

Section 5-11: SOLAR ENERGY SYSTEMS

Subsection A: Purpose, Jurisdiction, Interpretation

1. Purpose: This ordinance is established to set forth processes for permitting a Solar Energy System and to regulate the installation and operation of a Solar Energy System within Pipestone County pursuant to Minnesota Statutes Chapters 216C.25, 500.30, and Minnesota Rules Chapter 1325.1100, as amended, in order to promote the health, safety, and general welfare of the citizens of Pipestone County.
2. Authority: The regulations of this Ordinance shall apply to all the area of Pipestone County outside the incorporated limits of municipalities.
3. Interpretation: In interpreting and applying the provisions of this Ordinance, they shall be held to be the minimum requirements for the promotion of the public health, safety, and general welfare. Where the provisions of this Ordinance impose greater restriction than those of any statute, other ordinance or regulations, the provisions of this Ordinance shall be controlling. Where the provisions of any statute, other ordinance or regulation impose greater restrictions than this Ordinance, the provisions of such statute, other ordinance or regulation shall be controlling.

Subsection B: Definitions

The following words and phrases shall have the meanings ascribed to them in this Ordinance. If not specifically defined in this Section or in Section 2-2 of the Pipestone County Zoning Ordinance, terms used in this Ordinance shall have the same meaning as provided in the standards adopted by reference. Words or phrases that are not defined here or in the standards adopted by reference shall have common usage meaning. For purposes of this Ordinance, the words “must” and “shall” are mandatory and the words “may” and “should” are permissive.

1. Array (Solar). Any number of solar photovoltaic modules or panels connected together to provide a single electrical output.
2. 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.
3. Ground Mounted Solar Energy System. Freestanding solar panels mounted to the ground by use of stabilizers or similar apparatus.
4. Large Solar Energy System. A solar farm, where the primary land use of the parcel is for a solar array and have a Direct Current (DC) rated capacity greater than 100 kilowatts.

5. Module (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/or voltage.
6. Photovoltaic Array. A group of solar photovoltaic modules connected together to increase voltage and/or power to the level required for a given system.
7. Photovoltaic Device. A system of components that generates electricity from incident sunlight by means of the photovoltaic effect, whether or not the device is able to store the energy produced for later use.
8. 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.
9. Roof or Building Mounted Solar Energy System. A solar energy system that is mounted to the roof or building using brackets, stands or other apparatus.
10. Small Solar Energy System. A solar array meant to generate electricity to be used on site and/or sold back to Power Utilities and have a Direct Current (DC) rated capacity less than 100 kilowatts.
11. Solar cell. The basic unit of a photovoltaic solar panel.
12. 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.
13. 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 collecting, transferring, or converting solar-generated energy.
14. Solar Hot Water System. A system that includes a solar collector and a heat exchanger that heats or preheats water for building heating systems or other hot water needs.
15. Tracking Solar Array. A solar array that follows the path of the sun during the day to maximize the solar radiation it receives.

Subsection C: District Regulation

Solar Energy Systems will be permitted, conditionally permitted or not permitted based on the generating capacity and land use district as established in the table below (P=Permitted, C=Conditionally Permitted, NP=Not Permitted):

District	Small Solar Energy Systems	Large Solar Energy System
1. Agriculture	P	C
2. Rural Residential	P	NP
3. Urban Expansion	P	C
4. Hwy Service Business	P	C
5. Industrial	P	C
6. Floodplain	P	NP
7. Shoreland	P	NP

Nothing herein shall be construed to exempt a Solar Energy System from the regulations, requirements, and standards of the District in which it is located.

Subsection D: Setbacks and standards

1. Solar Energy Systems shall be subject to the structure setbacks set forth in each respective Zoning District in respect to property lines, road right-of-way lines, County tile lines (MN Statutes 103E.227), and County and Judicial Ditches.
2. Large Solar Energy Systems must be located at least 400 feet from the foundation of a non-participating occupied dwelling.
3. Standards for Large Solar Energy Systems.
 - A. Shall include a Storm water Management and Erosion and Sediment Control Plan.
 - B. 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.

- C. Other standards and codes. All Large Solar Energy Systems 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.
 - D. 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, to the extent practicable.
4. Standards for Small Solar Energy Systems.
- A. 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 number of accessory structures allowed per residential lot or the coverage limits, as set forth in the Pipestone County Zoning Ordinance.
 - B. Height. Solar systems are subject to the following height requirements:
 - a. Building- or roof- mounted solar systems shall not exceed the maximum allowed height for structures in the zoning district in which the system is being installed, and shall not extend more than 10 feet above the building or roof on which they are mounted.
 - b. Ground- or pole-mounted solar systems shall not exceed 15 feet in height when oriented at maximum tilt.
 - C. 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 feet. 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.

- D. **Maximum Coverage.** The total collector surface area of pole or ground mount systems in the Rural Residential district shall not exceed ten percent of the lot area.
- E. **Building and roof-mounted Solar Energy Systems** cannot be installed without a written certification of a qualified engineer or building inspector licensed by the State of Minnesota that the building or roof is structurally capable of bearing the Solar Energy System.
- F. **Approved Solar Components.** Electric solar system components must have a Underwriters Laboratory (UL) listing.
- G. **Compliance with State Electric Code.** All photovoltaic systems shall comply with the Minnesota State Electric Code.
- H. **Utility Notification.** No grid-intertie photovoltaic system shall be installed until evidence has been given to the Department that 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.

Subsection E: Permit application

Land Use Permits, Conditional Use Permits and Variances shall be applied for and reviewed under the procedures established in the Pipestone County Zoning Ordinance and Minnesota Statutes Chapter 394, except where noted below. An application to the County for a permit under this section is not complete unless it contains the following:

1. A site plan of existing conditions showing the following:
 - A. Existing property lines and property lines extending 100 feet 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, if available.
 - 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 Pipestone 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 foundations 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. Disposal of structures and/or foundations shall meet the provisions of the Pipestone County Solid Waste Ordinance; or successor ordinance. The Board may require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning.