

## CHAPTER 156

# WIND ENERGY DEVICES

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**156.01 PURPOSE.** The purpose of this chapter is to provide for the regulation of the construction, erection, placement, location and maintenance of wind energy devices in the City of Milford, Dickinson County, Iowa, to protect public health, safety and welfare of the community.

**156.02 DEFINITIONS.** For use in this chapter, the following terms are defined:

1. “Guyed tower” means a tower that is supported, in whole or in part, by guy wires and ground anchors.
2. “Lattice tower” means guyed or self-supporting, open, steel frame structure, with three or more sides, that is used to support one or more antennas.
3. “Monopole tower” means a tower consisting of a single pole, constructed without guy wires and ground anchors.
4. “Owner” means the individual or entity that intends to own or owns and operates the wind energy device in accordance with this chapter.
5. “Total height” means the vertical distance from ground level to the highest point of the tip of the blades or rotors.
6. “Tower” means the monopole, freestanding, or structure that supports a wind turbine generator.
7. “Wind energy conversion system (WECS)” means an aggregation of parts and 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 or other component used in the system. The term “wind energy conversion system” refers to wind towers, wind turbines, wind generators, windmills or other wind energy conversion systems.
8. “Wind energy conversion system, freestanding” means a WECS which is elevated by means of a monopole tower only and is not located on another supporting structure except that a tower shall have an appropriately constructed concrete base. Guyed, lattice, or other non-monopole style towers shall not meet this definition.
9. “Wind energy conversion system, horizontal axis” means a WECS that has blades which rotate through a horizontal plane.
10. “Wind turbine generator” means the component of a wind energy device that transforms mechanical energy from the wind into electrical energy.

**156.03 GENERAL REGULATIONS.**

1. Special Exception Use. A WECS shall be allowed only as Special Exception Use in the designated zoning district.
2. Zoning. A WECS may be allowed in Arterial Commercial (AC) and Light and Heavy Industrial Zones as a Special Exception Use. A WECS shall not be allowed under any conditions in any other zoning district.
3. Permit Required. It shall be unlawful to construct, erect, install, alter or locate any WECS within the City of Milford, Dickinson County, Iowa, unless an Application for Special Exception Use permit has been approved by the Board of Adjustment. The Special Exception Use permit may be revoked by resolution of the Board of Adjustment any time the WECS does not comply with the rules set forth in this chapter and conditions imposed by the Board of Adjustment. The owner/operator the WECS must also obtain any other permits required by any Federal, State and local agencies/departments prior to the constructing of the system. Any person who fails to comply with any provision of this chapter or Special Exception Use permit shall be subject to enforcement and penalties as provided in this Code of Ordinances.
4. Number of Systems per Lot. No more than one (1) freestanding WECS may be placed on any parcel or lot.
5. Tower. Only monopole towers shall be permitted for a freestanding WECS. Lattice, guyed or towers of any other type shall not be considered to be in compliance with this chapter.
6. Color. Freestanding WECS shall be a neutral color such as white, sky blue or light gray or the color produced by the manufacturer. The surface shall be non-reflective.
7. Lighting. No lights shall be installed on the tower, unless required to meet Federal, State or local regulations, including FAA regulations. In no event shall such lights or lighting be unduly bright, or cause an annoyance or nuisance to neighboring properties.
8. Signage. No signage or advertising of any kind shall be permitted on the tower or any associated structure or part of the WECS other than the manufacturer's or installer's identification or appropriate warning signs.
9. Climbing Apparatus. The tower must be designed to prevent climbing within the first ten (10) feet closest to the ground.
10. Maintenance. WECS shall be well maintained in accordance with the manufacturer's specifications and recommendations. It shall remain in an operational condition that poses no potential safety hazard or be in violation of any provisions contained within this chapter or elsewhere within the Code of Ordinances.
11. Displacement of Parking Prohibited. The location of the SECS shall not result in the net loss of required parking as specified anywhere in the Milford Zoning Regulations or Code of Ordinances.
12. Utility Notification. The City of Milford shall notify the Milford Municipal Utilities of receipt of a Special Exception Use application for a WECS. WECS that connect to the Milford Municipal Utilities grid shall comply with all local, State and Federal regulations, as may be amended, regarding the connection of such systems.

Off-grid systems (an electrical system not connected to Milford Municipal Utility distribution and transmission facilities) shall be exempt from this requirement.

13. Interconnection. The WECS, if not off-grid, shall meet the requirements for interconnection and operation as set forth by Milford Municipal Utilities and the Iowa Utilities Board. No Special Exception Use permit of any kind shall be issued until the City of Milford has been provided with a copy of an executed interconnection agreement between the owner and the Milford Municipal Utilities. Off-grid systems shall be exempt from this requirement.

14. Electricity Generated. A WECS shall be used exclusively to supply electrical power to the owner for on-site consumption, except that excess electrical power generated by the WECS and not presently needed for use by the owner may be used as determined by the Milford Municipal Utilities, subject to its rules, regulations and Iowa law.

15. Noise. A WECS shall be designed, installed and operated so that the noise as measured at the property line is not an annoyance or nuisance to neighboring properties. A WECS shall comply with any local ordinances regulating the volume of sound as a nuisance, if applicable. Sound levels, however, may be exceeded during short term events out of anyone's control, such as utility outages or severe wind storms.

16. Shadow Flicker. No WECS shall be installed and operated so to cause a shadow flicker (light intensity caused by sunlight through the moving blades of a WECS) to fall on any residential or commercial occupied structure located on another property. The Board of Adjustment may waive this requirement if notarized written consent is obtained from all property owners who would receive shadow flicker from the WECS.

17. Safety Controls. Each WECS shall be equipped with both automatic and manual braking, governing, or feathering system to prevent uncontrolled rotation, over-speeding, and excessive pressure on the tower structure, rotor blades, or turbine components. The said automatic braking system shall also be capable of stopping turbine rotation in the event of a power outage to prevent back feeding of the electric grid.

18. Shut Off. A clearly marked and easily accessible shut off for the wind turbine is required as determined by the Zoning Administrator.

19. Electromagnetic Interference. All WECS shall be designed and constructed so as not to cause interference with radio, television, or wireless communications. If it is determined that the WECS is causing electromagnetic interference, the owner/operator shall promptly take the necessary corrective action to eliminate this interference. If the electromagnetic interference from the WECS is evident and corrective action is not taken within a reasonable time period or if corrective action does not sufficiently correct the interference, the WECS will be required to be removed.

20. Wind Access Easements. The enactment of this chapter does not constitute the granting of an easement by the City of Milford. The SWECS owner/operator shall have the sole responsibility to acquire any covenants, easements, or similar documentation to ensure and/or protect access to sufficient wind as may or may not be necessary to operate the WECS.

21. Insurance. The owner/operator of the WECS must demonstrate and maintain general liability insurance under a standard business owner's insurance policy separate and distinct from any insurance requirements of a public utility, which insurance shall be in an amount and from an insurance company coverage satisfactory to the City of Milford and shall include 30 days advance notice to the City of Milford prior to any material change, cancellation, termination, non-renewal, or lapse of coverage under said insurance policy. An applicant shall provide evidence/certificate of insurance to the City of Milford with the WECS application.

22. Engineer Certification. Applications for any WECS shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, and footings. An engineering analysis of all components of the WECS showing compliance with the applicable regulations and certified by an Iowa licensed professional engineer shall also be submitted.

23. Installation. Installation must be done according to manufacturer's recommendations. All wiring and electrical work must be completed according to all applicable State and local building and electric codes and the National Electric Code. All ground mounted electrical and control equipment shall be labeled and secured to prevent unauthorized access. All electrical components must meet code recognized test standards. All electrical wires associated with a wind turbine shall be located underground to the maximum extent possible.

24. Removal. If the WECS remains nonfunctional or inoperative for a continuous period of six (6) months, the system shall be deemed to be abandoned. The owner/operator shall remove the abandoned system at his/her expense. Removal of the system includes the entire structure, transmission equipment and fencing from the property excluding foundations. Non-function or lack of operation may be proven by reports from the interconnected utility. For off-grid systems the City of Milford shall have the right to enter the property at its sole discretion to determine if the off-grid system is generating power. Such generation may be proven by use of an amp meter. If removal of towers and appurtenant facilities is required, the Zoning Administrator or designee shall notify the WECS owner/operator. Removal shall be completed within 90 days of written notice to remove.

25. Right of Entrance. As a condition of the approval of a Special Exception Use permit, an applicant seeking to install a WECS shall be required to sign a petition and waiver agreement which shall be recorded and run with the land granting permission to the City of Milford to enter the property to remove the WECS pursuant to the terms of approval and to ensure compliance with the other conditions set forth in the permit. Removal shall be at the expense of the owner/operator and the cost may be assessed against the property.

26. Feasibility Study. It is required that the owner/operator conduct a feasibility study at any site prior to installing a WECS. The feasibility study should include measuring actual wind speeds at the proposed WECS site and determine the effects of said WECS on surrounding property. If available, this study shall be provided to the appropriated entities considering the application, including but not limiting, the City of Milford, the Board of Adjustment, and Milford Municipal Utilities. An application for a WECS shall include a site plan showing graphically the precise location of the WECS, nearby structures, easements, utilities, sidewalks, driveways and other points of ingress and egress, including access streets.

27. WECS Capacity. A WECS which has a nameplate rated capacity of thirty (30) kilowatts or less is permitted if all other criteria in this chapter are met. WECS with a capacity of thirty-one (31) kilowatts or more are not permitted.

#### **156.04 BULK REGULATIONS.**

1. Setbacks. The minimum distance between any freestanding WECS and any property line shall be a distance that is equivalent to one hundred ten percent (110%) of the total system height. The setback shall be measured from the property line to the point of the WECS closest to the property line.

2. Maximum Height. Height shall be measured from the ground to the highest point of the blades.

A. For lots of less than three (3) acres, the maximum height shall be 75 feet.

B. For lots of three (3) to seven (7) acres, the maximum height shall be 100 feet.

C. For lots of more than seven (7) acres, the maximum height shall be 125 feet.

3. Minimum Lot Size. None as long as the minimum setback requirements are met.

4. Clearance of Blade. No portion of a horizontal axis WECS blade shall extend within 30 feet of the ground. No portion of a vertical axis WECS shall extend within 10 feet of the ground. No blades may extend over parking areas, driveways or sidewalks. No blade may extend within 20 feet of the nearest tree, structure or above ground utility facilities.

5. Location.

A. No part of a WECS shall be located within or over drainage, utility or other established easements.

B. The WECS shall be located entirely in the rear yard or in a location appropriate to the property and setting and as determined through the City's permitting and site plan review process.

C. A WECS shall be located in compliance with the guidelines of applicable Federal, State and local regulations as amended from time to time, including without limitation, applicable Federal Aviation Administration (FAA) regulations.

D. No WECS shall be constructed so that any part thereof can extend within 20 feet laterally of an overhead electrical power line (excluding secondary electrical service lines or services drops). The setback from underground electric distribution lines shall be at least five (5) feet.

E. Building mounted WECS shall be prohibited.

**156.05 APPLICATION REQUIRED.** Application for a WECS shall be made on forms provided by the City of Milford. No action may be taken until all application requirements have been met and fees paid.

#### **156.06 PREREQUISITES TO APPLICATION.**

1. The Board of Adjustment shall not grant a Special Exception permit for a WECS unless the following procedures have been fulfilled:
  - A. The Planning and Zoning Commission shall provide the Board of Adjustment with a review and recommendation on the application.
  - B. The Board of the Milford Municipal Utilities shall provide the Board of Adjustment with a review and recommendation on the application.
  - C. The Milford Airport Commission shall be provided with a copy of the application. To the extent that the WECS interferes, directly or indirectly, with the operations of the Milford Municipal Airport, the Milford Airport Commission shall provide the Board of Adjustment with a review and recommendation on the application.
  - D. Notice of the application shall be given by ordinary mail to all property owners within 300 feet of the proposed site.
2. Pre-Issuance Review. Before issuing any special permit for a WECS, the Board of Adjustment shall review the conformity of the proposed application with the standards of the comprehensive plan and with recognized principles of civic design, land use planning and landscape architecture. The Board of Adjustment may approve the application as submitted, or before approval, may require the applicant modify, alter, adjust or amend the proposal as the Board deems necessary to the end that it preserves the intent and purposes of this chapter to promote public health, safety, morals and general welfare.
3. Criteria/Standards. In deciding to grant or deny a WECS application, the Board of Adjustment shall consider all the requirements of the chapter and other applicable standards set forth in the Code of Ordinances of the City of Milford, Iowa, and shall further consider the recommendations of other City entities, as the Board may deem appropriate, including without limiting, the Planning and Zoning Commission, the Board of the Milford Municipal Utilities, and the Milford Airport Commission. The Board of Adjustment shall not grant an application unless the Board finds that the application meets all the requirements of this chapter and other applicable criteria set forth in the statutes of the Code of Ordinances of the City of Milford, Iowa, and further finds that the application will not adversely affect the public interest pursuant to testimony presented at the public hearing. In granting an application, the Board may prescribe appropriate conditions and safeguards in conformity with this chapter and the Code of Ordinances of the City of Milford, Iowa. Violation of such conditions and safeguards, when made a part of the terms under which the application is granted, shall be deemed a violation of this chapter and punishable under this Code of Ordinances of the City of Milford, Iowa, and the WECS shall be subject to removal as provided in Section 156.03(24) or as otherwise provided herein.

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