

## 761. Wind Energy Conversion Systems

### 761.1 Purpose

This Ordinance is established to regulate the installation and operation of Wind Energy Conversions Systems (WECS) within Wright County not otherwise subject to siting and oversight by the State of Minnesota under the Minnesota Power Plant Siting Act (MS 116C.51-116C.697)

### 761.2 Definitions

- (1) Aggregate Project – Aggregated projects are those which are developed and operated in a coordinated fashion, but which may have multiple entities separately owning one or more of the individual WECS within the larger project. Associated infrastructure such as power lines and transformers that service the facility may be owned by a separate entity but are also included as part of the aggregate project.
- (2) Commercial WECS – A WECS of equal to or greater than 100 kW in total nameplate generating capacity.
- (3) Non-Commercial WECS – A WECS of less than 100 kW in total name plate generating capacity.
- (4) Fall Zone – The area, defined as the furthest distance from the tower base, in which a guyed tower will collapse in the event of a structural failure. This area is less than the total height of the structure.
- (5) Feeder Line – Any power line that carries electrical power from one or more wind turbines or individual transformers associated with individual wind turbines to the point of interconnection with the electric power grid. In the case of interconnection with the high voltage transmission systems, the point of interconnection shall be the substation serving the WECS.
- (6) Meteorological Tower – For the purpose of this Ordinance, meteorological towers are those towers which are erected primarily to measure wind speed and directions plus other data relevant to siting WECS. Meteorological towers do not include towers and equipment used by airports, the Minnesota Department of Transportation, or other similar applications to monitor weather conditions.
- (7) Micro-WECS – Micro WECS are WECS of 1 kW nameplate generating capacity or less and utilizing supporting towers of 35 feet or less.
- (8) Property Line – The boundary line of the area over which the entity is applying for a WECS permit has legal control for the purposes of installation of a WECS. This control may be attained through fee title ownership, easement, or other appropriate contractual relationship between the project developer and landowner.
- (9) Rotor Diameter – The diameter of the circle described by the moving rotor blades.

- (10) Substations – Any electrical facility designed to convert electricity produced by the wind turbines to a voltage greater than 35,000 (35 KV) for interconnection with high voltage transmission lines shall be located outside of the road right-of-way.
- (11) Total Height – The height of a WECS as measure from ground level to the highest point reached by a rotor tip or any other part of the WECS.
- (12) Tower – Towers include vertical structures that support the electrical generator, rotor blades, or meteorological equipment.
- (13) Tower Height – The total height of the WECS exclusive of rotor blades.
- (14) Transmission Line – Those electrical power lines that carry voltages of at least 69,000 volts (69 KV) and are primarily used to carry electrical energy over medium to long distances rather than directly interconnecting and supplying electric energy to retail customers.
- (15) Public Conservation Lands – Land owned in fee title by County, State or Federal agencies and managed specifically for conservation purposes, including but not limited to County Parks, State Wildlife Management Areas, State Parks, State Scientific and Natural Areas, Federal Wildlife Refuges and Waterfowl Production Areas. For the purpose of this section, public conservation lands will also include lands owned in fee title by non-profit conservation organizations. Public conservation lands do not include private lands upon which conservation easements have been sold to public agencies or non-profit conservation organizations.
- (16) Wind Turbine – A wind turbine is any piece of electrical generating equipment that converts kinetic energy of blowing wind into electric energy through the use of airfoils or similar devices to capture the wind.

### 761.3 Applications

All applications for Micro WECS, Non-Commercial WECS, and Meteorological Towers shall include the following information;

- The name of project applicant.
- The name of the property owner.
- The legal description and address of the property.
- A description of the project including: number, type, nameplate generating capacity, tower height, rotor diameter, and total height of all wind turbines and means of interconnecting with the electrical grid.
- 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 separation/setback distances and be drawn to scale.
- Plan designed by a Minnesota Licensed Engineer for footings and structure.
- Documentation of land ownership or legal control of the property.
- Life expectancy of the WECS and proposed abandonment date.

All applications for Commercial WECS shall also include:

- The latitude and longitude of individual wind turbines.
- A ½ section map of the property and surrounding area, including any other WECS within 10 rotor diameters of the proposed WECS.
- Location of wetlands, and natural areas (including bluffs) within 1,320 feet of the proposed WECS.
- FAA Permit Application
- Location of all known Communication Towers within 2 miles of the proposed WECS
- Decommissioning plan
- Description of potential impacts on nearby WECS and wind resources on adjacent properties.
- Road and grading plans, including drainage and erosion control measures
- An NPDES Permit, if required.

#### 761.4 Aggregated Projects

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. The Minnesota Public Utilities Commission shall be the site permitting authority for all WECS with a nameplate generating capacity of 5 megawatts or more.

761.5 District Regulations

<b>District</b>	<b>Micro-WECS</b>	<b>Non-Commercial WECS</b>	<b>Commercial WECS</b>	<b>Meteorological Tower</b>
AG – General Agriculture	Permitted	Permitted	Conditional Use Permit	Permitted
AR – Ag/Residential	Permitted	Conditional Use Permit	Prohibited	Permitted
R1 – Urban Rural Transition	Prohibited	Prohibited	Prohibited	Prohibited
R2 – Suburban Residential	Conditional Use Permit	Prohibited	Prohibited	Prohibited
R2a – Suburban Residential (a)	Conditional Use Permit	Conditional Use Permit	Prohibited	Prohibited
B1 - Highway Business	Conditional Use Permit	Conditional Use Permit	Conditional Use Permit	Permitted
B2 – General Business	Conditional Use Permit	Conditional Use Permit	Conditional Use Permit	Permitted
I1 – General Industry	Conditional Use Permit	Conditional Use Permit	Conditional Use Permit	Permitted
WS – Wild and Scenic	Conditional Use Permit	Conditional Use Permit	Prohibited	Conditional Use Permit
Shoreland Overlay	Prohibited	Prohibited	Prohibited	Prohibited

761.6 Setbacks – Wind Turbines, Tower, and Related Structures

	Wind-Turbine – Non-Commercial WECS	Wind Turbine – Commercial WECS	Micro-WECS & Meteorological Towers
Property Lines	1.1 times the total height	1.5 times the total height	1.1 times the total height
Dwellings	750 feet	750 feet	1.5 times the total height
Road Right-Of-Ways	1.1 times the total height	1.1 times the total height	1.1 times the total height
Other Right-Of-Ways (railroads, power line, and other easements)	1.1 times the total height	1.1 times the total height	1.1 times the total height
Public Conservation Lands	1.1 times the total height	600 feet	1.1 times the total height
Wetlands, USFWS Types III, IV, & V	1.1 times the total height	600 feet	1.1 times the total height
Other Structures	2 times the total height	2 times the total height	2 times the total height
Existing WECS	750 feet	750 feet	750 feet
Bluffs	1,000 feet	1,000 feet	1,000 feet

761.61 Minimum setback standards for substations and feeder lines shall be consistent with the standards for essential services established in Section 725 of the Wright County Zoning

Ordinance. Substations must be located outside of the road right-of-way and no less than 10 feet from the side property lines.

## 761.7 Requirements and Standards

### 761.71 – Safety Design Standards

Engineering Certification – For all WECS, the manufacturer’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.

Clearance – Rotor blades or airfoils must maintain at least 12 feet of clearance between their lowest point and the ground.

Warnings –

For all Commercial WECS, a sign or signs shall be posted on the tower, transformer, and substation warning of high voltage. The signs must include emergency contact information.

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 10 feet above the ground. Visible fencing around the anchor points of guy wires may be substituted for the above referenced markers.

All towers and support structures shall be reasonably protected against unauthorized climbing. The bottom of the structure (measured from ground level to 14 feet above ground level) shall be designed in a manner to preclude unauthorized climbing and shall be enclosed with a minimum of an eight (8) foot chain link fence with a locked gate. The chain link fence will meet the requirements of the 2006 IBC 3109.4.1.5. Depending on design, monopole structure may be exempt for the fence requirement.

### 761.72 – Standards

- Non-Commercial WECS shall have a total height of less than 200 feet
- All wind turbines which are part of a Commercial WECS shall be installed with a tubular, monopole type tower.
- Meteorological towers must be guyed
- All wind turbines and towers that are part of a Commercial WECS shall be white, gray, or another non-obtrusive color. Blades may be black in order to facilitate deicing. Finishes shall be matte or non-reflective.
- Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by the Federal Aviation Administration permits and regulations. Red strobe lights are preferred for night-time illumination. Red pulsating incandescent lights should be avoided.
- All signage on-site shall comply with Section 724 of the Wright County Zoning Ordinance. The manufacturer’s or owner’s company name and/or logo may be placed upon the compartment containing the electrical generator of the WECS.

- All communications and feeder lines, equal to or less than 34.5 kV in capacity, installed as part of a WECS shall be buried.
- 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.
- A WECS shall be considered a discontinued use after 1 year without energy production, unless a plan is developed and submitted to the Wright County Zoning Administrator outlining the steps and schedule for returning the WECS to service. All WECS and accessory facilities shall be removed to ground level within 90 days of the discontinued use.
- Each Commercial WECS shall have a decommissioning plan outlining the anticipated means and costs of removing WECS at the end of their serviceable life or upon becoming a discontinued use. The cost estimate 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.
- Upon issuance of a conditional use permit, all Commercial WECS shall notify the Environmental Quality Board Power Plant Siting Act program staff of the project location and details on the survey form specified by the Environmental Quality Board.
- All WECS shall comply with Minnesota Rules 7030 governing noise.
- All WECS shall comply with FA standards and permits.
- All WECS shall comply with the Building Code adopted by the State of Minnesota.
- Applicants for WECS shall be responsible for restoring or paying damages to all applicable road authority sufficient to restore the roads and bridges to preconstruction conditions.
- The applicant for a WECS shall be responsible for the immediate repair or damage to public drainage systems stemming from the construction, operation, or maintenance of the WECS.
- Guy wires and guy wire anchors shall not be erected within public or private easements and shall be setback a minimum of five (5) feet from all property lines.
- No land may be subdivided for the purpose of providing space for any WECS unless all lot size requirements for the relevant zoning district are met and subdivision approval is obtained.

761.73 Interference

The applicant shall minimize or mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any WECS. The applicant shall notify all communication tower operators within 5 miles of the proposed WECS location upon application to the County for permits. No WECS shall be constructed so as to interfere with the County or Minnesota Department of Transportation microwave transmissions.

761.74 Abandonment

1. At such time that a Micro or Non-Commercial wind energy system is scheduled to be abandoned or discontinued, the applicant will notify the building inspector by certified U.S. mail of the proposed date of the abandonment or discontinuation of operations.
2. Upon abandonment or discontinuation of use, the owner shall physically remove the small wind energy system within 90 days from the date of abandonment or discontinuation of use. This period may be extended at the request of the owner and at the discretion of the building inspector. “Physically remove” shall include, but not be limited to:
  - a. Removal of the wind generator, tower, and all related above-grade structures
  - b. Restoration of the location of the small wind energy system to its natural condition, except that any landscaping, grading, or below-grade foundation may remain in its same condition at initiation of abandonment.
3. In the event that an applicant fails to give such notice, the system shall be considered abandoned or discontinued if the system is out-of-service for a continuous 12 month period. After the 12 months of inoperability, the building inspector may issue a Notice of Abandonment to the owner of the small wind energy system. The owner shall have the right to respond to the Notice within 30 days from receipt of Notice. After review of the information provided by the owner, the building inspector shall determine if the small wind energy system has been abandoned. If it is determined that the small wind energy system has not been abandoned, the building inspector shall withdraw the Notice of Abandonment and notify the owner of the withdrawal.
4. If the owner fails to respond to the Notice of Abandonment or if, after review by the building inspector, it is determined that the small wind energy system has been abandoned or discontinued, the owner of the system shall remove physically remove the system at the owner’s sole expense within 90 days of the receipt of the Notice of Abandonment. If the owner fails to physically remove the system after the Notice of Abandonment procedure, the building inspector may pursue legal action to have the small wind energy system removed at the owner’s expense.

**Added to Section 302 of Wright County Zoning Ordinance:**

Wind Energy Conversion System (WECS) – An electrical generating facility comprised of one or more wind turbines and accessory facilities, including but not limited to: power lines, transformers, substations and meteorological towers that operate by converting the kinetic energy of wind into electrical energy. The energy may be used on-site or distributed into the electrical grid.