

Draft Solar Energy Bylaw

Amend the Zoning Bylaw by changing the Name and Definition in Section II, Definitions, from “Large-Scale Ground–Mounted Solar Photovoltaic Installation” to “Large Solar Energy System”, as follows:

LARGE SOLAR ENERGY SYSTEM – A commercial solar facility whose primary purpose is electrical generation for the wholesale electricity market. It includes service and access roads, equipment, machinery and structures utilized in connection with the conversion of solar energy into electrical power and storage thereof, with a rated nameplate capacity greater than 250kW

Amend the Zoning Bylaw by adding a new section 200-5.21 as follows:

§ 200-5.21. Large Solar Energy Systems

- A. Purpose:** The purpose of this section is to promote the development and maintenance of large solar energy systems by providing standards for the placement, design, construction, operation, monitoring, modification, and removal of such facilities; to protect public safety; to minimize impacts of large solar systems on the character of neighborhoods, property values, and the scenic, historic and environmental resources of Charlton; and to provide adequate financial assurance for the decommissioning of such facilities.
- B. Applicability:** This bylaw applies to all Large Solar Energy Systems and their energy facilities and to any physical modifications that materially alter the type, configuration, or size of these facilities or related equipment. The Planning Board shall approve no more than 30 large solar systems town-wide and no system shall exceed 5 MW. This limit shall not include municipal systems on Town owned parcels.
- C. General Requirements:**
- (1) Special Permit and Site Plan Review:** All Large Solar Energy Systems, where allowed, require a special permit and site plan approval by the Planning Board prior to construction, installation, or modification as provided in this section. If applicable, the applicant shall file concurrently with the Conservation Commission.
- (2) Required Documents:** In addition to the submission requirements for Site Plan Review in this Bylaw, the applicant shall provide the following documents:
- (a) Plans and drawings of the solar energy system signed and stamped by a Professional Engineer licensed to practice in Massachusetts showing the proposed layout of the system.

- (b) Technical specifications of the major system components, including the solar arrays, mounting system, electrical equipment and other supporting equipment and structures. No arrays/panels shall exceed a height of eight (8) feet. Accessory battery units and the cooling equipment shall not exceed ten (10) feet and are limited to one 50 feet long x 15feet wide x 10 feet tall unit per 2 MW of system capacity.
- (c) Color renderings not less than 1 inch = 50 feet showing site line views from abutting streets and properties of the proposed installation.
- (d) Color aerial I view both before and after proposed installation showing tree coverage and buffer zone not less than 1 inch = 50 feet.
- (e) A glare analysis and proposed mitigation, if any, to minimize the impact of glare on affected properties and roads.
- (f) The name, addresses, and contact information of the owner, proposed installer, operator and emergency contact person (located within 1 hour of Charlton) posted on site, pre and post construction.
- (g) Proof of actual or proposed control of access ways and the project site sufficient to allow for installation and use of the proposed facility, including existing and proposed easements.
- (h) Proof of liability insurance.
- (i) Financial surety that satisfies Section H of this section.
- (j) Operation & Maintenance Plan: The applicant shall submit a plan for the operation and maintenance of the Large Solar Energy System along with a signed agreement with a maintenance company. This plan shall include measures for maintaining year-round safe access for emergency vehicles, snow plowing, storm water controls, and general procedures for operating and maintaining the energy facility including the fencing, fire access roads and landscaping. Use of pesticides and herbicides is prohibited.
- (k) Utility Notification and Interconnectivity Agreement: The applicant shall submit evidence satisfactory to the Planning Board that the utility company has been informed in writing of the intent to install a solar energy facility and that the utility company has responded in writing to the interconnection notice. (Off grid systems are exempt from this requirement.)

- (l) If the applicant enters into a purchase agreement for the sale of energy produced from the project, the Assessor's office shall be notified and copied on the signed agreement. The Assessor's office may recommend that the Planning Board include conditions in its decision regarding the purchasing contract.
- (m) If the project would otherwise be exempt from the payment of personal or real property taxes, the applicant shall enter into a tax agreement or payment in lieu of taxes agreement that provides for an equivalent amount of tax revenue to the Town as determined by the Board of Assessors.

(3) Design, Dimensional and Density Requirements:

- (a) Setbacks and Height Restrictions: The project and its facilities including appurtenant structures (including but not limited to equipment shelters, storage facilities, transformers, fences and substations) shall have a setback from front, side and rear property lines and public ways of at least one hundred feet (100') and if the facility abuts a residential zone, the setback shall increase to two hundred feet (200'). The Planning Board may reduce visual mitigation planting requirements if sufficient natural vegetation exists in the setback area. Solar panels and their support grids shall not exceed a height of eight feet (8') as measured from the ground.
- (b) Each facility shall provide the following:
 - [1] Fencing:
 - a. Shall be not greater than eight feet (8') in height and shall surround the entire field.
 - b. Shall be placed 4 inches (4") off the ground to allow migration of wildlife.
 - c. Solid fencing may also be required at the discretion of the Planning Board.
 - d. Fencing shall consist of a commercial grade, high quality (HF40 or better) framework, galvanized chain link, ends, corners and posts. The Planning Board may require additional measures such as coated galvanized fencing and screening bands or aluminized chain link.
 - [2] Emergency Access System (EAS) padlock or box shall be provided at each gate.
 - [3] Signage with emergency contact information.
 - a. A minimum of 24 inch x 36 inch white background and black lettering.
 - b. Street name and number.
 - c. Owner of solar field.

- d. 24 hr emergency contact name and phone number.
 - [4] Low growth ground cover routinely maintained no closer than 6" of lowest point on solar panels.
 - [5] Perimeter access road of eighteen feet (18') in width, consisting of a hard pack and gravel base, for emergency vehicles around the entire perimeter of the solar field, placed outside of the fencing.
 - [6] Training for emergency services shall be provided in regards to shutdown procedures.
- (c) Buffering/Visual Mitigation: The visual impact of the project including all appurtenant structures shall be visually mitigated. Structures shall be buffered/shielded from view and/or clustered to avoid adverse visual impacts as deemed necessary by the Planning Board using landscaping and natural features as appropriate to accomplish the mitigation. Evergreens shall be at least 6 feet to 8 feet tall at time of planting. Plant choices to incorporate habitat forage plantings for pollinators is encouraged. Water bags shall be filled as needed for three growing seasons to assure the plants' survival. Dead or diseased plants shall be replaced. A proposed project in a residential zone shall provide a buffer with a minimum width of two hundred feet (200') measured from the fence of the proposed solar project to the property line of all abutting properties.
- (d) Lighting: Lighting shall be limited to that required for safety and operational purposes, and shall not be intrusive in any way on abutting properties. Lighting shall incorporate full cut-off fixtures to reduce light pollution.
- (e) Signage: No signage is permitted except the emergency sign required in Section C.3(b)(3) above.
- (f) Utility Connections: All utility connections within two hundred feet (200') of a public way shall be underground. The Planning Board may grant a waiver depending on soil conditions, shape or topography of the site. Electrical transformers/cabinets shall follow visual mitigation practices.
- (g) Land Clearing: Clearing shall be limited to 30% of the total parcel as determined by the Planning Board during Site Plan Review for the construction, operation, and maintenance of the solar energy system.
- (h) Environmental Impacts: Proposed structures (including panels) shall be integrated into the existing terrain and surrounding landscape by: minimizing impacts to wetlands,

steep slopes, and hilltops; protecting visual amenities and scenic views; minimizing tree, vegetation, and soil removal; and minimizing grade changes.

(i)

Noise:

Noise generated by solar energy installations, cooling fans, associated equipment and machinery shall conform at a minimum to applicable state and local noise regulations, including the DEP's Division of Air Quality noise regulations, 310 CMR 7.10.

In addition, for the purposes of this bylaw, a source of sound will be considered in violation of this section, if the source increases the broadband sound level by more than 5db(C).

D. Emergency Services: The operator shall provide a copy of the operation and maintenance plan, electrical schematic, and site plan to the Charlton Fire and Police Departments. The operator shall cooperate with local emergency services in developing an emergency response plan; this plan shall be reviewed annually with local emergency officials and revised as necessary. All means of shutting down the solar energy facility shall be clearly marked. The premises shall identify a qualified contact person (located within a one hour radius of the site) to provide assistance during an emergency. The operator shall change the contact information immediately and so notify the Charlton Fire and Police Departments whenever there is a change in the contact person.

E. Post Approval Activities:

(1) The operator shall maintain the facility in good condition. Maintenance shall include, but not be limited to, painting, structural repairs, equipment inspections for fluid leakage, tree planting health, and integrity of fencing and other security measures. The operator shall be responsible for maintaining access for emergency vehicles that is determined to be adequate by the Charlton Fire and Police Departments, and any other local emergency services, and for maintaining adequate access for any maintenance equipment.

(2) The operator shall provide the Planning Board with a yearly Operations and Maintenance report of the operation status including but not limited to efficiency of energy production. This report shall be submitted no later than 45 days after the end of the calendar year. The applicant shall incur the cost for the Town to hire an engineer to review the report. If said report is not submitted, the Town may consider this as evidence the facility has been abandoned and the Planning Board may take action as described in Section G.

F. Modifications: Modification of an approved facility that the Planning Board deems significant will require a new site plan approved by the Board prior to issuance of a building permit.

G. Discontinuance, Decommissioning, Abandonment and Removal:

(1) Removal Requirements: Any project that has reached the end of its useful life, or is operating at less than 25% of its original MW capacity or has been discontinued, decommissioned, or abandoned, as defined below in Section H, shall be removed. The owner or operator shall physically remove the facility within one hundred fifty (150) days after the date of discontinuance or abandoned operations or decommissioning in compliance with the requirements of the Planning Board. The owner or operator shall notify the Planning Board and Board of Selectmen by certified mail of the proposed date of discontinued operations or decommissioning and submit the plans for removal.

(2) Removal: Removal shall consist of physical removal of all of the equipment from the site, including, but not limited to, the solar arrays, structures, foundations, equipment, security barriers, and electrical transmission lines.

(3) Stabilization or re-vegetation of the site is necessary to minimize erosion. The Planning Board will work with the Conservation Commission to require the applicant to return the property to pre-construction condition. This may include plantings to ensure re-vegetation of fields to prevent run-off and wetland impacts. The Planning Board may waive this requirement if the applicant submits a proposed re-use plan for the site.

H. Abandonment: The system shall be considered abandoned upon 1) notice by the owner or operator to the Planning Board, as provided above in Section G(1), stating a proposed date of discontinuance or decommissioning; 2) when the solar facility fails to operate at 25% of the original capacity; or 3) operations are discontinued for more than one year without the written consent of the Planning Board. If the owner or operator fails to remove the energy facility in accordance with the requirements of Section G above, as required by May 1st of each year or within one hundred fifty (150) days of abandonment, discontinuance or the proposed date of decommissioning, the Town may, to the extent it is otherwise duly authorized by law, enter the property and physically remove the facility.

H. FINANCIAL SURETY: Prior to issuance of a building permit, the applicant shall provide a form of surety through a cash deposit, bond or Stand by Letter of Credit. The applicant shall submit a fully inclusive estimate, prepared by a professional engineer. This estimate shall include the costs associated with removal and disposal of all materials including fluids and hazardous materials, without including any potential salvage and recycling estimates. The

Planning Board and Town Treasurer shall accept the form and amount of surety. Surety shall include an escalator for calculating increased removal costs due to inflation.

I. Special Permit Criteria: The Planning Board may approve an application for a large solar energy system if the Board finds that the system complies with the Site Plan Review and Approval Criteria in §200-7.1(D)(7), and with the Conditions for Granting Special Permits in §200-7.2(E). Large solar energy systems shall also satisfy the following additional criteria:

- (1) Environmental features of the site are protected, and surface runoff will not cause damage to surrounding properties or increase soil erosion and sedimentation of near-by streams and ponds.
- (2) The visual impact of the system on the immediate abutters and on the nearby neighborhood has been effectively neutralized through appropriate design, landscaping, or structural screening.
- (3) The applicant has provided a means to assure the Town receives revenue based upon the full valuation of the system as determined by the Board of Assessors.
- (4) The Planning Board may also impose conditions as it finds reasonably appropriate to safeguard the Town or neighborhood including, but not limited to, screening, lighting, noise, fences, modification of the exterior appearance of electrical cabinets, battery storage systems, or other structures, limitation upon system size, and means of vehicular access or traffic features.

J. SEVERABILITY:

In the event one or more of the provisions of this section are deemed invalid by the Attorney General or a court of competent jurisdiction, then all remaining provisions shall remain in full force and effect.

Amend the Use Regulation Schedule, line 6t, from permitted in every district by right with site plan review, to require special permits for the use in certain districts and to prohibit the use in other districts, as follows:

	A	R-40	R-SE	NB	V	CB	IG	BEP
(t) Large solar energy system	SP	N	N	N	N	SP	SP	SP

Currently named Large-Scale Ground-Mounted Solar Photovoltaic Installations

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