

Chapter 246

DRAFT

NON-RESIDENTIAL PHOTOVOLTAIC SOLAR ENERGY SYSTEMS
(PSES)

AN ORDINANCE IN AMENDMENT OF CHAPTER 134 OF THE CODE OF ORDINANCES, TOWN OF HOPKINTON, ENTITLED, “ZONING”

The Town Council of the Town of Hopkinton hereby ordains:

SECTION 2 - DEFINITIONS

Section 2, entitled “**DEFINITIONS**” of the Code of Ordinances of the Town of Hopkinton, is hereby amended by adding the following:

Abandonment – When the use of a property has ceased and the property has been vacant for 12 months, abandonment of use will be presumed. This excludes temporary or short-term interruptions during periods of maintaining or improving the property or a solar energy system.

Freestanding Solar Panels - Solar collectors not attached to and separate from any existing structures on the site.

Photovoltaic Solar Energy System (PSES) – All equipment, machinery and structures utilized in connection with the conversion of solar energy to electricity, including but is not limited to, distribution lines, transmission, storage, collection and supply equipment, substations, transformers, inverters, service and access roads, and solar energy producing panels; a SEF may include solar energy generation, which is located at a commercial, industrial, agricultural, institutional, or public facility. These are systems whose main purpose is to generate energy for sale back into the energy grid system, rather than being consumed on the site.

Rated Nameplate Capacity – The maximum rated output of electric power production equipment. This output is typically specified by the manufacturer with a “nameplate” on the equipment.

Solar Access – A property owner’s right to have sunlight shine on the owner’s land. The enforcement of this right is through the Zoning Ordinance that establishes height and setback requirements.

Solar Energy Equipment – Items including but not limited to, solar panels, lines, pumps, batteries, mounting brackets, framing and/or foundations used for or intended to be used for, the collection of solar energy on municipal or commercial properties; any device associated with a solar energy system.

Solar Energy Panel – A structure containing one or more receptive cells that convert solar energy into usable electrical energy, heat water, produce hot air, or perform any other similar function by way of a solar energy system; a device that utilizes modules and cells to collect the sunlight and convert to direct current (DC) voltage.

Solar Glare – The effect produced by light reflecting from a solar panel with intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

SECTION 5.3 – Photovoltaic Solar Energy Systems

PURPOSE AND APPLICABILITY

A. Purpose

It is the purpose of this ordinance to promote the safe, effective and efficient production of electricity by means of Photovoltaic Solar Energy Systems (PSES) in order to lessen the hazards posed by other energy sources that are used to produce the electricity distributed through the energy grid.

B. Findings

There is a need to regulate PSES due to the potential adverse impact they may have on the aesthetics, public health, and safety of the Town.

C. Intent

This ordinance intends to provide standards for the placement, design and construction, monitoring, modification and removal of PSES to further public safety and minimize impact on scenic, natural and historic resources of the Town of Hopkinton.

The Town of Hopkinton encourages PSES in locations which provide the greatest potential energy generation while actively striving to minimize the visual impacts of these systems from streets and neighboring properties.

D. Applicability

The following requirements apply to photovoltaic solar energy systems whose main purpose is to generate energy for sale back into the energy grid system. This ordinance applies to all PSES to be constructed after the effective date of this ordinance. PSES constructed prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance. Any upgrade, modification, or structural change that materially alters the size or placement of an existing PSES shall comply with the provisions of this Ordinance.

E. Severability

Should any section, subdivision, clause, or phrase of the Ordinance be declared by the courts to be invalid, the validity of the Ordinance as a whole, or in part, shall not be affected other than the part invalidated.

F. Exemptions

The Planning Board shall have the authority to waive and/or modify any of the provisions of this Ordinance within their review process for PSES located on town-owned the following properties:

AP 13 Lot 27 Stubtown Road

AP 24 Lot 172 Laurel Street

AP 24 Lot 173 West Street

AP 25 Lot 23 West Street

PHOTOVOLTAIC SOLAR ENERGY SYSTEMS (PSES) REQUIREMENTS

A. General Requirements

1. The minimum front, side and rear yard depth and the maximum building height applicable to permitted uses in the applicable zoning district shall apply to photovoltaic solar energy systems. Notwithstanding, the Planning Board shall have the authority to increase the building setbacks pertaining to PSES by as much as one hundred percent above the requirements for the underlying zone in instances where PSES abut residential zones.
- ~~1.2.~~ All electrical connection and distribution lines within the facility shall be underground unless physical constraints to the land make underground lines impossible or impractical, as determined by the town engineer or building official. Electrical equipment between the facility and the utility connection may be above ground if required by the utility
- ~~2.3.~~ To prevent unauthorized access, the ground level facility shall be enclosed by a vinyl-coated black chain link perimeter fence of no less than six (6) feet high, elevated six (6) inches above ground level to allow for the passage of small animals.
- ~~3.4.~~ Exterior lighting within the facility shall comply with all Hopkinton lighting ordinances and be the minimum necessary. All fixtures shall be full-cut off fixtures approved by the International Dark Sky Association
- ~~4.5.~~ The maximum height of ~~the ground-mounted panels~~ shall be no greater than twelve (12) feet, as measured from the ground surface. The panels shall be constructed so that rows of panels should be tangent to a straight or curved line (not wavy or uneven).
- ~~5.6.~~ No PSES shall be erected, constructed, installed or modified as provided in this Ordinance without first obtaining development plan approval from the Planning Board in accordance with the Development Plan Review Ordinance.
- ~~6.7.~~ The construction and operation of all such proposed PSES shall be consistent with all applicable local, state and federal requirements, including but not limited to, all applicable safety, construction, environmental, electrical, communications and aviation requirements. The applicant shall consult with the Fire Marshall prior to the submission of any material to the Planning Board for review. The proposed PSES shall be designed and constructed in accordance with all applicable fire codes, as such may be interpreted by the Fire Marshall. The construction of any PSES will not be allowed until the design has been approved by the Fire Marshall.
- ~~7.8.~~ All applicants must provide documentation that the installation of the PSES is in accordance with the manufacturer's directions. Certificates of Design Compliance shall be submitted with the Land Development plan. The development plan shall clearly specify the method to be used to anchor the solar array to the ground.
9. The establishment of the proposed PSES will not prevent the normal and orderly use, development or improvement of the adjacent property, for uses permitted in the district.
10. The PSES shall be designed to prevent the misdirection of concentrated solar radiation onto nearby properties, public roads, or other areas accessible to the public. Any glare from a solar panel shall be directed away from an adjoining property.

11. The applicant shall avoid any disruption, interference with, or loss of radio, telephone, television or similar signals and shall mitigate any such harm caused by the PSES.
12. All precautions must be taken to protect neighboring properties from exposure to any radiation produced as a result of the PSES, including but not limited to, high levels of radio frequency electromagnetic radiation.
13. Solar panels and all associated equipment are considered structures. The entirety of all structures and associated equipment constituting the PSES shall cover no more than 75% of Commercial and Manufacturing zoned parcels. If the parcel is zoned RFR-80, and the applicant is seeking to re-zone the parcel, no more than 30% of the parcel shall be covered. For purposes of a PSES, lot coverage includes all of the land area upon which all structures and associated equipment are placed; such land area includes all of the land lying directly below the solar panels and associated equipment as well as the interstitial spaces between the solar panels. During the pre-application phase of Development Plan Review, the Planning Board reserves the right to adjust the allowable coverage percentage based upon the unique characteristics of the parcel and in a manner that is consistent with the Town's Comprehensive Plan, with the intent to balance environmental and aesthetic concerns, as well as the rights of the property owner to develop the parcel.
14. Submissions to the Planning Board for review shall include a noise study as part of their application. The noise study shall assess the potential impacts upon any off-site noise receptors due to sound emitted by the PSES and demonstrate that the installation, as designed, does not yield a noise level that exceeds forty (40) decibels at the property line; A PSES that exceeds this standard shall not be permitted by the Town of Hopkinton.
15. Before construction begins, the PSES owner will enter into a signed and notarized Stormwater Facility Maintenance Agreement with the town that mirrors the sample agreement developed by the Rhode Island Department of Environmental Management.

B. Roof Mounted Solar Panel Requirements

1. Roof mounted solar energy equipment shall be mounted so as not to exceed the maximum building height specified for the underlying zoning district.
2. Equipment frames, support structures, and related rooftop equipment shall be painted to match the predominant color of the roof.
3. The existing roof structure and the weight of the PSES shall be taken into consideration when applying for a PSES.
4. Roof mounted systems need to be sited so as to provide all proper clearances from other building roof penetrations, including but not limited to, plumbing stacks, elevator shafts and chimneys, and shall conform to the Town's Building Code.
5. If a PSES that is to be mounted to, or is constructed on top of, an existing building, detailed calculations and engineered drawings of the mounting must be provided.
6. Front or road facing installation may be permitted by the Planning Board if the applicant indicates valid reasons as to why this is the only effective or possible means for utilizing solar energy on the property. Such information shall be certified by a

licensed and authorized design professional consistent with the appropriate statutes governing design professionals in the State of Rhode Island.

7. Flat roof elements shall not have equipment or support structures that are visible from public streets, public facilities or neighboring properties and shall be placed as close to the roof plane as possible. ~~The equipment shall be screened with an architecturally compatible structure.~~
8. Solar panels on a flat roof shall be angled such that they do not exceed the maximum building height requirement for the district in which the PSES is located.
9. Flush mounting is preferred on pitched roofs and shall not project vertically above the peak of the roof and/or no more than the height requirements for the zone in which they are located. Equipment and support structures shall not extend beyond the existing roof area or above the top of the wall or existing roof peak of the building on which they are mounted. Panels shall not be located within three (3) feet of any peak, eave, or valley of the roof, to maintain pathways of accessibility. In no instance shall any part of the roof mounted solar panels extend beyond the edge of the roof.
10. Systems located on a sloped roof shall provide, as part of their permit application, evidence of design review and structural certification if the slope of the panel differs from the roof pitch. All panels on commercial roofs shall provide this information regardless of slopes, as well as any residential roof with greater than fifty percent (50%) coverage.

C. PSES Design Guidelines

1. Land Clearing and Environmental/Cultural Impact

All PSES shall be constructed and operated in a manner that minimizes any adverse visual, safety and environmental impacts. The design of the PSES shall use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment. The proposed PSES shall be designed and will be constructed so that ground leveling is limited to those areas needed for effective solar energy collection and so that the natural ground contour is preserved to the greatest extent practical. In instances where a parcel is rezoned from residential to commercial or manufacturing use for the purpose of accommodating a PSES, existing soil conditions will be maintained to the maximum extent practicable. No blasting will be conducted on the parcel in conjunction with any activity related to the construction of a PSES, including land preparation.

Clearing of ~~natural~~ any existing vegetation on the subject parcel for the purpose of constructing, operating and maintaining a PSES shall be limited to a maximum of 40% of the total area of the parcel, that which is necessary for the construction, operation and maintenance of the PSES and as otherwise prescribed by applicable laws, regulations and ordinances. Clearing of any existing vegetation within the front, rear and side yard setback areas is prohibited, unless explicitly approved by the Planning Board. The PSES and equipment shall not have a significant impact upon the soils, water resources, air quality or other natural resources of the land or surrounding area.

The applicant will submit an Environmental Impact Statement that includes a narrative on the PSES impact on wildlife migration as well as any other resultant habitat changes.

The applicant, through the use of a Soil Erosion and Sediment Control Plan and a Stormwater Management Plan, will clearly state how erosion will be mitigated completely contained on the parcel during construction and prior to the establishment of permanent vegetation. Surface water runoff will be completely contained on-site.

Clearing existing vegetation from the area proposed to site the PSES is not permitted prior to the applicant executing an interconnection agreement with the Public Utility receiving a determination from the Public Utility that the proposed project is feasible as well as an assurance from the Public Utility that interconnection approval will be granted by the Public Utility at the appropriate time, which is at the completion of the construction of the project.

Tribal Cultural Impacts: Pursuant to Hopkinton's 2010 Comprehensive Plan – page 26, Traditional Cultural Properties or Places (TCPs) can be eligible for inclusion in the National Register of Historic Places because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community Register Bulletin 38, US Department of Interior). “TCPs are reminders of the spiritual practices of Native Peoples that are considered by the Tribe(s) to be irreplaceable and they may be threatened by development. There are places in Hopkinton that may be of ceremonial importance to the Narragansett Indian Tribe. The Town of Hopkinton will make efforts to work with the Narragansett Indian Tribal Historic Preservation Office (NITHPO) and the Rhode Island Historical Preservation and Heritage Commission (RIHPHC) to identify and protect important ceremonial sites in Town.”

On solar projects the NITHPO shall be afforded the opportunity by the Town Council to walk proposed development parcels and pursuant to 36 CFR 800.4(c)(1) to identify and assess “the eligibility of historic properties that may be of religious and cultural significance to the them.”. Upon identification of such properties, the NITHPO or its research Trust and its designated sub-contractors (mappers, historical researchers or ground penetrating radar specialists – if required) shall be funded by the project proponent to survey the project's area of potential effect and identify any ceremonial features and ceremonial alignments that may require avoidance planning. Such avoidance planning will be factored into the overall plan developed by the project proponent and the Town.

2. Appurtenant Structures

- a. Appurtenant structures, including but not limited to, equipment shelters, storage facilities, transformers, inverters and substations, shall be architecturally compatible with each other.
- b. All appurtenant structures and equipment shall be screened from view by vegetation and joined or clustered to avoid adverse visual impacts to any adjacent property that is residentially zoned or used for residential purposes.

- c. The screen shall consist of deer resistant shrubbery, trees, or other non-invasive plant species which provides a visual screen from the point at which the PSES inputs power to the grid through decommission of the project. The visual screen shall be maintained in a manner consistent with the original approval that effectively shields the project until the PSES is decommissioned. In lieu of a planting screen, a decorative fence meeting the requirements of the Zoning Ordinance may be used; all plants and other material used for screening shall be no less than six feet in height at the time of installation.
- d. Any equipment that utilizes fluid shall be outfitted with a containment mechanism sufficient to contain at least 125% of said fluid, and which prevents said fluid contact with the ground.

3. Lighting and Signage

- a. Lighting of the PSES shall be limited to that required for safety, and operational, and maintenance purposes.
- b. The manufacturers' identification, installers' identification, equipment information, appropriate warning signage, and indication of ownership, shall be posted on or near the panels in a clearly visible manner and shall comply with the prevailing sign regulations.
- c. A PSES shall not be used to display advertising, including signage, or other ancillary materials. Reasonable identification of the manufacturer or operator of the system shall be allowed. In no case shall any identification be visible from a property line.

D. Planning Board Review

The prospective owner of a proposed PSES shall be the only party eligible to submit an application to the Planning Board seeking Development Plan approval for a proposed PSES. The prospective owner of a proposed PSES shall be referred to herein as the applicant.

~~In addition to the requirements under the Development Plan Review Ordinance, the applicant shall provide the Planning Board with the following information:~~

- ~~1. Documentation, in the form of an affidavit from the property owner, evidencing applicant control of the project site for the purpose of constructing, operating and maintaining a PSES.~~
- 2. 1. The Planning Board will review PSES proposals in accordance with the process specified in the Development Plan Review Ordinance. The applicant shall prepare and submit all of the required material in conformity with the specifications of the Development Plan Review Ordinance. All maps and plans submitted to the Planning Board must be prepared by the appropriate Rhode Island licensed design professional, taking particular care to note on the proposed development plan explicit specifications for the origin and precision of the data presented. A one (1) inch equals two hundred (200) feet plan, prepared, stamped and signed by a currently licensed and authorized design professional consistent with the appropriate statutes governing design professionals in the State of Rhode Island, of the proposed PSES site with contour intervals of no more than ten (10) feet, showing the following:
 - 2. Solar arrays cannot be established in Historic Districts. All historic views from historic properties must be considered and saved, if possible.

- ~~_____ (a) property lines for the site parcel and adjacent parcels within five hundred _____ (500) feet;~~
- ~~_____ (b) an outline of all existing buildings, including purpose (e.g. residence, garage, _____ etc.) on site parcel and all adjacent parcels within five hundred (500) feet, _____ including distances from the PSES to each building shown;~~
- ~~_____ (c) location of all public and private roads on the site parcel and adjacent parcels _____ within five hundred (500) feet, and proposed roads or driveways, either _____ temporary or permanent;~~
- ~~_____ (d) proposed location and design of the PSES, including all panels, ground _____ equipment, appurtenant structures, transmission infrastructure, access, _____ fencing, exterior lighting, etc.; and~~
- ~~_____ (e) existing areas of tree cover, including average height of trees, on the site _____ parcel and adjacent parcels within five hundred (500) feet.~~

~~Should the applicant propose a location or configuration other than one that best meets the intent of the design standards, the applicant shall have the burden of proof to provide calculations which demonstrate that meeting the intent of the standards will result in either an increase in system cost in excess of twenty percent (20%), or a decrease in system efficiency in excess of twenty percent (20%), when compared to the location of configuration proposed by the applicant.~~

In addition to the requirements under the Development Plan Review Ordinance, the applicant shall provide the Planning Board with the following information:

1. Site Control

~~The applicant shall submit dDocumentation, in the form of an affidavit from the property owner, evidencing applicant control of the project site for the purpose of constructing, operating and maintaining a PSES.~~

2. Operation and Maintenance Plan

The applicant shall submit a plan to the Planning Board for the operation and maintenance of the PSES, including any and all access roads. The Operation and Maintenance Plan shall include provisions for emergency shutdown. The applicant shall maintain a current phone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project.

~~The Operation and Maintenance Plan will include a list of all chemicals proposed to be used in conjunction with the operation and maintenance of the PSES. No chemicals, solvents or herbicides, excluding water, will be used in the operation and maintenance of the PSES unless approved by the Planning Board.~~

~~Throughout the life of the project, the owner of the PSES will provide copies of all correspondence with Federal and State agencies pertaining to project permits and regulatory requirements.~~

3. Landscape Plan

~~A The applicant shall submit a stamped and signed landscape plan, prepared by a Registered Landscape Architect licensed and currently authorized to practice in the State of Rhode Island, stamped and signed by a currently licensed and authorized design professional consistent with the appropriate statutes governing design professionals in the State of Rhode Island, indicating all proposed changes to the landscape of the site,~~

including temporary or permanent roads or driveways, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures. The landscape plan shall specify the method to be employed for mitigating- containing all erosion on the site during as well as after construction.

The landscape plan will specify a seed mixture meeting the criteria of a low and slow-growing mix in re-seeding a site following construction. A long-term maintenance plan ensuring the livelihood of the Pollinator Habitat shall be included in the Operations and Maintenance Plan for approval by the Planning Board. The landscape plan shall specify method of erosion control to be used to ensure proper grass establishment. No topsoil shall be removed from the site.

4. As-built Plan

The applicant shall submit an as-built plan, prepared, stamped and signed by a Registered Professional Land Surveyor, licensed and currently authorized to practice in the State of Rhode Island, showing the actual location of any installed solar energy equipment. If the equipment is not installed as permitted, the Town may order its removal and/or its relocation as appropriate

5. Financial Security

The applicant shall establish and maintain in effect a financial security instrument covering the PSES from commencement of operations through decommission completion. Such instrument may be an escrow account, cash or surety bond, or other form acceptable to the Planning Board. The security must be sufficient to cover the complete cost of removal in the event the Town or its contractor must remove the PSES, in a form and amount determined to be reasonable by the Planning Board, but in no event shall the security exceed the one hundred twenty-five percent (125%) of the estimated cost of removal.

The applicant shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer, licensed in the State of Rhode Island. The cost estimate shall include a mechanism for estimating the anticipated increased costs over the lifespan of the facility. The amount of security shall be based on the estimated cost of removal at the end of the useful life of the facility.

Financial security is not required for municipally owned facilities.

The applicant shall establish and maintain in effect general liability insurance covering the land, equipment and any access drives associated with the proposed PSES until decommission of the PSES is completed.

E. POST PSES APPROVAL REGULATIONS

1. Maintenance

The applicant shall submit an annual Operation and Maintenance report to the Planning Department detailing the present condition of the PSES as well as a forecast for future operations covering the likely operational life span of the PSES.

The applicant shall maintain the PSES in a neat, clean, operable condition at all times, ensuring the structural and technical integrity of the facility. All maintenance shall be performed in a timely manner. Maintenance shall include, but not be limited to, structural repairs and integrity of security measures.

Site access shall be maintained to a level acceptable to the Fire Chief and Emergency Medical Services.

The applicant shall be responsible for the cost of maintaining the PSES and any access road, unless adapted as a public way, and shall bear the cost of repairing any damage occurring as a result of operation and construction.

2. Abandonment

Absent notice of a proposed date of decommissioning, the PSES shall be considered abandoned when the PSES fails to operate for more than one (1) year.

Any PSES that has been abandoned or is in a state of disrepair and has not developed a plan for reconditioning and/or replacement of existing equipment to modernize and extend the useful life of the facility, shall be decommissioned.

3. Decommissioning

Decommissioning shall include the total removal of the PSES, including any underground and above-ground utilities, structures, any other associated facilities, and the cleaning and restoration of the site.

a. If decommissioning has not been completed within one hundred eighty (180) days of abandonment or the proposed date of decommissioning, the Town shall give written notice to the landowner and/or PSES owner and operator to accomplish the decommissioning within thirty (30) days.

b. If the decommissioning has not been completed within thirty (30) days of said written notice by the Town, the Town and/or the Town's representative shall have the authority to enter the property and decommission the PSES, charging the landowner and/or PSES owner and operator for all costs and expenses, including reasonable attorney's fees for collection.

4. Removal Requirements

When the PSES is scheduled to be decommissioned, the applicant shall notify the Town by certified mail of the proposed date of discontinued operations and plans for removal. The owner/operator shall physically remove the PSES no more than one hundred eighty (180) days after the discontinued operations. ~~At the time of removal, the PSES site shall be restored to the state it was in before the facility was constructed.~~ Decommissioning shall consist of:

- a. Physical removal of all solar energy panels, mounting systems, structures, equipment, security barriers and transmission lines from the site – including below grade foundations, transmission lines, and other structures;
- b. Disposal of all solid and hazardous waste (if any) in accordance with local and state disposal regulations; and
- c. Stabilization or re-vegetation of the site as necessary to minimize erosion.
- d. Any earth disturbance as a result of the removal of the system shall be graded and reseeded.

F. INSPECTION/ENFORCEMENT

The Building/Zoning Official shall have the power to inspect any PSES at any time to ensure compliance with the provisions of this Ordinance. Any entity who fails or refuses to adhere to all of the provisions of this Ordinance shall be deemed in violation and liable

to the Town of Hopkinton for penalties not to exceed \$500 per day for each violation. Each day of existence of a violation shall be deemed a separate offense.

The Town's Engineer or designee shall inspect the PSES at the expense of the applicant on a monthly basis during construction, and during the month of April each year after completion of construction. Said inspection will include a review of any and all reports as required by the State of Rhode Island, ~~and~~ the Town of Hopkinton and the Federal government. The applicant shall reimburse the town for any cost incurred as specified in the Stormwater Facility Maintenance Agreement.

G. ADOPTION

This Ordinance shall take effect upon passage and all Ordinances or parts of Ordinances inconsistent herewith are hereby repealed.

ADOPTED: July 18, 2016

ATTEST: _____
Elizabeth J. Cook-Martin