

ORDINANCE NO. 29

HARDIN COUNTY ZONING ORDINANCE OF 1999

AMENDMENT NUMBER 2

ARTICLE XXIII. NON-COMMERCIAL WIND ENERGY CONVERSION SYSTEM PERMITTED USES AND COMMERCIAL CONDITIONAL USE WIND ENERGY CONVERSION SYSTEM STANDARDS.

Section 1. DEFINITIONS.

1. Commercial WECS: A WECS of equal to or greater than [100/40] kW in total name plate generating capacity.
2. Non-Commercial WECS: A wind energy conversion system consisting of a wind turbine, a tower, and associated control or conversion electronics, which has a total name plate generating capacity of not more than 100 kW and which is intended to primarily reduce on-site consumption of utility power.
3. 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 metrological towers that operate by converting the kinetic energy of wind into electrical energy. The energy maybe used on-site or distributed into the electrical grid.
4. 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 2. "A", AGRICULTURAL DISTRICT; ARTICLE IX. "R-1", SINGLE-FAMILY RESIDENTIAL DISTRICT; ARTICLE X. "R-2", MULTI-FAMILY RESIDENTIAL DISTRICT; ARTICLE XI. "R-3", MOBILE HOME PARK DISTRICT; ARTICLE XII. "C", COMMERCIAL DISTRICT; ARTICLE XIII. "M", MANUFACTURING DISTRICT; "W", WILDERNESS PRESERVE DISTRICT; "G", CONSERVATION-GREENBELT DISTRICT.

I. PERMITTED USES:

1. Non-Commercial WECS, subject to the following standards:

- a. **Tower Height:** Parcels smaller than one acre are not recommended for the placement of WECS, and must seek a special use permit. For property sizes between one acre and two acres the tower height shall be limited to 80 ft. For property sizes of two acres or more, there is no limitation on tower height, except as imposed by FAA regulations.
- b. **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.
- c. **Noise:** Non-Commercial WECS shall not exceed 60 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.
- d. **Engineer Certification:** Applications for Non-Commercial 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 licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer.
- e. **Compliance with FAA Regulations:** Non-Commercial WECS must comply with applicable FAA regulations, including any necessary approvals for installations close to airports.
- f. **Compliance with National Electric Code:** Applications for Non-Commercial 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.
- g. **Utility Notification:** No Non-Commercial 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.

Section 2. CONDITIONAL USE PERMITS FOR COMMERCIAL C-WECS STANDARDS.

The requirements of this Ordinance shall apply to all C-WECS proposed after the effective date of this Ordinance. C-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 C-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 C-WECS shall be allowed without full compliance with this Ordinance.

1. General Requirements for C-WECS:

- a. **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. Exceptions may be made for meteorological towers, where concerns exist relative to aerial spray applicators.
- b. **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.

- c. **Lighting.** C-WECS sites shall not be artificially lighted, except to the extent required by the FAA or other applicable authority. 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. Exceptions may be made for meteorological towers, where concerns exist relative to aerial spray applicators.
- d. **Signage.** All signage on site shall comply with Hardin County Sign Standards. The manufacturer's or owner's company name and/or logo may be placed upon the compartment containing the electrical generator, of the WECS. Wind turbines shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the C-WECS sites.
- e. **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.
- f. **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 Hardin County Health Department and disposed of in accordance with all applicable local, state and federal regulations.
- g. **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.
- h. **Signal Interference.** The applicant shall minimize and mitigate any interference with electromagnetic communications, such as radio, telephone or television signals caused by any C-WECS.
- i. **Federal Aviation Administration.** All C-WECS shall comply with FAA standards and permits.
- j. **Electrical Codes and Standards.** All C-WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.
- k. **Setbacks.** The following setbacks and separation requirements shall apply to all wind turbines and meteorological towers; provided that the Board of Adjustment upon recommendation by the Commission 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 defined by the base zone district.
 - i. **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 the greater of (a) two (2) times its total tip height or (b) one thousand (1,000) feet. Total height shall be measured at the highest point of the blade system during its rotation.
 - ii. **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.
 - iii. **Public Right-of-Way.** Setbacks from public right-of-way, railroads, powerlines and structures shall be a minimum of 1.1 times the height of the tower and rotor.
 - iv. **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.
- l. **Noise.** Audible noise due to C-WECS sites operations shall not exceed sixty (60) 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 conditional use permit from the property line.
 - i. 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 subparagraph a of this subsection shall be reduced by five (5) dBA.
 - ii. 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.

- iii. 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 upon recommendation by the Commission provided that the following has been accomplished:
 1. 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
 2. 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 Hardin 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.
- m. **Safety.**
 - i. 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 Board of Adjustment
 - ii. Wind turbines and meteorological towers shall not be climbable up to 15 feet above ground level.
 - iii. All access doors to wind turbines and meteorological towers and electrical equipment shall be locked when not being serviced.
 - iv. Appropriate warning signage shall be placed on Wind Turbine towers, electrical equipment, and C-WECS entrances.
 - v. 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.
 - vi. 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 eight (8) 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 Commission and Board of Adjustment.
- n. **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 Director 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 year of the discontinuation of use. 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 be available to pay for the decommissioning and removal of the C-WECS and accessory facilities. The County reserves the right to verify that adequate decommissioning terms are contained in the land owner easement.
- o. **Avoidance and Mitigation of Damages to Public Infrastructure.**
 - i. **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.
 - ii. **Existing Road Conditions.** Applicant shall 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. The applicant is responsible for on-going road maintenance and dust control measures identified by the Hardin County Engineer during all phases of construction.

- iii. **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.
- p. **Required Financial Security.** 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. Financial security in a manner approved by the Hardin 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 recommendation from the Hardin County Engineer.
- q. **Submittal Requirements.** In addition to the submittal requirements defined for Conditional Use Permit applications, all applications for C-WECS must submit the following information (as applicable).
 - i. The names of project applicant
 - ii. The name of the project owner
 - iii. The legal description and address of the project.
 - iv. 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.
 - v. 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.
 - vi. Engineer's certification(s) as required in these supplemental standards.
 - vii. Documentation of land ownership or legal control of the property
 - viii. The latitude and longitude of individual wind turbines.
 - ix. A USGS 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.
 - x. Existing Resources Inventory.
 - xi. An Acoustical analysis
 - xii. FAA Permit Application
 - xiii. Location of all known communications towers/facilities within two (2) miles of the proposed C-WECS.
 - xiv. Decommissioning Plan.
 - xv. Description of potential impacts on nearby all C-WECS and Non C-WECS and wind resources on adjacent properties.
 - xvi. Identification of significant migratory patterns and nesting areas for birds within two (2) miles.
 - xvii. Proof of liability insurance.

EFFECTIVE DATE. This Ordinance shall be in full force and effect from and after its passage and publication as provided by law.

Passed by the Hardin County Board of Supervisors on the 4th day of April, 2012.

HARDIN COUNTY BOARD OF SUPERVISORS



Brian Lauterbach, Chair



Lance Granzow, Member



Jim Johnson, Member

ATTEST:



Renee McClellan
Hardin County Auditor