

100.23 WIND ENERGY CONVERSION SYSTEMS. The intent of the regulations of this Section is to balance the need for clean, renewable energy resources with the need to protect the public health, safety, and welfare. The regulations of this Section are found to be necessary to ensure that wind energy conversion systems (WECS) are appropriately designed, sited, and installed. Wind energy conversion systems are defined as a single turbine designed for more than one hundred kilowatts (100 kW) of electrical output. Multiple interconnected WECS installed for utility-scale energy production may be referred to as a Wind Farm.

1. *Use.*

A. ***Accessory Use.*** Wind Energy Conversion System (WECS) shall be allowed only as an accessory use to a permitted principal use in residential, commercial, and industrial zoning districts and land uses.

B. ***Principal Use.*** WECS shall be allowed as a principal use only in agricultural zoning districts and land uses. A free-standing or guyed tower with a height up to 500 feet is a permitted special use.

2. ***Special Use Permit Required.*** No zoning permit shall be issued for any WECS that is proposed to be constructed until after a Special Use Permit has been approved by the Board of Adjustment in accordance with Section 100.32 of this Chapter.

A. The special use permit shall be valid so long as the structure conforms to the site plan on file with the Monona County Zoning Administrator and the Monona County Zoning Ordinance.

B. ***Pre-application Informational Conference Required.*** Whenever a WECS development is proposed in the jurisdiction of Monona County, the owner/developer of the planned WECS development is required to hold a public informational conference on the proposed WECS development. This conference shall be held a minimum of 30 days and a maximum of 90 days prior to the date of the first public hearing with the Board of Adjustment. The conference shall be held in Monona County at a place adequate in size to serve the anticipated attendance. The conference shall be advertised in the official county newspaper once a week for the two weeks prior to the conference. The ad in the newspaper shall be a minimum size of 1/8 page. The ad shall include as a minimum the name of the proposed project, the time and place of the conference and a description of the proposed project. The owner/developer of the proposed WECS project is responsible in meeting all of these requirements and shall provide documentation to the county that all of these requirements have been met. This shall be the time and place for landowners, municipal government officials, and other members of the public to make their concerns known to the developers and the Zoning Board of Adjustment.

3. ***Process.*** The process for obtaining a Special Use Permit for a WECS shall be as follows:

- A. Zoning Permit Application with preliminary site plan
 - B. Notification of agencies in Section 5(B) of this chapter
 - C. Pre-application Informational Conference
 - D. Public Hearing of the Zoning Board of Adjustment for the purposes of approval or disapproval for a Special Use Permit
 - E. Upon approval of a Special Use Permit, issuance of zoning permits and clearance for site development
4. **Zoning Permit Required.** It shall be unlawful to construct, erect, install, alter, or locate any WECS within Monona County, unless a zoning permit has been obtained from the Zoning Administrator or their designee. The owner and/or operator of the WECS must also obtain any other permits required by other federal, state, and local agencies or departments prior to obtaining an approved zoning permit or installing the system, and shall comply with all overlay district regulations.
5. **Permit Application Information.** An application for a zoning permit for a WECS shall be made on forms provided by the County. Along with the application, the applicant shall submit the following information:
- A. *Site Plan.* One (1) complete copy of a site plan and fee shall be submitted in accordance with Section 100.25. The site plan shall be based on a certified instrument survey by a surveyor licensed in the State of Iowa. A Plat of Survey, Easement Plat, or Record of Lot Tie is required to establish property lines, setbacks, and documented legal control of the fall zone. The site plan shall include the following:
 - (1) Location of each WECS on the site and total height of the system, including blades, rotor diameter, ground clearance, and fall zone for each tower;
 - (2) Utility lines, telephone lines and any other lines, both above and below ground, within a radius of 200% of the tower height measured from the tower base to the highest reach of the rotor tip;
 - (3) Details as to how the power will be delivered to the grid, including the route and size of poles and towers to be used;
 - (4) Property lot lines, land uses and the location and dimensions of all existing structures and uses on and off site within a radius of 200% of the tower height measured from the tower base to the highest reach of the rotor tip, or 500 feet, whichever is larger;
 - (5) Standard drawings and dimensional representations of the wind turbine structure, including the tower and base for individual WECS; and
 - (6) A line drawing of the electrical components in sufficient detail to allow for

a determination that the manner of the installation conforms to the Iowa Electric Code.

B. Notification.

- (1) The WECS project owner and/or operator is responsible for notifying the following agencies of their planned project and allowing the agency 120 days to do a preliminary review. Documentation of notification of these agencies, and any reports from the agencies are to be provided to the county 30 days prior to the first Zoning Board of Adjustment public hearing on such matter. If nothing is received from the reviewing agencies within 120 days, the permitting process will continue. For the purposes of this Chapter section, it is recommended that any issues be addressed prior to the public hearing.

- Federal Aviation Administration
- Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Bureau of Land Management
- Iowa Department of Transportation
- Iowa Department of Natural Resources
- Iowa Utilities Board
- Monona County Engineer's Office
- Local EMS Fire and Rescue
- Local airport authorities including but not limited to: James G Whiting Memorial Field in Mapleton

- (2) It is required that the owner and/or operator have a preliminary review with the Iowa Department of Natural Resources early in the planning stages of all WECS projects located in Monona County.
- (3) Notice shall be given by ordinary mail to all property owners located within one (1) mile of the property for which the special use is requested in accordance with Section 100.32 of this chapter.

6. Bulk Regulations.

A. Setbacks.

- (1) The Wind Energy Conversion System (WECS) shall be placed at a distance at least 200% of the height of the turbine, measured from the base to the highest reach of the rotor tip, or 1200 feet, whichever is greater, from any human-occupied structure.
- a. A human-occupied structure is defined as a residential dwelling, school, place of worship, commercial building, or any other structure occupied by humans for residential, business, or leisure purposes for three hours or more, 52 days or more per year.

- b. The Zoning Administrator or their designee may require a larger setback from property lines and public right-of-way in order to minimize shadow flicker, nuisance noise, and other possible documented effects to humans living and working in these structures. All of this is to be addressed as part of the application by the owner and/or operator.
 - c. All WECS must be placed at a distance greater than or equal to 110% of its height, measured from the base of the tower to the highest reach of the rotor tip, from property lines and overhead utility lines.
- (2) The WECS shall be placed a minimum of 110% of its height, measured from the base to the highest reach of the rotor tip, from any non-human-occupied structures, defined as barns, warehouses, or any other buildings not occupied by humans for more than three hours per day, 52 days per year. The measurement is to be taken from the nearest point of the unoccupied structure to the center of the base of the turbine.
- B. *Minimum Lot Size.* The minimum net lot size for any WECS shall meet the current zoning ordinance, exclusive of right-of-way.
- C. *Maximum Tower Height.*
- (1) The maximum tower height of a WECS shall be five hundred (500) feet.
 - (2) Site plans with a WECS exceeding the height limits of this chapter shall require a special exception prior to the issuance of a zoning permit. In no case shall a WECS exceed 150% of the maximum height allowed in this chapter.
- D. *Clearance of Blade:* No portion of any WECS blade shall extend within thirty (30) feet of the ground. No portion of any WECS blade shall extend over parking areas, driveways or sidewalks, with the exception of roads intended for accessing the WECS and/or surrounding agricultural land. No portion of any WECS blade shall extend within twenty (20) feet of the nearest tree or structure.

7. *Location.*

- A. No more than one (1) accessory WECS shall be installed on any lot or parcel in a residential, commercial, or industrial zoning district.
- B. No part of a WECS shall be located within or over drainage, utility or other established easements, or on or over any property lines.
 - (1) At no time shall any part of the WECS overhang an adjoining property without securing appropriate easements from adjoining property owners, or filing a Record of Lot Tie agreement with the Monona County Auditor.
 - (2) If the deed to two or more adjoining parcels are owned by the same person, trust, business, or other type of ownership, the site plan must stay within the

required setbacks of each individual parcel unless said parcels are part of an official Record of Lot Tie or a perpetual easement has been recorded.

- C. An accessory WECS shall be located entirely in the rear yard in permitted districts.
 - D. A WECS shall not be located in any required setback.
 - E. A WECS shall be located in compliance with all Federal Aviation Administration (FAA) regulations, guidelines and standards. It is the owner's responsibility to ensure compliance with the FAA.
8. A WECS shall not be located within one (1) mile of the Loess Hills, as determined by the Loess Hills Overlay District.
9. **Interconnection.** The WECS, if not off-grid, shall meet the requirements for interconnection and operation as set forth by the utility and the Iowa Utilities Board. No permit of any kind shall be issued until Monona County has been provided with a copy of an executed interconnection agreement. Off-grid systems, defined as not being connected to the distribution network of a utility, shall be exempt from this requirement.
10. **Installation.** Installation shall be done by a qualified professional and according to the manufacturer's recommendations.
- A. All equipment used for installation shall follow an approved route to the site. The route shall be approved by the County Engineer or their designee.
 - B. Color, finish, and markings. WECS shall to the extent reasonably possible, use materials, color, and texture that will blend with the natural setting and existing environment. All WECS will be marked as required by FAA. Any guy wires will have a colored spherical marker.
11. **Mitigation of Damages to Public Infrastructure:**
- A. The owner and/or operator of the WECS shall remedy any adverse effect on any duly established drainage district caused by construction of the WECS project.
 - B. Costs of repair of damage and any maintenance to county roads, rights-of-way, or any county infrastructure resulting from the construction phase of the WECS project shall be the responsibility of the owner and/or operator of the WECS.
 - C. Any substantiated interference with electronic devices shall be remedied by the owner and/or of the WECS.
 - D. Documentation required from the owner and/or operator accepting any responsibility of a, b, and c above as part of the application.
12. **Restriction on Use of Electricity Generated.** An accessory WECS shall be used exclusively to supply electrical power for on-site use, except that excess electrical

power generated by the WECS and not presently need for on-site use may be used by the utility company in accordance with Section 199, Chapter 15.11(5) of the Iowa Administrative Code.

13. ***Fall-Zone Clearance.*** The fall-zone of a WECS may not overlap with the fall-zone of any communications tower.
14. ***Security.***
- A. ***Lighting.*** No light shall be installed on the tower, unless required to meet FAA regulations.
 - B. ***Signage.***
 - (1) One sign, limited to four (4) square feet, shall be posted at the base of each tower. The sign shall include a notice of no trespassing, a warning of high voltage, and the phone number of the owner and operator to call in case of emergency.
 - (2) Each entrance to a wind farm shall include a notice of restriction to authorized personnel, a warning of high voltage, and the phone number of the owner and/or operator to call in case of emergency.
 - (3) Each driveway will be given a 911 address by Monona County, and each WECS at that address will be given a unique letter or number for the purpose of identification.
 - C. ***Climbing Apparatus.*** All external climbing apparatus for accessory WECS shall be located at least eight (8) feet above the ground, and the tower must be designed to prevent climbing within the first eight (8) feet.
 - D. ***Fencing.*** To limit access to the tower, a non-climbable fence six (6) feet high with locked gate may be installed around the WECS at the discretion and expense of the owner and/or operator.
15. ***Maintenance.*** Structures and facilities shall be well maintained in an operational condition that poses no potential safety hazard.
16. ***Electromagnetic Interference.*** Every WECS shall be designed and constructed so as not to cause radio and television interference.
17. ***Removal.*** If a WECS remains nonfunctional or inoperative for a continuous period of one (1) year, the system shall be deemed discontinued and abandoned and shall constitute a public nuisance.
- A. The owner and/or operator shall have one (1) year to remove the abandoned system at their sole expense. Nonfunctioning or lack of operation may be proven by reports from the interconnected utility. If removal of towers and appurtenant facilities is required, the Zoning Administrator or their designee shall notify the

owner and operator.

- B. If the property owner does not remove the abandoned system and appurtenant structures within the timeframe provided on the official notice from the Zoning Administrator, the County may cause the structure to be removed and shall assess the costs to the property owner by invoice or property tax lien.