

CHAPTER 29

WIND ENERGY CONVERSION SYSTEMS (WECS)

SECTION:

- 01-29-1 Purpose
- 01-29-2: Procedure
- 01-29-3: Special Requirements
- 01-29-4: Performance Standards
- 01-29-5: Exceptions

01-29-1: PURPOSE: The purpose of this Chapter is to establish standards and procedures by which the installation and operation of wind energy conversion systems (WECS) shall be governed within the City.

01-29-2: PROCEDURE: The erection of a wind energy conversion system shall require an interim use permit, subject to the requirements of this Chapter and Chapter 6 of this Article.

01-29-3: SPECIAL REQUIREMENTS:

- A. Wind energy conversion systems governed by this Chapter shall be allowed within the UR, GB, and GI Districts, or in any other zoning district on a parcel of at least two and one-half (2.5) acres in area.
- B. **Declaration Of Conditions:** The Planning Commission may recommend and the City Council may impose such conditions on the granting of a WECS interim use permit as may be necessary to carry out the purpose and provisions of this Chapter.
- C. **Site Plan Drawing:** All applications for a WECS interim use permit shall be accompanied by a detailed site plan drawn to scale and dimensioned, displaying the information as specified in Section 01-9-6 of this Article and the following:
 - 1. Location and height of all buildings, structures, aboveground utilities and trees on the lot, including both existing and proposed structures and guy wire anchors.
 - 2. Location and height of all adjacent buildings, structures, aboveground utilities and trees located within three hundred fifty feet (350') of the exterior boundaries of the property in question.

- 3 An elevation drawing of the premises accurately depicting the proposed WECS and its relationship to structures on the subject site and adjacent lots.

PERFORMANCE STANDARDS:

01-29-4:

- A. **Heights:** The permitted maximum height of a WECS shall be determined in one of two (2) ways. In determining the height of the WECS the total height of the system shall be included. System height shall be measured from the base of the tower to the highest possible extension of the rotor.
 1. A ratio of one foot to one foot (1': 1') between the distance of the closest property line to the base of the WECS to the height of the system.
 2. A maximum system height of one hundred seventy five feet (175'). The shortest height of the two (2) above mentioned methods shall be used in determining the maximum allowable height of a WECS system. The height of a WECS must also comply with FAA regulation part 77 "Objects Affecting Navigable Air Space" and/or MNDOT Rule 14, MCAR 1.3015 "Criteria for Determining Obstruction to Air Navigation".
- B. **Setbacks:** No part of a WECS (including guy wire anchors) shall be located within or above any required front, side or rear yard setback. WECS towers shall be setback from the closest property line one foot (1') for every one foot (1') of system height. WECS shall not be located within thirty feet (30') of an aboveground utility line.
- C. **Rotor Size:** All WECS rotors shall not have rotor diameters greater than twenty six feet (26').
- D. **Rotor Clearance:** Blade arcs created by the WECS shall have a minimum of thirty feet (30') of clearance over any structure or tree within a two hundred foot (200') radius.
- E. **Rotor Safety:** Each WECS shall be equipped with both a manual and automatic braking device capable of stopping the WECS operation in high winds (40 miles per hour or greater).
- F. **Lightning Protection:** Each WECS shall be grounded to protect against natural lightning strikes in conformance with the National Electrical Code as adopted by the City.
- G. **Tower Access:** To prevent unauthorized climbing, WECS towers must comply with one of the following provisions:

1. Tower climbing apparatus shall not be located within twelve feet (12') of the ground.
 2. A locked anti-climb device shall be installed on the tower.
 3. Towers capable of being climbed shall be enclosed by a locked, protective fence at least six feet (6') high.
- H. **Signs:** WECS shall have one sign, not to exceed two (2) square feet posted at the base of the tower and said sign shall contain the following information.
1. Warning high voltage.
 2. Manufacturer's name.
 3. Emergency phone number.
 4. Emergency shutdown procedures.
- I. **Lighting:** WECS shall not have affixed or attached any lights, reflectors, flasher or any other illumination, except for illumination devices required by FAA regulations part 77 "Objects Affecting Navigable Air Space" and FAA Advisory circular 70/7460-1 F, September 1978 "Obstruction Marking and Lighting".
- J. **Electromagnetic Interference:** WECS shall be designed and constructed so as not to cause radio and television interference.
- K. **Noise Emission:** Noises emanating from the operation of WECS shall be in compliance with and regulated by the State of Minnesota Pollution Control Standards, Minnesota Regulations NPC 1 and 2, as amended.
- L. **Utility Company Interconnection:** No WECS shall be interconnected with a local electrical utility company until the utility company has reviewed and commented upon it. The interconnection of the WECS with the utility company shall adhere to the National Electrical Code as adopted by the City.
- M. **Code Compliance:**
1. Compliance With State Building Code: Standard drawings of the structural components of the wind energy conversion system and support structures, including base and footings shall be provided along with engineering data and calculations to demonstrate compliance with the structural design provisions of the State Building Code. Drawings and engineering calculations shall be certified by a Minnesota licensed engineer.

2. Compliance With National Electrical Code: WECS electrical equipment and connections shall be designed and installed in adherence to the National Electrical Code as adopted by the City.
- N. **Manufacturing Warranty:** Applicant shall provide documentation or other evidence from the dealer or manufacturer that the WECS has been successfully operated in atmospheric conditions similar to the conditions within Howard Lake. The WECS shall be warranted against any system failures reasonably expected in severe weather operation conditions.
- O. **Inspection:** The City hereby reserves the right upon issuing any WECS interim use permit to inspect the premises on which the WECS is located. If a WECS is not maintained in operational condition and poses a potential safety hazard, the owner shall take expeditious action to correct the situation.
- P. **Abandonment:** Any WECS or tower which is not used for six (6) successive months shall be deemed abandoned and shall be dismantled and removed from the property at the expense of the property owner.

01-29-5: EXCEPTIONS: Ornamental wind devices that are not a WECS shall be exempt from the provisions of this Chapter and shall conform to other applicable provisions of this Article.