

## **7800 Solar Photovoltaic Installations**

### **7801 Purpose**

To provide reasonable regulations pertaining to public health, safety and welfare for Solar Photovoltaic Installations in accordance with Massachusetts General Law Chapter 40A, Section 3.

### **7802 Applicability**

This section shall apply to all Neighborhood and Industrial Solar Photovoltaic Installations, including related buildings, structures, and equipment, and to physical modifications of such installations that materially alter their type, configuration, or size.

### **7803 Standards and Requirements**

Except where specifically stated otherwise, the following provisions shall apply to all Neighborhood and Industrial Solar Photovoltaic Installations in all zoning districts.

#### **(1) Setbacks**

The solar layout of an installation and all related structures, buildings and equipment shall comply with the front, side and rear yard requirements of the zoning district in which they are located, except for power feed and distribution lines and equipment where underground installation is not possible.

#### **(2) Landscaping, Screening, and Panel Orientation and Tilt**

Landscaping or architectural screening shall be provided to reduce the visual impact of installations and specifically to protect nearby receptors from danger, harm, or nuisance that may result from the reflective solar glare of photovoltaic panels. Where necessary, panels shall be oriented or tilted in a manner to prevent such glare upon receptors.

#### **(3) Lighting**

Night Lighting is prohibited except for security lighting controlled by motion detectors or infrared sensors with an on-time of no more than ten (10) minutes per activation.

#### **(4) Utility Connections**

All utility connections, conduits, cables, power lines transformers and inverters shall be placed underground, except (a) where otherwise required by the Massachusetts State Building Code or the utility provider; (b) in adverse ground conditions such as ledge or excess water; or (c) for connection to existing above ground utility lines. Wiring within the installation's solar layout shall follow industry standards.

#### **(5) Signs**

Signs shall comply with the requirements of Section 6300 of this Bylaw. However, in the Residential Districts not more than one (1) sign up to six (6)

square feet in area per side may be installed with the names, current telephone numbers, websites and trademarks of the installer, manufacturer, owner, and operator of the installation. In addition, pedestrian scale educational displays are permitted, which may include the names and contact information of the display sponsors, and directions and contacts for additional information.

(6) Water Management and Conservation

To the largest extent possible, the ground shall remain pervious to rain water. Where necessary, adequate provision shall be made for groundwater recharge and to prevent site run-off and erosion.

(7) Protection of Forest Land

Not more than one (1) acre of land shall be deforested for any one Industrial Solar Photovoltaic Installation, and no such installation shall be placed on such land that was deforested within the prior 5 years.

(8) Solar Access

The owners and operators of Solar Photovoltaic Installations are advised to acquire solar access easements from abutters where access to sunlight could be impacted from an allowed use on an abutting parcel.

7804 Exemptions from Zoning Requirements

Solar Photovoltaic Installations shall be exempt from requirements of this Bylaw pertaining to lot area, floor area ratio, impervious cover, open space, and vehicular parking.

**Definitions – continued**

2196 Photovoltaic System (also referred to as Photovoltaic Installation) shall mean active solar energy system that converts solar energy directly into electricity.

2197 Rated Nameplate Capacity shall mean the maximum rated output of electric power production of the photovoltaic system in watts of Direct Current (DC).

2198 Solar Access shall mean access of a solar energy system to direct sunlight.

2199 Solar Collector shall mean 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.

2200 Solar Energy shall mean radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

2201 Solar Energy System shall mean 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 generation, or water heating.

2202 Solar Energy System, Active shall mean solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical, or chemical means.

2203 Solar Energy System, Grid-Intertie shall mean photovoltaic system that is connected to an electric circuit served by an electric utility.

2204 Solar Energy System, Ground-Mounted shall mean an Active Solar Energy System that is structurally mounted to the ground and is not roof-mounted; may be of any size (small-, medium- or large-scale).

2205 Solar Energy System, Large-Scale shall mean an Active Solar Energy System that occupies more than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 250kW DC or greater).

2206 Solar Energy System, Medium-Scale shall mean an Active Solar Energy System that occupies more than 1,750 but less than 40,000 square feet of surface area (equivalent to a rated nameplate capacity of about 10 - 250 kW DC).

2207 Solar Energy System, Off-Grid shall mean photovoltaic 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.

2208 Solar Energy System, Passive shall mean solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the energy via a heat exchanger.

2209 Solar Energy System, Roof-Mounted shall mean an Active Solar Energy System that is structurally mounted to the roof of a building or structure; may be of any size (small-, medium- or large-scale).

2210 Solar Energy System, Small-Scale shall mean an Active Solar Energy System that occupies 1,750 square feet of surface area or less (equivalent to a rated nameplate capacity of about 10 kW DC or less).

2211 Solar Thermal System shall mean an Active Solar Energy System that uses collectors to convert the sun's rays into useful forms of energy for water heating, space heating, or space cooling.

2212 Neighborhood Solar Photovoltaic Installation shall mean a solar photovoltaic installation with a solar layout that is not more than one (1) acre in size and that is primarily designed to benefit the energy needs of uses in the immediately surrounding area or neighborhood.

2213 Industrial Solar Photovoltaic Installation shall mean a solar photovoltaic installation with a solar layout that is of any size and that is primarily designed to benefit all energy users regardless of location or vicinity to the installation.

2214 Solar Layout shall mean the total area of the vertical projection on the ground of all panels in the installation's most horizontal tilt position and shall include all spaces between the panels.

2215 Ground-Mounted shall mean that installations are structurally mounted to the ground in any manner, including but not limited to ground anchored pole, rack, or rail installations, or non-ground penetrating ballasted installations; not roof-mounted installations or canopy installations above parking lots or driveways.

**4003(4): Business/ Industrial Uses -- continued**

	<b>AR</b>	<b>R1</b>	<b>B</b>	<b>B1</b>	<b>OP</b>	<b>TC</b>	<b>IC</b>
Building-Mounted Solar Photovoltaic Installation	Y	Y	Y	Y	SP	SP	SP
Ground-Mounted Neighborhood	Y	Y	Y	SP	N	SP	N

Photovoltaic Installation							
Ground-Mounted Industrial Solar Installation	N	N	Y	Y	Y	Y	Y