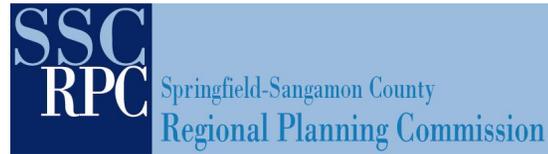


Information Brief



February 2, 2012

Consideration of Changes in the Sangamon County Wind Energy Conversion System (WECS) Ordinance

Summary:

The SSCRPC was asked to review the current Sangamon County WECS ordinance to determine if there were any sections that might be amended based upon changes in the wind power industry, experiences from other jurisdictions, and questions and concerns voiced by both the industry and the public concerning provisions in the ordinance.

This Information Brief proposes several areas where discussions concerning changes might prove fruitful.

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The Sangamon County Wind Energy Conversion Systems (WECS) ordinance [Chapter 17.49.010 et seq.] was adopted in 2006. The ordinance was developed based upon the most comprehensive information available at that time. Since counties across the state have now gained additional experience with WECS developments, the Sangamon County Board's Public Health, Safety and Zoning (PHS&Z) Committee requested that the staff of the SSCRPC review the existing ordinance and provide areas for discussion should the County Board wish to modify and update its WECS ordinance.

The SSCRPC's approach to this task was to review the existing ordinance in light of what Commission staff had learned from other jurisdictions, the research it had conducted, and the issues presented to the PHS&Z Committee by both the public and industry, and then determine if there were areas in which the ordinance might be improved. At the conclusion of its work, the SSCRPC found several areas where changes might be considered.

It must be noted that the SSCRPC is not presenting the changes described below as Commission recommendations. Since the County's zoning ordinance requires that the Planning Commission make a professional staff recommendation on any text amendment presented to the County's Zoning Board of Appeals, we believe that it would be inappropriate to propose recommendations outside of this process at this time.

We do, however, believe that the language provided below offers a starting point for discussions by the County Board if it wishes to make revisions to the ordinance. We believe that the language developed clarifies language and addresses a number of concerns voiced by both the industry and the public. The SSCRPC staff also offers some new language that might lead to a discussion of alternatives for reducing potential issues over the life of a WECS project.

In taking on the task we attempted to address matters in what we hope are relatively clear, concise and reasonable ways, fully understanding that what one person might consider to be clear, concise and reasonable, others may not see in the same light.

The following pages lay-out the provisions of the ordinance including language developed by the SSCRPC. The new, optional language offered for discussion is provided in bold-italics and underlined. Language in the current ordinance that would be deleted is shown by a strike-through. For each section, SSCRPC staff has attempted to describe the change and the reason why it is included.

No legal review has been done of the proposed language. Such a review should be done if changes are contemplated.

The Wind Energy Conversion System Ordinance and Possible Changes for Discussion

Zoning: Wind Energy CHAPTER 17.49 (Res. 11-1, 08-08-06)

17.49.010 Definitions

Contiguous Urban Development. *Development adjacent or not adjacent to an incorporated area, that makes intensive use of land for the location of buildings, other structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of such land for the production of food, fiber, or other agricultural products, or the extraction of mineral resources, and that, when allowed to spread over wide areas, typically requires urban services.*

Setback The distance from a feature to a tower.

System Height The height above grade of the fixed portion of the tower, ~~excluding the wind turbine itself~~ **tower structure plus the turbine blade at its full vertical extension.**

Mini Wind Energy Conversion System (Mini WECS) The system by which wind energy is converted to electricity including a wind turbine, one tower, support system, blades and associated control and conversion electronics which has a rated capacity less than ten (10) kW and a system height less than thirty-five feet (35') or more.

Small Wind Energy Conversion System (SWECS) The system by which wind energy is converted to electricity including a wind turbine, one tower, support system, blades and associated control and conversion electronics which has a rated capacity of ten-one hundred (10-100) kW or a system height of thirty-five feet (35') or more.

Wind Energy Conversion System (WECS) The system by which wind energy is converted to electricity including wind turbines, towers, support systems, blades and associated control and conversion electronics which has a rated capacity over one hundred (100) kW.

WECS Site All parcels of land making up the WECS project.

WECS Perimeter The outer boundaries of the WECS site.

WECS Project All WECS, substations and ancillary facilities.

Contiguous Urban Development:

While Sec. D.1. of the ordinance addresses location of WECS in regard to "contiguous urban development", this term is not defined. Since this relates to setbacks from incorporated areas, if left undefined it could have the effect of reducing urban setbacks. The inclusion of language like that offered would help clarify requirements.

System Height:

The current ordinance does not take into account the full height of the structure inclusive of the turbine blade. Many, if not most, ordinances do. This language would address concerns about turbine blade length and increasing height of towers as newer equipment becomes available. It would also effectively increase setbacks based upon system height.

17.49.040 Wind Energy Conversion System (WECS)

A Purpose and Intent

The purpose of these regulations is to provide a uniform and comprehensive set of standards for the installation and use of Wind Energy Conversion Systems designed for commercial energy production. The intent of these regulations is to protect the public health, safety and community welfare while allowing development of wind energy resources for commercial purposes.

B Conditional Permitted Use

WECS shall be a conditional permitted use in the A Agriculture zoning district on single or contiguous parcels of land totaling forty (40) acres or more in size. An existing principal structure on a parcel does not preclude placement of a WECS.

C Petition

All policies, procedures and standards of Chapter 17.58 – Conditional Permitted Uses – shall apply. In addition, the petition for a Conditional Permitted Use (CPU) shall include:

- 1) A written summary of the project including:
 - a) A general description of the project, including its approximate name plate generating capacity;
 - b) The potential equipment manufacturer(s) and type(s) of WECS(s);
 - c) Number of WECS towers, and name plate generating capacity of each WECS;
 - d) The system height;
 - e) Diameter of the WECS(s) rotor(s); and
 - f) Description of the applicant, owner and operator, include their previous WECS experience.
- 2) The name(s), address(es), and phone numbers(s) of the owner and operator.
- 3) A site plan of the WECS site showing:
 - a) Boundaries of the project;
 - b) Location of each WECS tower, guy lines and anchor bases (if any);
 - c) All WECS structures including, but not limited to, the project substation, interconnect substation and location and voltage of any overhead transmission lines;
 - d) Property lines;
 - e) Setback lines;
 - f) Public access roads;
 - g) Location of all existing structures with their uses identified; and
 - h) Land use, zoning, public roads and structures within one thousand feet (1000') of the WECS site; **and**
 - i) **A visual simulation of the site showing the placement and height above grade of each WECS tower within the project area such that the visual impact of the project can be reasonably ascertained.**

Visual Simulation: Language is intended to help address concerns regarding scenic impact. The inclusion of this language would provide additional information during the review process.

17.49.040 Wind Energy Conversion System (WECS)

D. **Special Requirements** WECS are subject to the following requirements:

- 1) **Location** A WECS shall not be located within one and one-half (1½) miles of an incorporated area with a population over ten thousand (10,000) or ~~within one half (1/2) mile of an incorporated area with a population of less than ten thousand (10,000).~~ WECS shall not be located so that they interfere with contiguous urban development.
- 2) **Height** Height shall meet the requirements of the Federal Aviation Administration or other state or federal laws.
- 3) **Setbacks**
 - a) perimeter setback – ~~one thousand two hundred feet (1,200’).~~ **For WECS system towers of four hundred feet (400’) or less in height, one thousand two hundred feet (1,200’).** **For WECS system towers greater than four hundred feet (400’) in height, the perimeter setback shall be increased in proportion to the height of the WECS above four hundred feet (400’).** If the distance from the WECS tower to the WECS site perimeter is less than one thousand two hundred feet (1,200’), the difference may be provided through a setback easement granted to the WECS owner allowing the easement property to be included as part of the one thousand two hundred foot (1,200’) setback. The easement shall clearly state that the property may be subject to adverse impacts from the WECS and no habitable structure shall be constructed. The time limit of the setback easement shall be the same as the projected life of the turbine for which the easement is providing a setback. The easement shall not be automatically renewable.
 - b) principal structures on each parcel – **For WECS systems of four hundred feet (400’) or less in height,** one thousand feet (1,000’) or three (3) times the rotor diameter, whichever is greater. **For WECS systems greater than four hundred feet (400’) in height, the setback from principal structures shall be increased in proportion to the height of the WECS above four hundred feet (400’).**
 - c) third party utility lines – 1.1 times the system height.
 - d) public road – 1.1 times the system height.
- 4) **Noise** Noise levels shall not exceed standards set by the Illinois Pollution Control Board for noise emissions from Class C land to Class A land regardless of the land use of the receiving land. Noise levels shall be enforced by both the State of Illinois and Sangamon County.

Location: The current ordinance does not take into account the extraterritorial planning jurisdiction of smaller communities. This jurisdiction may exist regardless of municipal population size if certain conditions are met. The change would also reflect more recent changes in state law. While the Sangamon County ordinance appears to be exempt from the state’s changes due to a ‘grandfathering’ provision, it seems reasonable to seek consistency. Please note the relationship of this section to the definition of Contiguous Urban Development offered above.

Perimeter Setback: The point has been made that the current ordinance does not take into account the potential growth in the height of turbines that new technology in the industry may allow. The 400’ base height provided in this language was drawn from the average tower heights reported on the market in 2010; the last year for which this data was found. With this language a WECS of 400’ or less would require a 1200’ setback. But, and as an example, a WECS of 500’ would require a 1500’ foot setback, or 25% more due to the proportional increase over 400’.

Principal Structure Setback: This language is added to make the section consistent with the proportionality of WECS height to setback established in the section immediately above. As with the previous language, a WECS of 400’ or less would require a 1000’ setback from a principal structure. But, and for the purpose of providing an example, a 500’ WECS would require a 1250’ setback, or 25% more due to the proportional increase over 400’.

17.49.040 Wind Energy Conversion System (WECS)

5) Annual Review and Reporting.

a) The applicant, owner and/or operator of a WECS project shall submit to the Sangamon County Department of Zoning on the first Monday of July of each year following WECS project approval by the Sangamon County Board, a report regarding WECS maintenance and operation. This report shall address: (i) any physical modifications to the WECS and/or its infrastructure; (ii) complaints pertaining to setbacks, noise, appearance, safety, lighting, use of public roads, electromagnetic interference, and shadow flicker, received by the applicant, owner and/or operator concerning the WECS, and the resolution of such complaints; (iii) calls for emergency services, including the nature of the emergency and how it was resolved; (iv) status of liability insurance; and (v) any other information that the County might reasonably request.

b) Within 90-days of the receipt of this annual report, the Department of Zoning shall review it, conduct an on-site, field-review of the WECS project, and within 120-days of the receipt of the report, provide a summary of the report and its on-site, field-review to the Sangamon County Board.

c) The Department of Zoning shall charge a fee for this annual review in the amount of no more than one hundred and fifty dollars (\$150.00) per turbine located within the WECS project area. This fee shall be provided to the Department of Zoning by the WECS applicant, owner and/or operator at the time of annual report submission. Failure to provide the annual report and required fee shall be considered a cessation of operations.

d) The applicant, owner and/or operator of a WECS project shall provide that the Sangamon County Department of Zoning have access to the WECS project site for the purposes described in 17.49.040 (D)(5)(b) above. Failure to provide access shall be deemed a violation of this ordinance.

E. Certification

WECS shall conform to applicable industry standards, including those of the American National Standards Institute (ANSI). Applicants shall submit certificates of design compliance that equipment manufacturers have obtained from Underwriters Laboratories (UL), Det Norske Veritas (DNV), Germanischer Lloyd Wind Energie (GL), or an equivalent third party.

All applicable county, state and national construction and electric codes shall be followed.

F. Appearance

WECS surface shall be a non-reflective, unobtrusive color (usually white or gray). No advertising signs or graphic designs shall be permitted on the WECS. The manufacturer's identification with ratings is allowed.

Annual Review and Reporting:

This new language is intended to provide additional public oversight for the project, especially in areas where concerns have been voiced. It is also intended to provide a mechanism by which the County might be informed of operational problems that could effect residents, and the actions taken to address these problems. It establishes: a reporting requirement and the items to be included in the report; a required review by County staff, including on-site review; and requires that the WECS applicant, owner or operator provide access to the site for this review.

Since this is a new task for County staff, it also provides for an annual fee to cover the County's associated costs.

17.49.040 Wind Energy Conversion System (WECS)

G. Safety

- 1) All wiring between wind turbines and the wind energy facility substation shall be underground whenever possible.
- 2) Wind turbine towers shall not be climbable up to fifteen (15) feet above ground level.
- 3) All access doors to wind turbine towers and electrical equipment shall be lockable.
- 4) Appropriate signs warning of high voltage shall be placed on wind turbine towers, electrical equipment, and wind energy facility entrances.
- 5) All WECS shall be equipped with a redundant braking system. This includes both aerodynamic overspeed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a fail-safe mode. Stall regulation shall not be considered a sufficient braking system for overspeed protection.

H. Lighting

The WECS shall not be lighted except as required by the Federal Aviation Administration or other state or federal law.

I. Use of Public Roads

The owner or operator shall identify all public roads to be used for transporting WECS or substation parts and/or equipment for construction, operation, or maintenance of the WECS(s) or substation(s) and shall:

- 1) Conduct a pre-construction baseline survey to determine existing road conditions for assessing potential future damage; ~~and~~
- 2) Submit an acceptable financial security in an amount determined by the appropriate highway authority to be used for the purpose of repairing any damage to public roads caused by constructing, operating or maintaining the WECS if not done by the WECS owner/operator when construction of the project is completed; and

3) Submit a public road use plan identifying periods during which roads will be used for transporting WECS or substation parts and/or equipment for construction, operation, or maintenance of the WECS or any substation(s), and any additional information that the County Engineer may request relating to the use of public roads in connection with the construction and/or operation of the WECS project. The Sangamon County Engineer may revise this plan or set restrictions on it so as to establish road use priorities and provide for adequate traffic flow and safety.

Public Road Use Plan: This language is intended to address problems identified in other jurisdictions and allows for better planning of road use and scheduling to reduce user conflicts. It would also provide for improved communication with public safety agencies.

17.49.040 Wind Energy Conversion System (WECS)

J. Electromagnetic Interference

No WECS shall be installed in any location where its proximity with existing fixed broadcast, retransmission, or reception antenna for radio, television, or wireless phone or other personal communication systems would produce electromagnetic interference with signal transmission or reception. No WECS shall be installed in a location along the major axis of an existing microwave communications link where its operation is likely to produce electromagnetic interference in the link's operation.

The applicant shall provide the applicable microwave transmission providers, local emergency service providers and the Sangamon County Emergency Telephone System Department copies of the project summary and site plan. If these providers demonstrate a likelihood of interference with their communications resulting from the WECS, the applicant shall take measures to mitigate anticipated interference or relocate the WECS tower or facility.

If the WECS causes interference with local residential broadcast TV, steps to mitigate the problem must be taken.

K. Shadow Flicker

The applicant shall conduct a study on potential shadow flicker. The study shall identify the locations of shadow flicker that may be caused by the project and the expected durations of the flicker at these locations. The study shall identify problem areas where shadow flicker may interfere more than one (1) hour per year with residences and other existing uses and describe measures that shall be taken to eliminate or mitigate the problems. Any safety problems identified by the County Engineer caused by shadow flicker on roads shall be eliminated or mitigated.

L. Decommissioning Plan

The WECS project must provide a decommissioning plan to insure that the WECS equipment is removed and land is restored to its previous use upon the end of the project's life or as stated in Sec. 17.49.060. The plan shall include:

- 1) Provisions for the removal of structures, debris and cabling on the surface and at least 5' below the surface, **and the sequence in which removal is expected to occur;**
- 2) Provisions for the restoration of the soil and vegetation;
- 3) An estimate of the decommissioning costs certified by a professional engineer in current dollars. **The engineer providing this estimate shall be engaged under contract by the Sangamon County Engineer and all costs associated with this engagement shall be born by the applicant;**

Removal Sequence: The current ordinance does not address removal sequence, and some engineering and planning professionals suggest that it should be addressed. This language would allow for better planning and scheduling of road impacts similar to that during construction.

It also makes a technical change by renumbering a section due to other changes.

Employment of Engineer: This language allows for the County, rather than the WECS owner/operator, to select the engineer so as to reduce any conflict of interest.

17.49.040 Wind Energy Conversion System (WECS)

Decommissioning Plan (Continued)

4) A financial plan approved by Sangamon County to ensure funds will be available for decommissioning and land restoration. **The applicant shall provide the County with a new estimate of the cost of decommissioning the WECS project every five (5) years under the same conditions as set forth in 17.49.040(L)(3), above. Upon receipt of this new estimate, the County may require, and the applicant, owner and/or operator of the WECS project shall provide, a new financial plan for decommissioning acceptable to the County. Failure to provide an acceptable financial plan shall be considered a cessation of operations;**

Financial Plan: Concerns have been voiced in other jurisdictions as well as Sangamon County about the establishment of decommissioning costs only at project onset. This language is intended to allow for on-going consideration of decommissioning costs throughout the life of the WECS project as well as periodic adjustments of the decommissioning financial plan.

5) A provision that the terms of the decommissioning plan shall be binding upon the owner or operator and any of their successors, assigns, or heirs; and

6) A provision that Sangamon County shall have access to the site and to the funds outlined in 17.49.040L. (4) above to effect or complete decommissioning one (1) year after cessation of operations.

M. **Certificate of Compliance**

1) Required Submission

The following items shall be submitted to the Sangamon County Department of Zoning ~~and Building Safety~~:

Receiving Department: This change simply reflects the change in the Department's name caused by the transfer of Building Safety.

a) Site plan with all items previously required. Additional items to be included are:

- 1) Electrical cabling from the WECS tower to the substation(s);
- 2) Ancillary Equipment;
- 3) Third party transmission lines;
- 4) Wells;
- 5) Septic fields;
- 6) Field tile location;
- 7) Existing easements;
- 8) Floodplain location and elevation, if applicable;
- 9) Wetland location, if any

b) Noise assessment including average and maximum noise levels at perimeter property lines and at housing units within the project.

c) Phase I Avian Screening Report by a qualified third party and all correspondence with the Illinois Department of Natural Resources and U.S. Fish and Wildlife Service regarding the project.

d) Letter from the FAA stating the project is in compliance with FAA height and lighting requirements.

e) Letter of compliance from the Illinois Historic Preservation Agency.

17.49.040 Wind Energy Conversion System (WECS)

Certificate of Compliance (Continued)

f) Emergency plan.

1) The site and emergency plan shall be submitted to the local fire protection district(s) and/or departments whose jurisdiction is included in whole or in part within the WECS project area.

2) The WECS project applicant, owner and/or operator shall cooperate, at its expense, with these fire protection district(s) and/or department(s) in the development of an emergency response plan(s) for the district(s) and/or department(s), and such plan(s) shall be subject to review and approval prior to the issuance of a certificate of compliance.

3) The applicant, owner and/or operator shall take reasonable steps (at the applicant's, owner's and/or operator's expense) to assist any and all requesting district(s) and/or department(s) included in whole and/or part within the WECS project area, to provide training to personnel responsible for emergency response.

Emergency Plan: This new language clarifies aspects of the required emergency plan, allows for review by affected fire districts, requires the involvement of fire districts in the development of emergency response plans, and establishes a training requirement to be borne by the WECS applicant, owner or operator. It is intended to address concerns voiced by some fire districts.

g) All required studies, reports, certifications, and approvals demonstrating compliance with the provisions of this Ordinance.

2) Review

a) Due to the complexity of the project and the information submitted, it shall be reviewed by a committee consisting of one or more representatives from:

- a) Sangamon County Departments of Zoning **and Public Health** (Building Safety);
- b) Springfield-Sangamon County Regional Planning Commission;
- c) Sangamon County Engineer;
- d) Sangamon County Emergency Telephone System Department;
- e) Sangamon County Administrator;
- f) Sangamon County State's Attorney;
- g) Applicable fire protection district.

Reviewing Agencies: This language simply reflects transfer of Building Safety to the Dept. of Public Health, ensuring the involvement of Building Safety in the review process.

b) Due to the complexity of the project and the information submitted for review, the County may charge the WECS project applicant, owner and/or operator for the cost of any special analytic or other review needs deemed by the committee to be absolutely necessary and incidental to adequate and timely review.

Special Studies or Other Review: This permissive language allows the County to recoup the cost of any studies or other staff work that may be required in the plan review process or to expedite plan review.

c) If the committee determines that all requirements of the ordinance have been met, the Zoning Administrator shall issue a Certificate of Compliance. The building permit may be reviewed at the same time.

17.49.050 Indemnification and Liability

1) The applicant, owner and/or operator of the WECS project shall defend, indemnify and hold harmless the County of Sangamon and its officials from and against any and all claims, demands, losses, lawsuits, causes of action, damages, injuries, costs, expenses and liabilities whatsoever, including attorney's fees, without limitation, arising out of acts or omissions of the applicant, owner and/or operator associated with the construction and/or operation of the WECS project.

2) The applicant, owner and/or operator of the WECS project shall maintain a current general liability policy covering bodily injury and property damage with limits of at least \$2 million per occurrence and \$2 million in the aggregate. Evidence of liability coverage must be reported to the Sangamon County Department of Zoning on an annual basis, and any loss of coverage must be reported within three (3) working days of loss. Failure to maintain coverage shall be considered a cessation of operations.

Indemnification and Liability:

This new section is intended to address questions that have arisen concerning County liability and is intended to provide for County indemnification and establish some liability protection. It also is intended to ensure that the WECS owner/operator maintains insurance sufficient to address any damages to people or property that may be caused by the WECS.

17.49.050 060 Cessation of Operations

If any Wind Energy Conversion System provided for in this chapter (Mini WECS, SWECS and WECS) has not been in operation and producing electricity for at least two hundred seventy (270) consecutive days, it shall be removed. The Sangamon County Zoning Administrator shall notify the owner to remove the system. Within thirty (30) days, the owner shall either submit evidence showing that the system has been operational and producing electricity or remove it. If the owner fails to or refuses to remove the Wind Energy Conversion System, the violation shall be referred to the Sangamon County States Attorney for enforcement.

Renumbering of Section:

This is simply a technical change required by the insertion of the section immediately above.

17.49.050 070 Penalties

A failure to obtain applicable building permit(s) for the construction of a Wind Energy Conversion System or a failure to comply with the requirements of a building permit or the provisions of this Ordinance shall be deemed a violation of this ordinance. The State's Attorney may bring an action to enforce compliance of the requirements of this Ordinance by filing an action before the Sangamon County Ordinance Violation Hearing Department or by filing an action in the Circuit Court for an injunction requiring conformance with this ordinance or seek such other order as the court deems necessary to secure compliance with this ordinance.

Any person who violates this ordinance shall be fined not less than twenty five dollars (\$25) or more than five hundred dollars (\$500). A separate offense shall be deemed committed upon each day during or on which a violation occurs or continues.

Nothing herein shall prevent the County from seeking such other legal remedies available to prevent or remedy any violations of this ordinance.

Renumbering of Section:

This is simply a technical change required by the insertion of the section immediately above.

Fine: While no language is suggested for discussion, the County Board should consider whether a fine from \$25 to \$500 is sufficient for offenses committed by operators of WECS. Consideration might be given to establishing different fine limits for the three different classifications of wind energy systems provided in ordinance.

The Springfield-Sangamon County Regional Planning Commission (SSCRPC) serves as the joint planning body for Sangamon County and the City of Springfield, as well as the Metropolitan Planning Organization for transportation planning in the region. The Commission has 17 members including representatives from the Sangamon County Board, Springfield City Council, special units of government, and six appointed citizens from the city and county.

The Commission works with other public and semi-public agencies throughout the area to promote orderly growth and redevelopment, and assists other Sangamon County communities and special districts with their planning needs. Through its professional staff, the SSCRPC provides overall planning services related to land use, housing, recreation, transportation, development, environmental protection, and various other special areas of municipal interest. Its executive director also oversees the Sangamon County Department of Zoning, which addressing zoning code administration and liquor licensing and regulation for the County.

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