

SECTION 23: SOLAR ELECTRIC INSTALLATIONS *(proposed new Section of the Zoning Bylaws)*

A. Purpose

The purpose of this bylaw is to facilitate the creation of new Large-Scale Ground-Mounted Solar Electric Installations (see Section 23B. Definitions) by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on environmental, scenic, natural and historic resources and to provide adequate financial assurance for the eventual decommissioning of such installations.

The provisions set forth in this section shall apply to the construction, operation, and/or repair of Large-Scale Ground-Mounted Solar Electric Installations greater than 15 kW.

1. Applicability

This section applies to Large-Scale Ground-Mounted Solar Electric Installations greater than 15 kW. Smaller scale (15 kW or less) ground mounted solar electric installations which are an accessory structure to an existing residential or non-residential use do not need to comply with this section, but require a building permit and must comply with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, and communications requirements and other provisions of Gill's Zoning Bylaws such as setback requirements.

Large-Scale Ground-Mounted Solar Electric Installations greater than 15 kW and up to 250 kW that occupy no more than one (1) acre of land proposed to be constructed in the Solar Electric Overlay District are allowed As-of-Right, but are subject to Site Plan Review (see Section 24) and the requirements of this section.

Large-Scale Ground-Mounted Solar Electric Installations which require a Special Permit and Site Plan Review in accordance with the Zoning Bylaws of the Town of Gill, in addition to meeting the requirements of this section are as follows:

- a. an installation greater than 15 kW up to 250 kW located outside of the Solar Overlay District; and
- b. an installation larger than 250 kW or an installation occupying more than one (1) acre of land on one or more adjacent parcels (including those separated by a roadway) located either inside or outside the Solar Electric Overlay District in the R, R-A, or VC Zoning Districts.

This section also pertains to physical modifications that materially alter the type, configuration, or size of Large-Scale Ground-Mounted Solar Electric installations or related equipment.

All buildings and fixtures forming part of a solar electric installation shall be constructed in accordance with the Massachusetts State Building Code.

B. Definitions

As-of-Right Siting: As-of-Right Siting shall mean that development may proceed without the need for a special permit, variance, amendment, waiver, or other discretionary approval. As-of-right development may be subject to Site Plan Review. Projects cannot be prohibited, but can be reasonably regulated by the inspector of buildings, building commissioner or local inspector, or if there is none in a town, the Board of Selectmen, or person or board designated by local ordinance or bylaw.

Building Inspector: The inspector of buildings, building commissioner, or local inspector, or person or board designated by local ordinance or bylaw charged with the enforcement of the zoning ordinance.

Building Permit: A construction permit issued by an authorized building inspector. The building permit evidences that the project is consistent with the state and federal building codes as well as local zoning bylaws, including those governing ground-mounted large-scale solar electric installations.

Designated Location: The Solar Electric Overlay District designated by the Town of Gill is shown on the Solar Overlay District Map dated August 24, 2011, in accordance with Massachusetts General Laws Chapter 40A. This map is hereby made a part of this Zoning Bylaw and is on file in the Office of the Gill Town Clerk.

Large-Scale Ground-Mounted Solar Electric Installation: A solar electric system that is structurally mounted on the ground or on poles placed in the ground, and is not roof-mounted, and has a minimum nameplate capacity greater than 15 kW.

Rated Nameplate Capacity: The maximum rated output of electric power production of the Electric system in Alternating Current (AC) or Direct Current (DC).

Site Plan Review: Review by the Zoning Board of Appeals to determine conformance with local zoning ordinances or bylaws.

Solar Photovoltaic Array: An arrangement of solar photovoltaic panels.

Zoning Enforcement Authority: The Building Inspector is charged with enforcing the zoning ordinances or bylaws.

C. General Requirements for all Large Scale Solar Ground-Mounted Solar Electric Installations

The following requirements are common to all Large-Scale Ground-Mounted Solar Electric installations.

1. Compliance with Laws, Ordinances and Regulations

The construction and operation of all Large-Scale Ground-Mounted Solar Electric Installations shall be consistent with all applicable local, state and federal requirements, including but not limited to all applicable safety, construction, electrical, and communications requirements. All buildings and fixtures forming part of a solar electric installation shall be constructed in accordance with the Massachusetts State Building Code.

2. Building Permit and Building Inspection

No Large-Scale Ground-Mounted Solar Electric Installations shall be constructed, installed or modified as provided in this section without first obtaining a building permit including payment of any required fees.

D. Site Plan Review

Large-Scale Ground-Mounted Solar Electric Installations shall undergo Site Plan Review (see Section 24) by the Zoning Board of Appeals prior to construction, installation or modification as provided in this section.

1. General

All plans and maps shall be prepared, stamped and signed by a Professional Engineer licensed to practice in Massachusetts.

2. Required Documents

The project proponent shall provide the following documents in addition to or in coordination with those required for Site Plan Review (see Section 24):

- a.** A site plan showing:
 - i.** Property lines, map and lot from the Assessor's records, and physical features, including roads and topography, for the project site;
 - ii.** Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures including their height;
 - iii.** Locations of wetlands, Priority Habitat Areas defined by the Natural Heritage & Endangered Species Program (NHESP)
 - iv.** Locations of Floodplains or inundation areas for moderate or high hazard dams;
 - v.** Locations of local and national historical, and archeological districts;
 - vi.** A list of any hazardous materials proposed to be located on the site in excess of household quantities and a plan to prevent their release to the environment as appropriate;
 - vii.** Blueprints or drawings of the solar electric installation signed by a Professional Engineer licensed to practice in the Commonwealth of Massachusetts showing the proposed layout of the system and any potential shading from nearby structures;
 - viii.** One or three line electrical diagram detailing the solar electric installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices;
 - ix.** Documentation of the major system components to be used, including the electric generating components, transmission systems, mounting system, inverter, etc.;
 - x.** Name, address, and contact information for proposed system installer;
 - xi.** Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;
 - xii.** The name, contact information and signature of any agents representing the project proponent; and
 - xiii.** Documentation of actual or prospective access and control of the project site;
- b.** An operation and maintenance plan (see Section 23F.);
- c.** Zoning district designation for the parcel(s) of land comprising the project site (submission of a copy of a zoning map with the parcel(s) identified is suitable for this purpose);
- d.** Proof of liability insurance; and
- e.** Description of financial surety that satisfies Section 23L.

3. Historical and Archaeological Areas

The owner should obtain written verification from the Town Clerk as to whether or not the project is sited within a local or national historical or archeological district. If the project is within such a district, then at the time of site plan submission to the Town Clerk, the owner must also:

- a.** Complete a Project Notification Form (obtain from: <http://www.sec.state.ma.us/mhc/>) accompanied by standard documents (USGS locus map, scaled project plans showing existing and proposed conditions, and current photographs keyed to the plan).

- b. Send the items in (a) above along with the Site Plans documents (D.2.a) above to the Massachusetts Historical Commission with a cover letter requesting the Commission send its response to the Zoning Board of Appeals, the Gill Historical Commission, and the owner.
- c. A copy of the packet assembled in (b) above should also be sent to the Gill Historical Commission.

The Zoning Board of Appeals may waive one or more requirements for submittal as outlined in Section 23.D.2. (Required Documents) for projects 60 kW or less, upon written request by the applicant, if in the opinion of the Zoning Board of Appeals the scale or site conditions of the proposed project warrants such a waiver. In addition, the Zoning Board of Appeals may reduce the setback requirements of Section 23.H.1 for projects 60 kW or less, upon written request by the applicant, provided that such reduced setbacks meet the minimum setback requirements for the zoning district where the facility is located as outlined in Section 3 Dimensional Schedule. Such determination to waive one or more of the submittal requirements or to allow a reduction in setbacks shall be in the sole discretion of the Zoning Board of Appeals.

E. Site Control

The project proponent shall submit documentation of actual or prospective access and control of the project site sufficient to allow for construction and operation of the proposed solar electric installation.

F. Operation & Maintenance Plan

The project proponent shall submit a plan for the operation and maintenance of the Large-Scale Ground-Mounted Solar Electric Installation, which shall include measures for maintaining safe access to the installation, storm water and vegetation controls, as well as general procedures for operational maintenance of the installation.

G. Utility Notification

No large-scale, ground-mounted solar electric installation shall be constructed until evidence has been given to the Zoning Board of Appeals that the utility company that operates the electrical grid where the installation is to be located has been informed of the solar electric installation owner or operator's intent to install an interconnected facility. Off-grid systems shall be exempt from this requirement.

H. Dimension and Height Requirements

1. Setbacks

For Large-Scale Ground-Mounted Solar Electric Installations, front, side and rear setbacks shall be as follows:

- a. Front yard: The front yard depth shall not be less than 50 feet.
- b. Side yard: Each side yard shall have a depth of at least 50 feet.
- c. Rear yard: The rear yard depth shall not be less than 50 feet.

The required setback areas should not be included in the 1 acre maximum calculation for By-Right solar electric installations (see Section 23A.).

2. Appurtenant Structures

All appurtenant structures to Large-Scale Ground-Mounted Solar Electric Installations shall be subject to reasonable regulations concerning the bulk and height of structures, lot area, and setbacks as specified in Section 23H., open space, parking and building coverage requirements. All such appurtenant structures, including but not limited to, equipment shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other. Whenever reasonable, structures should be screened from view by vegetation and/or joined or clustered to avoid adverse visual impacts.

3. Height of Structures

The height of any structure associated with a Large-Scale Ground-Mounted Solar Electric Installation shall not exceed 35 feet.

I. Design and Performance Standards

1. Lighting

Lighting of solar electric installations shall be consistent with local, state and federal law. Lighting of other parts of the installation, such as appurtenant structures, shall be limited to that required for safety and operational purposes, and shall be reasonably shielded from abutting properties. Lighting of the solar electric installation shall be directed downward and shall incorporate full cut-off fixtures to reduce light pollution.

2. Signage

An identification sign with manufacturer/operator's name and emergency contact information shall be required at the facility site. Signs on Solar Electric Installations shall comply with Gill's sign bylaw.

Solar electric installations shall not be used for displaying any advertising except for reasonable identification of the manufacturer or operator of the solar electric installation.

3. Utility Connections

Reasonable efforts, as determined by the Zoning Board of Appeals, shall be made to place all utility connections from the solar electric installation underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider.

4. Roads

Access roads shall be constructed to minimize grading, removal of stone walls or trees and minimize impacts to environmental or historic resources.

5. Hazardous Materials

Hazardous materials stored, used, or generated on site shall not exceed the amount for a Very Small Quantity Generator of Hazardous Waste as defined by the DEP pursuant to MassDEP regulations 310 CMR 30.000 and shall meet all requirements of the DEP including storage of hazardous materials in a building with an impervious floor that is not adjacent to any floor drains to prevent discharge to the outdoor environment. If hazardous materials are utilized within the solar electric equipment then impervious containment areas capable of controlling any release to the environment and to prevent potential contamination of groundwater are required.

J. Safety and Environmental Standards

1. Emergency Services

The Large-Scale Ground-Mounted Solar Electric Installations owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local Fire Chief. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan. All means of shutting down the solar electric installation shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation.

2. Land Clearing, Soil Erosion and Habitat Impacts

Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the Large-Scale Ground-Mounted Solar Electric Installation or otherwise prescribed by applicable laws, regulations, and bylaws.

K. Monitoring, Maintenance and Reporting

1. Solar Electric Installation Conditions

The Large-Scale Ground-Mounted Solar Electric Installation owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, control of vegetation, and integrity of security measures. Site access shall be maintained to a level acceptable to the local Fire Chief and Emergency Management Director. The owner or operator shall be responsible for the cost of maintaining the solar electric installation and any access road(s).

2. Modifications

Any material modification which would increase the kW size, scale (footprint), or height of the solar electric installation by more than 5% after issuance of the required building permit shall require approval by the Zoning Board of Appeals.

L. Abandonment or Decommissioning

1. Removal Requirements

Any large-scale ground-mounted solar electric installation which has reached the end of its useful life or has been abandoned consistent with Section 23L.(2) of this bylaw shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the Zoning Board of Appeals by certified mail of the proposed date of discontinued operations and plans for removal.

Decommissioning shall consist of:

- a. Physical removal of all Large-Scale Ground-Mounted Solar Electric Installations, structures, equipment, security barriers and transmission lines from the site.
- b. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

- c. Stabilization or re-vegetation of the site as necessary to minimize erosion. The Site Plan Review Authority may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

2. Abandonment

Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar electric installation shall be considered abandoned when it fails to operate for more than one year without the written consent of the Zoning Board of Appeals. If the owner or operator of the Large-Scale Ground-Mounted Solar Electric Installation fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, then the Town retains the right, after the receipt of an appropriate court order, to enter and remove an abandoned, hazardous or decommissioned Large-Scale Ground-Mounted Solar Electric Generating Installation. As a condition of Site Plan or Special Permit approval, an applicant shall agree to allow entry to remove an abandoned or decommissioned installation. The cost for the removal will be charged to the property owner in accordance with the provisions of M.G.L. 139, Section 3A as a tax lien on the property

3. Financial Surety

The Zoning Board of Appeals may require that a performance bond, secured by a deposit of money, negotiable securities or other form acceptable to the Zoning Board of Appeals in the form selected by the Zoning Board of Appeals, be posted with the Town to guarantee compliance with the conditions of the permit. Such surety will not be required for municipal or state-owned facilities. The project proponent shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer. The amount shall include a mechanism for calculating increased removal costs due to inflation.

CHANGES TO OTHER SECTIONS OF THE EXISTING ZONING BYLAWS

Please note: Proposed additions are in *italics*
 Proposed deletions are [underlined and in brackets]

SECTION 2: USE REGULATIONS

		R	R-A	VC	VR
8.	Industrial Uses				
a.	Sawmills and Woodmills	SP	SP	SP	No
b.	Public Utilities:				
	I. [Solar,] Wind, or Hydro-Electric Generating Facilities	SP	SP	SP	No
	II. Other Non-nuclear Electric Generating Facilities	No	No	SP	No
	III. Transmission Lines Substations & Switchyards	SP	SP	SP	No
	<i>IV. Large-Scale Ground-Mounted Solar Electric Installations greater than 15 kW up to 250 kW that meet the requirements of Section 23¹</i>	<i>SP</i>	<i>SP</i>	<i>SP</i>	<i>SP</i>
	<i>V. Large-Scale Ground-Mounted Solar Electric Installations greater than 250 kW that meet the requirements of Section 23</i>	<i>SP</i>	<i>SP</i>	<i>SP</i>	<i>N</i>
c.	Commercial radio, television, microwave or other transmitting or receiving towers	No	SP	SP	No
d.	Light Industry	No	SP	SP	No
e.	Printing & Publishing	No	SP	SP	No
f.	Warehousing, bulk storage, and self-storage	No	SP	SP	No

1 – Large-Scale Ground-Mounted Solar Electric Installation greater than 15 kW up to 250 kW that meet the requirements of Section 23 that are located in the Solar Overlay District are allowed By-Right (Yes) but are subject to Site Plan Review.

SECTION 24: SITE PLAN REVIEW

B. Projects requiring Site Plan Review

6. Large-Scale Ground-Mounted Solar Electric Installations greater than 15 kW.