

# BONNER SPRINGS, KS - WIND ENERGY CONVERSION SYSTEM

## City Council Staff Report

July 14, 2008

To: Mayor and City Council

Thru: John Helin, City Manager

From: Don E. Slone, AICP, CFM, City Planner

**RE: Zoning Ordinance Amendment: BSZP-108: "Wind Energy Conversion Systems (WECS)":** A request by the Bonner Springs Planning Commission to consider amending the Zoning Ordinance in order to allow Wind Energy Conversion Systems (WECS) (Not for commercial purposes). Recommend approval of a new Section 11: Wind Energy Conversion Systems (WECS) under Article XXII; Supplementary District Regulations and adding the definition of a Wind Energy Conversion Systems (WECS) to Section 3: Definitions under Article XXVIII. *(Copy of the Ordinance and the Planning Commission Staff Report are attached)*

### **Recommendation:**

The Building Official and the City Planner along with the Planning Commission by unanimously vote are recommending approval of an amendment to the Zoning Ordinance by adding a new Section 11: Wind Energy Conversion Systems (WECS) under Article XXII; Supplementary District Regulations; and adding the definition of a Wind Energy Conversion Systems (WECS) to Section 3: Definitions under Article XXVIII as follows:

#### **Article XXII: Supplementary District Regulations**

##### **Section 11: Wind Energy Conversion Systems (WECS) (Not for commercial purposes)**

1. The minimum distance from any lot line to any tower, pole or other support structure of the WECS shall be established by the following minimum standards:

<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)	<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)
5	100	25	310
10	165	30	340
15	220	35	365
20	270	40	385

(Rotor sizes and distances shall be interpolated or extrapolated from the above values)

2. A plot plan shall be submitted with all building permit applications showing the proposed location and height of the WECS, fencing and all existing buildings within the fall zone of the proposed location; and
3. Building permit applications for WECS shall be accompanied by standard drawings of the wind turbine structure, including the tower, base and footing details. An engineering analysis of the tower showing compliance with the International Building Code and certified by a licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer.

#### **Article XXVIII: Rules and Regulations, Section 3: Definitions:**

**Wind Energy Conversion Systems (WECS):** Any device commonly or technically referred to as a wind charger, windmill, wind turbine, or wind generator which converts wind energy to a form of usable energy. These terms shall include all associated support structures.

*(See the attached Planning Commission Staff Report for specific details on this item).*

**Excerpt from the June 24, 2008 Planning Commission Meeting**

ORDINANCE NO. \_\_\_\_\_

An Ordinance by the Governing Body, amending the Zoning Ordinance of the City of Bonner Springs, Kansas in order to allow Wind Energy Conversion Systems (WECS) by adding a new Section 11: Wind Energy Conversion Systems (WECS) (Not for commercial purposes) under Article XXII: Supplementary District Regulations and adding the definition of a Wind Energy Conversion Systems (WECS) to Section 3: Definitions under Article XXVIII

BE IT ORDAINED BY the Governing Body of the City of Bonner Springs, Kansas that:

**Section I:** Amend the Zoning Ordinance under Article XXII: Supplemental District Regulations in order to allow Wind Energy Conversion Systems (WECS) (Not for commercial purposes) by adding a new Section 11 as follows:

**SECTION 11. Wind Energy Conversion Systems (WECS) (Not for commercial purposes)**

1. The minimum distance from any lot line to any tower, pole or other support structure of the WECS shall be established by the following minimum standards:

<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)	<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)
5	100	25	310
10	165	30	340
15	220	35	365
20	270	40	385

(Rotor sizes and distances shall be interpolated or extrapolated from the above values)

2. A plot plan shall be submitted with all building permit applications showing the proposed location and height of the WECS, fencing and all existing buildings within the fall zone of the proposed location; and
3. Building permit applications for WECS shall be accompanied by standard drawings of the wind turbine structure, including the tower, base and footing details. An engineering analysis of the tower showing compliance with the International Building Code and certified by a licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer.

**Section II:** Amend Article XXVIII, Section 3: Definitions of the Zoning Ordinance by adding a definition of Wind Energy Conversion Systems (WECS) as follows:

**Wind Energy Conversion Systems (WECS):** Any device commonly or technically referred to as a wind charger, windmill, wind turbine, or wind generator which converts wind energy to a form of usable energy. These terms shall include all associated support structures.

**Section III:** This ordinance shall be in full force and effect after passage and publication in the official city newspaper.

**APPROVED** by the Governing Body and signed by the Mayor of the City of Bonner Springs, Kansas, this 14<sup>th</sup> day of July, 2008.

\_\_\_\_\_  
Clausie W. Smith, Mayor

ATTEST:

\_\_\_\_\_  
Rita Hoag, City Clerk

(SEAL)

To: Planning Commission

From: Don E. Slone, AICP, CFM, City Planner

**RE: Zoning Ordinance Amendment: BSZP-108: "Wind Energy Conversion Systems (WECS)":** A request by the Bonner Springs Planning Commission to consider amending the Zoning Ordinance in order to allow Wind Energy Conversion Systems (WECS) (Not for commercial purposes) within specified zoning districts. Recommend approval of a new Section 11: Wind Energy Conversion Systems (WECS) under Article XXII; Supplementary District Regulations; adding the definition of a Wind Energy Conversion Systems (WECS) to Section 3: Definitions under Article XXVIII.

**Discussion:**

The Zoning Ordinance does not address wind energy conversion systems. During the discussion and approval of the Sandstone Amphitheater's Special Use Permit, wind energy conversion systems were discussed by the lessee and have verbally proposed using wind energy conversion systems as part of their operation. In view of Sandstone's possible request and in harmony with the discussions during the Comprehensive Plan update for the City to be more "green", the Planning Commission has directed Staff to review and propose a process to allow wind energy conversion systems within the City.

The Building Official and City Planner reviewed several jurisdictions to see how they handled this issue and here are some of the responses that we received:

City of Hoisington:	Permitted subject to the issuance of a building permit
City of Hutchinson:	Permitted subject to the issuance of a building permit
City of Mulvane:	Not allowed
Franklin County:	Special Use Permit
Sedgwick County:	Conditional Use Permit
UG/KCK:	Not allowed

The cities of Hoisington and Hutchinson both utilize slightly different minimum requirements for wind energy conversion systems but both cities utilize the structure setback from property lines to regulate their location within the city. The setback is based upon the rotor diameter in feet for safety issues (fall zone) as well as the potential noise issues from adjacent properties. They do not restrict wind energy conversion systems by zoning districts.

The City Planner and Building Official recommend utilizing the following requirements for issuing building permits for Wind Energy Conversion Systems:

**Article XXII: Supplementary District Regulations**

**Section 11: Wind Energy Conversion Systems (WECS) (Not for commercial purposes)**

1. The minimum distance from any lot line to any tower, pole or other support structure of the WECS shall be established by the following minimum standards:

<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)	<u>Rotor Diameter</u> (Feet)	<u>Setback Distance</u> (Feet)
5	100	25	310
10	165	30	340
15	220	35	365
20	270	40	385

(Intermediate rotor sizes distances shall be interpolated from the above values.)

2. The minimum setback shall be equal to or greater than the height of the WECS from any property line measured from the base of the support to the center of the rotor diameter;

3. A plot plan shall be submitted with all building permit applications showing the proposed location and height of the WECS, fencing and all existing buildings within the fall zone of the proposed location; and
4. Building permit applications for WECS shall be accompanied by standard drawings of the wind turbine structure, including the tower, base and footing details. An engineering analysis of the tower showing compliance with the International Building Code and certified by a licensed professional engineer shall also be submitted. This analysis is frequently supplied by the manufacturer.

**Article XXVIII: Rules and Regulations, Section 3: Definitions:**

**Wind Energy Conversion Systems (WECS):** Any device commonly or technically referred to as a wind charger, windmill, wind turbine, or wind generator which converts wind energy to a form of usable energy. These terms shall include all associated support structures.

**Recommendation:**

The Building Official and City Planner are recommending approval of a new Section 11: Wind Energy Conversion Systems (WECS) under Article XXII; Supplementary District Regulations and adding the definition of a Wind Energy Conversion Systems (WECS) to Section 3: Definitions under Article XXVIII as shown above.

Staff does not recommend amending Appendices A & B by adding Wind Energy Conversion Systems (WECS) to AG, Agricultural and A-1, Agricultural Districts as a permitted use. This negative recommendation is based upon the fact that the cities of Hoisington and Hutchinson do not prohibit wind energy conversion systems in any of their zoning districts and would rather allow the setback distances from the property line to dictate where wind energy conversion systems are allowed.

If the Planning Commission desires to allow WECS in AG and A-1 zoning districts, the following amendments shall apply:

**Appendices A& B:**

**Wind Energy Conversion Systems (WECS):** shall be permitted in the AG and A-1 Zoning Districts only.