

MODEL ORDINANCE FOR SOLAR PHOTOVOLTAIC SYSTEMS

[Municipality]

Ordinance No. [Effective Date/Date Enacted]

An Ordinance to amend the Zoning Ordinance of [Municipality] by modifying [Article/Section], Definitions, by adding definitions for solar photovoltaic systems and by amending [Article/Section], by incorporating new sections to permit certain solar photovoltaic systems as accessory uses in any zoning district and by revising [Article/Section], by adding provisions for the permitting of certain solar photovoltaic systems.

This Zoning for Solar Energy Law is adopted pursuant to [sections 261-263 of the Town Law, sections 7-700 through 7-704 of the Village Law, or sections 19 and 20 of the City Law] of the State of New York, which authorize the [Insert Town, Village, or City Here] to adopt zoning provisions that advance and protect the health, safety, and welfare of the community

BE IT HEREBY ENACTED AND ORDAINED by the [Governing body] of [Municipality name], [County], New York, that the [Municipal] Zoning Ordinance shall be amended in the following respects:

Article 1. Purpose

It is the purpose of this regulation to promote the safe, effective and efficient use of installed solar energy systems that reduce consumption of utility delivered energy while protecting the health, safety and welfare of adjacent and surrounding land uses and [lots/parcels/properties]. This Ordinance seeks to:

- 1. Provide property owners and business owners/operators with flexibility in satisfying their energy needs.
- 2. Reduce overall energy demands within the [Municipality/Township/Borough/community] and to promote clean energy.
- 3. Integrate solar energy systems seamlessly into the [Municipality/Township/Borough/community]'s neighborhoods and

landscapes without diminishing quality of life in the neighborhoods.

Article 2. Definitions

Accessory Structure: A structure, the use of which is customarily incidental and subordinate to that of the principal building and is attached thereto, and is located on the same lot or premises as the principal building.

Accessory Use: A structure or use which is clearly incidental to a principal structure or use, and is located on the same lot with the principal structure or use, is an accessory use. All accessory uses are subject to the restrictions in this section.

Array: Any number of electrically connected photovoltaic (PV) modules providing a single electrical output.

Building-Integrated System: A solar photovoltaic system that is constructed as an integral part of a principal or accessory building or structure and where the building-integrated system features maintain a uniform profile or surface of vertical walls, window openings, and roofing. Such a system is used in lieu of a separate mechanical device, replacing or substituting for an architectural or structural component of the building or structure that appends or interrupts the uniform surfaces of walls, window openings and roofing. A building-integrated system may occur within vertical facades, replacing view glass, spandrel glass or other façade material; into semitransparent skylight systems; into roofing systems, replacing traditional roofing materials; or other building or structure envelope systems.

Building-Mounted System: A solar photovoltaic system attached to any part or type of roof on a building or structure that has an occupancy permit on file with the [Municipality/Township/Borough] and that is either the principal structure or an accessory structure on a recorded [lot/parcel/property]. This system also includes any solar-based architectural elements.

Cell: The smallest basic solar electric device which generates electricity when exposed to light.

Drip line: The outermost edge of a roof including eaves, overhangs and gutters.

Farmland of Local Importance: land that has been identified by the local agency or agencies as farmlands for the production of food, feed, fiber, forage, and oilseed crops, even though these lands are not identified as having national or statewide importance. Farmlands of local importance may include tracts of land that have been designated for agriculture by local ordinance.



Farmland of Statewide Importance: Land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops as determined by the appropriate state agency or agencies. Farmlands of statewide importance may include tracts of land that have been designated for agriculture by state law.

Ground-Mounted System: A solar photovoltaic system mounted on a structure, pole or series of poles constructed specifically to support the photovoltaic system and not attached to any other structure.

Interconnection: The technical and practical link between the solar generator and the grid providing electricity to the greater community.

Kilowatt (kW): A unit of electrical power equal to 1,000 Watts, which constitutes the basic unit of electrical demand. A watt is a metric measurement of power (not energy) and is the rate (not the duration) at which electricity is used. 1,000 kW is equal to 1 megawatt (MW).

Large Solar Energy System: A solar photovoltaic system with a rated capacity larger than 200kW the principal purpose of which is to provide electrical power for sale to the general power grid or to be sold to other power customers may include both physical or virtual aggregation, or to be consumed on site.

Medium Solar Energy System: A solar photovoltaic energy systems with a rated capacity between 25kW and 200kW the principal purpose of which is to provide electrical power to be consumed on site or to provide power to be shared with other power customers (which may include both physical or virtual aggregation).

Module: A module is the smallest protected assembly of interconnected PV cells.

Net Metering Agreement: An agreement with a local electric utility that allows customers to receive a credit for surplus electricity generated by certain renewable energy systems.

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

Prime farmland: Land designated by the U.S. Department of Agriculture as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these land uses.

Principal Use: The primary or main use of land, building or structure, as distinguished from an accessory use, building or structure.

Qualified Solar Installer: A person who has skills and knowledge related to the construction and operation of solar electrical equipment and installations and has received safety training on the hazards involved. Persons who are on the list of eligible photovoltaic installers maintained by the New York State Energy Research and Development Authority (NYSERDA), or who are certified as a solar installer by the North American Board of Certified Energy Practitioners (NABCEP), shall be deemed to be qualified solar installers for the purposes of this definition. Persons who are not on NYSERDA's list of eligible installers or NABCEP's list of certified installers may be deemed to be qualified solar installers if the [Town/City/Village] determines such persons have had adequate training to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the installation safely. Such training shall include the proper use of special precautionary techniques and personal protective equipment, as well as the skills and techniques necessary to distinguish exposed energized parts from other parts of electrical equipment and to determine the nominal voltage of exposed live parts.

Remote Net Metering: allows solar photovoltaic owner generators to apply excess generation credits from the generator system ("Host Account") to other meters on property that is owned or leased by the same customer and are within the same load zone as the generator ("Satellites").

Rooftop or Building Mounted System: A solar power system in which solar panels are mounted on top of the structure of a roof either as a flush-mounted system or as modules fixed to frames which can be tilted toward the south at an optimal angle.

Small Solar Energy System: A solar photovoltaic energy systems with a rated capacity up to and including 25kW the principal purpose of which is to provide electrical power to be consumed on site or to provide power to be shared with other power customers (which may include both physical or virtual aggregation).

Solar-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- and/or ground-mounted 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. A solar PV system is a



generation system with a nameplate capacity of not greater than 50 kilowatts if installed at a residential service or not larger than 3,000 kilowatts at other customer service locations and do not produce excess on- site energy greater than currently permitted by Pennsylvania Public Utility Commission guidelines.

Tracking System: A number of photovoltaic modules mounted such that they track the movement of the sun across the sky to maximize energy production, either with a single-axis or dual-axis mechanism.

Article 3. Applicability

This Ordinance applies to all building-mounted and ground-mounted systems installed and constructed after the effective date of the Ordinance.

Solar PV systems constructed prior to the effective date of this Ordinance are not required to meet the requirements of this Ordinance.

Any upgrade, modification or structural change that alters the size or placement of an existing solar PV system by 50% or more, or that triggers NYS code compliance, shall comply with the provisions of this ordinance.

Article 4. Permitted Locations

No solar energy system or device shall be installed or operated in the [Town/City/Village] of [] except in compliance with this article.

Section 1. Small and Medium Solar Energy Systems

- A. Small and Medium Solar Energy Systems may be mounted on lawfully permitted principal or accessory structures and shall be considered an accessory use in [Town/City/Village] subject to the following conditions:
 - i. A building permit or unified permit shall be required for installation of all rooftop and building mounted solar collectors.
 - ii. Any height limitations of the [Town/City/Village] Code shall not be applicable to solar collectors provided that such systems are erected only to such height as is reasonably necessary to accomplish the purpose for which they are intended to serve.



- iii. Panels installed on residential principal or accessory structures facing the front yard must be mounted at the same angle as the roof's surface with a maximum distance of 18 inches between the roof and highest edge of the system.
- B. Small and Medium Solar Energy Systems may be ground-mounted and considered accessory uses in the property's zoning district subject to the following conditions:
 - i. The system is not the primary use of the property.
 - ii. Building permits are required for the installation of all ground-mounted solar collectors.
 - iii. The location of the solar energy system meets all applicable setback requirements for accessory structures in the zoning district in which it is located.
 - iv. Small ground-mounted solar energy systems shall be screened when possible and practicable through the use of architectural features, earth berms, landscaping, or other screening which will harmonize with the character of the property and surrounding area.
 - v. Medium ground-mounted solar energy systems shall not be visible from the public right-of-way and shall be screened through the use of architectural features, earth berms, landscaping, or other screening which will harmonize with the character of the property and surrounding area.
 - vi. The height of the solar collector and any mounts shall not exceed [20] feet when oriented at maximum tilt.
- C. Small and Medium Solar Energy Systems are permitted as the principal and primary uses of land subject to the following conditions:
 - i. Small and Medium Solar Energy Systems proposed within residential and commercial zoning districts shall undergo site plan review prior to construction, installation or modification as provided within this section, and are subject to the following conditions:
 - a. The site is larger or equal to 2 acres.
 - b. The total lot coverage ratio does not exceed 60%. Lot coverage shall be defined as the area measured from the outer edge(s) of the arrays, inverters, batteries, storage cells and all other mechanical



equipment used to create solar energy, exclusive of fencing and roadways.

- c. Applicable screening and setback requirements.
- i. No solar array shall be installed on Prime Farmland, farmland of statewide importance, farmland of local importance, or unique soils as defined by the US department of Agriculture (USDA), New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or local governing body.
- ii. No solar array shall be installed on a designated wetland as defined by the New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or other governing body.
- iii. No solar array shall be installed on Critical Environmental Areas (CEAs) as defined by the New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or other governing body.
- iv. Pursuant to the Site Plan Review process, the project proponent shall provide the following documents, as deemed applicable by the Site Plan Review Authority:
 - a. A site plan showing:
 - 1. Property lines and physical features, including roads, for the project site;
 - 2. Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;
 - 3. Blueprints or drawings of the solar energy system showing the proposed layout of the system, any potential shading from nearby structures, the distance between the proposed solar collector and all property lines and existing on-site buildings and structures, and the tallest finished height of the solar collector;
 - 4. Documentation of the major system components to be used, including the panels, mounting system, and inverter;
 - 5. Name, address, and contact information for proposed system installer;
 - 6. Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;
 - 7. The name, contact information and signature of any agents representing the project proponent; and



- 8. Zoning district designation for the parcel(s) of land comprising the project site.
- 9. Proof the owner has submitted notification to the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.
- v. Building permits are required for the installation of all ground-mounted solar collectors.
- vi. Small and Medium principal use systems are subject to setback requirements of the particular zoning district in which they are located.
- vii. Small and Medium principal use systems are exempt from lot frontage requirements in the applicable zoning district.
- D. Building-integrated Solar Energy Systems: Building-integrated systems, as defined by this Ordinance, are not considered an accessory use and are not subject to the requirements of this Ordinance, but are subject to all other applicable building, electrical, and safety codes.

Section 2. Large Scale Solar Energy Systems

- A. Large Scale roof mounted solar energy systems are permitted as accessory uses and are exempt from project site review.
- B. Large Scale ground mounted solar systems are permitted as accessory and principal uses in [Town/City/Village], subject to the following conditions:
 - No large-scale ground-mounted solar array shall be installed on Prime Agricultural Soil as defined by the New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or other governing body.
 - ii. No large-scale ground-mounted solar array shall be installed on a designated wetland as defined by the New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or other governing body.
 - iii. No large-scale ground-mounted solar array shall be installed on Critical Environmental Areas (CEAs) as defined by the New York State Department of Environmental Conservation, the U.S. Army Corps of Engineers, or other



governing body.

- iv. Pursuant to the Site Plan Review process, the project proponent shall provide the following documents, as deemed applicable by the Site Plan Review Authority:
 - 1. A site plan showing:
 - a. Property lines and physical features, including roads, for the project site;
 - b. Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;
 - c. Blueprints or drawings of the solar energy system showing the proposed layout of the system, any potential shading from nearby structures, the distance between the proposed solar collector and all property lines and existing on-site buildings and structures, and the tallest finished height of the solar collector;
 - d. Documentation of the major system components to be used, including the panels, mounting system, and inverter;
 - e. Name, address, and contact information for proposed system installer;
 - f. Name, address, phone number and signature of the project proponent, as well as all co-proponents or property owners, if any;
 - g. The name, contact information and signature of any agents representing the project proponent; and
 - h. Zoning district designation for the parcel(s) of land comprising the project site.
 - i. Proof the owner has submitted notification to the utility company of the customer's intent to install an interconnected customer-owned generator. Off-grid systems are exempt from this requirement.
- v. Building permits are required for the installation of all ground-mounted solar collectors.
- vi. Large Scale Principal Use Energy Systems are subject to setback requirements of the particular zoning district in which they are located.
- vii. Large Scale Principal Use Energy Systems are exempt from lot frontage requirements in the applicable zoning district.



Article 5. Permitted Zoning Districts

1. All building-mounted and ground-mounted systems are permitted in all zoning districts as a primary use or as an accessory use to any lawfully permitted principal use on the same property upon issuance of the proper permits pursuant to Article 4 and upon compliance with all requirements of this section and as elsewhere specified in this Ordinance.

Article 6. Design and Installation Standards

- 1. The solar PV system must be constructed to comply with the New York State Building and Electrical Code, as amended, and any additional electrical and safety regulations adopted by the State of New York.
- 2. All systems must be installed by a qualified solar installer as defined by this ordinance.
- 3. All wiring must comply with the National Electrical Code, most recent edition, as amended and adopted by the State of New York.
 - a. For Large scale ground-mounted systems, all exterior electrical lines must be above the surface of the ground and placed in conduit.
- 4. The solar PV system must be constructed to comply with the most recent fire code as amended and adopted by the State of New York.
- 5. For Large Scale principal use solar systems:
 - a. The applicant must submit a storm water management plan, certified by a professional engineer, which demonstrates storm water runoff will infiltrate into the ground beneath at a rate equal to that of the infiltration rate prior to the placement of the system.
 - b. The System shall be properly maintained and be kept free from hazards including, but not limited to, faulty wiring, loose fastenings, and creation of an unsafe condition or detriment to public health, safety or general welfare.

Article 7. Setback Requirements

1. Ground-mounted Systems: Ground-mounted systems, as a primary use or accessory use are subject to setback requirements in the zoning district in which the system is to be constructed. The required setbacks are measured from the [lot/parcel/property] line



to the nearest part of the system. No part of the ground-mounted system shall extend into the required setbacks due to a tracking system or other adjustment of solar PV related equipment or parts.

Article 8. Height Restrictions

- 1. Notwithstanding the height limitations of the zoning district:
 - a. For a building-mounted system installed on a pitched roof that faces the front yard of a property, the system must be installed at the same angle as the roof on which it is installed with a maximum distance, measured perpendicular to the roof, of eighteen (18) inches between the roof and edge or surface of the system.
 - b. For a building-mounted system installed on a sloped roof, the highest point of the system shall not exceed the highest point of the roof to which it is attached.
 - c. For a building-mounted system installed on a flat roof, the highest point of the system shall be permitted to extend up to six (6) feet above the roof to which it is attached.
- 2. Ground-mounted systems may not exceed the permitted height of accessory structures in the zoning district where the solar PV system is to be installed or 20 feet from the ground, whichever is less.

Article 9. Screening and Visibility

- 1. Building-mounted systems on a sloped or flat roof shall not be required to be screened, unless otherwise stated in this ordinance.
- 2. Ground mounted systems are required to submit a screening & landscaping plan showing adequate measures to screen through landscaping, grading or other means so that the solar panels and other equipment not visible from roadways and neighboring residential properties. The screening & landscaping plan shall include specifies the locations, elevations, height, plant species, and/or materials that will comprise the structures, landscaping and/or grading used to screen and/or mitigate any adverse aesthetic effects of the system.
- 3. A detailed safety plan specifying the measures that will be used to prevent public access to unsafe areas and to provide for emergency response, including but not



limited to the location, height, materials, and colors of fencing and other barriers to access and a safety signage plan that contains the locations, sizes and text of signs that will be used to warn the public away from unsafe areas and that shall include the name and phone number of an official of the owner or operator who can be contacted in the event there is an emergency or any question about safety.

- 4. No element of the system shall reflect glare (as defined by the FAA) onto a neighboring property, public right-of-way, or aircraft flight path.
- 5. Building-mounted systems (not including conduit) mounted on historic properties shall not be visible from the public right-of-way within a 200 foot radius of the property, at a level of 5 (five) feet from the ground in a similar manner as to any other rooftop HVAC or mechanical equipment. This can be accomplished with architectural screening such as a building parapet or by setting the system back from the roof edge in such a manner that the solar PV system is not visible from the public right-of-way within a 200 foot radius when measured at a distance of 5 (five) feet from the ground.

Article 10. Impervious Property Coverage Restrictions

- 1. The surface area of any ground-mounted system, regardless of the mounted angle of any portion of the system, is not considered an impervious surface and shall not be calculated as part of the property lot coverage limitations for the zoning district.
- 2. If the ground-mounted system is mounted above existing impervious surface, it shall not be calculated as part of the property lot coverage limitations for the zoning district.
- 3. Footers and other hard surfaces placed underneath racking and mounting systems are considered impervious and count towards impervious surface calculations.

Article 11. Non-conformance

- 1. Building-mounted systems:
 - a. If a building-mounted system is to be installed on any building or structure that is non-conforming because its height violates the height restrictions of the zoning district in which it is located, the building-mounted system shall be permitted, so long as the building-mounted system does not extend above the peak or highest point of the roof to which it is mounted and so long as it complies with the other provisions of this Ordinance.



b. If a building-mounted system is to be installed on a building or structure on a non-conforming property that does not meet the minimum setbacks required and/or exceeds the lot coverage limits for the zoning district in which it is located, a building-mounted system shall be permitted, so long as there is no expansion of any setback or lot coverage non-conformity and so long as it complies with the other provisions of this Ordinance.

2. Ground-mounted systems:

- a. If a ground-mounted system is to be installed on a property containing a structure that is non-conforming because the required minimum setbacks are exceeded, the proposed system shall be permitted so long as the system does not encroach into the established setback for the property.
- b. If a ground-mounted system is to be installed on a property that is non-conforming because it violates zoning district requirements other than setbacks, then a special use permit must be obtained for the proposed installation.

Article 12. Signage and/or Graphic Content

- 1. No signage or graphic content may be displayed on the solar PV system except the manufacturer's badge, safety information and equipment specification information. Said information shall be depicted within an area no more than thirty-six (36) square inches in size.
- 2. Disconnect and other emergency shutoff information will be clearly displayed on a light reflective surface.
- 3. 24 hour emergency contact information will be clearly displayed.
- 4. Systems and sites may not be used for displaying advertising except for reasonable identification of the owner/operator and shall comply with all signage restrictions.

Article 13. Inspection, Safety and Removal

1. The Municipality reserves the right to inspect a solar PV system for building or fire code compliance and safety with 24 hour notification to the property owner and/or owner-operator of the system.



- 2. All Large-Scale Solar Energy Systems shall be enclosed by fencing to prevent unauthorized access. Warning signs with the owner's contact information shall be placed on the entrance and perimeter of the fencing.
- 3. The solar energy system shall be removed, at the owner's or operator's expense, within 180 days of determination by the designated municipal representative that the system is no longer being maintained in an operable state of good repair or no longer supplying solar power. Such an order shall be in writing, shall offer the option to rectify, and shall notify the [owner/property owner/land owner/facility owner/operator] of his or her right to appeal such determination.
 - a. Removal shall include solar collectors, cabling, electrical components, accessory structures, and any associated facilities below grade.
 - b. Disturbed earth shall be graded and reseeded, unless the designated municipal representative approves a written request by the property owner that internal roads or other site improvements are not to be restored.
- 4. If upon inspection the Municipality determines that a fire code or building code violation exists, or that the system otherwise poses a safety hazard to persons or property, the Municipality may order the [owner/property owner/land owner/facility owner/operator] to repair or remove the system within a reasonable time as determined by the code enforcement officer. Such an order shall be in writing, shall offer the option to repair, shall specify the code violation or safety hazard found and shall notify the [owner/property owner/land owner/facility owner/operator] of his or her right to appeal such determination.
- 5. If a [owner/property owner/land owner/facility owner/operator] fails to repair or remove a solar PV system as ordered, and any appeal rights have been exhausted, the [Municipality/Township/Borough] may enter the property, remove the system and charge the [owner/property owner/land owner/facility owner/operator] for all costs and expenses of removal, including reasonable attorney's fees or pursue other legal action to have the system removed at the [owner/property owner/land owner/facility owner/operator]'s expense.
- 6. In addition to any other available remedies, any unpaid costs resulting from the Municipality's removal of a vacated abandoned or de-commissioned solar PV system shall constitute a lien upon the real property against which the costs were charged. Legal counsel of the Municipality shall institute appropriate action for the recovery of such cost, plus attorney's fees, including, but not limited to filing of municipal claims pursuant to for the cost of such work, 6% interest per annum, plus a penalty of 5% of the amount due plus attorney's fees and costs incurred by



the [*Municipality*] in connection with the removal work and the filing of the Municipality's claim.

Article 14. Permit Requirements

1. Before any construction or installation on any solar PV system shall commence, a building permit issued by [*Municipality name*] shall be obtained to document compliance with this Ordinance.