

Wind Turbines

Section 1 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, Grand County finds these regulations are necessary to ensure that wind energy conversion systems are appropriately designed and safely sited and installed.

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 (i.e. net metering).

Wind Turbine: A structure that use moving air to generate electricity (wind power) through the use of blades that are easily turned by the wind. Wind turbines typically have one, two, or three blades.

Tower: The vertical component of a wind energy conversion system that elevates the wind turbine generator and attached blades above the ground. Tower height shall be measured to the turbine mounting point.

Section 3 Regulations

Residential wind energy systems shall be a permitted use in all zoning classifications where structures of any sort are allowed. Any such turbine shall be subject to all provisions of these regulations, including setback requirements, and is required to obtain a building permit from the Grand County Building Department.

Size: Wind turbines shall not be allowed on parcels less than one (1) acre in size.

On any parcel one (1) acre and above, wind turbines of thirty five (35) feet or under shall be allowed as a use by right. All other requests shall be subject to a special use permit, and required to meet all provisions of these regulations.

For parcels including five (5) acres up to thirty five (35) acres, the tower height shall be limited to sixty five (65) feet or twenty (20) feet above tree line, whichever is less. For property sizes of thirty five (35) acres or more, tower heights shall be limited to a height of eighty (80) feet, except as may be imposed by FAA regulations.

Height: If approval of a Special Use Permit is granted for a wind turbine, the height limitation established within the Grand County Zoning Regulations shall not apply except as provided within Section 3 of this regulation.

Duration: All Special Use Permits issued for a wind turbine shall be for the life of the wind turbine. Any replacement or alterations shall be required to obtain an amendment to the existing special use permit.

Clearance of Blade: No portion of the residential wind energy system blade sweep shall extend within twenty feet of the ground. No blade sweep may extend over parking areas, driveways or sidewalks.

Setbacks: Setbacks for the system tower shall be no closer from the property line than the height of the tower, with a minimum setback of fifty (50) feet from all property lines. Guy wire anchor points may extend to 10 feet from the property line. Building mounted systems shall also be required to be no closer than fifty (50) feet from all property lines.

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. Turbine/blade systems shall be rated to wind speeds of no less than 110 MPH, measured at sea level.

Sound: On properties below thirty five (35) acres, wind energy systems shall not exceed 60 dBA, as measured at the closest neighboring dwelling. The level, however, may be exceeded during short-term events such as utility outages and/or severe wind storms.

Approved Wind Turbines: All wind turbines must be approved under an Emerging Technology program such as the California Energy Commission, IEC or any other small wind certification program recognized by the American Wind Energy Association (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.

Compliance with Uniform Building Code: All wind turbines shall be required to obtain a building permit. Applications for wind systems shall be accompanied by a site plan showing applicable setbacks and standard drawings of the wind turbine structure, including the tower, base, footing, and guy wire anchors. An engineering analysis of the tower, guy wires, and anchors showing compliance with the Current County Building Code and certified by a licensed professional engineer shall also be submitted. This analysis is typically supplied by the manufacturer.

Compliance with FAA Regulations: Residential wind energy systems must comply with applicable FAA regulations, for installations within 20,000 feet from any airports or runways. If the request is located within either the Granby or Kremmling Airport Review Area, FAA approval for any wind turbine shall be required.

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.

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, net metered customer-owned generator. Off-grid systems shall be exempt from this requirement.

Three Lakes Design Review Area: All wind turbines located within the Three Lakes Design Review Area shall be required to comply with the requirements of this area.