliance with all IDNR recommendations regarding conservation of wildlife and natural resources (Appendix J), and presentation of a bird and bat conservation strategy (BBCS) plan.

Although not required by the Zoning Ordinance, Woodford County might consider the following additional conditions of approval for the application:

- Submittal of a plan that certifies that the applicant will implement stormwater and erosion control Best Management Practices, based on IDNR guidance, along all access roads constructed for the projects.
- Submittal of a National Pollutant Discharge Elimination System permit by the applicant.

Respectfully submitted,

Tri-County Regional Planning Commission Staff