

## CEDAR COUNTY ORDINANCE #47

### AN ORDINANCE REGULATING THE PLACEMENT OF WIND ENERGY CONVERSION SYSTEMS (WECS) ON PROPERTY LOCATED IN THE UNINCORPORATED AREAS OF CEDAR COUNTY, IOWA.

BE IT ENACTED BY THE CEDAR COUNTY BOARD OF SUPERVISORS:

#### SECTION 1. PURPOSE.

The purpose of this ordinance is to establish guidelines for the siting, design and construction of Wind Energy Conversion Systems (WECS) and substations which generate electricity for use at the location of the WECS or to be sold to wholesale or retail markets. In addition, the purpose of this Ordinance shall be to promote the public health, safety, comfort and general welfare, while facilitating economic opportunities for rural residents and promoting a goal of increased energy production from renewable energy sources. The requirements of this Ordinance shall apply to all WECS constructed after the effective date of this Ordinance. WECS for which a required permit has been properly issued prior to the effective date of this Ordinance shall not be required to meet the requirements of this Ordinance; provided, that any such pre-existing WECS, which does not provide energy for a continuous period of twelve (12) months, shall meet the requirements of this Ordinance prior to recommencing production of energy. Also, no modification or alteration to an existing WECS shall be allowed without full compliance with this Ordinance.

#### SECTION 2. DEFINITIONS.

For use in this Ordinance, certain words used herein shall be defined as follows:

Applicant: The owner or operator of a WECS.

Aggregated Project: Aggregated projects are those which are developed and operated in a coordinated fashion, but which 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.

Commercial Wind Energy Conversion System (C-WECS): A WECS of equal to or greater than [100/40] kW in total name plate generating capacity.

Easement: A legal interest in land, as defined in a document recorded in the office of the Cedar County Recorder, granted by the owner to another person or entity, which allows that person(s) or entity(ies) the use of all or a portion of the owner's land, generally for a stated purpose, including, but not limited to, access or placement of utilities.

Electromagnetic Interference (EMI): The interference to communication systems created by scattering of electromagnetic signals.

Fall Zone: The area, defined as the furthest distance from a tower base, in which a guyed tower or self-supporting tower will collapse in the event of a structural failure. This area includes the total height of the structure based upon the tower's structural design plus ten (10) percent.

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 electrical power grid. In the case of interconnection with the high voltage transmission systems, the point of interconnection shall be the substation serving the WECS(s).

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.

Non-Commercial WECS (Non C-WECS): A wind energy conversion system consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a rated capacity of not more than 100 kW and which is intended to primarily reduce on-site consumption of utility power.

Operator: The entity responsible for the day-to-day operation and maintenance of the WECS, including third party subcontractors.

Owner: The entity or entities with an equity interest in the WECS(s), including their respective successors and assigns. Owner does not mean (i) the property owner from whom the land is leased for locating the WECS (unless the property owner has an equity interest in the WECS); or (ii) any person holding a security interest in the WECS(s) solely to secure an extension of credit, or a person foreclosing on such security interest provided that after foreclosure, such person seeks to sell the WECS(s) at the earliest practicable date.

Professional Engineer: A qualified individual who is licensed in the state of Iowa as a professional engineer.

Residence: A house, apartment or other shelter that is the abode of a person, family, or household.

Rotor Diameter: The diameter of the circle described by the moving rotor blades of a WECS.

Setback: The minimum required distance from the property line, right-of-way, or easement to any portion of the structure.

Shadow Flicker: The alternating pattern of sun and shade caused by the wind tower blades casting a shadow.

Structure: Anything constructed or erected on the ground or attached to the ground, including but not limited to, antenna(s), buildings, sheds, cabins, dwellings (built on-site or factory built homes), signs, storage tanks, towers, windmills and other similar uses.

Substation: The apparatus that connects the electrical connection system of the WECS(s) and increases the voltage for connection with the utility's transmission lines.

Total Height (WECS): The highest point, above ground level, reached by the rotor tip or any other part of the WECS.

Tower: The vertical structure that supports the electrical generator, nacelle, rotor blades, or meteorological equipment.

Tower Height: The total height of the WECS inclusive of the rotor blades.

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 electrical energy to retail customers.

Wind Energy Conversion System (WECS): All necessary devices that together convert wind energy into electricity, including the rotor, nacelle, generator, WECS Tower, electrical components, WECS foundation, transformers, electrical cabling and meteorological towers from the WECS Tower to the Substation(s).

WECS Project: The collection of WECS(s) and Substations as specified in the siting approval application pursuant to Section 5 of this Ordinance.

Wind Turbine: A wind turbine is any piece of electrical generating equipment that converts the kinetic energy of blowing wind into electrical energy through the use of airfoils or similar devices to capture the wind.

### SECTION 3. SPECIAL EXCEPTION.

All C-WECS and all Non C-WECS over one hundred (100) feet in height, or which sell a portion of the generated electricity to wholesale or retail markets, and Meteorological

Towers may be permitted as a Special Exception use as provided in the Cedar County Zoning Ordinance, Number 10, upon determination that all applicable conditions of this Ordinance are met. Special Exception Use applications are submitted to the Cedar County Board of Adjustment for action after review and recommendation by the Cedar County Planning and Zoning Commission.

#### SECTION 4. PERMITTED LOCATIONS.

Subject to Section 3, of this Ordinance, C-WECS and Non C-WECS and Meteorological Towers are a permitted use in the following Zoning Districts as identified in the Cedar County Zoning Ordinance: A-1, Agricultural; C-1, Local Commercial; C-2, Highway Commercial; M-1, Light Industrial or the M-2, Heavy Industrial Zoning Districts. No C-WECS or Non C-WECS or Meteorological Towers are permitted in the following Zoning Districts: AR-1, Agricultural-Recreational; R-1 Suburban Residential; R-2, Urban Residential or the R-3, Multi-Family Residential Zoning Districts.

#### SECTION 5. SITING APPROVAL APPLICATION REQUIREMENTS.

The applicant for a Special Exception for siting and construction of a WECS shall file an application, as provided by Chapter 17.18(2) of the Cedar County Zoning Ordinance accompanied by a fee as established by the Cedar County Board of Supervisors and payable to the Treasurer of Cedar County, Iowa.

- A. In addition to the submittal requirements defined for Special Exception Permit applications, all applications for C-WECS must submit the following information (as applicable).
1. A WECS Project summary, including, to the extent possible: (1) a general description of the project, including its approximate nameplate generating capacity; the potential equipment manufacturer(s), type(s) of WECS(s), number of WECSs, and the name plate generating capacity of each WECS; and (2) a description of the Applicant, Owner and Operator, including their respective business structures.
  2. The names of project applicant.
  3. The name of the project owner.
  4. The legal description and address of the project.
  5. Tower height, rotor diameter, and total height of all wind turbines and means of interconnecting with the electrical grid.
  6. 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.
  7. Engineer's certification(s) as required in these supplemental standards.
  8. Documentation of land ownership or legal control of the property.
  9. The latitude and longitude of individual wind turbines.

10. A U.S.G.S. topographical map, or map with similar data, of the property and surrounding area, including any other C-WECS within 10 rotor diameters of the proposed C-WECS.
11. Location of wetlands, scenic, and natural areas [including bluffs] within 1,320 feet of the proposed C-WECS.
12. An Acoustical Analysis.
13. F.A.A. Permit Application.
14. Location of all known communications towers/facilities within 2 miles of the proposed C-WECS.
15. Decommissioning Plan.
16. Description of potential impacts on nearby C-WECS and Non C-WECS and wind resources on adjacent properties.
17. Identification of significant migratory patterns and nesting areas for birds and bats and identification of endangered species within two (2) miles. A qualified professional such as a wildlife biologist, shall conduct a habitat and migration route study, as part of the siting approval application process, to determine if the installation of WECS(s) will have a substantial adverse impact on these animals.

B. The Applicant, Owner or Operator shall submit a copy of the site plan and Emergency Action Plan to the Cedar County Emergency Management Administrator.

The Applicant shall notify Cedar County of any changes to the information provided in Section 5 that occur while the siting approval application is pending.

#### SECTION 6. GENERAL REQUIREMENTS FOR C-WECS AND METEOROLOGICAL TOWERS.

In addition to satisfactorily addressing the considerations set forth in Chapter 17.18, Subsections 2(d) and 2(e) of the Zoning Ordinance, the applicant must provide documentation that the following requirements have been met.

1. Color and Finish. Wind Turbines shall be painted a non-reflective color. Blades may be black in order to facilitate de-icing. Finishes shall be matte or non-reflective. At C-WECS sites, the design of the buildings and related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the C-WECS to the natural setting and existing environment.
2. Tower configuration. All wind turbines, which are part of a C-WECS, shall be installed with a tubular, monopole type tower. Meteorological towers may be guyed.
3. Tower Density. There shall not be more than one C-WECS per acre.
4. Lighting. C-WECS sites shall not be artificially lighted, except to the extent required by the F.A.A. or other applicable authority or for night time repairs/maintenance. Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation

Administration and/or Federal Communication Commission 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. Exceptions may be made for meteorological towers, where concerns exist relative to aerial spray applicators.

5. Signage. Upon completion of the WECS Tower, the Owner's company name and/or logo and the phone number and name of the person to contact in case of emergency shall be placed upon the base of the WECS Tower or the entrance to any enclosure fence. Wind turbines shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the C-WECS sites.
6. Feeder Lines. All communications and feeder lines, equal to or less than 34.5 kV in capacity, installed as part of a C-WECS shall be buried not less than forty eight (48) inches deep.
7. 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 in a time period as established by the Cedar County Environmental Health Department and disposed of in accordance with all applicable local, state and federal regulations.
8. Minimum Ground Clearance. The blade tip of any Wind Turbine shall, at its lowest point, have ground clearance of no less than seventy-five (75) feet.
9. Signal Interference. The applicant shall provide to applicable microwave transmission providers and the Emergency Management Administrator copies of the project summary and site plan, in accordance with Section 5, of this Ordinance. The applicant shall minimize and mitigate any interference with electromagnetic communications, such as radio, telephone or television signals caused by any C-WECS. If, after construction of the WECS, the Owner or Operator receives a written complaint related to the above-mentioned interference, the Owner or Operator shall take reasonable steps to respond to the complaint.
10. Federal Aviation Administration. All C-WECS shall comply with F.A.A. standards and permits.
11. Electrical Codes and Standards. All C-WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.
12. Setbacks. The following setbacks and separation requirements shall apply to all Wind Turbines and meteorological towers; provided that the Board of Adjustment may reduce the standard setbacks and separation requirements if the intent of this Ordinance would be better served thereby. All other structures shall comply with the applicable setbacks as allowed by the base zoning district.
  - a) Inhabited Structures. Each wind turbine and meteorological tower shall be set back from the nearest residence, school, hospital, church or public library, a distance no less than (i) two (2) times its total height or (ii) one thousand (1,000) feet, whichever is greater.

- b) Property Lines. At no time shall any part of the wind turbine and meteorological tower overhang an adjoining property without securing appropriate easements from adjoining property owners.
- c) Public Right-of-Way. Setbacks from public right-of-way, railroads, power lines and structures shall be a minimum of 1.1 times the height of the tower and rotor.
- d) Communication and Electrical Lines. Each wind turbine and meteorological tower shall be set back from the nearest above-ground public electric power line or telephone line a distance no less than 1.1 times its total height, determined from the existing power line or telephone line.

13. Noise. Audible noise due to C-WECS sites operations shall not exceed fifty (50) decibel A (dBA) for any period of time, when measured at any dwelling, school, hospital, church or public library existing on the date of approval of any Special Exception Use permit.

- a) In the event audible noise due to C-WECS operations contains a steady pure tone, such as a whine, screech, or hum, the standards for audible noise set forth in this subsection shall be reduced by five (5) dBA.
- b) In the event the ambient noise level (exclusive of the development in question) exceeds the applicable standard given above, the applicable standard shall be adjusted so as to equal the ambient noise level. The ambient noise level shall be expressed in terms of the highest whole number sound pressure level in dBA, which is succeeded for more than five (5) minutes per hour. Ambient noise levels shall be measured at the exterior of potentially affected existing residences, schools, hospitals, churches and public libraries. Ambient noise level measurement techniques shall employ all practical means of reducing the effect of wind generated noise at the microphone. Ambient noise level measurements may be performed when wind velocities at the proposed project site are sufficient to allow wind turbine operation, provided that the wind velocity does not exceed thirty (30) mph at the ambient noise measurement location.
- c) In the event the noise levels resulting from the C-WECS exceed the criteria listed above, a waiver to said levels may be granted by the Board of Adjustment provided that the following has been accomplished:
  - (i) Written consent from the affected property owners has been obtained stating that they are aware of the C-WECS and the noise limitations imposed by this Ordinance, and that consent is granted to allow noise levels to exceed the maximum limits otherwise allowed; and
  - (ii) If the applicant wishes the waiver to apply to succeeding owners of the property, a permanent noise impact easement shall be recorded in the Office of the Cedar County Recorder

which describes the burdened properties and which advises all subsequent owners of the burdened property that noise levels in excess of those permitted by this Ordinance may exist on or at the burdened property.

14. Safety.

- a) All wiring between Wind Turbines and the C-WECS substation shall be underground. If the developer can demonstrate the need for an overhead line and the acceptance of landowners for this line, such option may be approved conditionally by the Cedar County Board of Adjustment.
- b) Wind Turbine and meteorological towers shall not be climbable up to fifteen (15) feet above ground level.
- c) All access doors to Wind Turbine and Meteorological Towers and electrical equipment shall be locked when not being serviced.
- d) Appropriate visible warning signage shall be placed on Wind Turbine towers, electrical equipment, and C-WECS entrances.
- e) For all C-WECS, the manufacturer's engineer or another qualified engineer shall certify that the turbine, foundation and tower design of the C-WECS is within accepted professional standards, given local soil and climate conditions.
- f) All WECS shall be equipped with a redundant braking system. This includes both aerodynamic over speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient braking system for over speed control.
- g) 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 twelve (12) feet above the ground. Visible fencing shall be installed around anchor points of guy wires. The property owner must sign a notarized acknowledgement and consent form allowing construction of the turbine and guyed wires without fencing as required in this Ordinance to be presented to the Board of Adjustment.

15. Exceptions to this section may be made for meteorological towers, where concerns exist relative to aerial spray applicators.

SECTION 7. AVOIDANCE AND MITIGATION OF DAMAGES TO PUBLIC INFRASTRUCTURE

1. Roads. Applicants shall identify all roads to be used for the purpose of transporting C-WECS, substation parts, cement, and/or equipment for construction, operation or maintenance of the C-WECS and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.

2. Existing Road Conditions. Applicant shall conduct a pre-construction baseline survey, in coordination with the impacted local road authority(ies) to determine existing road conditions for assessing potential future damage. The survey shall include photographs and a written agreement to document the condition of the public facility. The applicant is responsible for on-going road maintenance and dust control measures identified by the Cedar County Engineer during all phases of construction. The applicant is responsible for any costs required to repair roads to pre-construction baseline condition. Cedar County reserves the right to halt operations if road conditions deteriorate to a point that creates a hazard to the public.
3. Drainage System. The Applicant shall be responsible for immediate repair of damage to public drainage systems stemming from construction, operation or maintenance of the C-WECS.
4. Performance Bond or Equivalent Financial Instrument. The applicant shall 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. A performance bond or equivalent financial instrument, approved by the Cedar County Attorney's Office, shall be submitted covering 130% the costs of all required improvements. This requirement may be waived by the Board of Adjustment by written recommendation from the Cedar County Engineer.

#### SECTION 8. DISCONTINUATION AND DE-COMMISSIONING.

A C-WECS shall be considered a discontinued use after one (1) year without energy production, unless a plan is developed and submitted to the Administrator outlining the steps and schedule for returning the C-WECS to service. All C-WECS and accessory facilities shall be removed to four (4) feet below ground level within one hundred eighty (180) days of the discontinuation of use. An extension to such period may be granted by the Board of Adjustment provided that the Owner or Operator submits an acceptable alternate plan for the decommissioning and thereafter diligently pursues such decommissioning until completed. Each C-WECS shall have a De-commissioning plan outlining the anticipated means and cost of removing C-WECS at the end of their serviceable life or upon becoming a discontinued use. The cost estimates shall be made by a professional engineer licensed in the State of Iowa. The plan shall also identify the financial resources that will be available to pay for the decommissioning and removal of the C-WECS and accessory facilities. Cedar County reserves the right to verify that adequate decommissioning terms are contained in the landowner easement.

#### SECTION 9. NON-COMMERCIAL WECS (Non C-WECS).

A. Non-Commercial WECS, are subject to the following standards. In addition to satisfactorily addressing the requirement of Chapter 17.6, of the Zoning Ordinance, the applicant must provide documentation that the following requirements have been met.

1. Tower Height: Subject to Section 3 of this Ordinance, Non C-WECS shall not exceed one hundred (100) feet in height without approval of a Special Exception by the Cedar County Board of Adjustment. Non C-WECS, shall be subject to all height limitations as necessary to comply with other sections of this Ordinance and those imposed by F.A.A. regulations.
2. Setback: No part of the wind system structure, including guy wire anchors, may extend closer than ten (10) feet to the property boundaries of the installation site. The distance of the base of the tower from any property line shall be a minimum of 115% of the total height of the tower.
3. Noise: Non C-WECS shall not exceed 50 dBA, 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.
4. Engineer Certification: Applications for Non C-WECS shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, and footings. An engineering analysis of the tower showing compliance with the applicable regulations and certified by a Iowa licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer.
5. Compliance with F.A.A. Regulations: Non C-WECS must comply with applicable F.A.A. regulations, including any necessary approvals for installations close to airports.
6. Compliance with National Electric Code: Applications for Non C-WECS shall be accompanied by a line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.
7. Utility Notification: No Non C-WECS shall be installed until evidence has been given that the utility company has been informed of the customer's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
8. Insurance: The Owner seeking a Zoning Permit to erect a Non C-WECS shall provide evidence, in the form of a certificate of insurance satisfactory to Cedar County, showing general liability coverage for the installation and operation of the system under a standard homeowner's or standard business owner's insurance policy, separate and distinct from any insurance requirements of a public utility.

#### SECTION 10. LIABILITY INSURANCE.

The Owner or Operator of the WECS(s) and Meteorological Towers, subject to Section 3 of this Ordinance, shall maintain a current general liability policy covering bodily injury and property damage with limits of at least Three Million Dollars per occurrence and Three Million Dollars in the aggregate.

SECTION 11. ZONING PERMIT(S).

All C-WECS and Meteorological Towers are subject to the construction permit requirements of Chapter 17 of the Cedar County Zoning Ordinance. Permit issuance is contingent upon documentation of F.A.A. approval.

SECTION 12. REPEALER.

All ordinance(s) in conflict with the provisions of this Ordinance are hereby repealed.

SECTION 13. SEVERABILITY.

Should any section or provisions of this Ordinance be declared by the courts to be invalid or unconstitutional, such decision shall not affect the validity of the Ordinance as a whole, or any part thereof other than the part so declared to be invalid or unconstitutional.

SECTION 14. PENALTY.

Any person, persons, firms, partnerships or corporations, whether acting alone or in concert with any other, who violates this Ordinance shall be guilty of a County Infraction and shall be penalized as set forth in Ordinance #20, of the County Code of Cedar County, Iowa.

SECTION 15. EFFECTIVE DATE.

This Ordinance shall be in effect after its final passage, approval and publication as provided by law.

PASSED AND APPROVED this \_\_\_\_ day of May, 2010.

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Jon E. Bell

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Dennis L. Weih

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LeRoy Moeller

\_\_\_\_\_  
Wayne Deerberg

\_\_\_\_\_  
Dennis Boedeker

ATTEST: \_\_\_\_\_  
Cedar County Auditor or Designee

First Reading:  
Second Reading:  
Adopted:  
Published: