

## SECTION 5-10: WIND ENERGY CONVERSION SYSTEMS

### Subsection A: Purpose

This section established to regulate the installation and operation of Wind Energy Conversion Systems (WECS) within Pipestone County as described in Minnesota Statutes 216B.1691. Wind Energy Conversion Systems (WECS) with a rated capacity of less than 25,000 kilowatts (kW) or 25 megawatts (MW), and to regulate the installation and operation of WECS not otherwise subject to siting and oversight by the State of Minnesota under the Minnesota Power Plant Siting Act (MS 116C.51-116C.697.) pursuant to Minnesota Statutes, Chapter 216F, Wind Energy Conversion Systems, as amended.

### Subsection B: Procedures

1. Land Use Permits, Conditional Use Permits and Variances shall be applied for and reviewed under the procedures established in Chapter Three of this Ordinance.
2. The application for all WECS shall include the following information:
  - ~~a) The names of project applicant.~~
  - a) Letter from the State Agency responsible for size determination of a project, pursuant the Minnesota Statutes, Chapter 216F.011, as amended.
  - b) The name and address of project applicant.
  - ~~b)c) The names and addresses of the project owners.~~
  - ~~e)d) The legal description and address of the project.~~
  - ~~d)e) 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 electrical grid.~~
  - ~~e)f) Site layout, including the location of property lines, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures. The site layout shall include distances and be drawn to scale.~~
  - ~~f) Engineer's certification.~~
  - g) Documentation of land ownership or legal control of the property.

- h) Documentation of intent to pursue a Power Purchase Agreement or documentation that the power will be utilized on-site.
- i) Documentation that indicates compliance with all other applicable State and Federal Regulatory Standards:
  - (1) Uniform Building Code, as amended.
  - (2) National Electrical Code, as amended
  - (3) Federal Aviation Administration (FAA), as amended
- ~~g)~~

3.The application for Commercial WECS shall also include:

- a) The latitude and longitude of individual wind turbines.
- b) A USGS topographical map, or map with similar data, of the property and surrounding area, including any other WECS within 10 rotor diameters of the Proposed WECS.
- c) Location of wetlands, scenic, and natural areas including bluffs within 1,320 feet of the proposed WECS.
- d) An Acoustical analysis.
- ~~d)e)Microwave Beam Path Study.~~
- ~~e) FAA Permit Application.~~
- f) Location of all known Communications Towers within 2 miles of the proposed WECS.
- g) Decommissioning Plan.
- h) Description of potential impacts on nearby WECS and wind resources on adjacent properties.

### **Subsection C: Aggregated Projects – Procedures**

Aggregated Projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearings, reviews and as appropriate approvals. Permits will be issued and recorded separately. Joint applications will be assessed fees as one project. [Aggregated projects having a combined capacity equal to or greater than the threshold for

State oversight as set forth in MS Statute 116C.691 through 116C.697 shall be regulated by the State of Minnesota.]

**Subsection D: District Regulations**

WECS will be permitted, conditionally permitted or not permitted based on the generating capacity and land use district as established in the table below:

| <b>District</b>       | <b>Non-Commercial*</b> | <b>Commercial</b> | <b>Meteorological Tower[*]</b> |
|-----------------------|------------------------|-------------------|--------------------------------|
| Agriculture           | Permitted              | Conditional       | Permitted                      |
| Rural Residential     | Conditional            | Not permitted     | Not Permitted                  |
| Recreation Commercial | Conditional            | Not permitted     | Not Permitted                  |
| Highway Commercial    | Conditional            | Not Permitted     | Permitted                      |
| Industry              | Permitted              | Conditional       | Permitted                      |
| Shoreland             | Conditional            | Not permitted     | Not permitted                  |
| Urban Expansion       | Conditional            | Not permitted     | Not permitted                  |

\*Non-Commercial WECS and Meteorological towers shall require a conditional use permit if over 125 feet in height.

## Subsection E: Setbacks – Wind Turbines and Meteorological Towers

1. All towers shall adhere to the setbacks established in the following table.

|  | Wind Turbine –<br>Non- Commercial<br>WECS  | Wind Turbine -<br>Commercial WECS   | Meteorological Towers  |
|--|--|---|--|
| <i>Property Lines</i>                                    | 1.1 times the total height <del>or in Agricultural or Industrial Land Use Districts only.</del> the distance of the fall zone, as certified by a professional engineer + 10 feet | 1.1 times the total height  | The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, <u>Minimum 250 feet.</u> |
| <u><i>Project Boundaries</i></u>                         | <u>NA</u>  | <u>3 RD on east-west axis and 5 RD on north-south axis.</u>   | <u>The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, Minimum 250 feet.</u> |
| <i>Neighboring Dwellings*</i>                            | <u>Not applicable if setbacks are met.</u>   | 750 feet <u>and/or sufficient distance to meet state noise standards, whichever is greater.</u>                                   | The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, <u>Minimum 250 feet.</u> |
| <i>Road Rights-of-Way **</i>                             | <del>The distance of the fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height.</del>   | 1.1 times the height, may be reduced for minimum maintenance roads or a road with an Average Daily Traffic Count of less than 10. | The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, <u>Minimum 250 feet.</u> |
| <i>Other Rights-of-Way (Railroads, power lines, etc)</i> | <del>The lesser of 1.1 times the total height or the distance of the fall zone, as certified by a professional engineer + 10 feet.</del>   | <del>To be considered by the planning commission</del> <u>1.1 times total height</u>  | The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, <u>Minimum 250 feet.</u> |
| <i>Public conservation lands managed as grasslands</i>   | <del>NA</del> <u>1.1 times the total height</u>  | <u>3 RD on east-west axis and 5 RD on north-south axis. 600 feet</u>  | 600 feet   |
| <i>Wetlands, USFW Types III, IV and V</i>                | <del>NA</del> <u>1.1 times the total height</u>  | <u>3 RD on east-west axis and 5 RD on north-south axis. 600 feet</u>  | 600 feet   |
| <i>Other Structures</i>                                  | <u>1.1 times total height</u>  | <del>To be considered</del> <u>1.1 times the total height</u>   | <u>The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height, Minimum 250 feet.</u> |

|  |           |   |                  |
|--|-----------|---|------------------|
| <p><b><u>Other Existing WECS*** and Internal Turbine Spacing</u></b></p> | <p>NA</p> | <p><u>3 RD on east-west axis and 5 RD on north-south axis. To be considered based on:</u><br/> <del>–Relative size of the existing and proposed WECS; alignment of the WECS relative to the predominant winds; topography; extent of wake interference impacts on existing WECS; property line setback of existing WECS; Other setbacks required.</del></p> | <p><u>NA</u></p> |
|--|-----------|---|------------------|

\* The setback for dwellings shall be reciprocal in that no dwelling shall be constructed within 750 feet of a commercial wind turbine.

\*\* The setback shall be measured from future rights-of-way if a planned changed or expanded right-of-way is known.

~~\*\*\* Waived for internal setbacks in multiple turbine projects, including aggregated projects.~~

- ~~2. 2. Native Prairie – Turbines and associated facilities shall not be placed in native prairie unless approved in native prairie protection plan. Native Prairie protection plan shall be submitted if native prairie is present. The Permittee shall, with the advice of the DNR and any others selected by the permittee, prepare a prairie protection and management plan and submit it to the County and DNR Commissioner 60 days prior to the start of construction.~~
- ~~3. Sand and Gravel Operations – No turbines, towers or associated facilities in active sand and gravel operations.~~
- ~~4. Aviation (public and private airports) – No turbines, tower or associated facilities shall be located so as to create an obstruction to navigable airspace of public and private airports in Pipestone County. Setbacks or other limitations determined in accordance with MN/DOT Department of Aviation and Federal Aviation Administration (FAA) requirements.~~
- ~~5. Setbacks – All essential service lines and structures must meet the setback requirements of Section 5-6.~~
- ~~6. No wind turbines shall be allowed within Shoreland District, except by permission of the Pipestone County through the conditional use process and only in areas where electricity is not presently availableSubstations and Accessory~~

~~Facilities—Minimum setback standards for substations and feeder lines shall determined in the permitted process, based upon the site’s unique circumstances and consistent with Appendix A.~~

## Subsection F: Requirements and Standards

1. Engineering Certification – For all WECS, the manufacture’s engineer or another qualified engineer shall certify that the turbine, foundation and tower design of the WECS is within accepted professional standards, given local soil and climate conditions.
2. Clearance – Rotor blades or airfoils must maintain at least ~~30~~42 feet of clearance between their lowest point and the ground.
3. Warnings:
  - a) For all Commercial WECS, a sign or signs shall be posted on the tower, transformer and substation warning of high voltage. [Signs with emergency contact information shall also be posted on the turbine or at another suitable point.]
  - b) For all guyed towers, visible and reflective objects, such as plastic sleeves, reflectors or tape, shall be placed on the guy wire anchor points and along the outer and innermost guy wires up to a height of 8 feet above the ground. Visible fencing ~~shall~~ may be required around anchor points of guy wires. Aviation warning standards shall be implemented on meteorological towers of less than 200 feet.
4. Total height – Non-Commercial WECS shall have a total height of less than 200 feet.
5. Tower configuration:
  - a) All wind turbines, which are part of a commercial WECS, shall be installed with a tubular, monopole type tower.
  - b) Meteorological towers may be guyed.
6. Color and Finish – All wind turbines and towers that are part of a commercial WECS shall be white, grey or another non-obtrusive color. ~~Blades may be black in order to facilitate deicing.~~ Finishes shall be matt or non-reflective.
7. Lighting – Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation Administration permits and regulations,. Red strobe lights are preferred for night-time illumination

- to reduce impacts on migrating birds. Red pulsating incandescent lights should be avoided.
8. Other Signage – All signage on site shall comply with Chapter Five: Section 5-1. The manufacturer's or owner's company name and/or logo may be placed upon the nacelle, compartment containing the electrical generator, of the WECS.
  9. Feeder Lines – All communications and feeder lines, equal to or less than 34.5 kV in capacity, installed as part of a WECS shall be buried where reasonably feasible. Feeder lines installed as part of a WECS shall not be considered an essential service. This standard applies to all feeder lines subject to Pipestone County authority.
  10. 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 regulations.
  11. Discontinuation and Decommissioning - A WECS shall be considered a discontinued use after 1 year without energy production, unless a plan is developed and submitted to the County 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 90 days of the discontinuation of use.
  12. Each Commercial WECS shall have a Decommissioning plan outlining the anticipated means and cost of removing WECS at the end of their serviceable life or upon becoming a discontinued use. 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 the decommissioning and removal of the WECS and accessory facilities.
  13. Orderly Development – Upon issuance of a conditional use permit, all Commercial WECS shall notify the ~~Environmental Quality Board Power Plant Siting Act program~~ Department of Commerce Staff of the project location and details ~~on the survey form specified by the Environmental Quality Board.~~

### **Subsection G: Other Applicable Standards**

1. Noise – All WECS shall comply with Minnesota Rules 7030 governing noise.
2. Electrical codes and standards – All WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.

3. Federal Aviation Administration– All WECS shall comply with FAA standards and permits.
4. Uniform Building Code – All WECS shall comply with the Uniform Building Code adopted by the State of Minnesota.
5. Interference – The applicant shall minimize or mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals cause by any WECS. The applicant shall notify all communication tower operators within five miles of the proposed WECS location upon application to the county for permits. No WECS shall be constructed so as to interfere with County or Minnesota Department of Transportation microwave transmissions.

#### **Subsection H: Avoidance and Mitigation of Damages to Public Infrastructure**

1. Roads – Applicants shall:
  - a) Identify all county, city or township roads to be used for the purpose of transporting WECS, substation parts, cement, and/or equipment for construction, operation or maintenance of the WECS and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.
  - b) Conduct a pre-construction survey, in coordination with the impacted local road authority(ies) to determine existing road conditions. The survey shall include photographs and a written agreement to document the condition of the public facility.
  - c) Enter into a written agreement prior to construction to be responsible for restoring or paying damages as agreed to by the applicable road authority(ies) sufficient to restore the road(s) and bridges to preconstruction conditions.
2. 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.