

SECTION 25: RENEWABLE ENERGY ORDINANCE

This Ordinance is established to regulate the installation and operation of Renewable Energy Systems within Cottonwood County not otherwise subject to siting and oversight by the State of Minnesota pursuant to Minnesota Statutes, chapter 216B.1691, to promote health, safety, and general welfare of the citizens of Cottonwood County.

A. Wind Energy Conversion Systems (WECS) with a rated capacity of less than 25,000 kilowatts (kW) or 25 Megawatts (MW), and to regulate the installation and operation of WECS within Murray County not otherwise subject to citing and oversight by the State of Minnesota pursuant to Minnesota Statutes, Chapter 216F, Wind Energy Conversion Systems, as amended

B. Large and Small Solar Energy Systems, and to regulate the installation and operation of a Solar Energy System within Cottonwood County pursuant to Minnesota Statutes Chapters 216C.25, 500.30 and Minnesota Rules Chapter 1325.1100, as amended.

Subdivision 1. Definitions

Accessory Use: A Use clearly incidental or subordinate to the principle use of a lot or a building located on the same lot as a principle use.

Aggregated Project: Aggregated 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 aggregated project.

Array (Solar): Any number of solar photovoltaic modules or panels connected together to provide a single electrical output.

Cartway: A roadway established to connect an inaccessible parcel to a public road.

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

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: Power lines that transport electrical power from one or more wind turbines to the point of interconnection with a high voltage transmission line.

High-voltage Transmission Line: A conductor of electric energy and associated facilities designed for and capable of operation at a nominal voltage of 100 kilovolts or more and is greater than 1,500 feet in length.

Large Solar Energy System: A solar farm, where the primary land use of the parcel is for a solar array. Solar farms are composed of multiple solar panels on multiple mounting systems (poles and racks), and generally have a Direct Current (DC) rated capacity greater than 100 kilowatts.

Meteorological Tower: For the purpose of this Wind Energy Conversion Systems 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. The applicant shall specify if the tower is permanent or temporary.

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

Modular (Solar): A number of individual solar cells connected together in an environmentally protected housing producing a standard output voltage and power. Multiple modules/panels can be assembled into an array for increased power and voltage.

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

Photovoltaic Array: A group of solar photovoltaic modules connected together to increase voltage and/or power to the level required for a given system.

Photovoltaic Device: A system of components that generates electricity from incident sunlight by means of photovoltaic effect, whether or not the device is able to store the energy produced for later use.

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.

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 a landowner.

Public Conservation Land: 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 Waterfowl Production Areas. For the purpose of this section Public Conservation Lands do not include private lands upon which conservation easements have been sold to public agencies or non-profit conservation organizations.

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

Small Solar Energy System: Any solar capturing device that is an accessory use and generally has a Direct Current (DC) rated capacity less than 100 kilowatts

Solar Cell: The basic unit of a photovoltaic solar panel

Solar Easement: A right, whether or not stated in the form of a restriction, easement, covenant, or condition, in any deed, will, or other instrument executed by or on behalf of any owner of land or solar sky space for the purpose of ensuring adequate exposure of a solar energy system as defined in Section

216C.06, Subdivision 17, to solar energy. Required contents of a Solar Easement are defined in Minnesota Statute Section 500.30.

Solar Energy System: A set of devices whose primary purpose is to collect solar energy and convert and store it for useful purposes including heating and cooling buildings or other energy-using processes, or to produce generated power by means of any combination of collection, transferring, or converting solar-generated power.

Sub-Stations: Any electrical facility designed to convert electricity produced by wind turbines to a voltage for interconnection with transmission lines.

Telecommunication Towers: Any cables, wires, lines, wave guides, antennas, and any other equipment or facility associated with the transmission or reception of communications which a person seeks to locate or has installed upon or near a tower or antenna support structure. However the term telecommunication facilities shall **not** include:

1. Any satellite earth station antenna two meters in diameter or less which is located in an area zoned industrial or commercial.
2. Any satellite earth station antenna one meter or less in diameter, regardless of zoning category.

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

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

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

Tracking Solar Array: A solar array that follows the path of the sun during the day to maximize the solar radiation it receives.

Waiver: The intentional or voluntary written relinquishment of a landowner's right under this ordinance, which waiver would negate the necessity of a Variance Hearing under the Zoning Ordinance. This agreement shall be properly signed and notarized on a form provided by the Office of the Zoning Administrator and would have the same effect as a decision of the Board of Adjustment.

WECS – Wind Energy Conversion System: A device such as a wind charger, windmill, or wind turbine and associated facilities that convert wind energy to electric energy.

- Large wind energy conversion system or LWECS means any combination of WECS with a combined nameplate capacity of 5,000 kilowatts or more.
- Small Wind energy conversion system or SWECS means any combination of WECS with a combined nameplate capacity of less than 5,000 kilowatts.

Wetland: A Surface water feature classified as a Wetland in the United States Fish & Wildlife Circular No. 39 (1971 Edition), which is hereby incorporated by reference. This Circular is available through the Minnesota Inter-library loan system, and is not subject to frequent change.

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.

Subdivision 2. Application Requirements

Subd. 2A. Permit Application for WECS

Land Use Permits, Conditional Use Permits, and Variances shall be applied for and reviewed under the procedures established in the Cottonwood County Zoning Ordinance. An application to the County for a Permit under this Section is not complete and will not be accepted by the County until a size determination is made pursuant to Minnesota Statutes, chapter 216F.001, as amended.

An application for all WECS shall include the following information:

1. The name(s) of the project applicant(s).
2. The name(s) of the project owner(s).
3. The mailing address for the project.
4. The legal description of the project.
5. A description of the project including: number of towers, type, name plate generating capacity, tower height, rotor diameter, and total height of all wind turbines, and means of interconnecting with the electrical grid.
6. Site layout, including the location of property lines, wind turbines, electrical wires, interconnection points with the electrical grid, and all related accessory structures along with distances and shall be drawn to scale.
7. Documentation of land ownership or legal control of the property.
8. The latitude and longitude of individual wind turbines.
9. The 911 addresses for each individual WECS in the project.
10. Evidence of a Power Purchase Agreement.
11. A USGS topographical map or a map with similar data of the property and surrounding area, including any other WECS within 10 rotor diameters of the proposed WECS.
12. A map showing location of wetlands, scenic, and natural areas including bluffs within 1,320 feet (1/4 mile) of the proposed WECS.

13. A copy of FAA Permit Application.
14. A map showing location of all known Telecommunication Towers within one (1) mile of the proposed WECS.
15. Additional information stated in Minnesota Rules, part 7836.0500 (subpart 1), as amended.

Subd. 2B. Permit Applications for Solar Energy Systems

Land Use Permits, Conditional Use Permits, and Variances shall be applied for and reviewed under the procedures established in the Cottonwood County Zoning Ordinance and Minnesota Statutes Chapter 394, except where noted below.

1. A site plan of existing conditions showing the following:
 - A. Existing property lines and property lines extended 100 ft. from the exterior boundaries, including the names of the adjacent property owners and current use of those properties.
 - B. Existing public and private roads, showing widths of the roads and any associated easements.
 - C. Location and size of any abandoned wells, sewage treatment systems and dumps.
 - D. Existing buildings and any impervious surface.
 - E. Topography at 2' intervals and source of contour interval. A contour map of the surrounding properties may also be required.
 - F. Existing Vegetation (list type and percent of coverage: i.e. grassland, plowed field, wooded areas, etc.)
 - G. Waterways, watercourses, lakes and public water wetlands.
 - H. Delineated wetland boundaries.
 - I. The 100-year flood elevation and Regulatory Flood Protection Elevation.
 - J. Floodway, flood fringe, and/or general flood plain district boundary, if applicable
 - K. The Shoreland district boundary, if any portion of the project is located in a shoreland district.
 - L. In the shoreland district, the ordinary high water level and the highest known water level.
 - M. In the shoreland district, the toe and top of any bluffs within the project boundaries.
 - N. Mapped soils according to the Cottonwood County Soil Survey.
 - O. Surface water drainage patterns.

2. Site Plan of Proposed Conditions

- A. Location and spacing of solar panels.
- B. Location of Access Roads.
- C. Planned location of underground or overhead electric lines connecting the solar farm to the building, substation or other electric load.
- D. New electrical equipment other than at the existing building or substation that is the connection point for the solar farm.
- E. Proposed erosion and sediment control measures.
- F. Proposed storm water management measures.
- G. Sketch elevation of the premises accurately depicting the proposed solar energy conversion system and its relationship to structures on adjacent lots (if any)

3. Manufacturer's Specifications and recommended installation methods for all major equipment, including solar panels, mounting systems and foundation for poles or racks.

4. The number of panels to be installed.
5. A Description of the method of connecting the array to a building or substation
6. A copy of the interconnection agreement with the local electric utility or a written explanation outlining why an interconnection agreement is not necessary.
7. A decommissioning plan shall be required to ensure that facilities are properly removed after their useful life. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. The plan shall include provisions for removal of all structures and foundations, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. The Board may require the posting of a bond, letter of credit or establishment of an escrow to ensure proper decommissioning.

Subdivision 3. Permitting Regulations by Zoning District.

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

WECS

District	Non-Commercial	Commercial	Meteorological Tower
Agriculture	Permitted	Conditionally Permitted	Permitted
Commercial	Conditionally Permitted	Conditionally Permitted	Conditionally Permitted
Flood Plain	Prohibited	Prohibited	Prohibited
Industrial	Conditionally Permitted	Conditionally Permitted	Conditionally Permitted
Residential	Conditionally Permitted	Conditionally Permitted	Conditionally Permitted
Delft/Liberty Park	Conditionally Permitted	Conditionally Permitted	Conditionally Permitted
Shoreland	Conditionally Permitted	Prohibited	Prohibited

Solar Energy Systems

District	Large Solar Energy	Small Solar Energy
Agriculture	Conditionally Permitted	Permitted
Commercial	Conditionally Permitted	Permitted
Flood Plain	Prohibited	Prohibited
Industrial	Conditionally Permitted	Permitted
Residential	Conditionally Permitted	Permitted
Shoreland	Prohibited	Permitted

Subdivision 4. Orderly Development.

Upon issuance of a Conditional Use Permit, all Commercial WECS shall notify the Environmental Quality Board Power Plant Siting Act Program Staff of the project location and details on the survey form specified by the Environmental Quality Board.

Subdivision 5: Setback Requirements and Standards For WECS

	Wind Turbine Non-commercial WECS	Wind Turbine Commercial WECS	Meteorological Towers
Property Lines	1.1 times the total height in Agricultural Districts only	1.1 times the total height or * Waiver agreement with neighboring property owner	The fall zone as certified By a professional engineer + 10 feet or 1.1 times the total height.
Neighboring Residence	Adhere to Setback Requirements.	5 times the Rotor Diameter or * Waiver agreement with neighboring residence owner	The fall zone as certified By a professional engineer + 10 feet or 1.1 times the total height.
Noise Standard	Minnesota Rule 7030	Minnesota Rule 7030	N/A
Road Rights-of-Way	1.1 times the total height.	1.1 times the total height;	1.1 times the total height
Other Rights-or-Way (Railroads, Power Lines, Cartways, Etc.)	1.1 times the total height.	To be determined by the Planning Commission.	1.1 times the total height
Public Conservation Land Managed as grasslands	N/A	1.1 times the total height	1.1 times the total height
Wetlands, USFW Types I IV, and V	N/A	1.1 times the total height	1.1 times the total height
Other Structures	N/A	To be determined.	N/A
Other Existing WECS	N/A	To be determined based on: -Relative size of the existing and proposed WECS. -Alignment of the WECS	N/A

		<p>relative to the predominant winds.</p> <ul style="list-style-type: none"> -Topography. -Extent of wake interference Impacts on existing WECS -Property line setback of Existing WECS. -Other setbacks required. <p>Waived for internal setbacks in multiple turbine projects including aggregated projects</p>	
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* The setback for dwellings shall be reciprocal in that no dwelling shall be constructed within 5 times the rotor diameter of a commercial wind turbine. OR: the distance agreed upon using the waiver procedure.

Setbacks – substations, accessory facilities, or other structures not located within a public right-of-way or any utility easement shall be set back at least sixty-five (65) feet from the right-of-way of any public road. Applicant is responsible for obtaining any necessary rights-of-way permits and road access permits.

1. Safety Design Standards.

- a. Engineering Certification. For all WECS, the manufacture’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. Each individual Tower or WECS shall be clearly labeled and identified with the 911 address.
- d. Warnings.
 - (1) 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.
 - (2) 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 shall be installed around anchor points of guy wires. Consideration shall be given to aviation warning painted on metrological towers of less than 200 feet.

2. Non-Commercial WECS shall have a total height of less than 200 feet.

3. Tower configuration.

- a. All wind turbines, which are part of a commercial WECS, shall be installed with a tubular, monopole type tower.
- b. Meteorological towers may be guyed.
- c. 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.
- d. 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.
- e. All signage on site shall comply with Section 11, Subdivision 2, page 37, of the Cottonwood County Zoning Ordinance. The name and/or logo of the manufacturer or the owner's company name may be placed upon the nacelle, (compartment containing the electrical generator), of the WECS.

Subdivision 6. Setbacks and Standards for Solar Energy Conversion Systems.

Subd. 6A. Standards for Large Solar Farms

1. Solar farms are the primary land use for the parcel on which the array is located and are distinguished from solar arrays that are a secondary or accessory use. Solar farms are composed of multiple solar panels on multiple mounting systems (poles or racks), and generally have a Direct Current (DC) rated capacity greater than 100 kilowatts.
2. Storm water Management and Erosion and sediment Control shall meet the requirements of the MPCA Construction Storm water Permit requirements.
3. Foundations. The manufacturer's engineer or another qualified engineer shall certify that the foundation and design of the solar panels is within accepted professional standards, given local soil and climate conditions.
4. Other standards and codes. All solar farms shall be in compliance with any applicable local, state, and federal regulatory standards, including the State of Minnesota Uniform Building Code, as amended: and the National Electric Code, as amended.
5. Power and Communication Lines. Power and communication lines running between banks of solar panels and to electric substations or interconnections with buildings shall be buried underground.

Subd. 6B. Standards for Small Solar Energy Systems

Solar energy systems are a permitted accessory use in all zoning districts, subject to the following standards.

1. Accessory Building Limit. Solar Systems, either roof or ground-mounted, do not count as an accessory building for the purpose of meeting limits on the coverage limits, as set forth in the Cottonwood County Zoning Ordinance.
2. Height. Active Solar systems are subject to the following height restrictions
 - A. Building- or roof-mounted solar systems shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, solar systems other than building-integrated systems shall be considered to be mechanical devices and are restricted consistent with other building-mounted mechanical devices for the zoning district in which the system is to be installed.
 - B. Ground- or Pole- mounted solar systems shall not exceed 15 ft. in height when oriented at maximum tilt.
3. Location within Lot. Solar Systems must meet the accessory structure setback for the Zoning District.
 - A. Roof-mounted Solar Systems. In addition to the building setback, the collector surface and mounting devices for roof-mounted solar systems that are parallel to the roof surface shall not extend beyond the exterior perimeter of the building on which the system is mounted or built. The collector and racking for roof-mounted systems that have a greater pitch than the roof surface shall be set back from all roof edges by at least 2 ft. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a side yard exposure.
 - B. Ground-Mounted Solar Systems, Ground-Mounted solar energy systems may not extend into the side-yard, rear, or road right-of-way setback when oriented at minimum design tilt.
 - C. Large Ground-Mounted Systems. Ground-Mounted Solar systems that result in the creation of one or more acres of impervious surface, must comply with the MPCA Construction Storm water Permit Requirements.
4. Maximum Coverage. Roof or building mounted solar systems, excluding building-integrated systems, shall not cover more than 80% of the south-facing or flat roof upon which the panels are mounted. The total collector surface area of pole or ground mount systems in non-agricultural district shall not exceed on percent of the lot area.
5. Approved Solar Components. Electric Solar System Components must have a Underwriters Laboratory (UL) listing.
6. Compliance with State Electric Code. All photovoltaic systems shall comply with the Minnesota State Electric Code.
7. Utility Notification. No grid-intertie photovoltaic system shall be installed until evidence has been given to the Department what the owner has notified the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.

Subdivision 7. Noise

Noise is regulated by the Minnesota Pollution Control Agency under Chapter 7030. These rules establish the maximum night time noise and day time noise levels that effectively limit wind turbine noise to 50 bD(A) at farm residences.

Subdivision 8. Waste Management.

1. Solid Waste – Construction of Renewable power facilities, as with other facilities, will lead to the generation of various types of waste: packaging, equipment parts, litter, debris generated by site cleaning. Removal of such materials shall be accomplished in a timely manner. Similarly, ongoing operation and maintenance of these machines results in the generation of various waste products. This may include worn parts and packaging from new parts. All such materials shall be removed from the project site in a timely manner, and managed in an appropriate manner.
2. Hazardous Waste - Operation and maintenance of Renewable power facilities will result in the generation of some hazardous materials. All such material shall be removed from the site immediately and managed in a manner consistent with all appropriate rules and regulations.

Subdivision 9. Interference

The applicant shall minimize or mitigate interference with electromagnetic communications, such as radio, telephone, microwaves, or television signals caused by any WECS. The applicant shall notify all telecommunication tower operators within one (1) mile of the proposed WECS location upon application to the county for permits. No WECS shall be constructed so as to interfere with County or Minnesota Department of Transportation microwave transmissions

Subdivision 10. Avoidance and Mitigation of Damages to Public Infrastructure.

1. Roads. Applicants shall:
 - a. Identify all county, city or township roads to be used for the purpose of transporting WECS, substation parts, materials, 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.
 - b. 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.
 - c. Be responsible for restoring or paying damages as agreed to by the applicable road authority(ies) sufficient to restore the road(s) and bridge(s) to tower preconstruction conditions or according to preconstruction agreement.
2. Drainage System. The Applicant shall be responsible for immediate repair of damage to private and public drainage systems stemming from construction, operation or maintenance

Subdivision 11. Other Applicable Standards

1. Electrical codes and standards. All WECS and accessory equipment and facilities shall comply with the National Electrical Code and other applicable standards.
2. All WECS shall comply with Federal Aviation Administration (FAA) standards and permits.

Subdivision 12. Discontinuation Regulations.

1. A WECS shall be considered a discontinued use after 1 year without energy production, unless a plan is developed and submitted to the Office of the Cottonwood County Zoning Administrator outlining the steps and schedule for returning the WECS to service.
2. All WECS and accessory facilities shall be removed within one (1) year of the discontinuation of use.
3. Removal of all structures and debris to a depth of a minimum of 4 feet.
4. Restoration of soil and vegetation shall be consistent and compatible with surrounding vegetation.
5. FAA Lighting shall be maintained until the tower is removed.

Subdivision 14. Enforcement, Violations, Remedies, and Penalties.

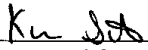
Enforcement of Section 25, Wind Energy Conversion Systems (WECS) shall be done in accordance with processes and procedures established in Cottonwood County and according to Minnesota State Statute.

SECTION 36: DATE OF EFFECT

Subdivision 1. Date of Effect.

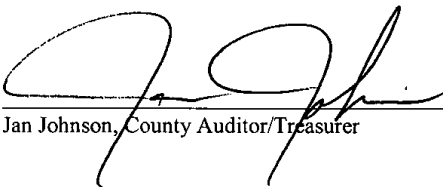
This Ordinance shall be in full force and effect from and after June 26th, 2016 and its amendment upon passage and publication.

Effective Date: June 26th, 2016



Cottonwood County Commissioner Chairperson

Attest:



Jan Johnson, County Auditor/Treasurer