CHAPTER 78
WIND ENERGY CONVERSION SYSTEMS

78.01 DEFINITIONS. For purposes of this chapter, the following terms are defined.

1. "Administrator" means the Sac County Zoning Administrator.
2. "Aircraft Detection Lighting System (ADLS)" means a radar or other sensor-based system designed to detect aircraft in the vicinity of wind turbines and to control the operation of aviation safety lights accordingly.
3. "Commercial Wind Energy Device (CWED)" means any wind energy device with a nameplate capacity of more than 100 kilowatts the primary intent of which is to generate electrical power to be sold to utility or power companies.
4. "Event Center" means a facility on private property in the unincorporated area of the County that primarily functions to provide a venue for any type of social gathering by individuals assembled for the common purpose of attending a special event — such as a celebration, ceremony, wedding, reception, party, meeting, corporate function, or similar activity to benefit someone other than the property owner — that is used for this purpose on a regular basis.
5. "Human occupied dwelling" means a dwelling that is currently occupied or capable of being occupied for residential purpose.
6. "Meteorological Tower (or MET Tower)" means any meteorological measuring or surveying equipment erected or attached to verify the wind and weather resources found in a certain area. MET towers are subject to permitting.
7. "Owner/Developer" means the individual or entity that intends to own or operate the wind energy system in accordance with this chapter.
8. "Repowering" means the process of replacing older wind turbines, or significant components of turbines, to extend their life, increase their efficiency, or expand their capacity.
9. "Rotor Diameter" means the cross-sectional dimension of the circle swept by the rotating blades.
10. "Small Wind Energy Device" means a wind energy system used to generate electricity that has a nameplate capacity of 100 kilowatts or less. Devices with a generating capacity of 20 kilowatts or less may be used for residential or personal use, and a device with a generating capacity between 20 and 100 kilowatts is considered small wind energy for commercial or industrial applications. A wind energy device is considered small only if it supplies electrical power solely for on-site use, except that when a parcel also receives electrical power from a utility company, excess power generated and not presently needed 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.
11. "Total Height" means the vertical distance from ground level to the tip of a wind generator blade when the tip is at its highest point.
12. "Wind Energy Device" means equipment that converts and stores or transfers energy from the wind into usable forms of energy. This equipment includes any base, blade, foundation, generator, nacelle, rotor, tower, transformer, wire, inverter, batteries, and other components used in the system. The term often refers to and includes wind towers, wind turbines, wind generators, windmills, or wind energy conversion systems.

Additional definitions are listed in Sac County Ordinance No. 6 under Section 6.01.010.

78.02 MODIFICATION FEE AND PERMIT REQUIREMENTS. A modification fee of $75.00 shall be charged to make minor changes to a permitted tower where any of the dimensions or locations of the permitted tower are changed. A permit shall be required for the installation of a wind energy device. The application shall be accompanied by a site plan and fee, which include the following:

A. Location and site layout, including the location relative to property lines, wind turbines, electrical wires, connection points with the electrical grid, and related accessory structures. The site layout shall be drawn to scale.

B. Wind energy device specifications, including manufacturer and model, rotor diameter, tower height, and tower type (free-standing or guyed).

C. Tower and tower foundation blueprints or drawings.

D. FAA permit application.

E. Documentation of land ownership or legal control of the property where the device will be located.

F. For commercial wind towers, the distances to any human occupied dwellings and to other wind energy devices or other tower structures, which shall not be located less than the greater of 3.5 times the height or 1,697 feet.

G. For commercial wind towers, access points to roads showing construction details typical of all entrances proposed to be built in the public right-of-way.

H. At the time the conditional use permit application is made, the owner/developer shall obtain and submit to the County Zoning Administrator the names and last known addresses of the owners of all property within 2,640 feet (one-half mile) of the proposed tower sites containing wind energy device(s). Prior to approval of such conditional use permit, notice shall be given by the Zoning Administrator, by ordinary mail, to all adjacent property owners and owners of property within 2,640 feet (one-half mile) of the proposed site(s) for which the conditional use is requested.

I. A decommissioning agreement is required with the County prior to project construction.

78.03 PLACEMENT OF WIND TURBINE GENERATORS. The placement of all wind turbine generators (WTGs) shall comply with the following:

1. Setback distances with respect to property lines shall not apply to wind turbines located within a wind farm where the property lines nearest to any turbines define and separate properties belonging to two or more participating landowners.
2. With respect to a wind turbine, all setbacks and separation distances shall be defined relative to the nearest surface of the wind turbine as measured at the natural ground level.
3. A commercial wind turbine shall not be located less than the greater of 3.5 times the total height or 1,697 feet from:
   A. the nearest dwelling occupied or capable of being occupied for residential purpose;
   B. all incorporated areas;
   C. all public recreational areas;
   D. all village residential areas;
   E. all lake area development districts;
   F. all urban transition districts; and
   G. all event centers.
4. A wind generator tower may be set back less than the greater of 3.5 times the total height or 1,697 feet from a dwelling if the property owner signs a waiver agreeing to the reduced setback distance. However, the setback shall not be closer than a distance equal to the height of the tower.
5. Any wind turbine within a wind farm shall not be located less than 1.5 times the total height from the nearest abutting non-participating properties, unless the adjacent property owner signs an agreement. This agreement shall be attached to the application.

6. Any wind turbine within a wind farm shall be located not less than the total height from the road right-of-way.
7. Any wind turbine within a wind farm shall not straddle the property lines between two participating properties.
8. Approval of the conditional use permit for a wind energy device shall be valid for a period no longer than two (2) years from the date of such permit, unless construction has commenced or the Board of Adjustment specifically grants a longer period of time for the conditional use permit.
9. Sound. Sound produced by any wind energy device under normal operating conditions, as measured from the wind turbine to a human occupied dwelling, shall not produce sound at a level that would constitute a nuisance. Wind energy noise should not exceed 50 dBA at a distance of 1,697 feet or 3.5 times the total height, whichever is greater, which is the setback distance to a human occupied dwelling in the County. Sound levels may, however, be exceeded during short-term events outside anyone's control, such as utility outages or severe wind storms.
10. Shadow Flickering. The maximum amount of shadow flickering from wind turbines on any human occupied dwelling shall not be more than 20 hours per year.

78.04 WIND ENERGY REQUIREMENTS.

A. Lighting. A wind energy device shall not be artificially lighted unless such lighting is required by the Federal Aviation Administration. (See also Section 78.05 regarding Aircraft Detection Lighting Systems.)

B. Color and Finish. The wind device shall remain painted or finished the way it was originally applied by the manufacturer, unless approved in a special exception permit.

C. Code Compliance. All wind energy devices shall comply with all applicable state construction and electrical codes and the National Electrical Code. Wind energy devices that connect to the electrical utility shall comply with all local, State of Iowa, and federal regulations regarding the connection of energy generation facilities.

D. Signs. All signs visible from any public road, other than the manufacturer's or installer's identification or appropriate warning signs, are prohibited.

E. Placement. In all Residential, Lake Area, and Urban Transition districts, no wind energy device or accessory structure shall be permitted within the front yard without special exception.

F. Access and Wires. All ground-mounted electrical and control equipment shall be labeled and secured. All electrical wires for the wind tower, except wires necessary for operation, shall be underground.

G. Hotline Telephone Number. Prior to the commencement of construction of the project and during the entire operating life of the project, the owner/operator shall establish a telephone hotline for the general public to call with any complaints or questions. The hotline number shall be publicized to ensure that the general public is aware of it, and shall be conspicuously posted at the project sites and at the project owner/operator's office in the County. Each call shall be logged by the project owner/operator, and the log shall identify the name, address, and reason for the call. The owner/operator shall provide the designated County representative with the call log on a monthly basis and upon reasonable request, to the extent allowed by law. The project owner/operator shall respond to all complaints within a reasonable time, not to exceed 72 hours, and shall take necessary actions to resolve all objectively verified complaints. During construction of the project, the project owner/operator shall maintain updated contact information on file with the designated County representative, including a designated representative of the project owner/operator along with a phone number and email address and a 24-hour emergency contact phone number.

78.05 AIRCRAFT DETECTION LIGHTING SYSTEMS. The purpose of this section is to enhance the safety and efficiency of air traffic near wind energy installations by requiring radar-based Aircraft Detection Lighting Systems (ADLS) for the construction and repowering of wind turbines, while minimizing light

pollution and improving the visual environment for nearby communities and ensuring safety compliance for air traffic.

1. Installation Requirements and System Specifications.

A. Notwithstanding the rules in Sections 78.01 through 78.07, all Commercial Wind Energy Devices (CWEDs) or turbines constructed or repowered after June 18, 2024 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 the requirements established by Federal Aviation Administration permits and regulations.

B. All CWEDs or turbines constructed or repowered after June 18, 2024 shall be equipped with an Aircraft Detection Lighting System (ADLS), a passive radar-sensing system used to turn on obstruction lighting (red flashing lights) only when aircraft are detected at the defined outer perimeter.

C. ADLS systems in the County shall be capable of automatically toggling on the red aviation safety lights atop the turbines when aircraft are detected within a minimum radius of 3 miles from any turbine, or as required by FAA regulations. The ADLS shall ensure that turbine lights remain off unless an aircraft's proximity necessitates illumination for safety reasons.

2. Compliance and Verification.

A. A certification of compliance with this section from a qualified independent inspector must be submitted to the County Zoning Administrator prior to the operational deployment of newly constructed or repowered CWEDs or turbines.

B. Wind energy companies must conduct annual tests of the ADLS to ensure functionality and compliance. The results must be submitted to the County Zoning Administrator within 30 days of completion. Compliance with Federal Aviation Administration guidelines and standards for ADLS systems is mandatory.

3. Enforcement and Penalties.

A. Failure to install an ADLS in accordance with this section shall result in a penalty of up to $10,000.00 per turbine per month of non-compliance.

B. Continuous non-compliance for more than six months may result in additional penalties and potential suspension of operational permits.

78.06 MITIGATION OF DAMAGES. In the event there are any damages that occur during construction or maintenance of any wind energy device, the owner/developer shall be fully responsible to mitigate and correct any damages to public or private infrastructure within a year. The Zoning Administrator and/or County Engineer may enter any property for which a permit has been issued under this chapter to conduct an inspection to determine whether the conditions stated in the permit have been met or to check on damages.

1. Roads. The costs of replacement, maintenance, restoration, and/or repair of damage to county roads, rights-of-way, or any county infrastructure resulting from modifications, adjustments, heavy equipment, or frequent use during construction and operation of the wind energy devices shall be the responsibility of the owner/developer of the project. A separate roads agreement that clearly and specifically lays out the rights and obligations of the County and the owner/developer with respect to the construction, maintenance, and use of roads in connection with the development project shall be required with the County Engineer as a condition of the permit.
2. Drainage System. The owner/developer of the wind energy device shall remedy any adverse effect on any duly established drainage tile caused by construction or repair of the project within one year of discovery or reporting of the problem.

78.07 ABANDONMENT OR DISCONTINUANCE. Any commercial wind energy device that is out of service for a continuous period of 180 days shall be deemed to have been abandoned and discontinued from use. Upon such abandonment, the tower owner shall have an additional six (6) months after receipt of notice

within which to (1) reactivate the use of the tower or (2) dismantle and remove the tower. Each applicant and/or the subsequent utility owner of a commercial wind energy device shall be totally responsible for the abandonment, discontinuance, or dismantling of the wind energy device in accordance with the decommissioning agreement.