

SECTION 1800. SOLAR ENERGY SYSTEMS *(Ord No 1-21-2010)*

1801. Purpose

The purpose of the ordinance is to provide for the regulation of the construction and operation of Solar Energy Systems (SES) subject to reasonable conditions that will protect the environment, public health, safety, and welfare.

1802. Definitions

- .01 **Active SES**
A SES that transforms solar energy into another form of energy or transfers heat from a collector to another medium using mechanical, electrical or chemical means
- .02 **Building-Integrated SES**
An active SES 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. Building-integrated SES include, but are not limited to, photovoltaic or hot water SES that are contained within roofing materials, windows, skylights and awnings
- .03 **Grid-Connected SES**
A photovoltaic SES that is connected to an electric circuit served by an electric utility company
- .04 **Off-Grid SES**
A photovoltaic SES in which the circuits energized by the SES are not electrically connected in any way to electric circuits that are served by an electric utility company.
- .05 **Passive SES**
A SES that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.
- .06 **Photovoltaic SES**
An active SES that converts solar energy directly into electricity.
- .07 **Renewable Energy Easement, Solar Energy Easement**
An easement that limits the height or location, or both, of permissible development on the burdened land in terms of a structure or vegetation, or both, for the purpose of providing access for the benefited land to wind or sunlight passing over the burdened land.
- .08 **Renewable Energy System**
A solar energy or wind energy conversion system. Renewable energy systems do not include passive systems that serve a dual function, such as a greenhouse or window.
- .09 **Roof Pitch**
The final exterior slope of a building roof calculated by the rise over the run, typically but not exclusively in twelfths, such as 3/12, 9/12, 12/12.

- .10 **Solar Access**
A view of the sun from any point on the collector surface that is not obscured by any vegetation, building, or object located on parcels of land other than the parcel upon which the solar collector is located, between the hours of 9:00 a.m. and 3:00 p.m. Standard time on any day of the year.
- .11 **Solar Collector**
A device, structure or a part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.
- .12 **Solar Collector Surface**
Any part of a solar collector that absorbs solar energy for use in the collector's energy transformation process. Collector surface does not include frames, supports and mounting hardware.
- .13 **Solar Daylighting**
A device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.
- .14 **Solar Energy**
Radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.
- .15 **Solar Energy Device**
A system or series of mechanisms designed primarily to provide heating, to provide cooling, to produce electrical power, to produce mechanical power, to provide solar daylighting or to provide any combination of the foregoing by means of collecting and transferring solar generated energy into such uses either by active or passive means. Such systems may also have the capability of storing such energy for future utilization. A passive SES shall clearly be designed as a solar energy device such as a trombe wall and not merely a part of a normal structure such as a window.
- .16 **SES**
A device or structural design feature a substantial purpose of which is to provide daylight for interior lighting or provide for the collection, storage and distribution of solar energy for space heating or cooling, electricity generating, or water heating.
- .17 **Solar Heat Exchanger**
A component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.
- .18 **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, including residential domestic hot water and hot water for commercial processes.

- .19 Solar Mounting Devices
Devices that allow the mounting of a solar collector onto a roof surface or the ground.
- .20 Solar Storage Unit
A component of a solar energy device that is used to store solar generated electricity for later use.
- .21 Lot Coverage (*Ord No 12-10-2015-2*)
Ground-mounted SES is considered impervious surfaces and must not cause the lot to exceed impervious surface coverage standards.

1803. Conditional Use Permit

An active SES shall be allowed as a use by Conditional Use Permit in all zoning classifications where structures of any sort are allowed, subject to certain requirements as set forth below:

- .01 Height
An active SES must meet the following height requirements:
 - (1) A building or roof-mounted SES shall not exceed the maximum allowed height in any zoning district. For purposes of height measurement, all SES other than building-integrated systems shall be considered to be mechanical devices.
 - (2) A ground or pole-mounted SES is permissible only in the FDD District. A ground-mount SES is permissible in I and I-2 Districts. (*Ord No 12-10-2015-2*)
- .02 Setback
 - (1) Roof-Mounted SES
In addition to the building setback, the collector surface and mounting devices for a roof-mounted SES shall not extend beyond the exterior perimeter of the building on which the system is mounted or built. Exterior piping for solar hot water systems shall be allowed to extend beyond the perimeter of the building on a sideyard exposure.
- .03 Visibility
An active SES shall be designed to blend into the architecture of the building or be screened from routine view from public right-of-ways other than alleys. The color of the solar collector, if consistent with the provisions of this Ordinance, is not required to be consistent with other roofing materials unless specified in the Conditional Use Permit.
 - (1) Building-Integrated Photovoltaic SES
Building-integrated photovoltaic SES shall be allowed regardless of visibility provided the building component in which the system is integrated meets all required setback, land use and performance standards for the district in which the building is located.

- (2) SES with Mounting Devices
SES using roof-mounting devices or ground-mounted SES shall not be restricted if the system is not visible from the closer edge of any public right-of-way other than an alley. Roof-mounted SES that are visible from the nearest edge of the street frontage right-of-way shall not have a highest finished pitch greater than five percent steeper than the roof pitch on which the SES is mounted, and shall be no higher than ten (10) inches above the roof.
- (3) Screening (*Ord No 12-10-2015-2*)
Solar energy systems shall be screened from view to the extent possible without impacting their function.
- .04 Approved Solar Components
Electric SES components must have a UL listing and solar hot water systems must have a Solar Rating and Certification Corporation (SRCC) rating. (*Ord No 12-10-2015-2*)
- .05 Plan Approval Required
By virtue of the Conditional Use Permit requirement, all SES shall require Planning and Zoning Commission and City Council approval.
 - (1) Plan Applications
Plan applications for a SES shall be accompanied by to-scale horizontal and vertical (elevation) drawings. The drawings must show the location of the system on the building.
 - (1.1) Pitched Roof-Mounted SES
For all roof-mounted SES other than on a flat roof, the elevation must show the highest finished slope of the solar collector and the slope of the finished roof surface on which it is mounted.
 - (1.2) Flat Roof-Mounted SES
For flat roof applications, a drawing shall be submitted showing the distance to the roof edge and any parapets on the building and shall identify the height of the building on the street frontage side, the shortest distance of the SES from the street frontage edge of the building, and the highest finished height of the solar collector above the finished surface of the roof.
- .06 Compliance with Building Code
All active SES shall comply with the City's Zoning Ordinance and with the current Building Code as adopted by the State of Minnesota.
- .07 Compliance with State Electric Code
All photovoltaic SES shall comply with the current National Electrical Code as currently adopted by the State of Minnesota Building Code.

- .08 Utility Notification
No grid-connected photovoltaic SES shall be installed until evidence has been given to the Commission that the owner has submitted an Interconnect Agreement with the Melrose Public Utilities of the customer's intent to install an interconnected customer-owned generator. Off-grid SES is exempt from this requirement. *(Ord No 12-10-2015-2)*
- .09 Aesthetic Conditions
The SES must blend into the building on which the system is mounted.
- .10 Safety Conditions
The SES must be anchored in such a manner so as to withstand windspeeds of 90 mph and must be set back from adjoining properties far enough so as to insure that no reasonable risk of accidental contact with electrical components from adjoining properties will occur.
- .11 Abandonment *(Ord No 12-10-2015-2)*
If a SES remains nonfunctional, inoperative or fails to generate electricity for a continuous period of one year, the system shall be deemed to be abandoned and shall constitute a public nuisance. The owner shall remove the abandoned system at their expense. Removal includes the entire structure including transmission equipment.
- .12 The City has a right to abate a public nuisance under the procedures set forth in Chapter 93 (Assessable Services; Nuisances) of the City Code 60 days after the 12 consecutive month period. *(Ord No 12-10-2015-2)*

1804. Certification

All solar collectors and solar water heating systems sold, offered for sale, or installed in the State must bear a Solar Rating and Certification Corporation (SRCC) certification label evidencing the manufacturer's compliance with the design, reliability, durability, safety, operation, servicing, installation, and manual criteria contained in the Operating Guidelines and Standards. In addition, in accordance with the Operating Guidelines and Standards, every seller of solar collectors and solar water heating systems for installation in the State must provide every bona fide prospective buyer a copy of the certification award issued by the SRCC.

1805. Enforcement

The City shall not issue any permits required for installation of the electrical, mechanical, or structural aspects of the SES until the seller has furnished to the Commission a copy of the completed certification award required by Section 1804. The Commission need not determine the accuracy of the seller's certification award or otherwise determine the extent to which the seller's SES meets or exceeds the Operating Guidelines and Standards.