

## §145-28. Commercial Solar Photovoltaic Installations

**A. Purpose.** This bylaw is to regulate the development of Commercial Solar Photovoltaic Installations by providing standards for their placement, design, construction, operation, monitoring, modifications, and removal; to protect public health, safety or welfare in accordance with M.G.L. c. 40A, § 3; to protect and preserve farmland, forests, and open space as promoted by the Commonwealth of Massachusetts; to protect the scenic, natural, and historic resources of Belchertown; and to provide adequate financial assurance for the eventual decommissioning of such installations. A solar photovoltaic system that is for the exclusive purpose of providing electricity for a property that is primarily in agricultural use as defined under M.G.L. c. 40A, §3, and that produces electricity to be used solely for the benefit of the agricultural property is exempt.

**B. Applicability.** This bylaw applies to large-scale (minimum 250 kW rated nameplate capacity) solar photovoltaic installations constructed after the effective date of this bylaw. This bylaw also pertains to physical modifications that materially alter the type, configuration, or size of these installations or related equipment. The requirements of this bylaw shall apply to a commercial solar photovoltaic installation regardless of whether it is the primary use of property or an accessory use.

- (1) As-of-Right: The following commercial solar photovoltaic installations, as defined herein, are allowed as of right with site plan approval in all zoning districts:
  - (a) Any such installation over parking lots;
  - (b) Any such installation on existing structures.
- (2) Special Permit: Any CSPI not specified in (1) requires a special permit in all zoning districts from the Planning Board. For all special permit applications, site plan approval as described below is required, but shall not require a second public hearing, per §145-27D(3)(a).
- (3) Not Permitted: No commercial solar photovoltaic installation may be permitted as follows:
  - (a) Any CSPI of greater than 20 acres in fenced array area.
  - (b) Any CSPI requiring forest clearing greater than ten acres.
  - (c) Any CSPI on slopes of 8% or greater as averaged over 50 horizontal feet; the Planning Board may consider waiving this up to 12% based on site-specific parameters.
  - (d) Any CSPI on a parcel with inadequate frontage as defined in §145-2.

### C. Definitions.

**Commercial Solar Photovoltaic Installation (CSPI):** Any solar photovoltaic installation with 250 kW or greater rated nameplate capacity, even if its primary generation is not intended for supplying the grid.

**Rated Nameplate Capacity:** The maximum rated output of electric power production of the commercial solar photovoltaic installation in Direct Current (DC).

**Site Plan Approval Authority:** The site plan approval authority as designated by the Zoning Bylaw.

**Solar Photovoltaic Array:** an arrangement of solar photovoltaic panels.

## D. Requirements.

(1) **Site Plan Approval.** The construction, installation or modification of a CSPI, whether as-of-right or by special permit, shall be subject to site plan approval in accordance with the Zoning Bylaw. Together with the requirements of §145-27, the Site Plan Approval Authority shall consider and apply the requirements set forth in this bylaw in reviewing and deciding an application for site plan approval.

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

(b) **Required Documents.** The project proponent shall provide the following documents:

[1] A site plan showing:

- i. An existing conditions plan with property lines and physical features, including topography and roads, for the project site;
- ii. Proposed changes to the landscape of the site, including grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures, driveways, snow storage, and storm water management systems;
- iii. Blueprints or drawings of the solar photovoltaic 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;
- iv. One or three line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices;
- v. Documentation of the major system components to be used, including the PV panels, mounting system, and inverter;
- vi. Name, address, and contact information for proposed system installer;
- vii. Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;
- viii. The name, contact information and signature of any agents representing the project proponent; and

[2] Documentation of actual or prospective access and control of the project site (item (2) below);

[3] An operation and maintenance plan (item (3) below);

[4] Proof of liability insurance; and

[5] Description of financial surety that satisfies Section 10(b);

[6] There shall be a fence surrounding the solar array and ancillary equipment.

The Site Plan Approval Authority may waive documentary requirements as it deems appropriate upon the written request of the applicant submitted with an application for approval.

(2) **Site Control.** The project proponent shall submit documentation of actual or committed prospective access and control of the project site sufficient to allow for construction and operation of the proposed CSPI.

(3) **Operation & Maintenance Plan.** The project proponent shall submit a plan for the operation and maintenance of the CSPI. This plan shall include measures to maintain safe access to the installation, storm water controls, and general procedures for operational maintenance of the installation. The development is subject to the Belchertown Stormwater bylaw and regulations.

(4) **Utility Notification.** No CSPI shall be constructed until evidence has been given to the Site Plan Approval Authority that the utility company operating the electrical grid the installation is to be connected to has been informed of the CSPI owner or operator's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.

(5) **Dimension and Density Requirements.**

(a) **Setbacks**

For all CSPI, front, side and rear yard setbacks shall be as follows:

- [1] The front setback depth shall be at least 150 feet;
- [2] The side setback depth shall be at least 75 feet;
- [3] The rear setback depth shall be at least 75 feet;
- [4] The setback from any developed residential property shall be at least 200 feet.

(b) **Appurtenant Structures.** All appurtenant structures to a CSPI shall be subject to the requirements of the Zoning Bylaw concerning the bulk and height of structures, lot area, setbacks, 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 shaded from view by vegetation.

(6) **Design Standards.**

(a) **Lighting.** Lighting of CSPI shall be limited to night-time maintenance and inspections by authorized personnel, and shall comply with Dark Sky standards. There shall be no illumination without personnel on the site.

(b) **Signage.** A sign shall be erected identifying the owner and providing a 24-hour emergency contact phone number of the CSPI owner or operator. CSPIs shall not display any advertising. Any sign must comply with §145-22.

(c) **Day-time Visual Distraction.** The panel array shall be positioned to minimize glare on any residence or public way, and shall not create a visual obstruction on a public roadway, such as blocking intersections or creating blind curves.

(d) **Utility Connections.** Reasonable efforts shall be made to place all utility connections from the CSPI 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.

**(7) Safety and Environmental Standards.**

- (a) Emergency Services.** The CSPI owner or operator shall provide a copy of the project summary, electrical schematic, and an approved site plan, to the local fire department and the Building Inspector. Upon request the owner or operator shall cooperate with local emergency services in developing an emergency response plan, which may include ensuring that emergency personnel have immediate, 24-hour access to the facility. All means of shutting down the CSPI shall be clearly marked. The owner or operator shall identify a responsible person for public inquiries throughout the life of the installation, and shall provide a mailing address and 24-hour telephone number for such person(s).
- (b) Control of Vegetation and Animals, Including Insects.** Herbicides, rodenticides, or any other pesticides may not be used to control vegetation or animals at a CSPI. In a dual-use CSPI, the agricultural operator, but not the CSPI operator, is exempt from this restriction.
- (c) Project Visibility and Landscape Planting.** A CSPI shall be designed to minimize its visibility, including preserving natural vegetation to the maximum extent possible, blending in equipment with the surroundings, adding vegetative buffers to provide an effective visual barrier from adjacent roads and driveways, and to screen abutting dwellings. The owner of the CSPI shall not remove any naturally occurring vegetation such as trees and shrubs unless it adversely affects the performance and operation of the solar installation. A diversity of plant species native to New England shall be used for any screens and vegetative erosion controls. Use of exotic plants, as identified by the most recent version of the "Massachusetts Prohibited Plant List" maintained by the Massachusetts Department of Agricultural Resources, is prohibited. If deemed necessary by the Planning Board, the depth of the vegetative screen shall be 30 feet and will be composed of native trees and shrubs staggered for height and density that shall be properly maintained. Cultivars of native plants are acceptable. The open area of the site shall be seeded with a pollinator mix and maintained as bird and insect habitat. Mowing is to be done as little as possible to retain a natural functioning of the landscape. Plants shall be maintained and replaced as necessary by the owner of the CSPI for the life of the CSPI.
- (d) Land Clearing, Soil Erosion, and Wildlife Habitat.** Clearing of natural vegetation shall be limited to what is necessary for the construction, operation, and maintenance of the CSPI or otherwise prescribed by applicable laws, regulations, and bylaws. A CSPI may not be constructed on slopes exceeding 8% except as expressly authorized pursuant to §145-28B(3)(c), nor may cutting and filling be done to reduce natural slopes. Existing root structures and topsoil shall be maintained to the maximum extent practicable and provide for a minimum of 6" of topsoil on all exposed areas.

**(8) Mitigation Measures.**

- (a) Mitigation for Loss of Carbon Sequestration and Forest Habitat.** If forestland is proposed to be converted to a CSPI, the plans shall designate an area of unprotected land (that is, land that could otherwise be developed under current zoning) on the parcel or block of contiguous parcels under common ownership that comprise the project site, and of a size equal to four times the total area of such forest conversion. Such designated land shall remain in substantially its natural

condition without alteration except for routine forestry practices until such time as the CSPI is decommissioned and the site restored to forest. The special permit may be conditioned to effect and make enforceable this requirement.

- (b) Mitigation for Loss of Forest Habitat within the Installation.** If forestland is proposed to be converted to a CSPI, the plans shall show mitigation measures that create a wildflower meadow habitat within and immediately around the CSPI and a successional forest habitat in the surrounding areas managed to prevent shading until the installation is decommissioned and the site restored to forest. The special permit may be conditioned to effect and make enforceable this requirement.

**(9) Monitoring and Maintenance.**

- (a) Construction Monitoring.** The Site Plan Approval Authority may require a third-party inspector, selected by and acting under the direction of the Building Commissioner, to be employed to monitor compliance with all approvals and conditions during the CSPI's construction at the applicant's expense.
- (b) Maintenance.** The CSPI owner or operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, and integrity of security measures. Site access shall be maintained to a level acceptable to the local emergency services. The owner or operator shall be responsible for the cost of maintaining the solar photovoltaic installation and all access roads that are not public ways.
- (c) Annual Reporting.** The owner or operator of a CSPI shall submit an annual report demonstrating and certifying compliance with the Operation and Maintenance Plan, the requirements of this bylaw, and approvals granted hereunder, including but not limited to continued management and maintenance of vegetation, compliance with the approved plans and any permit conditions, continuation of liability insurance, and adequacy of road access. The annual report shall also provide information on the maintenance completed during the course of the year and the amount of electricity generated by the facility. The report shall be submitted to the Board of Selectmen, Planning Board, Fire Chief, Building Commissioner, Board of Health, and Conservation Commission (if a wetlands permit was issued) no later than 45 days after the end of the calendar year.
- (d) Modifications.** All material modifications to a CSPI made after issuance of the required building permit shall require approval by the Site Plan Approval Authority.

**(10) Discontinuance and Removal.**

- (a) Removal Requirements.** Any CSPI, or any substantial part thereof, not used for a period of one continuous year or more without written permission from the Site Plan Approval Authority, or that has reached the end of its useful life, shall be considered discontinued and shall be removed. Upon written request from the Building Inspector, addressed to the contact address provided and maintained by the owner or operator as required above, the owner or operator shall provide evidence to the Building Inspector demonstrating continued use of the CSPI. Failure to provide such evidence within thirty days of such written request shall be conclusive evidence that the installation has been discontinued. Anyone intending to decommission and/or remove such an installation shall notify the Site Plan Approval Authority and Building Inspector

by certified mail of the proposed date of discontinued operations and plans for removal.

The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. Removal shall consist of:

- [1] Physical removal of all parts of and appurtenances to the CSPI, including structures, equipment, security barriers and transmission lines;
- [2] Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations;
- [3] Stabilization or re-vegetation of the site as necessary to minimize erosion. The Site Plan Approval Authority may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.
- [4] Any site that was deforested for the CSPI, per §145-28B(3)(b), shall be restored to encourage native tree growth, including the planting of seedlings, if necessary, to establish growth. The cost of plant replacement shall be incorporated into the financial surety stipulated in §145-28D(10)(b) below.

If the owner or operator of the CSPI fails to remove the installation in accordance with the requirements of this section, the town shall have the right, to the extent it is otherwise duly authorized by law, to enter the property and physically remove the installation at the expense of the owner of the installation and the owner(s) of the site on which the facility is located. The Town may use the financial surety as stipulated in §145-28D(10) (b), below for this purpose.

- (b) Financial Surety.** Proponents seeking to construct and operate a CSPI shall provide to the Town, in a form determined by the Site Plan Approval Authority and prior to construction, a surety, through cash, an escrow account, bond or otherwise, to cover the cost of removal in the event the town must remove the CSPI and remediate the landscape, including reforestation. The amount and form of such surety shall be determined by the Site Plan Approval Authority. This surety will not be required for municipally- 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.