

## **SOLAR ENERGY**

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 3 of the Nobles County Land Use 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.

### **Definitions**

1. Array (Solar). Any number of solar collectors connected together to provide a single electrical output.
2. Interconnection Agreement. A contract between the owner or operator of a solar energy system and utility company governing connection between the solar energy system and power grid.
3. Mounting Devices. Devices that allow the mounting of solar collector onto a roof, surface, wall, or the ground.
4. Power Line. An overhead or underground conductor and associated facilities used for the transmission or distribution of electricity.
5. Shoreland - land located within the following distances from public waters. (1) 1,000 feet from the normal highwater mark of a lake, pond or flowage; and (2) 300 feet from a river or stream, or the landward extent of a floodplain designated by ordinance on such a river or stream, whichever is greater. The practical limits of shorelands may be less than the statutory limits whenever the waters involved are bounded by natural topographic divides which extend landward from the water for lesser distances and when approved by the Commissioner
6. Solar Collector or Solar Panel. A device, structure, or part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.
7. 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 process, or to produce generated power by means of any combination of collecting, transferring, or converting solar-generated energy.
  - a. Accessory Solar Energy System. A solar energy system that is secondary to the primary use of the parcel on which it is located and which is directly connected to or designed to serve the energy needs of the primary use with a Direct Current (DC) rated capacity of 40 or fewer kilowatts.

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- b. Large Solar Energy System. A solar farm, where the primary land use of the parcel is for a solar array. A solar energy system comprised of multiple solar panels on multiple mounting systems (poles or racks) with a Direct Current (DC) rated capacity greater than 40 kilowatts.
8. Solar Energy System, Building- Integrated. An active solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Such systems include, but are not limited to, solar energy systems that function as roofing materials, windows, skylights, and awnings.
9. Solar Energy System, Grid-intertie. A solar energy system that is connected to an electric circuit served by an electric utility company.
10. Solar Energy System, Ground-mounted. A solar collector, or collectors, located on the surface of the ground. The collector or collectors may or may not be physically affixed, or attached to the ground. Ground-mounted systems include pole-mounted systems.
11. Solar Energy System, Off-Grid. A solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.
12. Solar Energy System, Roof-mounted. A solar collector, or collectors, located on the roof of a building or structure. The collector or collectors may or may not be physically affixed, or attached to the roof.
13. Substation. Any electrical facility containing power conversion equipment designed for interconnection with power lines.
14. Tracking Solar Array; A solar array that follows the path of the sun during the day to maximize the solar radiation it receives.
15. Zoning Ordinance: The Nobles County Land Use Ordinance

### **Purpose**

This ordinance is established to set forth the processes for permitting Solar Energy from eligible energy technology as described in Minnesota Statutes 216B.1691, to promote the health, safety, and general welfare of the citizens of Nobles County, and to regulate the installation and operation of a Solar Energy System within Nobles County pursuant to Minnesota Statutes Sections 216C.25, 500.30, and Minnesota Rules Chapter 1325.1100, as amended.

### **Permit Application**

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Land Use Permits, Conditional Use Permits and Variances shall be applied for and reviewed under the procedures established in the Nobles County Land Use 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 information:

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 public and private field drainage tile location and size. This portion must also include the proposed method of repair for tiles damaged during and after construction.
- e) Existing buildings and any impervious surface.
- f) Topography at 2' intervals and source of contour interval. A contour map of the surrounding properties may also be required.
- g) Existing vegetation (list type and percent of coverage; i.e. grassland, plowed field, wooded areas, etc.)
- h) Waterways, watercourses, lakes and public water wetlands.
- i) Delineated wetland boundaries.
- j) The 100-year flood elevation and Regulatory Flood Protection Elevation, if available.
- k) Floodway, flood fringe, and/or general flood plain district boundary, if applicable.
- l) The shoreland district boundary, if any portion of the project is located in a shoreland district.
- m) In the shoreland district, the ordinary high water level and the highest known water level.
- n) In the shoreland district, the toe and top of any bluffs within the project boundaries.
- o) Mapped soils according to the Nobles County Soil Survey.

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p) Surface water drainage patterns.

2. Site Plan of Proposed Conditions showing the following:

a) Location and spacing of solar panels.

b) Location of access roads.

c) Planned location of underground or overhead power lines connecting the solar energy system 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 energy system.

e) Proposed erosion and sediment control measures.

f) Proposed stormwater 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).

h) Vegetative Cover - project shall be planned and developed in a way that is beneficial to pollinators; Maintenance of the vegetative cover shall be required for the duration of the permit.

i) 3. Manufacturer's specifications and recommended installation methods for all major equipment, including solar panels, mounting devices and foundations for mounting devices.

4. The number of solar panels to be installed and total capacity of each panel.

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.

### **Decommissioning**

Provisions shall ensure that facilities are properly decommissioned upon the end of project life or facility abandonment. Decommissioning of solar panels must occur in the event they are not in use for 12 consecutive months. Decommissioning shall include provisions for: removal of all structures, foundations and debris to a depth of 4 feet; restoration of the soil and vegetation (consistent and compatible with surrounding vegetation).

Provisions shall include a decommissioning plan. This plan will identify:

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- 1) When and how a facility is to be decommissioned.
- 2) Estimated cost of decommissioning.
- 3) Financial resources to be used to accomplish decommissioning.

The County may require the developer/owner to create and fund an escrow account to fund decommissioning. An agreement between the developer/owner and the County may be required whereby the County is granted access to the escrow account for the explicit purpose of decommissioning. The County Board shall determine the minimum amount of funds to be held in the escrow account. The minimum amount shall be consistent with the estimated cost of decommissioning. The County Board may change the minimum amount to be held in escrow if the estimated costs of decommissioning changes. The decommissioning plan shall be included as part of the permit application.

**Permitted and Conditional Uses**

Solar Energy Systems will be permitted, conditionally permitted or prohibited based on the generating capacity and land use district as established in the table below (P=Permitted, C=Conditionally Permitted, and N=Prohibited):

**Table 1**

<b>District</b>	<b>Large Solar Energy System &gt;40 kW</b>	<b>Accessory Solar Energy System 40 KW or fewer</b>
Agricultural Preservation	C	P
Urban/Rural Residential	C	P
General Business	C	P
General Industry	C	P
Floodplain Management	N	C
Shoreland – Special Protection – Residential/Recreational Shoreland	N	N
Airport Approach	N	C

**Setbacks and Standards**

**Standards for Large Solar Energy Systems**

Large solar energy systems require a Conditional Use Permit or are not permitted in the zoning districts as indicated in Table 1.

1. *Setbacks.* All large solar energy systems shall be setback a minimum of 150 feet from all property lines and 200 feet from the centerline of all roads including fences.

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2. Stormwater Management and Erosion/Sediment Control. The Stormwater Management and Erosion/Sediment Control shall meet of the MPCA Construction Stormwater Permit (SWPPP) requirements.
3. Foundations. The manufacturer's engineer or another qualified engineer shall certify that the foundation and design of the solar array is within accepted professional standards, given local soil and climate conditions.
  - a) 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.
4. 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.
5. Liability Insurance. The landowner shall maintain a current general liability policy on the Large Solar Energy System covering bodily injury and property damage with limits of at least \$1 million per occurrence and \$1 million in the aggregate.

### **Standards for Accessory Solar Energy Systems**

Accessory solar energy systems are permitted or conditional uses in all zoning districts, subject to the following standards:

1. Accessory Building Limit. Small or accessory solar energy systems, regardless of the mounting device, are considered an accessory structure and must be permitted separately from buildings.
2. Height. Active small or accessory solar energy systems are subject to the following height requirements:
  - a) Building-integrated or roof- mounted solar systems shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, solar energy 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 being installed.
  - b) Ground- or pole- mounted solar systems shall not exceed 25 feet in height when oriented at maximum tilt.
3. Location within Lot. Small and accessory solar energy systems must meet the structure setback requirements for the zoning district in which they are proposed.

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- a) **Roof-mounted Solar Energy Systems.** In addition to the building setback, the collector surface and mounting devices for roof-mounted solar energy 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 solar collector(s) and mounting device(s) 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 Energy 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.
4. Maximum Coverage. Roof-mounted solar energy 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 mounted solar energy systems in non-agricultural districts shall not exceed one percent of the lot area.
  5. Approved Solar Components. Electric solar system components must have an 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 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.

### **Other Applicable Standards**

1. Solar panels shall not be placed in the vicinity of any airport in a manner that would interfere with airport flight patterns. If acknowledgement from the Federal Aviation Administration is necessary, it must be obtained prior to constructing or operating any solar energy system.
2. A solar energy system shall not be used to display advertising, or decorations including signage, streamers, pennants, spinners, reflectors, ribbons, tinsel, balloons, flags, banners or similar materials. The manufacturers and equipment information, warning, or indication of ownership shall be allowed on any equipment of the solar energy system provided they comply with the prevailing sign regulations.
3. Any public or private drainage tile system that is damaged during the construction of the project is to be repaired at the project owner's expense. This includes but is not limited to damage that is found during and after construction is complete.

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4. A solar energy system shall not be constructed until a building/zoning permit has been approved and issued.

### **Public Services**

1. *Roads.* If the project and/or construction are large enough that roads can sustain severe damage or if construction is taking place during spring load restrictions enforcement of road limits may make construction impossible. The local unit of government may choose to require either remediation of road repair upon completion of the project or are authorized to collect fees for oversized load permits.
2. *Fire, Safety and Security.* The following permit standards shall be followed to reduce risk of fire and to provide adequate safety and security measures on each site:
  - a) Adherence to electrical codes and standards.
  - b) Removal of fuel sources, like vegetation, from immediate vicinity of electrical gear and connections.
  - c) The permittee shall obtain an emergency response, 911 rural address for the project.
  - d) A fence, with a minimum height of 8 feet and locking gates on all site entrances, shall be constructed on large solar energy systems over 40 KW.
  - e) All applicable warning signs are to be displayed and maintained.
  - f) All requirements of Section 706 of the Nobles County Land Use Ordinance must be complied with.