WIND TURBINE INSTALLATION

Regulations

The Raymore Unified Development Code (UDC) includes requirements for the design, siting and installation of wind energy conversion systems or wind turbines. The regulations address small turbines (under 100kW, typically for residential or small-business uses) and large systems (over 100kW, typically for large commercial or industrial uses).

The regulations address the number, size, and height of turbines permitted and where on a property a turbine can be located. The regulations also address the design of the tower. Regulations vary depending on the size of the property on which the turbine is proposed. The UDC requirements strive to let property owners take full advantage of available wind resources and to ensure that safety measures and aesthetic controls are in place to protect surrounding property owners.

Permit Requirements

If you are considering installing a wind energy conversion system, contact the Development Services Department to determine the regulations and how they apply to your property. Next, the application included in this packet should be completed and returned to the Development Services Department for review. If the City determines that the proposed turbine requires approval of a Conditional Use Permit, a separate application must be filed. Conditional Use Permits require review and approval from the Raymore Planning and Zoning Commission and City Council; notification to surrounding properties and a public hearing are also required. After zoning compliance is demonstrated, a building permit application can be filed.

Interconnection of turbines to the utility grid must be approved by Kansas City Power and Light. The City will not issue a building permit until approval from the utility is granted.

Regulations and permit requirements also apply to meteorological towers (met towers or anemometers).

An application for installation of a wind energy conversion system shall contain the following:	
	Building Permit. All wind energy conversion systems must be in compliance with Building Codes and Electric Codes. All systems require a building permit. Contact the Building Inspections division at (816) 331 -7916 for a building permit application.
	A plot plan showing: 1. Property lines and physical dimensions of the property 2. Location, dimensions, and types of existing major structures on the property 3. Location of the proposed small wind energy system, including foundation, guy cables, and associated equipment 4. The right-of-way of any public road that is contiguous to the property 5. Dimensions of the distance between the small wind energy system and any property line, structure, right-of-way or overhead utility lines
	Wind energy conversion system specifications, including: 1. The model and manufacturer 2. Rotor diameter 3. Installed height (measured from the highest point of the rotor arc or highest point on the system, whichever is greater) 4. Rated power output
	Standard drawings of the wind turbine structure, including tower and footings.
	An engineering analysis showing compliance with the International Building Code and International Residential Code, certified by a licensed professional engineer. (This information is frequently supplied by the manufacturer. Original seal and signature are not required.)
	A line drawing of the electrical components in sufficient detail to allow for a determination that the manner of installation conforms to the National Electrical Code. (This information is frequently supplied by the manufacturer.)
	Tower and tower foundation blueprints or drawings or required roof loads if system is roof-mounted.
	Any other data necessary to show compliance with UDC Section 420.070.
Applications for large wind energy conversion systems shall also contain the following:	
	A shadow flicker analysis demonstrating that the proposed system is sited to minimize impact on all occupied structures. The analysis shall identify the locations of shadow flicker that may be caused by the system and the expected duration of the shadow flicker over the course of a year. The analysis shall be conducted by a qualified engineer or other qualified professional approved by the Planning and Zoning Commission.
	A noise study demonstrating that the system shall not produce noise in excess of 60 decibels or 10 decibels above ambient noise levels as measured from the property line under normal operating conditions. The study shall be conducted by an acoustical engineer or other qualified professional as approved by the Planning and Zoning Commission and shall be in compliance with IEC 61400-11 Acoustic Noise Measurement Techniques for Wind Turbines.
	A study evaluating potential adverse impacts on avian or bat species and their critical habitats and potential mitigation measures that could be taken to minimize any such impacts. The study shall be conducted by a qualified environmental professional as approved by the Planning and Zoning Commission.