

STEVENS COUNTY
WIND ENERGY CONVERSION SYSTEMS
ORDINANCE

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**STEVENS COUNTY
WIND ENERGY CONVERSION SYSTEMS
ORDINANCE**

SECTION 1: PURPOSE

This Ordinance is established to regulate the installation and operation of Wind Energy Conversion Systems (WECS) within Stevens County not otherwise subject to siting and oversight by the State of Minnesota pursuant to Minnesota Statutes Chapter 216F “Wind Energy Conversion Systems” as amended. This Ordinance complements and/or supplements the Stevens County Zoning Ordinance.

SECTION 2: JURISDICTION

The jurisdiction of this Ordinance shall apply to all areas of Stevens County outside incorporated municipalities.

SECTION 3: RULES

For the purpose of this Ordinance, certain terms or words used herein shall be interpreted as follows:

- A. The word “Person” includes a firm, association, organization, partnership, trust, company, or corporation as well as an individual.
- B. The word “shall” is mandatory, and not discretionary, the word “may” is permissive.
- C. Words used in the present tense shall include the future; and words used in the singular shall include the plural, and the plural the singular.
- D. The word “lot” shall include the words “piece”, “parcel”, and “plot”.
- E. The words “special use” also means “conditional use”.
- F. The words “Board of Adjustment”, also mean “Board of Variance”.
- G. The word “building” shall include structures of every kind, regardless of similarity to buildings.
- H. The word “used for” shall include the phrases “arranged for”, “designed for”, “intended for”, “maintained for” and “occupied for”.
- I. The masculine gender shall include the feminine and neuter.
- J. All stated and measured distances shall be taken to the nearest integral foot. If a fraction is one-half (1) foot or less, the integral foot next below shall be taken.
- K. The word “Board” includes the “County Commissioners”, the “Board of County

Commissioners” or any other word or words meaning the “Stevens County Board of Commissioners”.

SECTION 4: DEFINITIONS

Aggregated Project: Aggregate projects are those which are developed and operated in a coordinated fashion, but which have multiple entities separately owning one or more of the individual WECS within the larger project. Associated infrastructure such as power lines and transformers that service the facility may be owned by a separate entity but are also included as part of the aggregate project.

Airfoil: A part such as a blade, with a flat or curved surface, designed to provide a desired reaction force when in motion relative to the surrounding air.

Azimuth: A clockwise measurement around the horizon in degrees, beginning and ending at true north.

Bluff: “Bluff” means a topographic feature such as a hill, cliff, or embankment having the following characteristics (an area with an average slope of less than 18 percent over a distance for 50 feet or more shall not be considered part of the bluff).

Board of Adjustment and Appeals: An officially constituted quasi-judicial body appointed by the County Board whose principle duties are to hear appeals from decisions of the Zoning Administrator and, where appropriate, grant variances from the strict application of this Ordinance.

C-BED Project: As defined in Minnesota Statutes Section 216B.1612, as amended. Based on the total name plate generating capacity, C-BED Projects are considered to be (1) Micro-WECS, (2) Non-Commercial WCES or (3) Commercial WECS as defined in this Section.

Campground: A facility licensed by the Minnesota Department of Health for the purposes of camping.

Church: As defined in Minnesota Statutes Chapter 272.

Comprehensive Plan: The policies, statements, goals, and interrelated plans for private and public land and water use, transportation, and community facilities including recommendations for plan execution, documentation in texts, ordinances and maps which constitute the guide for the future development of the unincorporated area of the county.

Conditional Use Permit: A land use or development that would not be appropriate generally but may be allowed with appropriate restrictions as provided by official controls upon a finding that 1) certain conditions as detailed in this Ordinance exist, and 2) the use or development conforms to the Land Use Policies of the County and 3) is compatible with the existing neighborhood.

County: Stevens County, Minnesota.

County Board: Stevens County Board of Commissioners.

Decibel: A unit of measure of sound pressure.

DB(A): A Weighted Sound Level: A measure of over-all sound pressure level in decibels, designed to reflect the response of the human ear.

Dwelling: A building or portion thereof, designed exclusively for residential occupancy; the term does not include hotels, motels, tents, tent trailers or recreational vehicles.

Easement: A grant by a property owner for the use of a strip of land for the purpose of constructing and maintaining utilities, including, but not limited to, sanitary sewers, water mains, electric lines, telephone lines, storm sewer or storm drainage ways, and gas lines.

Electromagnetic Communications: The use of an electromagnetic wave to pass information between two points.

Essential Services: Overhead or underground electrical, gas, steam or water transmission or distribution systems and structures, or collection, communication supply or disposal systems and structures used by public utilities or governmental departments or commissions or as required for protection of the public health, safety, or general welfare, including towers, poles, wires, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, police call boxes, and accessories in connection therewith, but not including buildings. For the purpose of this Ordinance the word “building” does not include “structures” for essential services.

Fall Zone: The area, defined as the furthest distance from the tower base, in which a guyed tower will collapse in the event of a structural failure. This area is less than the total height of the structure.

Feeder Line: Any power line that carries electrical power from one or more wind turbines or individual transformers associated with individual wind turbines to the point of interconnection with the electric power grid, in the case of interconnection with the high voltage transmission systems the point of interconnection shall be the substation serving the WECS.

Flicker: The moving shadow cast by the rotating blades of a WECS, or any intermittent, repetitive, or rhythmic lighting effect that is a direct result of rotating WECS blades.

Flicker Analysis: A study showing the duration and location of flicker potential.

Generator nameplate capacity: The maximum rated output of electrical power production of a generator under specific conditions designated by the manufacturer with a nameplate physically attached to the generator.

Health Care Facilities: Facilities principally engaged in providing services for health maintenance and the treatment of mental or physical conditions including but not limited to hospitals, clinics, and nursing homes.

Hub Height: The distance from the ground to the center axis of the turbine rotor.

Internal Setback: Refers to “Internal Turbine Spacing” as defined pursuant to rules promulgated under Minnesota Statute Section 216F.08.

Kilowatt: A unit of power equal to 1000 watts.

Megawatt: A unit of power equal to one million watts.

Meteorological Tower: For the purposes of this Wind Energy Conversation System Ordinance, meteorological towers are those towers which are erected primarily to measure wind speed and directions plus other data relevant to siting WECS. Meteorological towers do not include towers and equipment used by airports, the Minnesota Department of Transportation, or other similar applications to monitor weather conditions.

Micro-WECS: Micro-WECS are WECS of 1kW nameplate generating capacity or less and utilizing supporting towers of 40 feet or less.

Noise Profile: A study certifying the WECS is in compliance with Minnesota Rules Chapter 7030, as amended, of the Minnesota Pollution Control Agency noise standards.

Non-participating Dwelling: A residence that has not entered into an agreement with a wind energy project.

Non Prevailing Wind: The non-dominant wind direction in Stevens County.

Participating Dwelling: A residence that has entered into an agreement with a wind energy project.

Power Line: An overhead or underground conductor and associated facilities used for the transmission or distribution of electricity.

Power Purchase Agreement: A legally enforceable agreement between two or more persons where one or more of the signatories agrees to provide electrical power and one or more of the signatories agrees to purchase the power.

Preliminary Acoustic Study: A study certifying the WECS will be in compliance with Minnesota Administrative Agency Rules Chapter 7030, as amended, of the Minnesota Pollution Control Agency.

Prevailing Wind: The predominant wind direction in Stevens County.

Project: A WECS or combination of WECS.

Project Boundary/Property Line: The Boundary line of the area over which the entity applying for a WECS permit has legal control for the purpose of installation of a WECS. This control may be attained through fee title ownership, easement, or other appropriate contractual relationship between the project developer and landowner.

Project Owner: An individual or entity with legal ownership of a WECS project.

Property Line: The boundary line of the area over which the entity applying for a WECS permit has legal control for the purposes of installation of a WECS. This control may be attained through fee title ownership, easement, or other appropriate contractual relationship between the

project developer and landowner.

Public Conservation Lands: Land owned in fee title by State or Federal agencies and managed specifically for (grassland) conservation purposes, including but not limited to State Wildlife Management Areas, State Parks, State Scientific and Natural Areas, Federal Wildlife Refuges and Water fowl Production Areas. For the purposes of this section public conservation lands will also include lands owned in fee title by non-profit conservation organizations. Public conservation lands do not include private lands upon which conservation easements have been sold to public agencies or non-profit conservation organizations.

Qualified Independent Acoustical Consultant: A person with Full Membership in the Institute of Noise Control Engineers (INCE), or other demonstrated acoustical engineering certification. The Independent Qualified Acoustical Consultant can have no financial or other connection to a WECS developer or related company.

Receptor: Structures intended for human habitation, whether inhabited or not, including but not limited to churches, schools, hospitals, public parks, the manicured areas of recreational establishments designed for public use, including but not limited to golf courses, and camp grounds.

Rotor: A system or airfoils connected to a hub that rotates around an axis.

Rotor Blades: See Airfoil.

Rotor Diameter (RD): The diameter of the circle described by the moving rotor blades.

School: As defined in Minnesota Statutes Section 120A.05, as amended, and private schools excluding home school sites.

Substations: Any electrical facility designed to convert electricity produced by wind turbines to a voltage greater than 35,000 (35,000 KV) for interconnection with high voltage transmission lines shall be located outside of the road right of way.

Total Height: The highest point, above ground level, reached by a rotor tip or any other part of the WECS.

Total Name Plate Capacity: The total of the maximum rated output of the electrical power production equipment for a WECS project.

Tower: Towers include vertical structures that support the electrical generator, rotor blades, or meteorological equipment.

Tower Height: The total height of the WECS exclusive of the rotor blades.

Transmission Line: Those electrical power lines that carry voltages of at least 69,000 volts (69 KV) and are primarily used to carry electric energy over medium to long distances rather than directly interconnecting and supplying electric energy to retail customers.

Wake Loss: The loss of wind resource downwind of an operating wind turbine.

Wake Loss Study: A study of potential impacts to the wind resource downwind of operating wind turbines.

Wind Turbine: A wind turbine is any piece of electrical generating equipment that converts the kinetic energy of blowing wind into electrical energy through the use of airfoils or similar devices to capture the wind.

WECS - Wind Energy Conversion System: An electrical generating facility comprised of one or more wind turbines and accessory facilities, including but not limited to: power lines, transformers, substations and meteorological towers, that operate by converting the kinetic energy of wind into electrical energy. The energy maybe used on-site or distributed into the electrical grid.

Commercial WECS: A WECS of equal to or greater than 100 kW in total name plate generating capacity.

Non-Commercial WECS: A WECS of less than 100 kW in total name plate generating Capacity.

Zoning Ordinance: The Stevens County Zoning Ordinance regulating the use of land and water in Stevens County.

SECTION 5: PROCEDURES

- A. Land Use Permits, Conditional Use Permits and Variances shall be applied for and reviewed under the procedures established in the Stevens County Zoning Ordinance.
- B. The application for all WECS shall include the following information:
 - 1. The names of project applicant.
 - 2. The name of the project owner.
 - 3. The legal description and address of the project.
 - 4. A description of the project including: Number, type, name plate generating capacity, tower height, rotor diameter, and total height of all wind turbines and means of interconnecting with the electrical grid.
 - 5. Site layout, including the location of property lines, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures. The site layout shall include distances and be drawn to scale.
 - 6. Federal Aviation Administration (“FAA”) Permit Application and notification to the local airport commissions within 10 miles of a project and/or existing private air strips within 3 miles of a project.

7. Engineer's certification.
 8. Documentation of land ownership or legal control of the property.
- C. The application for Commercial WECS shall also include:
1. The latitude and longitude of individual wind turbines.
 2. A USGS topographical map, or map with similar data, of the property and surrounding area, including any other WECS within 10 rotor diameters of the proposed WECS.
 3. Location of wetlands, scenic, and natural areas including bluffs within 1,320 feet of the proposed WECS.
 4. An Acoustical analysis.
 5. FAA Permit Application and notification to the local airport commissions within 10 miles of a project and/or existing private air strips within 3 miles of a project.
 6. Flicker Analysis
 7. Location of all known Communications Towers within 2 miles of the proposed WECS and a microwave beam study.
 8. Decommissioning Plan.
 9. Description of potential impacts on nearby WECS and wind resources on adjacent properties.
- D. The County may, at its discretion, require a Development Agreement to address specific technical procedures which may include but are not limited to: road use and repair, site specific issues, payment in lieu of taxes, other financial securities, or real property value protection plans.

SECTION 6: AGGREGATED PROJECTS - PROCEDURES

Aggregated Projects may jointly submit a single application and be reviewed under joint proceedings, including notices, hearings, reviews and as appropriate approvals. Permits will be issued and recorded separately. Joint applications will be assessed fees as one project. [Aggregated projects having a combined capacity equal to or greater than the threshold for State oversight as set forth in Minnesota Statutes Section 216F.01 shall be regulated by the State of Minnesota.]

SECTION 7: DISTRICT REGULATIONS

WECS will be permitted, conditionally permitted or not permitted based on the generating capacity and land use district as established in the table below:

District	Non-Commercial*	Commercial	Meteorological Tower *
A-1 Agriculture	Permitted	Conditional	Permitted
R-1 Rural Residential	Conditional	Not permitted	Not permitted
R-2 Mobile Home	Not permitted	Not permitted	Not permitted
S-1 Special Protection Shoreland	Not permitted	Not permitted	Not permitted
S-2 Residential-Rec. Shoreland	Not permitted	Not permitted	Not Permitted
B-1 Highway Service Business	Not permitted	Not permitted	Not permitted
I-1 Limited Industry	Conditional	Conditional	Permitted
F-1 Flood Plain	Not permitted	Not permitted	Not permitted

*** Non-Commercial WECS and Meteorological towers shall require a conditional use permit if over 125 feet in height.**

SECTION 8: SETBACKS - WIND TURBINES AND METEOROLOGICAL TOWERS

A. All towers shall adhere to the setbacks established in the following table.

	Wind Turbine - Non-Commercial WECS	Wind Turbines - Commercial WECS	Meteorological Towers
<i>Property Lines</i>	1.1 times the total height or in Agricultural or Industrial Land Use Districts only, the distance of the fall zone, as certified by a professional engineer + 10 feet.	1.1 times the total height	The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height.
<i>Neighboring Dwellings *</i>	750 feet	500 feet from participating dwelling. 1,000 feet from non-participating dwelling.	The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height.
<i>Road Rights-of-Way **</i>	The distance of the fall zone, as certified by a professional engineer + 10 feet or 1 times the total height.	1 times the height, may be reduced for minimum maintenance roads or a road with an Average Daily Traffic Count of less than 10.	The fall zone, as certified by a professional engineer + 10 feet or 1 times the total height.
<i>Other Rights-of-Way (Railroads, power lines, etc.)</i>	The lesser of 1 times the total height or the distance of the fall zone, as certified by a professional engineer + 10 feet.	To be considered by the Planning Commission.	The fall zone, as certified by a professional engineer + 10 feet or 1 times the total height.
<i>Public conservation lands managed as grasslands/Public Wetlands, USFWS Types III, IV & V</i>	NA	600 feet	600 feet
<i>Private Wetlands, USFW Types III, IV & V</i>	NA	The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height.	The fall zone, as certified by a professional engineer + 10 feet or 1.1 times the total height.
<i>Other Structures</i>	1.1 times total height	1.1 times total height	1.1 times total height
<i>Other Existing WECS ***</i>	NA	3 times the Rotor Diameter (RD) in non-prevailing wind axis and 5 RD in prevailing wind axis.	

* The setback for dwellings shall be reciprocal in that no non-participating dwelling shall be constructed within 1,000 feet of an existing commercial wind turbine.

** The setback shall be measured from future rights-of-way if a planned changed or expanded right-of-way is known.

*** Waived for internal setbacks in multiple turbine projects, including aggregated projects.

B. Substations and Accessory Facilities - Minimum setback standards for substations and feeder lines shall be determined in the permitted process, based upon the site's unique circumstances and consistent with the requirements of the respective zoning districts of the County's Zoning Ordinance.

SECTION 9: REQUIREMENTS AND STANDARDS

- A. Engineering Certification – For all WECS, the manufacturer’s engineer or another qualified engineer shall certify that the turbine, foundation and tower design of the WECS is within accepted professional standards, given local soil and climate conditions.
- B. Clearance – Rotor blades or airfoils must maintain at least 30 feet of clearance between their lowest point and the ground.
- C. Warnings - For all Commercial WECS, a sign or signs shall be posted on the tower, transformer and substation warning of high voltage. Signs with emergency contact information shall also be posted on the turbine or at another suitable point.
- D. All meteorological towers must be marked in the following manner:
 - 1. For all guyed towers, visible and reflective objects, such as plastic sleeves, reflectors or tape, shall be placed on the guy wire anchor points and along the outer and innermost guy wires up to a height of 8 feet above the ground. Visible fencing may be required around anchor points of guy wires.
 - 2. The top one-third of the tower shall be painted to meet FAA paint specifications (aviation orange and white).
 - 3. Guide-wire towers must have a total of eight marker balls attached as follows: four marker balls attached to guide wires at the top of the tower; four marker balls at the bottom of the guide wires at a minimum height of 15 feet above the ground.
- E. Total height – Non-Commercial WECS shall have a total height of less than 200 feet.
- F. Towers less than 200 feet in height – All towers less than 200 feet above the ground are required to register with the Minnesota Department of Transportation Small Tower Registry.
- G. Tower configuration:
 - 1. All wind turbines, which are part of a commercial WECS, shall be installed with a tubular, monopole type tower.
 - 2. Meteorological towers may be guyed.
- H. Color and Finish – All wind turbines and towers that are part of a commercial WECS shall be white, grey or another non-obtrusive color. Blades may be black in order to facilitate deicing. Finishes shall be matt or non-reflective.
- I. Lighting – Lighting, including lighting intensity and frequency of strobe, shall adhere to but not exceed requirements established by Federal Aviation Administration permits and regulations. Red strobe lights are preferred for night-time illumination to reduce impacts on migrating birds. Red pulsating Incandescent lights should be avoided.

- J. Other Signage – All signage on site shall comply with Section 14.A. of the Stevens County Zoning Ordinance. The manufacturer’s or owner’s company name and/or logo may be placed upon the nacelle, compartment containing the electrical generator, of the WECS.
- K. Feeder Lines – All communications and feeder lines, equal to or less than 34.5 kV in capacity, installed as part of a WECS shall be buried where reasonably feasible. Feeder lines installed as part of a WECS shall not be considered an essential service. This standard applies to all feeder lines subject to Stevens County authority.
- L. Waste Disposal – Solid and Hazardous wastes, including but not limited to crates, packaging materials, damaged or worn parts, as well as used oils and lubricants, shall be removed from the site promptly and disposed of in accordance with all applicable local, state and federal regulations.
- M. Discontinuation and Decommissioning – A WECS shall be considered a discontinued use after 1 year without energy production, unless a plan is developed and submitted to the County Zoning Administrator outlining the steps and schedule for returning the WECS to service. All WECS and accessory facilities shall be removed to four feet below ground level within 90 days of the discontinuation of use.
- N. Each Commercial WECS shall have a Decommissioning plan outlining the anticipated means and cost of removing WECS at the end of their serviceable life or upon becoming a discontinued use. The cost estimates shall be made by a competent party; such as a Professional Engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The plan shall also identify the financial resources that will be available to pay for the decommissioning and removal of the WECS and accessory facilities.
- O. Orderly Development – Upon issuance of a conditional use permit, all Commercial WECS shall notify the Public Utility Commission Power Plant Siting Act program Staff of the project location and details on the survey form specified by the Public Utility Commission.
- P. Permitted Tower Relocation - In the event that previously unidentified environmental conditions are discovered during construction which by law or pursuant to conditions outlined in the Permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine sites. The Permittee shall notify the County Zoning Administrator of any turbines that are to be relocated before the turbine is constructed on the new site. The Zoning Administrator shall amend the permit and ensure the relocation meets the setbacks and all other requirements of this ordinance.

SECTION 10: OTHER APPLICABLE STANDARDS

- A. Noise – All WECS shall comply with Minnesota Rules 7030 governing noise.
- B. Electrical codes and standards – All WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.

- C. Federal Aviation Administration – All WECS shall comply with FAA standards and permits.
- D. Uniform Building Code – All WECS shall comply with the Uniform Building Code adopted by the State of Minnesota.
- E. Interference – The applicant shall minimize or mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals cause by any WECS. The applicant shall notify all communication tower operators within five miles of the proposed WECS location upon application to the county for permits. No WECS shall be constructed so as to interfere with all or any licensed microwaves transmissions.

SECTION 11: AVOIDANCE AND MITIGATION OF DAMAGES TO PUBLIC INFRASTRUCTURE

- A. Roads – Applicants shall:
 - 1. Identify all county, city or township roads to be used for the purpose of transporting WECS, substation parts, cement, and/or equipment for construction, operation or maintenance of the WECS and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.
 - 2. Conduct a pre-construction survey, in coordination with the impacted local road authority(ies) to determine existing road conditions. The survey shall include photographs and a written agreement to document the condition of the public facility.
 - 3. Be responsible for restoring or paying damages as agreed to by the applicable road authority(ies) sufficient to restore the road(s) and bridges to preconstruction conditions.
- B. Drainage System – The Applicant shall be responsible for immediate repair of damage to private and public drainage systems stemming from construction, operation or maintenance of the WECS.

SECTION 12. VIOLATIONS, PENALTIES AND ENFORCEMENT

- A. Violations and Penalties
 - 1. Any person, firm, or corporation who shall violate any of the provisions hereof or who shall fail to comply with any of the provisions hereof or who shall make any false statement in any document required to be submitted under the provisions hereof, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine not to exceed one thousand (\$1,000) dollars or by imprisonment not to exceed ninety (90) days. Each day that a violation continues shall constitute a separate offense.

B. Enforcement

1. This Ordinance shall be administered and enforced by the Zoning Administrator, who is hereby designated the enforcing officer.
2. In the event of a violation or a threatened violation of this Ordinance, the Board of County Commissioners or any member thereof, in addition to other remedies, may institute appropriate actions or proceedings to prevent, restrain, correct, or abate such violations or threatened violations, and it shall be the duty of the County Attorney to institute such action.
3. Any taxpayer or taxpayers of the county may institute mandamus proceedings in District Court to compel specific performance by the proper official or officials of any duty required by this Ordinance.

SECTION 13. VALIDITY

Should any section or provision of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance as a whole or any part thereof other than the part so declared to be invalid.

SECTION 14. EFFECTIVE DATE

This Ordinance shall be in full force and effect from and after its passage, approval, and publication as provided by law.

Passed and approved this ____ day of _____, 2010.

Don Munsterman, Chairman,
Stevens County Board of Commissioners

Attest: _____
Brian Giese, County Coordinator

Recommended By: Stevens County Planning Commission
November 22, 2010

Knute Christensen, Chairman,
Stevens County Planning Commission