

CHAPTER 21

WIND ENERGY CONVERSION SYSTEMS

SECTION:

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Chapter 21 Section 1: **STATUTORY AUTHORITY; PURPOSE AND INTENT:** In order to balance the need for clean, renewable energy resources and the necessity to protect the public health, safety and welfare of the community, the City of Shelley finds these regulations are necessary to ensure that wind energy conversion systems are appropriately designed and safely sited and installed.

This ordinance establishes the regulations and criteria which allow windmills to be located within the various land use districts. Unless otherwise provided, all windmill uses are subject to the same regulations as the sponsoring primary use.

Chapter 21 Section 2: **DEFINITIONS:**

RESIDENTIAL WIND ENERGY SYSTEM:

A wind energy conversion system consisting of a wind turbine, tower, and associated control or conversion electronics, which has a rated capacity of not more than 10 KW and which is intended to primarily reduce on-site consumption of utility power. A system is considered a residential wind energy system only if it supplies electrical power solely for on-site use, except that when a parcel on which the system is installed also receives electrical power supplied by a utility company, excess electrical power generated and not presently needed for on-site use may be used by the utility company.

TOWER: The vertical component of a wind energy conversion system that elevates the wind turbine generator and attached blades above the ground.

Chapter 21 Section 3: REGULATIONS:

Residential wind energy systems shall be a permitted use in all zoning where structures of any sort are allowed; subject to certain requirements as set forth below:

(A) Tower Height: For property sizes at least one third (1/3) acre up to one acre, the tower height shall be limited to no less than 30 feet and no greater than 70 feet measured from the ground to the highest point of the turbine blades. For property sizes of one acre or more, there is no limitation on tower height, except as imposed by FAA or other applicable regulations. Wind energy conversion systems shall not be subject to the height regulation for buildings set forth in Section 10-8-1 of the City Code as such may be amended from time to time.

(B) Clearance of Blade: No portion of the turbine or blades, or any other moving parts of the residential wind energy system shall extend within twenty (20) feet of the ground. No blades may extend over parking areas, driveways, sidewalks, or exposed utility lines.

(C) Set-back: No part of the wind system structure, including guy wire anchors, may be located within ten (10) feet of the property boundaries of the installation site. Set-back for the system tower from the property boundaries shall be at least equal to the actual Tower Height as installed, provided that the location also complies with any other applicable setback requirements.

(D) Automatic Over Speed Controls: All wind energy conversion systems shall be equipped with manual (electronic or mechanical) and automatic over speed controls to limit the blade rotation speed to within the design limits of the residential wind energy system.

(E) Sound: Residential wind energy systems 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.

(F) Approved Wind Turbines: Residential wind turbines must be approved under an Emerging Technology program such as the California Energy Commission, IEC or any other small wind certifications program recognized by the American Wind Energy Associations (AWEA) or the U.S. Department of Energy. Non-certified residential wind turbines must submit a description of the safety features of the turbine prepared by a registered mechanical engineer. Non-certified

residential wind turbines must also be reviewed and approved by the City's engineer.

(G) Compliance with International Uniform Building Code: Building permit applications for residential wind systems 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 International Uniform Building Code and certified by a licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer. Wet stamps shall not be required.

(H) Compliance with FAA Regulations: Residential wind energy systems must comply with applicable FAA regulations, including any necessary approvals for installations close to airports.

(I) Compliance with National Electric Code: Building permit applications for residential wind energy systems shall be accompanied by a line drawing of the electrical components in sufficient detail to allow for a determination that the manner of the installation conforms to the National Electrical Code. This information is frequently supplied by the manufacturer.

(J) Utility Notification: No residential wind energy system 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.