

**CUP1802 THUNDERHEAD WIND ENERGY LLC  
ADMINISTRATOR'S REPORT**

**DATE:** 10-9-18

**APPLICANT:** Thunderhead Wind Energy LLC

**LOCATION:** T24N R8W: ALL SECTIONS—Stanton Twp.  
T24N R7W: SECTIONS 2-11, 14-23, 26-35—Elgin Twp.  
T25N R7W: SECTIONS 26-35—Ord Twp.  
T25N R8W: SECTIONS 25-36—Clearwater Twp.  
T23N R8W: SECTIONS 1-22, 27-30—Lincoln Twp.  
T23N R7W: SECTIONS 2-6—Logan Twp.

**BACKGROUND:** Thunderhead Wind Energy is a project being developed by Invenergy. This Conditional Use Permit application is for the use of the land. A Zoning Permit is also required for each individual structure that will be constructed. The application is for up to 300 MW of capacity generally located in Stanton, Elgin, Ord, Clearwater, Lincoln, and Logan Townships, will consist of up to 137 turbines in Antelope County, and associated uses and structures.

As you review the Setback Summary Map in Exhibit C, keep in mind that the icons for the residences and turbines are not to scale so while it may appear that they do not meet setbacks or are very close. Invenergy will be required to provide more accurate information for the Zoning permit before they will be allowed to construct turbines and meteorological towers.

The actual size of the turbine purchased will determine the number constructed. Geotechnical work will be done after the permit is issued to determine suitability of the soil at each site. Because not all the turbines shown on the maps will be constructed, clustering will be reviewed before Zoning Permits are issued. The actual setbacks required for the Zoning Permits will be based on the actual size of the turbine purchased. Numbers used in the application are assuming the maximum size of turbine proposed.

**SURROUNDING LAND USE AND ZONING:** The turbine sites are all zoned AG-G and are surrounded by various ag uses.

**COMPREHENSIVE PLAN SPECIFICATIONS:** See the Energy Sustainability Plan for more information.

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**APPLICABLE ZONING REGULATIONS** (*My comments are shown in italics*):

**8.08.03 Requirements for Application:**

Commercial/Utility Grade wind energy systems shall follow the requirements below:

1. The name(s) of project applicant. *This information is supplied in Tab 3.0 of the application.*
2. The name of the project owner. *This information is supplied in Tab 3.0 of the application.*
3. The legal description and address of the project. *This information is supplied in Tab 3.0 of the application.*

4. A description of the project including; Number, type, name plate generating capacity, tower height, rotor diameter, and total height of all wind turbines and means of interconnecting with the feeder lines. *This information is supplied in Tab 3.0 of the application.*
5. Site layout, including the location of property lines, wind turbines, electrical grid, and all related accessory structures. This site layout shall include distances and be drawn to scale. *The layout map can be found in Exhibit A of the application.*
6. Certification by an Engineer competent in disciplines of wind turbines and WECS projects that the electrical, acoustics, and structural systems are compliant with all State and Federal code. *This information can be found in Exhibit F of the application.*
7. Documentation of land ownership or legal control of the property through the presentation of all deeds, leases (less financial disclosures), affidavit or another instrument indicating a landowner is a willing participant in the project. *Exhibit B shows the participating landowners and the recording information of the Memorandum of Leases.*
8. The latitude and longitude of individual wind turbines. *This information is found in Exhibit A but is subject to change.*
9. An acoustical analysis of the project including anticipated noise levels for each turbine at nearby inhabited structures. *This has been provided in Exhibit E.*
10. A USGS topographical map, or map with similar data, of the property and surrounding area, including any other Wind Energy Conversion System not owned by the applicant, within 10 rotor diameters of the proposed Wind Energy Conversion System. *This item is for information only and has been supplied on P21-22 of Section 3.0 of the application.*
10. Location of wetlands, scenic, and natural areas (including bluffs) within 1,320 feet of the proposed Wind Energy Conversion System (see table below) *This information is shown in Exhibit D of the application.*
11. FAA and FCC permit: Applicant shall submit permits from the appropriate agency prior to any power being produced. *This information shall be supplied prior to the Zoning Permit being issued.*
12. Location of and evidence there will be no interference with any commercial and/or public safety communication towers within two miles of the proposed Wind Energy Conversion System. *See Exhibit G of the application.*
13. Decommissioning Plan as required by this regulation. *See Exhibit I of the application.*
14. Description of potential impacts on nearby Wind Energy Conversion Systems and wind resources on adjacent properties not owned/contractually obligated by the applicant. *See P 27 of Section 3.0 of the application.*
15. Applicants shall be required to establish a separate road repair and maintenance agreement with the County Roads Department and County Board. *See Exhibit J for a draft of the proposed agreement.*

#### **8.08.04 Aggregated Projects**

1. Aggregated projects may jointly submit a single application and be reviewed under joint proceedings, including notices, public hearings, reviews and as appropriate approvals.
2. Permits may be issued and recorded separately.
3. Joint projects will be assessed fees as one project *The \$10,000 permit fee has been paid.*
4. Setbacks to property lines, not road rights-of-way, may be less when adjoining property owners are within the same aggregate project. *See Draft Condition #4.*
5. *Due to some turbines possibly not being built, this will be reviewed before Zoning Permits for individual turbines are issued.* Clustered wind turbines shall not:
  - Have more than two turbines between the distances of 2400 feet and 3500 feet from a dwelling on a non-participating landowner property.
  - These standards shall apply, unless the developer and non-participating landowner provide the county with an approved impact easement.

6. Approval of an aggregated project shall give the applicant the approval necessary to begin final site locations, if necessary, within any variations allowed by the Planning Commission and County Board. *See Draft Condition #5.*
7. Approval of an aggregated project shall provide authorization to the developer to commence on the project unless specific conditions are applied during the review and approval process.

**8.08.05 Setbacks** *See Exhibit C. For turbine information, see P15 Section 3.0 of the application.*

All towers shall adhere to the setbacks as measured from the center of the base established in the following table:

	<b>Wind Turbine – Commercial/Utility WECS</b>	<b>Meteorological Towers</b>
<b>Property Lines</b>	1.1 times the length of a rotor blade, if ice braking procedures are put in place during the conditional use process; otherwise  1.5 times the hub height + the rotor diameter	1.1 times the total height
<b>Dwelling Units (participating)</b>	1,000 ft.	1.1 times the total height
<b>Dwelling Units (non-participating) *</b>	2,400 ft. These requirements may be exceeded; however, when an easement has been signed with said non-participating landowner.	1.1 times the total height
<b>Road Rights-of-Way**</b>	1.1 times the length of a rotor blade, if ice braking procedures are put in place during the conditional use process; otherwise  1.5 times the hub height + the rotor diameter	1.1 times the total height
<b>Other Rights-of-Way</b>	1.1 times the length of a rotor blade, if ice braking procedures are put in place during the conditional use process; otherwise  1.5 times the hub height + the rotor diameter	1.1 times the total height
<b>Public Conservation Lands including Wildlife Management Areas and State Recreation Areas</b>	1.1 times the total height or a distance established by any state or Federal agency.	600 ft. or a distance established by any state or Federal agency.
<b>Wetlands, USFW Types III, IV, and V</b>	1.1 times the total height or a distance established by any state or Federal agency.	600 ft. or a distance established by any state or Federal agency.
<b>Other structures not on the applicant's site</b>	1.1 times the total height	1.1 times the total height

\* The setback for dwelling units shall be reciprocal in that no dwelling unit shall be constructed within the same distance required for a commercial/utility Wind Energy Conversion System.

\*\* The setback shall be measured from any future Rights-of-Way if a planned change or expanded right-of-way is known, as identified in the County's 1- and 6-year Road Program at the time of application.

\*\*\* The Antelope County Planning Commission and County Board reserve the right to require greater separation distances or removal of individual turbines.

**8.08.06 Special Safety and Design Standards and Additional Requirements**

Special safety and design standards for all towers and additional listed requirements are stated below, which shall be adhered to and are specifically written for this Section 8.08:

1. Clearance of rotor blades or airfoils must maintain a minimum of 25 feet of clearance between their lowest point and the ground. *See P15 Section 3.0.*
2. All Commercial/Utility WECS shall have a sign or signs posted on each tower, transformer and substation, warning of high voltage. Other signs shall be posted at the entrance to the site with the 911 address and emergency contact information. *See P12 of Section 2.0 of the application,*
3. All wind turbines, which are a part of a commercial/utility WECS, shall be installed with a tubular, monopole type tower.
4. Consideration shall be given to painted aviation warnings on all towers less than 200 feet.
5. **Color and finish**  
All wind turbines and towers that are part of a commercial/utility WECS shall be white, grey, or another non-obtrusive color. Blades may be black in order to facilitate deicing; Finishes shall be matte or non-reflective.
6. **Lighting**  
Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by the FAA and NDA permits and regulations. Red strobe lights shall be used during nighttime illumination to reduce impacts on neighboring uses and migratory birds. Red

pulsating incandescent lights should be avoided.

7. **Other signage**

All other signage shall comply with the sign regulations found in these regulations.

8. **Feeder Lines**

All communications and feeder lines installed as part of a WECS shall be buried, where feasible. Feeder lines installed as part of a WECS shall not be considered an essential service.

9. **Waste Disposal**

Solid and Hazardous wastes, including but not limited to crates, packaging materials, damaged or worn parts, as well as used oils and lubricants, shall be removed from the site promptly and disposed of in accordance with all applicable local, state and federal rules and regulations.

10. **Discontinuation and Decommissioning** *See Exhibit I of the application for the draft and Draft Condition 11a.*

A. Discontinuation and Decommissioning: A WECS shall be considered a discontinued use after one year without energy production, unless a plan is developed and submitted to the Zoning Administrator outlining the steps and schedule for returning the WECS to service. All WECS and accessory facilities shall be removed to four feet below ground level within 180 days of the discontinuation of use. This period may be extended by the Board of Commissioners following a written request by an agent of the owner of the WECS if proof of weather delays and non-availability of equipment is provided.

Each Commercial/Utility WECS shall have a Decommissioning plan outlining the anticipated means and cost of removing WECS at the end of their serviceable life or upon being discontinued. The cost estimates shall be made by a competent party, such as a Professional Engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The plan shall also identify the financial resources that will be available to pay for decommissioning and removal of the WECS and accessory facilities.

11. **Interference** *See Exhibit G of the application.*

The applicant shall minimize or mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any wind turbine. The applicant shall notify all communication tower operators within five miles of the proposed wind turbines location upon application to the county for permits.

12. **Drainage System**

The applicant shall be responsible for immediate repair of damage to public drainage systems stemming from construction, operation or maintenance of the WECS.

13. **Noise** *See Exhibit E of the application and Draft Condition #13.*

1. Noise: A noise/sound limit of 50-decibels shall be hereby set and shall not be exceeded by any individual wind turbine facility or close group of wind turbine facilities and upon any adjoining, non-participating landowner's occupied dwelling; based upon ANSI testing requirements.

Exception: A Commercial/Utility WECS may exceed 50 dBA during periods of severe weather as defined by the US Weather Service or during shut down or restart for normal maintenance.

2. All noise standards shall be based upon ANSI S12.18 standards, or successor standards and shall be per the Leq<sub>10</sub> (10-minute) standards.

3. The Zoning Administrator shall be notified by any person, of a violation of said noise/sound limit. Said notification and complaint shall be made to the Zoning Administrator and must be accompanied by written substantiating evidence including an independent physical and scientific sound/acoustical study documenting the suspected violation. The Zoning Administrator will review the study and its findings, report the findings to the Board of Commissioners and address any violation found accordingly.

14. **Permit Fees:** Applicant shall remit an application fee set by the County Board  
*The Permit fee of \$10,000 was paid on 10-2-18 as per the fee schedule. Additional fees of \$500 per Zoning permit for each turbine shall be paid before the Zoning permit is issued.*

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**ZONING ADMINISTRATOR'S RECOMMENDATION:** Because the permit application requirements have been met, I recommend that the permit be approved with conditions.

**DRAFT MOTION:** (Subject to change by the Planning Commission and/or County Board) I move to recommend approval of Thunderhead Wind Energy LLC's Conditional Use Permit #CU1802 in:

- T24N R8W: ALL Sections
- T24N R7W: SECTIONS 2-11, 14-23, 26-35
- T25N R7W: SECTIONS 26-35
- T25N R8W: SECTIONS 25-36
- T23N R8W: SECTIONS 1-22, 27-30
- T23N R7W: SECTIONS 2-6

for a Commercial Wind Energy System and associated uses with the following conditions:

1. This Conditional Use Permit shall run with the land. The ownership of the land and the identity of the developer and operator of the Use shall not affect the right to conduct the Use in accordance with this Conditional Use Permit. In the event the Project is constructed in phases, Thunderhead may submit notice to Antelope County detailing the project company which will own that phase and the size of each Project phase.
2. Except where necessary, equipment used for Project construction will be located outside of the County Road Right-of-Way so as not to present a public safety hazard. Where it is necessary for equipment to be located within the County Road Right-of-Way, it will only be for such minimal period of time as necessary, and the Project will remove such equipment and materials from the Road Right-of-Way as soon as work within the Road Right-of-Way is complete.
3. The Conditional Use Permit shall permit the Use on the parcels as identified on Exhibit B Participating Landowner List. Upon the filing of a memorandum with the Antelope County register of deeds documenting a lease on new land which is within the Project Area but not currently under lease, the Conditional Use Permit shall be automatically amended to apply to such property and the updated Participating Landowners List shall be supplied to the Zoning Administrator.
4. Section 8.08.05 of the Antelope County Zoning Regulations as amended in March of 2018 shall constitute the setback requirements applicable to the Project. Any applicable property line setback does not apply when adjoining properties are within the Project Area and also under lease or other

agreement with the subject landowner, including additional land recorded with the register of deeds added within the project area, as described in the proposed Condition #3.

5. Turbines shall not move more than 900 feet in any direction from the specific proposed location in Exhibit A and shall be sited on parcels identified in the Participating Landowner List (See Condition #3.) All County zoning setbacks and conditions of this permit will apply and must be met in order to place turbines on the Property. To the extent the Project needs to build any Tower/Wind Turbine as part of this Wind Energy Conversion System that is outside the 900 feet from any specific proposed Tower/Wind Turbine location set forth in Exhibit A, the Project will be required to seek separate authorization from the County in the form of a permit amendment for that Tower(s)/Wind Turbine(s), by following the notice requirements of Section 5.03-2 of the County's zoning regulations, as applicable.
6. All turbines will be installed with a Winter Ice Operation Mode (WIOM) control algorithm for the Turbine Control Software and will thusly meet the requirement for reduced setbacks in section 8.08.05.
7. All turbines shall adhere to the Special Safety and Design Standards in Section 1504-06
8. To the extent any non-participating landowner within the Project Area intends to build a new dwelling unit within the 2400 foot setback or 3500 foot Clustered limitation required by Section 8.08.04 and 8.08.05 of the zoning regulations, the Project agrees not to object to the landowner obtaining a Zoning Permit from the County for said dwelling. To the extent that such dwelling unit is built within the setback, the Project will be deemed in compliance with the Commercial/Utility WECS regulations.
9. Thunderhead shall be allowed to cross or run parallel to any County Roads within the Project Area utilizing the Road Right-of-Way wherever necessary for the Project's ancillary facilities, including aerial construction or burial of components of the electrical collection and fiber-optic system (including overhang or line-sway of aerial lines located on adjacent private property), provided such crossing or use of Road Right-of-Way shall be in compliance with Antelope County's Criteria for Permit to Use Road Right-of-Way and appropriate County Permits are acquired.
10. Zoning Permits shall be issued for each individual turbine, approved in this Conditional Use Permit, on or before November 30th, 2020. It is further understood that each Zoning Permit shall expire two years from the date of issuance if said turbine is not constructed.
11. Prior to issuance of Zoning Permits for construction of turbines:
  - a. A Roads Use Agreement and Decommissioning Plan shall be approved by the County Board.
  - b. A final site plan will be required to be submitted to the Zoning Administrator in order to demonstrate compliance with the clustering requirement in Section 8.08.04 #5 of the Zoning Regulations and Condition #5.
  - c. Any environmental permits required by law to be in place prior to commencement of construction shall be obtained, and copies will be provided to the Zoning Administrator.
  - d. Applicable Driveway Permits, shall be approved by the County Board.

- e. Thunderhead shall provide exact final global positioning system locations to the Zoning Administrator and the County Assessor for each Tower/Turbine
  - f. A detailed site plan shall be submitted for individual towers and meteorological towers showing that said tower(s) complies with all applicable setbacks.
  - g. An acoustical analysis showing that the noise regulations can be met, notice to the National Telecommunication and Information Administration (NTIA), and FAA Determination of No Hazard shall be provided.
  - h. A \$500 fee for each individual turbine's Zoning Permit shall be paid.
12. Signs shall be posted at the Right-of-Way of each driveway for access to the towers giving the tower numbers, address, and Project name.
13. Within 24 months of completion of any phase of the Wind Energy Conversion System, the Project will be required to perform a sound analysis demonstrating the Project is in compliance with Section 8.08.06-13 of the County's zoning regulations.

*Liz Doerr, Zoning Administrator*