

### **10.5.18 Wind Energy Conversion Systems**

The purpose of this ordinance is to set forth a process for permitting wind energy facilities with a rated capacity of less than 5,000 kilowatts (or five megawatts). MN Statutes 116C.697 pre-empts all local authority over permitting or regulating the construction or operation of wind power facilities of five megawatts (five million watts) of name plate generator capacity or greater. All definitions shall be recognized by the language referenced in MN Rules 4401 and MN Statutes 116C.697.

Wind Energy Conversion Systems (WECS) shall be divided into the following categories and shall meet the respective requirements:

- A. **Hobbyist.** This type of system is designed for a nameplate rating not to exceed kilowatts. The system may be connected to the commercial electrical grid and electricity sold. Several small owned turbines joined together are or may be considered to be commercial application.
  - 1. Require a Conditional Use Permit including a site plan.
  - 2. Towers are free standing or guyed, and do not exceed 75 feet in height.
  - 3. Systems that directly connect to the commercial electrical grid shall conform to National Electrical Code (NEC).
  - 4. Applications for WECS that directly connect to the commercial electrical grid shall be accompanied by a Net Excess Generation (NEG) contract with the respective electrical power company.
  
- B. **Residential Commercial.** These systems are designed not to exceed 500 kilowatts of electrical output. The system may be connected to the commercial electrical grid and electricity sold. Applications for this use also require notification to the Minnesota Department of Commerce.
  - 1. Require a Conditional Use Permit for towers not exceeding 170 feet in height including a site plan.
  - 2. Non-free standing, guyed or non-lattice towers shall not exceed 120 feet in height. Guyed lattice towers shall not exceed 170 feet in height.
  - 3. Wind energy structural and mechanical systems engineering plan including soil investigation shall be developed by a qualified and licensed professional engineer to conform to applicable structural and mechanical standards.
  - 4. Systems that directly connect to the commercial electrical grid shall conform to National Electrical Code (NEC).
  - 5. Power Purchase Agreement (PPA) or other acceptable contract for the use or sale of power with the respective electrical power company is required as a condition of the Conditional Use Permit before the turbine is operable.
  
- C. **Commercial.** These systems are designed exclusively to be connected to the commercial electrical grid and electricity sold with a nameplate rating exceeding 500 kilowatts. Applications for this use also require notification to the Minnesota Department of Commerce before any approval is granted.
  - 1. Require a Conditional Use Permit.
  - 2. Towers shall not exceed 350 feet in height excluding the rotor blades.

3. Wind energy structural and mechanical systems engineering plan including soil investigation shall be developed by a qualified and licensed professional engineer to conform to applicable structural and mechanical standards.
4. Commercial systems shall conform to National Electrical Code (NEC).
5. A Power Purchase Agreement (PPA) or other acceptable contract for use or sale of power with the respective electrical power company is required as a condition of the Conditional Use Permit before the turbine is operable.

D. Experimental. These systems are designed and operated exclusively for research, testing, prototyping, education, demonstration, and development to supply electricity to loads isolated from the commercial grid.

1. Require a Land Use Permit for towers 170 feet or less in height including a site plan.
2. Require a Conditional Use Permit for towers more than 170 feet in height including a site plan.
3. Non-free standing, guyed non-lattice towers shall not exceed 120 feet in height.
4. Guyed lattice towers shall not exceed 170 feet in height.
5. Wind energy structural and mechanical systems engineering plan including soil investigation shall be developed by a qualified and licensed professional engineer to conform to applicable structural and mechanical standards.
6. Commercial systems shall conform to National Electrical Code (NEC).

### **Additional Standards**

In addition to the respective standards, all wind energy conversion systems shall comply with the following standards:

A. Districts and Setbacks:

1. Except for the Hobbyist system **or those with a nameplate rating that does not exceed 40 kilowatts** , WECS's are allowed only in the Agricultural (A-1, A-2) and Commercial/Industrial (C/I) Districts. Shoreland, Residential and other districts are prohibited.
2. **WECSs with a nameplate rating that does not exceed 40 kilowatts can be located within the shoreland zone of Natural Environment lakes that have less than 500 surface acres contingent that there's no adverse impact upon state and federal easements or related policies.**
3. Except for the Hobbyist system, towers shall be located no closer than 750 feet from the nearest residence other than the applicant.
4. All towers shall be located no closer than five (5) rotor diameter (RD) from any other wind tower project.
5. Towers shall be set back from all residential structures, property lines, public road and railroad right-of-ways an amount equal to the height of the tower plus 25 feet. Guy wires for towers shall be set back 25 feet from all property lines and public road rights-of-way. Notwithstanding the foregoing, the county may grant a conditional use permit for the construction of a residence or establishment of a WECS which does not meet these setback requirements provided that the permit is conditioned upon the applicant obtaining a covenant from the owner of record of each existing use from which the proposed use must be set back, which waives the protection of the setback and consents to the applicant's proposed use. The covenant must be in recordable form and binding on the grantor's heirs and assigns, and must be recorded by the applicant before

the conditional use permit is effective.

- B. Towers shall be constructed of, and/or treated with corrosive resistant material.
- C. WECS towers and electrical equipment shall be maintained and inspected according to manufacture's requirements by qualified personnel. Annual tower inspection reports shall be provided to the department.
- D. WECS electrical and mechanical equipment that is connected to a commercial electrical grid shall be maintained and inspected according to manufacture's requirements by qualified personnel. Annual electrical equipment inspection reports shall be provided to the Pope County Land & Resource Management Department on forms provided and shall include total annual energy generated, total annual energy sold, average daily generation, and instantaneous maximum generation. A copy of these reports must be filed with the Minnesota Department of Commerce.
- E. The use of any portion of a WECS tower for signs/placards other than warning, identification, or equipment information sign/placards is prohibited. Signs or placards for warning, identification, or equipment information shall not exceed six square feet or exceed 20 feet from ground. The manufacturer's or owner's name/logo printed on the nacelle is exempt from this standard.
- F. The addition of any non-WECS's equipment to a WECS's tower is prohibited. Towers that do not exceed 75 feet in height are exempt from this requirement.
- G. All towers must be painted a solid, natural tone color.
- H. For lattice structures or towers with external ladder access or towers over 75 feet tall, a suitable protective anti-climbing solution must be approved by the Department.
- I. The Permittee shall not operate a turbine so as to cause microwave, television, radio, telecommunications or navigation interference contrary to Federal Communications Commission (FCC) regulations or other law. In the event the turbine and its associated facilities or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.
- J. Noise is regulated by the Minnesota Pollution Control Agency under Chapter 7030. Any WECS shall not exceed 50 dB(A), as measured at the closest neighboring inhabited dwelling. The level, however, may be exceeded during short-term events such as utility outages and/or severe wind storms.
- K. Each WECS permit or conditional use permit may include a utility building for protection of associated equipment not to exceed 100 square feet.
- L. All towers shall utilize minimal lighting. No tower lighting other than normal security lighting shall be permitted except as may be required by the Federal Aviation Administration. It may be appropriate to allow for some infrared lights or heat lamps to prevent icing of sensors.
- M. All towers must have a decommissioning plan which shall include a description of:

1. When and how a facility is to be decommissioned.
2. Estimated cost of decommissioning.
3. If the WECS isn't removed within 12 months after cessation of the operations at a site, Pope County may remove the tower and associated facilities and assess the costs of removal against the property.

The following provisions must be followed to ensure that facilities are properly decommissioned upon the end of the project life or facility abandonment. Towers that have not been used for a period of twelve months must be decommissioned unless awarded an extension by the Pope County Board of Commissioners and shall follow the following requirements:

1. Remove all structures and debris to a depth of four (4) feet.
2. Restoration of the soil.
3. Restoration of vegetation (consistent and compatible with surrounding vegetation).