

SECTION 41 - WIND AND SOLAR ENERGY REGULATIONS

41.1 PURPOSE

The purpose of the Wind and Solar Energy Regulations is to provide for the construction and operation of Wind Energy Conversion Systems and Solar Energy Conversion Systems in Sarpy County, subject to reasonable restrictions, which will preserve the environment, public health, safety and welfare. Sarpy County finds that there is a public interest in installing renewable and nonpolluting energy sources.

41.2 TITLE

This regulation shall be known and cited as the Sarpy County Wind and Solar Energy Regulation.

41.3 SEVERABILITY

41.3.1 If any word, phrase, sentence, part, section, subsection, or other portion of these Wind and Solar Energy Zoning Regulations or any application thereof to any entity or circumstance is declared void, unconstitutional, or invalid for any reason, then such word, phrase, sentence, part, section, subsection, or other portion, or the proscribed application thereof, shall be severable, and the remainder of these Wind and Solar Energy Zoning Regulations, and all applications thereof, not having been declared void, unconstitutional, or invalid, shall remain in full force and effect.

41.3.2 A special use permit issued under these Wind and Solar Energy Zoning Regulations shall be comprehensive and not severable. If part of a Wind and Solar Energy Special Use Permit is deemed or ruled to be invalid or unenforceable in any material respect, by a competent authority, or is overturned by a competent authority, the Wind and Solar Energy Special Permit shall be void in total.

41.4 DEFINITIONS

For purposes of the Zoning Regulations, and where not inconsistent with the context of a particular section, the defined terms, phrases, words, abbreviations, and their derivations shall have the meaning given in this section. When not inconsistent with the context, words in the present tense include the future tense, words used in the plural number include words in the singular number and words in the singular number the plural number. The word "shall" is always mandatory, and not merely directory.

Applicant means any person or entity submitting an Application for a permit for a Renewable Energy Device or Facility.

Application means all necessary and appropriate documentation that an Applicant submits in order to receive a permit for a Renewable Energy Device or Facility.

Capacity means the amount of electricity produced by the Wind Energy Conversion System or a Solar Energy Conversion System measured in kilowatts (kW).

Completed Application means an application that contains all information and/or data necessary to enable an informed decision to be made with respect to an application.

County means the local political subdivision described as Sarpy County as set forth in State Statutes. When the term County is used to refer to a geographic area, it shall denote any areas within the County boundaries excluding areas within the extra territorial zoning jurisdiction of any City or Village within the County.

County Board means the Sarpy County Board of Commissioners.

Director of Planning means the Sarpy County Director of Planning.

Environmental Review means a detailed examination of the applicant's proposal and its local environmental context with an emphasis on avoiding, minimizing, and mitigating adverse impacts.

FAA means the Federal Aviation Administration, or its duly designated and authorized successor agency.

Facility Operator means the entity responsible for the day-to-day operation and maintenance of the Renewable Energy Facility.

Facility Owner means the entity or entities having controlling or majority equity interest in the Renewable Energy Facility, including their respective successors and assigns.

Nacelle means the body/shell/casing of a propeller-type wind turbine that covers the gearbox, generator, blade hub, and other parts.

Nebraska Game & Parks Commission – means the commission responsible for the stewardship of the states' fish, wildlife, parks and other resources.

Non-Participating Landowner means any landowner not under agreement with the Facility Owner or Operator.

Occupied Building means a residence, school, hospital, church, public library, or other building used that is occupied or in use when the permit application is submitted.

OPPD means Omaha Public Power District.

Participating Landowner means a landowner under lease or other property agreements with the Facility Owner or Operator pertaining to the Renewable Energy Facility.

Passive Solar Energy System means any space or structural components that are specifically designed to retain heat derived from solar energy, including ponds for evaporative cooling, and any moving parts that increase heat retention by the system.

Planning Commission means the Sarpy County Planning Commission.

Public Road means a full passage right-of-way.

Renewable Energy Device means any energy conversion device primarily utilizing renewable energy sources such as wind, solar, or ground source.

Renewable Energy Facility means an aggregation of energy conversion devices or units that generate electric energy which is independently metered and which results from the utilization of a renewable energy source.

Setback means the minimum distance, measured in feet, between the Renewable Energy Device or Facility and the property line or access easements.

Solar Array – Any number of solar photovoltaic modules or panels connected together to increase voltage and/or power to the level required for a given system.

Solar Collector – A device, or combination of devices, structure, or part of a device or structure which is used to transform solar energy into thermal, chemical, or electrical energy and that contributes to a structure's energy supply. It includes any space or structural components specifically designed to retain heat derived from solar energy.

Solar Energy Conversion System – Any device such as a solar panel, Solar Array, or Solar Collector or any combination thereof, which collects and converts solar energy to a form of useable energy.

Solar Energy Conversion System, Ground Mounted - A Solar Energy Conversion System mounted on a rack or pole that sits on the ground or has its own foundation and is not attached to a building or structure.

Solar Energy Conversion System, Roof Mounted – A Solar Energy Conversion System mounted on the roof of a structure.

Special Use Permit means the official document or permit by which an Applicant is allowed to file for a building permit to construct and use a Renewable Energy Device or Facility as granted or issued by the County Board.

State means the State of Nebraska.

Tower Height means the height above grade of the fixed portion of the tower, excluding the wind turbine itself.

U.S. Fish and Wildlife Service means the bureau of the Department of the Interior that works to conserve, protect and enhance fish, wildlife and plants and their habitats.

Wind Energy Conversion System (WECS) means an electric generating facility, whose main purpose is to supply electricity, consisting of one or more Wind Turbines and other accessory structures and buildings, electrical infrastructure, transmission lines and other appurtenant structures and facilities. For the purpose of this regulation, the term includes roof-mounted or building integrated roof mounting systems.

Wind Energy Conversion System (WECS), Small means a single system designed to supplement other electricity sources as an accessory use to existing buildings or facilities, wherein the power generated is used for on-site consumption. A small wind energy conversion system consists of a single wind turbine, a tower, and associated control or conversion electronics, which has a total rated capacity of 25 kW or less. Monopole facilities are encouraged.

Wind Power means the conversion of wind energy into another form of energy.

Wind Turbine or windmill is a wind energy conversion system that converts wind energy into electricity through the use of a wind turbine generator, and may include a nacelle, rotor, tower, guy wires and pad transformer.

Wind Turbine Height means the distance measured from grade at the center of the tower to the highest point of the turbine rotor or tip of the turbine blade when it reaches its highest elevation.

41.5 **OVERALL POLICY AND DESIRED GOALS FOR WIND ENERGY CONVERSION SYSTEMS**

In order to ensure that the placement, construction, and modification of Wind Energy Facilities protects the County's health, safety, public welfare, environment features, the nature and character of the community and neighborhood and other aspects of the quality of life specifically listed elsewhere in the Regulation, a special use permit is required for all small wind energy systems. Permits and applications for Wind Energy Conversion Systems shall comply with all of the policies, requirements, and procedures set out at Section 40, Special Use Permits, in addition to the policies, requirements, and procedures set out in this Section 41, Wind and Solar Energy Regulations.

41.5.1 **PERMIT APPLICATION**

The permit application shall comply with Section 40, Special Use Permits and contain the following:

- (A) A narrative describing the proposed Wind Energy Conversion System, including an overview of the project; proposed total rated capacity of the Wind Energy Conversion System;
- (B) The proposed number, representative types and height or range of heights of wind turbines to be constructed; including their generating capacity, dimensions and respective manufacturers, and a description of ancillary facilities;

- (C) Identification and location of the properties on which the proposed Wind Energy Conversion System will be located;
- (D) A site plan and construction drawings, including engineering stamp when applicable, showing the planned location of all wind turbines, property lines, setback lines, access roads and other site features;
- (E) Certification of compliance with applicable local, state, and Federal regulations, such as FAA and FCC regulations;
- (F) Other relevant information as may be reasonably requested by Sarpy County to ensure compliance with the requirements of the regulation;
- (G) Decommissioning plans that describe the anticipated life of the wind power project, the estimated decommissioning costs in current dollars, the method for ensuring that funds will be available for decommissioning and restoration, and the anticipated manner in which the wind power project will be decommissioned and the site restored;
- (H) Documentation of agreement between Participating Landowner(s) and the Facility Owner/Operator of the Wind Energy Conversion System;
- (I) Signature of the Applicant;
- (J) Elevations of the Wind Energy Conversion System;
- (K) Signed Interconnection agreement with local power company, OPPD if the applicant intends to interconnect to the power grid;
- (L) Signed Development agreement that addresses decommissioning of the Wind Energy Conversion System and proof of liability insurance.

41.5.2 SETBACKS

The minimum setback requirement is calculated by multiplying the required setback number by the Wind Turbine Height and measured from the center of the wind turbine base to the property line, or road. The required setback number is as follows:

Wind Energy Conversion System Type	Setback from Occupied Buildings on Property	Setback from Property Lines and Access Roads
Small Wind Energy System	0.0	1.5 times the height of the system

41.5.3 HEIGHT

Tower height shall be permitted up to eighty (80) feet for freestanding small wind energy systems. Rooftop systems are limited to the existing district height for primary structures.

41.5.4 NOISE

Audible sound from a Wind Energy Conversion System shall not exceed fifty-five (55) dBA, as measured at any property line.

41.5.5 INSTALLATION AND DESIGN

- (A) The installation and design of Wind Energy Conversion Systems shall conform to applicable industry standards, including those of the American National Standards Institute, and take into consideration local conditions.

- (B) All Wind Energy Conversion Systems shall be equipped with a redundant braking system. This includes both aerodynamic over speed 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 over speed protection.
- (C) All structural, electrical and mechanical components of the Wind Energy Conversion System shall conform to relevant and applicable local, state and national codes.
- (D) WECS shall be outside of any protected species habitat areas identified by the Nebraska Game and Parks Commission and U.S. Fish and Wildlife Service and at least 1,500 feet setback from wetlands unless the reviewing bodies find the system will not impact the habitat areas. These distances may be adjusted to be greater or lesser at the discretion of the reviewing body, based on topography, land cover, or land uses.
- (E) The visual appearance of the WECS shall at a minimum:
 1. Be a non-obtrusive color such as white, off-white, or gray;
 2. Not be artificially lighted, except to the extent required by the Federal Aviation Administration or other applicable authority that regulates air safety, and,
 3. Not display advertising (including flags, streamers, or decorative items), except for identification of the turbine manufacturer, facility owner and operator and no larger than one square foot in area.
 4. Not be installed at any location that would substantially detract from or block the view of the major portion of a recognized scenic area, as viewed from any public road right-of-way.
 5. Encourage monopole towers.

41.5.6 **DECOMMISSIONING**

- (A) The Wind Energy Conversion System Owner shall have six (6) months to complete decommissioning of the Facility if no electricity is generated for a continuous period of six (6) months.
- (B) Decommissioning shall include removal of wind turbines, buildings, cabling, electrical components, roads, and any other associated facilities down to thirty-six (36) inches below grade.
- (C) Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads or other land surface areas not be restored.
- (D) A development agreement, prepared by the County, must be signed and part of the application to address decommissioning responsibilities and filed with the Register of Deeds.

41.6 **OVERALL POLICY AND DESIRED GOALS FOR SOLAR ENERGY CONVERSION SYSTEMS**

In order to ensure that the placement, construction, and modification of a Solar Energy Conversion System protects the County's health, safety, public welfare, environmental features, the nature and character of the community and neighborhood and other aspects of the quality of life specifically listed elsewhere in the Regulation, the following regulations apply to all Solar Energy Conversion Systems.

41.6.1 SOLAR ENERGY CONVERSION SYSTEM AS AN ACCESSORY USE

No Solar Energy Conversion System shall be constructed as an accessory use on land within the zoning jurisdiction of Sarpy County unless it (i) is allowed as an accessory use in the applicable zoning district and (ii) is constructed in conformance with the County's adopted building codes. Building permits are required for all Solar Energy Conversion System installations. Solar Energy Conversion Systems constructed as an accessory use shall meet the following requirements:

- (A) Lot and Height Requirements: Solar Energy Conversion Systems shall conform to the required front, side and rear lot setback requirements except as provided herein:
 1. A Solar Energy Conversion System which is attached to an integral part of the principal building may project a maximum of two feet into the front yard, six feet into the rear yard, and two feet into the side yard.
 2. A Ground Mounted Solar Energy Conversion System may only be located in the rear yard provided it shall not exceed fifteen feet in height, and is not closer than one foot to any existing easement as measured from the closest point of the Solar Energy Conversion System including its foundation and anchors.
- (B) Structural Requirements: The physical structure of the Solar Energy Conversion System and all connections to existing structures shall conform to the applicable state building codes.
- (C) Site Plan: The application for a special use permit shall include a site plan drawn to scale showing property lines, existing structures on the lot, existing easements, and proposed Solar Energy Conversion System location with respect to property lines and dimensions.
- (D) Permit Fees: Permit fees are required in accordance with the Master Fee Schedule. All fees shall be paid prior to the issuance of the building permit.
- (E) Preexisting Solar Energy Conversion System: Notwithstanding noncompliance with the requirements of these Zoning Regulations, a Solar Energy Conversion System erected prior to the adoption of these Regulations, pursuant to a valid building permit issued by the County, may continue to be utilized so long as it is maintained in operational condition.

41.6.2 SOLAR ENERGY CONVERSION SYSTEM AS A SPECIALLY PERMITTED USE

41.6.2.1 GENERAL REQUIREMENTS

- (A) A Solar Energy Conversion System utilized as a primary use for a property may be allowed with an approved special use permit. Permits and applications for Solar Energy Conversion Systems shall comply with all of the policies, requirements, and procedures set out at Section 40, Special Use Permits, in addition to the policies, requirements, and procedures set out in this Section 41, Wind and Solar Energy Regulations.
- (B) Solar Energy Conservation Systems may be located within the Urban Reserve Zone, the Urban Development Zone, or the Rural Development Zone as shown on the Sarpy County Future Land Use - Growth Management Zone Map in areas designated

for Light Industrial and Heavy Industrial Land Use as shown on the Sarpy County Future Land Use Map.

- (C) A special use permit for a Solar Energy Conservation Systems may be granted for a maximum of 20 years. The special use permit may be renewed upon approval by the County Board.
- (D) A Solar Energy Conversion System shall not be allowed on property within the HC, Highway Corridor Overlay District as defined in these regulations.
- (E) A Solar Energy Conversion System shall provide road connectivity consistent with the Goals and Policies of Chapter 5, Transportation of the Sarpy County Comprehensive Plan.
- (F) If during the term of the special use permit, the roads in the vicinity of the property which is subject to the special use permit are improved, the developer shall be required to financially contribute to the road improvements in accordance with the County's road contribution policy for subdivision development. The road improvement obligations shall be outlined in a development agreement.
- (G) Developer shall be required to contribute to infrastructure improvements, within or adjacent to the property which is the subject of the special use permit, which are necessary to accommodate nearby development when such development takes place.
- (H) Developer shall be required to grant easements and right of way for road and wastewater improvements at no cost to County.
- (I) Permit fees are required in accordance with the Master Fee Schedule. All fees shall be paid prior to the issuance of the building permit. The application fee for the special use permit shall be paid by applicant at the time of submission of the application in accordance with the Master Fee Schedule and Section 40, Special Use Permits.

41.6.2.2 PERMIT APPLICATION REQUIREMENTS

The permit application shall comply with Section 40, Special Use Permits and contain the following:

- (A) A narrative describing the proposed Solar Energy Conversion System, including an overview of the project and proposed total rated capacity of the Solar Energy Conversion System.
- (B) The proposed number, representative types and height or range of heights of Solar Array to be constructed; including their generating capacity, dimensions and respective manufacturers, and a description of ancillary facilities.
- (C) Identification and location of the properties on which the proposed Solar Energy Conversion System will be located.

- (D) A site plan showing the planned location of all Solar Energy Conversion Systems, property lines, setback lines, existing easements, access roads and other site features.
- (E) Existing vegetation (list type and percentage of coverage) and soils information for the proposed site.
- (F) Landscape and Screening Plan prepared by a licensed landscape architect which shall include a narrative describing the overarching landscape architecture elements and how the design and placement of plant types and materials will complement the form and function of the developed site and blend into the surrounding environment.
- (G) Erosion/Sediment Control Plan or Resource Management Plan, if required. Include details on any proposed native grasses or plantings on the site.
- (H) Glare study required or provide verification of FAA approval.
- (I) Other relevant information as may be reasonably requested by Sarpy County to ensure compliance with the requirements of the regulation.
- (J) Decommissioning plans that describe the anticipated life of the solar power project, the estimated decommissioning costs in current dollars, the method for ensuring that funds will be available for decommissioning and restoration, and the anticipated manner in which the solar power project will be decommissioned and the site restored.
- (K) Documentation of agreement between Participating Landowner(s) and the Facility Owner/Operator of the Solar Energy Conversion System.
- (L) Signature of the Applicant.
- (M) Elevations of the solar Energy Conversion System.
- (N) Signed Development agreement that addresses decommissioning of the solar Energy Conversion System and proof of liability insurance.

41.6.2.3 **INSTALLATION AND DESIGN**

- (A) All structural, electrical and mechanical components of the Solar Energy Conversion System shall conform to relevant and applicable local, state and national codes.
- (B) The visual appearance of the Solar Energy Conversion System shall:
 1. Not display advertising (including flags, streamers, or decorative items), except for identification and logo of the array manufacturer, Facility Owner and Facility Operator. Any identification and logos shall not be larger than twelve square feet in area.
 2. Not be installed at any location that would substantially detract from or block the view of the major portion of a recognized scenic area, as viewed from any public road right-of-way.
- (C) Ground Mounted Solar Energy Conversion Systems

1. Prohibitions. Ground Mounted Solar Energy Conversion Systems are prohibited in the following areas:
 - a. Within any safety zones identified in an Airport Zoning Ordinance.
 - b. Within any recorded easement - such as but not limited to utility, ditch, conservation, or storm water - unless authorized in writing by the easement holder.
2. Site Access. Any driveway or site access off a state or county road will require permission from jurisdiction having authority and shall meet all County Subdivision Regulations.
3. Power and Communication Lines. All on-site power and communication lines running between banks of solar Arrays shall be buried underground. Exemptions may be granted in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.
4. 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.
5. Stormwater Management and Erosion Control. Solar Energy Conversion Systems shall meet the requirements for stormwater management and erosion and sediment control pursuant to Sarpy County Zoning Regulations.
6. Interconnection. The owner, developer or operator of the Solar Energy Conversion System must show proof of an executed interconnection agreement with the electric utility in whose service territory the system is located prior to the County issuing any building permits associated with the System. Off-grid systems are exempt from this requirement.
7. Electrical Codes and Standards. All Solar Energy Conversion Systems and accessory equipment shall comply with the National Electrical Code and other applicable standards.
8. Nebraska State Building Code. All Solar Energy Conversion System structures shall comply with the International Building Code as adopted by the State of Nebraska Building Code.
9. Maximum Height. Ground mounted systems shall not exceed fifteen (15) feet in height at maximum design tilt. Exceptions may be granted within the Special Use Permit in cases when topography, flood plain or other natural elements of the natural landscape interfere with the ability to meet the foregoing height restrictions.
10. Setbacks. All equipment and structures shall meet minimum required setback from applicable zoning district.
11. Security Fencing. All boundary line fencing shall be located entirely upon the property of the Solar Energy Conversion System. Fences shall consist of open

fencing such as chain link or barbed wire. Fences shall not exceed eight (8) feet in height.

12. Screening. A berm (2:1 maximum slope with supplemental plant materials including trees, shrubs, and groundcovers) and/or a continuous evergreen vegetative buffer shall be provided and maintained at all times around the perimeter of the fencing that faces (a.) public road right-of-way, b.) an existing residence or farmstead not on the subject parcel, or c.) residentially zoned or platted property. The evergreen vegetative buffer shall be composed of evergreen trees or shrubs of a type which at time of planting shall be a minimum of six (6) feet in height and which shall be maintained at maturity at a height of eight (8) feet in height to screen the fence.

41.6.3 **DECOMMISSIONING**

- (A) The Facility Owner shall have six (6) months to complete decommissioning of the System if no electricity is generated for a continuous period of six (6) months unless otherwise extended by the County Board or other jurisdiction with zoning authority.
- (B) Decommissioning shall include removal of solar arrays, buildings, cabling, electrical components, roads, and any other associated facilities down to thirty-six (36) inches below grade.
- (C) Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads or other land surface areas not be restored.
- (D) A development agreement, prepared by the County, must be signed and part of the special use permit application to address decommissioning responsibilities and filed with the Register of Deeds.