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Title: Energize CT Solar PV Model Zoning Ordinance
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Abstract

Energize CT developed a model solar PV zoning ordinance to aid municipalities in developing their own solar PV zoning ordinance. The model provides example height restrictions for various types of solar collector units. It states that ground-mounted solar PV systems are permitted as an accessory use in all zoning districts upon issuance of the proper permit and that they must not exceed thirty-five inches in height. Roof-mounted solar PV systems (permitted as an accessory use in all zoning districts upon issuance of the proper permit) shall be exempt from height restrictions pertaining to the principal structure so that the height of the system does not contribute to the total height of the principal structure. Building-Integrated PV Systems that are integrated into the roof or the faces of a structure, and which do not alter the relief of the roof, are permitted outright in all zoning districts. The model also provides model setback requirements for solar systems. Roof-mounted systems are exempt from zoning setbacks but may be subject to roof setbacks specific to solar PV in the State of Connecticut Building Code. Such systems will not extend beyond the edges of the roof on which they are mounted. Ground-mounted systems are exempt from front, rear and side lot setback.

Resource

See separate PDF below.

SOLAR PV MODEL ZONING ORDINANCE FOR CT JURISDICTIONS

ZONING ORDINANCE OR ORDINANCE ELEMENTS

Applicability and Scope

This model ordinance provides guidance on establishing zoning regulations that accommodate the functional requirements of solar photovoltaic (PV) systems. The ordinance incorporates standards for solar PV systems that enable them to perform at full efficiency. These standards can be implemented as written in the model ordinance, or adapted to fit the goals and character of your community. In addition to the ordinance text, footnotes and examples in the introduction to this ordinance can help you explore options for addressing solar energy systems in your jurisdiction.

With respect to municipal zoning regulations, small-scale residential and commercial solar PV systems that primarily deliver electricity to an onsite building are usually categorized as accessory structures. Larger systems, such as solar farms, that generate electricity primarily for offsite use are typically categorized as principal structures, although some electricity may be used by an onsite building.

This ordinance focuses on accessory structure restrictions and suggests example language to provide exemptions from or flexibility with respect to these regulations. Accessory structure restrictions could apply to rooftop or free-standing systems. The following are examples of the types of restrictions could be made more flexible for solar, or where solar could be exempted:

ORDINANCE

Section 1. Purpose.

It is the purpose of this regulation to promote the safe, effective and efficient installation and operation of solar photovoltaic (PV) systems. This Ordinance seeks to:

1. Provide property owners and business owners with flexibility in satisfying their on-site energy needs.
2. Reduce overall energy demands within the Municipality and promote energy efficiency.
3. Streamline the permitting process for solar PV systems by updating zoning regulations to explicitly address solar PV systems.
4. [As applicable] Support [alternatively, further] the Municipality's conservation and development plan [alternatively, comprehensive plan or sustainability goals].

Section 2. Definitions.

Accessory Roof-Mounted Solar Photovoltaic System: A solar photovoltaic system attached to any part or type of roof on a building or structure that is either the principal structure or an accessory structure on a recorded [lot/parcel/property] with the primary purpose of producing electricity for onsite consumption. This system also includes any solar photovoltaic-based architectural elements.

Accessory Ground-Mounted Solar Photovoltaic System: A solar photovoltaic system that is anchored to the ground via a pole or other mounting system and produces electricity primarily for onsite consumption. This system also includes any solar photovoltaic-based architectural elements.

Accessory Structure: A structure, the use of which is customarily incidental and subordinate to that of the principal building, and is located on the same lot or premises as the principal building. [Note: Your municipality could use your existing definition of "Accessory Structure"]

Building-Integrated Solar Photovoltaic System: A solar energy system that consists of integrating photovoltaic modules into the building structure, such as the roof or the façade and which does not alter the relief of the roof.

Passive Solar Energy Techniques: As defined in Connecticut General Statute 8-25 (b), these are site design techniques which maximize solar heat gain, minimize heat loss and provide thermal storage within a building during the heating season and minimize heat gain and provide for natural ventilation during the cooling season. The site design

techniques shall include, but not be limited to: (1) House orientation; (2) street and lot layout; (3) vegetation; (4) natural and man-made topographical features; and (5) protection of solar access within the development.

Photovoltaic (PV): A semiconductor based device that converts light directly into electricity.

Principal Solar Photovoltaic System: A solar photovoltaic system that captures solar energy and converts it to electrical energy primarily for offsite use and is the primary land use of the property on which it is located. Some electricity may be used by an onsite building.

Solar Photovoltaic (PV)-based Architectural Element: Structural/architectural element that provides protection from weather that includes awnings, canopies, porches or sunshades and that is constructed with the primary covering consisting of solar PV modules, and may or may not include additional solar PV related equipment.

Solar Photovoltaic (PV) Related Equipment: Items including a solar photovoltaic cell, panel or array, lines, mounting brackets, framing and foundations used for or intended to be used for collection of solar energy.

Solar Photovoltaic (PV) System: A solar collection system consisting of one or more building systems, solar photovoltaic cells, panels or arrays and solar related equipment that rely upon solar radiation as an energy source for collection, inversion, storage and distribution of solar energy for electricity generation.

Solar Thermal System: A solar collection system that directly heats water or other liquid using sunlight. The heated liquid is used for such purposes as space heating and cooling, domestic hot water, and heating pool water.

Section 3. Applicability.

1. This Ordinance applies to Accessory Building-Mounted Solar Photovoltaic (PV) and Accessory Ground-Mounted Solar PV Systems modified, upgraded or installed after the effective date of the Ordinance. This Ordinance does not apply to Solar Thermal Systems or Principal Solar Photovoltaic Systems, as defined by this Ordinance.
2. Solar Photovoltaic systems installed before the effective date of this Ordinance are not required to meet the requirements of this Ordinance.
3. Elements of this Ordinance are effective as of the effective date of this Ordinance unless another date is otherwise specified.
4. Any upgrades, modifications or changes to an existing solar energy system that significantly alter the size or placement of the structure must comply with the requirements of this ordinance.

Section 4. Permissible Zoning Districts.

Accessory Roof-Mounted and Ground-Mounted Solar PV Systems are permissible in all zoning districts as an accessory use to any lawfully permitted principal use on the same [lot/parcel/property] upon issuance of the proper permit pursuant to [Section/Article] and upon compliance with all requirements of this section and as elsewhere specified in this Ordinance. Building-Integrated Solar Photovoltaic Systems that are integrated into the roof or the façade of a structure, and which do not alter the relief of the roof, are permitted outright in all zoning districts.

Section 5. Location Within a Lot/Parcel/Property.

Accessory Roof-Mounted Solar PV Systems are permitted to face any rear, side or front yard. Accessory Roof-Mounted Systems may only be mounted on lawfully constructed principal or accessory structures. Ground-Mounted Solar Photovoltaic Systems are permitted within the lot's buildable area as determined by the solar PV specific setbacks defined in Section 9 of this ordinance.

Section 6. Design and Installation Standards.

1. Solar PV Systems must be installed to comply with all State of Connecticut codes and regulations.
2. All wiring must comply with the National Electrical Code, most recent edition, as adopted and amended by the State of Connecticut.

Section 7. Village or Historic Districts.

In the case of an installation in a village or historic district, no application for a certificate of appropriateness for an exterior architectural feature, such as a solar energy system, designed for the utilization of renewable resources shall be denied unless the commission finds that the feature cannot be installed without substantially impairing the historic character and appearance of the district.¹

Section 8. Height Restrictions.

Accessory Roof-Mounted Solar PV Systems shall be exempt from height restrictions pertaining to the principal structure so that the height of the rooftop solar PV system does not contribute to the total height of the principal structure [Alternatively, rooftop solar PV systems will not extend more than “X” feet from the highest point above the roof surface.]

Accessory Ground-Mounted Solar PV Systems will not exceed 35’ in height.³

Section 9. Setback Requirements

Accessory Roof-Mounted Solar PV Systems are exempt from zoning setbacks but may be subject to roof setbacks specific to solar PV in the State of Connecticut Building Code. Accessory Roof-Mounted Solar PV Systems will not extend beyond the edges of the roof on which they are mounted.

Accessory Ground-Mounted Solar PV Systems are exempt from front, rear and side lot setbacks. [Alternatively, Ground-Mounted Solar PV Systems will maintain a 1-3 foot setback from the property line at maximum design tilt.]

Section 10. Lot Coverage

The surface area of Accessory Ground-Mounted Solar PV Systems will be exempt from contributing to the calculation of overall lot coverage.

Section 11. Impervious Surface

The surface area of Accessory Ground-Mounted Solar PV Systems will be exempt from contributing to the calculation of overall impervious surface coverage. [Alternatively, only the footings⁴ of Accessory Ground-Mounted Solar PV Systems will contribute to the calculation of overall impervious surface coverage.]

Section 12. Subdivision developments

Developers proposing new subdivisions must demonstrate to the municipality that the use of Passive Solar Energy Techniques was considered in the development of the subdivision plan.⁵ [Consider using the “Solar Site Design Worksheet for a Proposed Subdivision” provided at www.energizect.com/sunriseNE.]

¹ https://www.cga.ct.gov/current/pub/chap_097a.htm#sec_7-147t

² Suggested restrictions are six feet for commercial rooftop systems.

³ Ideally, there would be no height restriction on standalone solar PV systems. If your municipality is set on having a height restriction, the higher the better, so that you do not prevent the installation of solar PV. Your municipality could include different height restrictions depending on the density of the zone. Suggested height limits are 30-35’ for pole-mounted and 20-25’ for ground-mounted systems. Limiting the height of a standalone system may reduce a system’s efficiency and its ability to collect sunlight without obstruction to the extent that it would not make economic sense to install the system.

⁴ “Footings” refers to the structural components of the solar energy system that makes contact with the ground, as opposed to the entire extent of the above ground surface.

⁵ Connecticut General Statute 8-25 (b) requires subdivision development regulations to “encourage energy-efficient patterns of development and land use, the use of solar and other renewable forms of energy, and energy conservation” and “requires any person submitting a plan for a subdivision to... demonstrate to the commission that such person has considered, in developing the plan, using passive solar energy techniques.” https://www.cga.ct.gov/current/pub/chap_126.htm#sec_8-25b