

## Section 32 - Solar Energy System

### **Subdivision**

32.01 Building-Integrated and Building-Mounted Solar Energy Systems

32.02 Ground-Mounted Solar Energy Systems

32.03 Roof-Mounted Community Solar Energy Systems

32.04 Ground-Mounted Community Solar Energy System

### **32.01 BUILDING-INTEGRATED AND BUILDING-MOUNTED SOLAR ENERGY SYSTEMS**

In those districts that permit building-integrated solar energy systems as an accessory use, the solar energy system shall be installed in a manner that follows all terms of this Ordinance including height and setback restrictions of the zoning district in which it is proposed to be located. Notwithstanding the height limitations of the zoning district, Building-mounted Solar Energy Systems shall not extend higher than three (3) feet above the ridge level of a roof on a structure with a gable, hip or gambrel roof and shall not extend higher than ten (10) feet at maximum tilt above the surface of the roof when installed on a flat or shed roof if the solar energy system is visible from a public right-of-way. All solar energy systems shall meet the standards of the Minnesota Building Code, and a building permit shall be received prior to installation

### **32.02 GROUND-MOUNTED SOLAR ENERGY SYSTEMS**

In those districts that permit ground-mounted solar energy systems as an accessory use, the ground-mounted solar energy system shall be installed in compliance with the following requirements:

- A. Parcel Size: When permitted as an accessory use in any Residential District, ground-mounted solar energy systems may only be permitted on parcels of not less than five (5) gross acres. There is no parcel size limitation in other districts.
- B. Size: Ground mounted solar energy systems are considered accessory structures. The size of the system based on the square feet of the solar panels will be calculated as part of the maximum combined number and size of accessory structures allowed by lot size.
- C. Setbacks: Ground-mounted solar energy systems including any appurtenant equipment shall comply with the accessory structure setback requirement and placement limitations for the district in which it is installed when oriented in any position. Ground-mounted solar energy systems are not permitted in front or side yards.
- D. Height: The height of ground-mounted solar energy systems shall not exceed ten (10) feet in height when oriented at maximum tilt.
- E. Glare: The panels of ground-mounted solar energy systems shall be placed and arranged such that reflected solar radiation, or glare shall not be directed onto roadways or residential buildings. Prior to the issuance of a permit for a ground-mounted solar energy system, the permit applicant must provide an analysis or technical documentation from the manufacturer of

the ground-mounted solar energy system demonstrating that the ground-mounted system will not impact roadways or residential buildings due to glare.

- F. Feeder Lines: The electrical collection system shall be placed underground within the interior of each property.
- G. Easements: The solar energy system shall not encroach on public easements.
- H. Utility Notification: No grid inter-tie solar energy system shall be installed until evidence has been given to the city that the owner has submitted notification to the utility company of the customer's intent to install an interconnected customer-owned solar energy system. Off-grid systems are exempt from this requirement.
- I. Abandonment: If the solar energy system remains nonfunctional or inoperative for a continuous period of 12 months, the system shall be deemed abandoned and shall constitute a public nuisance. The owner shall remove the abandoned system at their expense within 90 days. Removal includes the entire structure including transmission equipment, structures and foundations, and the restoration of soil and vegetation.

### 32.03 ROOF-MOUNTED COMMUNITY SOLAR ENERGY SYSTEMS

In those districts that permit Roof-Mounted Community Solar Energy Systems as an interim use, the roof-mounted community solar energy system shall be installed in compliance with the following requirements:

- A. Rooftop Installation: Community Solar Energy Systems shall be installed on a rooftop. The owner or contractor shall receive a building permit and/or mechanical permit before installing a rooftop community solar energy system. All rooftop systems shall meet the standards of the Minnesota Building Code.
- B. Placement: A rooftop community solar energy system shall be placed on the roof to limit visibility from the ground-level or adjacent residential parcels or public right-of-way and to blend into the roof design, provided that minimizing visibility still allows the owner to capture solar energy. Rooftop systems shall not exceed the maximum height in any zoning district.
- C. Pitched Roofs: On pitched roofs with a slope greater than 15%, solar panels shall be flush-mounted and shall not exceed above the peak of the roof.
- D. Glare: All solar energy systems shall minimize glare that affects adjacent or nearby properties. Steps to minimize glare nuisance may include selective placement of the system, selective orientation of the panels, or rooftop screening. All proposed projects shall conduct and submit a glare study to identify potential impacts and mitigation strategies. To complete this glare study, the applicant can use the Solar Glare Hazard Analysis Tool (SGHAT). Once installed, if the solar energy system creates glare onto neighboring properties and/or streets and highways and the City determines that such glare constitutes a nuisance, the City shall require a more detailed glare study - prepared by a third-party consultant mutually acceptable to the City and applicant -

to identify additional actions and/or screening that may be required to substantially eliminate or block the glare from entering the neighboring property and/or street and highway.

### 32.04 GROUND-MOUNTED COMMUNITY SOLAR ENERGY SYSTEM

- A. Use: A ground mounted community solar system, as an accessory or a principal use, shall be allowed under an Interim Use Permit (IUP) in applicable zoning districts.
- B. Prohibitions: Ground mounted community solar energy systems are prohibited in the following areas:
  - 1. Areas that are not guided on the Future Land Use Map as Agricultural or are located in Sections 1 or 7 through 18. Ground-mounted community solar energy systems will only be permitted in areas planned to be Agricultural on the Future Land Use Map and located in Sections 19 through 36.
  - 2. Shoreland and Floodplain Districts as designated by the Minnesota Department of Natural Resources (DNR) and the Zoning Ordinance.
  - 3. Within 600 feet of any property designated or protected from development by Federal, State or County agencies as wildlife habitat and wildlife management areas. Property designated as public parkland or park reserve shall not be subject to this setback requirement.
  - 4. Within delineated wetlands.
  - 5. Within any recorded easement - such as utility, ditch, conservation, or storm water - unless authorized in writing by the easement holder.
  - 6. Within one (1) mile of a Community Solar Energy System defined under this Chapter, it is either existing, permitted, or proposed under a pending application under review. Separation will be measured from the parcel boundary of the existing, permitted, or proposed community solar garden to the nearest parcel boundary of the proposed community solar garden.
- C. Performance Standards:
  - 1. Maximum Size and Capacity: No more than one (1) Community Solar Garden System per parcel shall be permitted, and the one (1) System or co-location of Systems shall have a maximum power capacity of one (1) megawatt AC and shall be no greater than ten (10) acres in size.
  - 2. Site Access: Any driveway or site access off a state, county or local road shall meet the requirements of this Ordinance.
  - 3. Signage; No advertising signage is allowed. Manufacturer and equipment information, warning, security, or indication of ownership signage on the site shall comply with Section 31 of the Zoning Ordinance.
  - 4. Power and Communication Lines: All on-site power and communication lines running between banks of solar panels and buildings, and all off-site lines running between the solar energy system to electric substations or interconnections, shall be buried underground. Exemptions may be granted at the sole discretion of the City Council in instances where shallow bedrock, water courses, or other elements of the natural landscape interfere with the ability to bury lines.

5. 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.
6. Stormwater Management and Erosion Control: Systems shall meet the requirements for stormwater management and erosion and sediment control as per city ordinances.
7. Interconnection: The owner, developer or operator of the Community Solar Energy System must submit an executed interconnection agreement with the electric utility in whose service territory the system is located prior to the City issuing any building permits associated with the System. Off-grid systems are exempt from this requirement. The interconnections shall require no more than two (2) utility poles and a ground utility cabinet or three (3) utility poles total.
8. Decommissioning Plan: A decommissioning plan shall be required to ensure that facilities are removed after their useful life and that the site is properly restored. Decommissioning of solar panels must occur if they are not in use for twelve consecutive months. The plan shall include provisions for removal of all structures and foundations, removal of all wire and all foreign material, restoration of soil and vegetation and a plan ensuring financial resources will be available to fully decommission the site. The city will require the posting of a bond, letter of credit or the establishment of an escrow account to ensure proper decommissioning, equal to 125% of the estimated amount of the cost to decommission and restore the site.
9. Noise: All Community Solar Energy Systems shall comply with Minnesota Rules 7030 governing noise.
10. Electrical Codes and Standards: All Community Solar Energy Systems and accessory equipment shall comply with the National Electrical Code and other applicable standards. Photovoltaic solar energy system components must have an Underwriters Laboratory (UL) listing or other third-party certification provided by an American National Standards Institute accredited organization.
11. Minnesota State Building Code: All Community Solar Energy System structures shall comply with the International Building Code as adopted by the State of Minnesota Building Code.
12. Maximum Height: Ground mounted systems shall not exceed fifteen (15) feet in height at maximum design tilt.
13. Glare: All solar energy systems shall minimize glare that affects adjacent or nearby properties. Steps to minimize glare nuisance may include selective placement of the system, selective orientation of the panels, or site screening, berming, or buffering. All proposed projects shall conduct and submit a glare study to identify potential impacts and mitigation strategies. To complete this glare study, the applicant can use the Solar Glare Hazard Analysis Tool (SGHAT). Once installed, if the solar energy system creates glare onto neighboring properties and/or streets and highways and the City determines that such glare constitutes a nuisance, the City shall require a more detailed glare study - prepared by a third-party consultant mutually acceptable to the City and applicant - to identify additional actions and/or screening that may be required to substantially

eliminate or block the glare from entering the neighboring property and/or street and highway.

14. Setbacks: All equipment and structures shall meet the front, side, and rear yard setbacks for principal structures for the zoning district in which the system is located.
15. Security Fencing: All boundary line fencing shall be located entirely upon the property of the System. Fences shall consist of open fencing such as chain link or barbed wire. Fences shall not exceed eight (8) feet in height, which includes barbed wire toppings.
16. 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 four (4) feet in height and which shall be maintained at maturity at a height of eight (8) feet in height to screen the fence.

D. Submittal Requirements:

1. The names of project applicants.
2. The name of the project owner.
3. The legal description and address of the project.
4. Documentation of land ownership or legal control of the property.
5. A description of the project including ownership or lease arrangement, the proposed installed maximum capacity, in kilowatts, for the site, proposed type of mounting and racking systems, along with manufacturer's specification or engineering designs for mounting and racking the method of connecting the system to the electric load; the types of panels that will be installed.
6. Site Plan, drawn to scale, including:
  - a. Existing and proposed structures;
  - b. Property lines;
  - c. Existing and proposed fencing;
  - d. Surface water drainage patterns;
  - e. The location of public and private tile drainage systems;
  - f. Floodplains;
  - g. Wetlands;
  - h. Shore land zones;
  - i. Topography at two (two) foot intervals, and bluffs;
  - j. The location, size and spacing of solar panels;
  - k. The location of existing and proposed access roads;
  - l. The location of underground or overhead electric line connections;
  - m. Existing easements on the property;
  - n. In-use wells and sewage treatment systems;
  - o. Abandoned wells, sewage treatment sites and dumpsites; and,
  - p. All other characteristics requested by the City.

7. Existing vegetation (list type and percentage of coverage) and soils information for the proposed site.
8. Landscape and Screening Plan prepared by a licensed landscape architect and 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.
9. Erosion/Sediment Control Plan or Resource Management Plan, if required. Include details on any proposed native grasses or plantings on the site.
10. Glare Study, if required.
11. Copy of the interconnection agreement with the local electric utility.
12. Decommissioning Plan.