

**Chapter 5-40 Ordinance Establishing the Regulation of Commercial Wind Energy Systems in Jefferson County - DRAFT**

**SECTION I**

**Purpose**

It is the purpose of this regulation to promote the safe, effective, and efficient development and use of commercial wind energy conversion systems within Jefferson County by regulating and requiring approval for the siting, design, construction, operation, and decommissioning of wind energy conversion systems to protect the public, health, safety, and general welfare of the County's residents and businesses and protect the productivity of County farmland.

**Applicability**

It shall be unlawful to construct, erect, install, alter or locate any wind energy conversion system or existing wind energy conversion system within incorporated Jefferson County without receiving prior approval from the Board of Supervisors and paying the application fee as outlined in this Ordinance.

**SECTION II**

**Definitions**

The following are defined for the specific use of this section.

1. **Aggregate Project** shall mean projects that 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 part of the aggregated project.
2. **Applicant** is the person or entity filing an application under this Ordinance.
3. **Commercial WECS (C-WECS)** shall mean a large-scale wind energy conversion system of equal to or greater than 100 KW in total name plate generating capacity.
4. **Facility Operator (Operator)** is the entity responsible for the day-to-day operation and maintenance of the Wind Energy Facility.
5. **Facility Owner (Owner)** is the entity or entities having controlling or majority equity interest in the Wind Energy Facility, including their respective successors and assigns.
6. **Fall Zone** shall mean 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.
7. **Feeder Line** shall mean 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 wind energy conversion system.
8. **Meteorological Tower** shall mean, for purposes of this regulation, a tower which is erected primarily to measure wind speed and directions plus other data relevant to siting a Wind Energy Conversion System. Meteorological towers do not include towers and equipment used by airports or other applications to monitor weather conditions.

9. **Micro-Wind Energy Conversion System** shall mean a Wind Energy Conversion System of 1 kW nameplate generating capacity or less and utilizing supporting towers of 40 feet or less.
10. **Non-Participating Landowner** is any landowner not under agreement with the Facility Owner or Facility Operator.
11. **Occupied Building** is a residence, school, hospital, church, public library, or other building used for public gathering, that is occupied or in use when the permit application is submitted.
12. **Participating Landowner** is a landowner under lease or other property agreements with the Facility Owner or Operator pertaining to the Wind Energy Facility.
13. **Public Conservation Lands** shall mean land owned in fee title by the City of Fairfield, Jefferson County, State or Federal agencies and managed specifically for conservation purposes, including but not limited to Parks, Wildlife Management Areas, Wildlife Refuges and Waterfowl Production Areas. For purposes of this regulation, public conservation lands will also include lands owned in fee title by non-profit conservation organizations. Public conservation lands will also include any land enrolled in a conservation easement as defined by Iowa Code 457A.
14. **Public Road** is a full passage Right-of-Way (ROW).
15. **Rotor Diameter** shall mean the diameter of the circle described by the moving rotor blades.
16. **Shadow Flicker** is the visible flicker effect when rotating turbine blades cast shadows on the ground and nearby structures causing the repeating pattern of light and shadow.
17. **Small Wind Energy System** shall mean 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.
18. **Substations** shall mean any electrical facility to convert electricity produced by wind turbines to a voltage greater than 35,000 (35,000 KV) for interconnection with high voltage transmission lines.
19. **Total Tower Height or Total Wind Turbine Height** shall mean the highest point, above ground level, reached by a rotor tip or any other part of the Wind Energy Conversion System.
20. **Tower** shall mean the vertical structures that support the electrical, rotor blades, or meteorological equipment.
21. **Tower Height** shall mean the total height of the Wind Energy Conversion System exclusive of the rotor blades.
22. **Transmission Line** shall mean the electrical power lines that carry voltages of at least 69,000 volts (69 KV) and are primarily used to carry electric energy over medium to long distances rather than directly interconnecting and supplying electric energy to retail customers.
23. **Wind Energy Conservation System (WECS)** shall mean 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.
24. **Wind Energy Facility** is an electric generating facility, whose main purpose is to supply electricity, consisting of one or more Wind Turbines and other accessory structures and buildings, including substations, meteorological towers, electrical infrastructure, transmission lines and other appurtenant structures & facilities. For the purpose of this Ordinance, the term does not apply to roof-mounted or building integrated roof mounting systems.

25. **Wind Energy Facility (Small)** is a single system designed to supplement other electricity sources as an accessory use to existing buildings or facilities, wherein the power generated is used primarily for on-site consumption. A small wind energy conversion system consists of a single wind turbine, a tower, and associated control or conversion electronics, which has a total rated capacity of 20 KW or less and which is intended to primarily reduce on-site consumption of utility power.

26. **Wind Energy Facility (Medium)** is a wind energy conversion system consisting of one or more wind turbine(s), tower(s), and associated control or conversion electronics, which has a total rated capacity of more than 20KW but not greater than 100 KW and which is intended to primarily reduce on-site consumption of utility power.

27. **Wind Power** is the conversion of wind energy into another form of energy.

29. **Wind Turbines or Windmills** is a wind energy conversion system that converts the kinetic energy of wind into electricity through the use of a wind turbine generator, and may include a nacelle, rotor tower, guy wires, and pad transformer.

### **SECTION III Requirements**

#### **1. Approval.**

**a. General requirements.** Before any construction activities related to a C-WECS project can begin in Jefferson County, an application must be submitted along with a \$1000.00 fee per application plus a cost per proposed turbine to be set by the Board of Supervisors per resolution, and approval must be received by the Jefferson County Board of Supervisors.

Applications for any expansion shall be based on the total rated capacity, including existing facility but excluding like-kind replacements. Any physical modification to an existing and permitted Wind Energy Facility that materially alters the size and/or type of Wind Turbines or other Equipment is considered a construction activity and requires an application, fee and approval from the Board under this Ordinance. Like-kind replacements that do not materially alter the size and/or type of wind turbines or other equipment shall not be deemed construction activities.

The following requirements and information shall be met and supplied to the Board of Supervisors for approval:

1. The name(s) of project applicant.
2. The name of the project owner.
3. The legal description and address of the project.
4. 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.
5. Site layout, including the location of property lines, wind turbines, electrical grid, and all related accessory structures. This site layout shall include distances and be drawn to scale.
6. County Engineer's certification.
7. Documentation of land ownership or legal control of the property.
8. The latitude and longitude of individual wind turbines.

9. A USGS topographical map, or map with similar data, of the property and surrounding area, including any other Wind Energy Conversion System, within 10 rotor distances of the proposed Wind Energy Conversion System.
10. Approval from any city within the county for all projects proposed within 1 mile of that city's limits.
11. Location of wetlands, scenic, and natural areas within 1,320 feet of the proposed Wind Energy Conversion System.
12. An Acoustical Analysis
13. FAA permit
14. Location of all known Communication Towers within two miles of the proposed Wind Energy Conversion System.
15. Description of potential impacts on nearby Wind Energy Conversion Systems and wind resources on adjacent properties.
16. Decommissioning Plan pursuant to Section IV
17. Pre-construction Survey identifying all county, municipal, or township roads to be used for the purpose of transporting WECS, substation parts, cement, and/or equipment for construction, operation, or maintenance of the WECS and obtain applicable weight and size permits from the impacted jurisdictions prior to construction and determining existing road conditions. The survey shall include photographs and a written agreement to document the condition of the public facility.
18. An Emergency Response Plan that has been reviewed by the Director of Emergency Services that contains response procedures in the event of a fire, personal injury, or other emergency at a project. The Plan shall contain 24-hour contact information for the project.
19. Written affirmation the applicant has identified migratory flyaways and nesting areas for all birds, bats, and endangered species within one (1) mile of the proposed wind turbine.
20. A report prepared by a qualified third party using the most current modeling software available establishing that no Occupied Residence will experience more than thirty (30) hours per year, or more than thirty (30) minutes per day of shadow flicker. The report must show the locations and estimated amount of shadow flicker to be experienced at all Occupied Residences as a result of the individual turbines in the project.

### **c. Aggregated Projects**

1. Aggregated projects may jointly submit a single application and be reviewed under joint proceedings, including notices, public hearings, reviews and as appropriate approvals.
2. Permits may be issued and recorded separately.
3. Joint projects will be assessed an application fee as one project.

### **d. Special Safety and Design Standards**

All towers shall adhere to the following safety and design standards:

1. *Clearance of rotor blades or airfoils* must maintain a *minimum of twelve (12)* feet of clearance between their lowest point and the ground.
2. All Commercial/Utility WECS shall have a *sign or signs posted* on the tower, transformer and substation, *warning of high voltage*. Other signs shall be posted on the turbine with *emergency contact information*.

3. All wind turbines, which are a part of a Commercial/Utility WECS, shall be installed with a *tubular, monopole type tower*.
4. Consideration shall be given to painted *aviation warnings* on all towers less than 200 feet.
5. *Color and Finish*: All wind turbines and towers that are part of a commercial/utility WECS shall be *white, grey, or another non-obtrusive color*. Blades may be *black in order to facilitate deicing*. Finishes shall be *matte or non-reflective*.
6. *Lighting*: Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by the Federal Aviation Administration (FAA) permits and regulations. *Red strobe lights shall be used during nighttime illumination to reduce impacts on neighboring uses and migratory birds*. Red pulsating incandescent lights should be *avoided*.
7. Other signage: All other signage shall comply with the sign regulations found in these regulations.
8. Feeder Lines: All communications and *feeder lines*, equal to or less than 34.5 KV in capacity, installed as part of a WECS *shall be buried*, where feasible. If it is proven that feeder lines can not be buried, applicants must seek approval from impacted landowners and the Board of Supervisors. Feeder lines installed as part of a WECS shall not be considered an essential service.
9. 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 promptly and disposed of in accordance with all applicable local, state and federal regulations.
10. Noise: No Commercial/Utility WECS shall exceed 50 dBA at the nearest structure.
11. Signal Interference: The C-WECS shall not interfere with any licenses microwave communication paths or those microwave paths planned to be used by current residents of Jefferson County or Jefferson County Emergency Management or any other county department at the time of the application. After applicant approval evidence, in the form of a report prepared by a qualified unrelated third party will be presented to the Board of Supervisors to demonstrate that the project will not interfere as discussed in this section. The C-WECS owner shall minimize and mitigate any interference with electromagnetic communications, such as radio, telephone and television signals caused by any Wind Turbines.
12. Tall Structures Ordinance: The applicant shall be responsible for ensuring that any proposed turbine complies with Chapter 5-30, Jefferson County Airport Tall Structures Ordinance.
13. Public Hearing Required: Upon completion of the County's review of the application, the County shall schedule and make notification of a public hearing in accordance with Iowa Code Chapter 21, to be held no later than thirty days after the County has deemed the application complete.

## **SECTION IV**

### **1. Discontinuation and Decommissioning:**

A WECS shall be considered a discontinued use after one (1) year without energy production, *unless* a plan is developed and submitted to the County Engineer outlining the steps and schedule for returning the WECS to service. All WECS and accessory facilities shall be removed to ground level within ninety (90) days of the discontinuation of use.

Each Commercial/Utility WECS shall have a Decommissioning Plan outlining the anticipated means and cost of removing WECS at the end of their serviceable life or upon being discontinued use. The cost estimates 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 decommissioning and removal of the WECS and accessory facilities. The applicant shall provide a bond or other security acceptable to Jefferson County for an amount of at least 110 percent of the decommissioning cost as specified in the decommissioning estimate within 30 days of approval of the application.

## **SECTION V.**

### **Siting and Design Standards**

**a. Setbacks:** All turbines and project substations shall observe the following setbacks established in Table 1. The setback shall be measured from any future Rights-of-Way if a planned change or expanded Right-of-Way is known.

Setbacks provisions may be waived if the following conditions are met:

1. Property owners may waive the setback requirement for Property Lines and/or Occupied Buildings on the participating Landowner property and/or Non-Participating Landowner property by signing a waiver that sets forth the applicable setback provisions(s) and the proposed changes.
2. The written waiver shall notify applicable property owner(s) of the setback required by this Ordinance, describe how the Wind Energy Facility is not in compliance, and state that consent is granted for the Wind Energy Facility to waive the setback as required by this Ordinance.
3. Any such waiver shall be signed by the applicant, the Participating Landowner(s) and/or Non-participating Landowner(s) and recorded in the Recorder's Office where the property is located.

<b>Table 1 Wind Turbine/Meteorological Tower Setbacks</b>	<b>Wind Turbine – Non Commercial WECS</b>	<b>Wind Turbine – Commercial/Utility WECS</b>	<b>Meteorological Towers</b>
<b>Property Lines</b>	1.1 times the total height	One and a quarter (1.25) times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or 1.1 times the total height.
<b>Neighboring Dwelling Units</b>	Two (2) times the total height.	Two (2) times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or 1.1 times the total
<b>Road Rights-of- Way (ROW)</b>	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or one (1) times the total height.	One (1) times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or one (1) times the total height.
<b>Other Rights-of-Way (ROW)</b>	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or one (1) times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10) feet or one times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + 10 feet or one (1) times the total height.
<b>Public Conservation Lands Wetlands,</b>	One (1) times the total height.	One (1) times the total height.	One (1) times the total height.
<b>Other Structures</b>	NA	The greater of: The fall zone, as certified by a professional engineer, + ten (10) feet or one (1) times the total height.	The <i>greater</i> of: The fall zone, as certified by a professional engineer, + ten (10 )feet or one (1) times the total height.

**Other  
Existing  
WECS**

NA

To be considered based on:

1. Relative size of the *existing & proposed* WECS
2. *Alignment* of the WECS relative to the predominant winds
3. Topography
4. Extent of wake interference impacts on existing WECS
5. Property line setback of existing WECS
6. Other setbacks required  
*Waived for internal setbacks in multiple turbine projects including aggregated projects*

**SECTION VI  
Additional Procedures**

**1. Roads.** Applicants shall be responsible for restoring or paying damages as agreed to by the applicable jurisdiction sufficient to restore the road(s) and bridges to preconstruction conditions.

**2. Post-Completion Survey.** Applicants and the County Engineer will meet upon completion of the project and agree as to the necessary action needed to return roads to the existing road conditions as identified in the pre-construction survey.

**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 WECS.

**SECTION VII  
Severability Clause**

Should any section or provision 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.

**SECTION VIII  
Repealer**

All Ordinances or parts of Ordinances in conflict with the provisions of this Ordinance are hereby repealed.

**SECTION IV  
Effective Date**

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