

§ 220-35 Renewable energy systems.

- A. Intent. It is the intent of this § 220-35 to encourage business and residential use of renewable energy systems in the Town of Delaware, including geothermal, solar and wind energy systems, as defined herein. It is further intended to facilitate the placement of required infrastructure for such systems on buildings and lots, recognizing these improvements often involve special design and location requirements.
- B. Definitions. The following special definitions shall apply to this section:

GEOHERMAL ENERGY SYSTEM

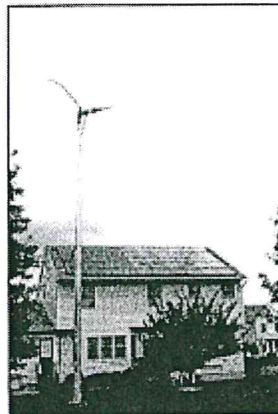
Equipment that transfers thermal energy to and/or from the ground for the purposes of heating and/or cooling a building. A geothermal energy system consists of a closed-loop system of pipes filled with liquid, a heat exchanger and heat pump.

SOLAR ENERGY SYSTEM

Equipment that directly converts and then transfers or stores solar energy into usable forms of thermal or electrical energy. For the purposes of this chapter, a solar energy system does not include any solar collection system of four square feet in size or less.

WIND ENERGY SYSTEM

Equipment used to produce electricity by converting the kinetic energy of wind to rotational, mechanical and electrical energy. A wind energy system consists of the turbine apparatus (rotor, nacelle and tower) and any other buildings, support structures, or other related improvements necessary for the generation of electric power.



- C. General standards. The following standards shall apply to all renewable energy systems, including geothermal, solar and wind energy systems:
- (1) Use classification. Except for systems designed to produce 100 kW or the equivalent in energy, which systems shall be considered manufacturing and industry uses for purpose of this chapter, all renewable energy systems shall be considered accessory uses permitted in conjunction with any principal use permitted in any zoning district. Notwithstanding this classification, such accessory uses may be placed on a lot separate from the principal use they serve, provided such principal use is located on an adjoining parcel in the Town of Delaware or an adjoining municipality.
 - (2) Setbacks. Renewable energy systems are not permitted within 10 feet of any property line or 35 feet of front lot line, except for underground systems, which may extend to within five feet of a property line, provided that no stand-alone renewable energy system structure shall be placed within a distance equal its own height from such property line or block the majority of sunlight from entering the window of any structure on an adjoining property. An easement granted by an adjoining landowner shall suffice as a setback.
 - (3)

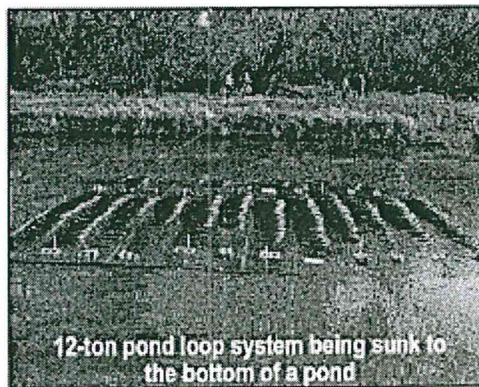
Compliance with Building Code. Any installation of a renewable energy system shall comply with any and all applicable provisions of the New York State Uniform Building and Fire Prevention Code and associated codes.

- (4) Utility notification. No alternative energy system shall be installed unless evidence has been provided to the Town of Delaware that the utility company has been informed of the customer's intent to install an interconnected customer-owned power generation system. Off-grid systems shall be exempt from this requirement.
- (5) Permit requirements. Building permits shall be required for all renewable energy system installations as defined herein.
- (6) Installation. All renewable energy system installations shall be made by qualified installers, and prior to operation, the electrical connections must be inspected by the Town and by an appropriate electrical inspection agency as determined by the Town.^[1]

[1] *Editor's Note: Amended at time of adoption of Code (see Ch. 1, General Provisions, Art. I).*

D. Geothermal energy system standards.

- (1) Location. Ground-source geothermal energy systems shall be located entirely within the subject property or within appropriate easements secured for this particular purpose. No part of any such system shall be located within public rights-of-way. The heat-exchanger part of a geothermal system may also be located within a pond or lake on the landowner's property, subject to the requirements of New York State law and site plan review by the Town of Delaware Planning Board, but no portion of a geothermal system shall be located within a stream or the Upper Delaware River. Fluids used shall be identified.



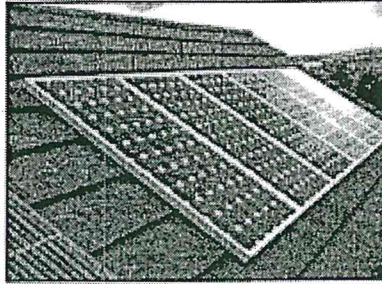
- (2) Water well protection zones. Geothermal energy systems within designated water well protection zones shall comply with all State of New York and Town of Delaware requirements pertaining to protection of public water supply systems and be subject to site plan review by the Town of Delaware Planning Board. Vertical or deep-bore geothermal systems are not permitted within these zones.
- (3) System design. Open-loop geothermal systems that include one or more supply wells and one or more diffusion, recharge, return or injection wells shall comply with all New York State Department of Environmental Conservation standards and be subject to site plan review by the Town of Delaware Planning Board. Water removed from an aquifer must be returned to that same aquifer and within 50 feet vertically, in either direction, of the withdrawal point.

E. Solar energy system standards.

- (1) Location. Solar panels or arrays shall be placed on a principal or accessory structure, on the ground or on a monopole not exceeding 35 feet in height.
- (2) Height. The height of the solar panel or array shall be the minimum necessary to generate usable energy but shall not exceed the height limitations for any structure to which it is attached, provided that structures intended solely for purposes of supporting such solar equipment shall not exceed 35 feet, and any placements

on existing structures at a height of more than 35 feet shall be subject to site plan review by the Town of Delaware Planning Board. The height of the equipment or the building and equipment combined shall, in all instances, be measured with the solar panel or array oriented toward a full tilt, where applicable.

- (3) Setbacks. A solar panel or array shall, where attached to an existing structure, comply with the required setbacks for such structure, provided that attachments to existing nonconforming structures shall not further encroach on such setbacks where already exceeded.
- (4) Surface area. The total surface area of all ground-mounted and freestanding solar panels and arrays on a lot shall not exceed 1,200 square feet, provided that nonresidential placements exceeding this size may be approved by the Town of Delaware Planning Board, subject to site plan review and a determination that such placement will still constitute an accessory use and not conflict with the Upper Delaware Scenic and Recreational River Management Plan.



- (5) Solar hot water. All solar hot water systems shall be subject to the same standards outlined herein as may be applicable.
- (6) Energy storage. When solar storage batteries are included as part of the solar energy system, they must be placed in a secure container or enclosure meeting the requirements of the New York State Uniform Building and Fire Prevention Code and associated codes when in use. When no longer used, such devices shall be safely disposed of in accordance with the laws and regulations of New York State and the Town of Delaware.
- (7) Removal. If a solar collector ceases to perform its originally intended function for more than 24 consecutive months, the property owner shall remove the collector, mount and associated equipment and facilities within 90 days of an order by the Town of Delaware Building Inspector for such removal.
- (8) Restriction on prohibitions. No homeowners' or property owners' association shall prohibit solar energy systems. Covenants and restrictions connected with projects requiring special use permits, site plan review or subdivision approval shall be reviewed for purposes of ensuring there are no such prohibitions.

“(9) Commercial Solar Systems – Non-farm commercial solar systems with nameplate capacity of 25kW or more of energy for sale to utility companies or for other commercial use shall, notwithstanding any other provisions of this law, be considered Special Uses permitted in the RU Rural District subject to the following additional standards and review criteria:

- (a) The owner of a commercial solar system shall, as a condition of approval and prior to constructing the system, provide evidence of approval to connect the solar system to the utility electrical grid and meet all applicable standards for such interconnection.
- (b) Nothing in this law shall be deemed to give any applicant the right to cut down surrounding trees and vegetation on any adjoining property to increase direct sunlight to the solar energy facility. Nothing in this law shall be deemed a guarantee against any future construction or Town approvals of future construction that may in any way impact the sunlight flow to any solar energy facility. It shall be the sole responsibility of the facility operator or owner to acquire any necessary solar energy easements, or rights to remove vegetation.

- (c) All commercial solar system applications shall, in addition to other ordinarily required site plan data, include the following:
- [1] Drawings of the solar installation signed by a licensed Professional Engineer showing the proposed layout of the system and any potential shading from nearby structures.
 - [2] Proposed changes to the site landscape, grading, vegetation clearing and planting, exterior lighting (which shall be limited), screening vegetation or structures; this shall include a visual analysis depicting prospective views from key observation points.
 - [3] A description of the solar facility and the technical, economic and other reasons for the proposed location and design with confirmation by a licensed professional engineer that it complies with all applicable Federal and State standards.
 - [4] Electrical diagram detailing the solar system layout, solar collector installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and over-current devices.
 - [5] Documentation of the major system components to be used, including the PV panels, mounting system, and inverter.
 - [6] An operation and maintenance plan which shall include measures for maintaining safe access to the installation as well as general procedures for operational maintenance of the installation.
 - [7] Information on noise and reflectivity/glare of solar panels and any potential impacts on adjoining or nearby property owners.
 - [8] Location of the nearest residential structure(s) on the site and located off the site, and the distance from the nearest proposed solar farm equipment.
- (d) The total surface area of all ground-mounted and freestanding solar collectors and impervious surfaces associated with the solar system, regardless of tilt, shall not exceed 50% of the land area used for the commercial solar system, including such buffers and setbacks as are required to comply with this section. Other impervious surfaces on the lot shall be limited to such proportion of the lot area as normally permitted for the zoning district. See illustration below.

Parcel
00-000-00
500 Acres

(Illustration Not to Scale)

Area Leased for Cedar Farm
20 Acres



Impervious
Surface Area at
50% of 20 Acres
= 10 Acres

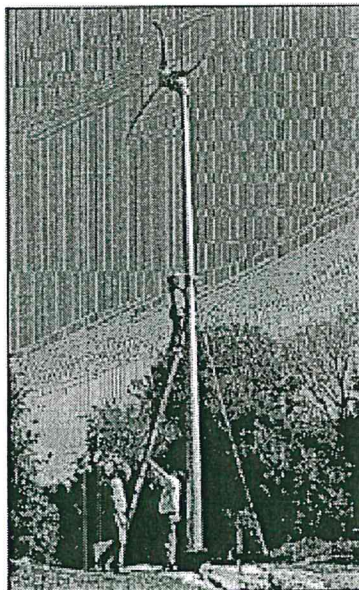
Town Highway

- (e) A vegetated perimeter buffer shall be installed and maintained to provide year round screening of the system from adjacent properties. Such buffer shall include a naturalized mix of trees, shrubs and ground cover in alternating rows designed to provide year-round screening. An earthen berm may also be required. The Planning Board, however, may waive such requirements where adequate vegetative buffers already exist, provided they are maintained so as to continue to accomplish the intended screening. Regardless, all commercial solar systems shall, under any circumstance, be designed and located so as to prevent reflective glare toward any habitable buildings, as well as public streets.
- (f) All ground-mounted panels shall not exceed twelve (12) feet in height.
- (g) All mechanical equipment, including any structure for batteries or storage cells, shall be completely enclosed by a minimum 8' high fence with a self-locking gate.
- (h) All onsite utility and transmission lines shall, to the extent feasible, be placed underground.
- (i) A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations.
- (j) All commercial solar system components shall have a minimum 100 foot setback from any lot lines.
- (k) Solar modular panels shall not contain hazardous materials or shall be designed in such fashion that any such materials shall be confined and protected from the possibility of any spills in the event of panel damage from normal wear and tear or due to weather.
- (l) There shall be no signs except announcement signs, such as "no trespassing" signs or signs required to warn of danger. A sign shall be placed at any entrance to the facility that identifies the owner and operator with an emergency telephone number where the owner and operator can be reached on a 24-hour basis.
- (m) The commercial solar system owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the local fire department. Upon request, the owner or operator shall cooperate with local emergency services in developing an emergency response plan.
- (n) The commercial solar system shall, at all times, be maintained in good condition. Site access shall be maintained to a level acceptable to the local Fire Department and Emergency Medical Services.

- (o) A valid performance bond or other financial surety suitable to the Town Board shall be assigned to the Town of Delaware for decommissioning purposes and all applications for a solar farm shall be accompanied by a decommissioning plan to be implemented upon abandonment and/or in conjunction with removal of the facility. Such plan shall include an engineering cost estimate for completing the decommissioning, which estimate shall be reviewed by the Town Engineer to guide the Town Board in arriving at the bond amount.”

F. Wind energy system standards.

- (1) Height. The height of a wind energy system shall be the minimum necessary to produce usable power. No part of a wind energy system, including the rotor blades while in operation, shall exceed 75 feet above ground level or 20 feet above the base height limit of the underlying zone, whichever is greater. The height may be increased to a maximum of 150 feet on parcels of five or more acres by the Town of Delaware Planning Board, subject to site plan review and findings that granting of the additional height would allow use of a wind energy system where none would otherwise be practical and the support structures are designed to blend in with the architectural character and/or landscape of the surrounding area.
- (2) Size. The maximum length of rotor blades shall be no more than 10 feet, provided that this length may be increased to a maximum of no more than 15 feet where such increased rotor length is documented as the minimum necessary to produce usable power. Longer length rotor blades may be permitted on properties of three acres or more in lot area, subject to site plan review by the Planning Board and findings that granting of the additional length would allow use of a wind energy system where none would otherwise be practical and the support structures are designed to blend in with the architectural character and/or landscape of the surrounding area.
- (3) Clearance of blades. No part of a wind energy system shall extend within 10 feet of the ground. No blades shall extend over parking areas, driveways or sidewalks.
- (4) Noise. Wind energy systems shall not exceed 60 dBA as measured at the nearest adjacent property or easement line. A noise study verifying that the maximum level is not being exceeded may be required to be submitted where equipment is to be located within 100 feet of a property line. An easement granted by an adjoining landowner shall suffice as a setback.
- (5) Transmission lines. Power transmission lines from the tower to any building or other structure shall, to the maximum extent practicable, be located underground.
- (6) Communications equipment. No television, radio or other communications antennas may be affixed or otherwise made part of any wind turbine, except with approval by the Town of Delaware Planning Board based upon site plan review to ensure such equipment will not interfere with existing communications equipment or overwhelm the primary purpose of generating renewable energy.



(7) Visual impacts. No advertising signs are allowed on any part of the wind energy facility, including fencing and support structures. Other measures to reduce the visual impact of wind turbines shall also be employed to the maximum extent practicable, and such facilities shall not conflict with the Upper Delaware Scenic and Recreational River Management Plan. Monopole towers shall be used wherever practicable. All structures in a project shall be finished in a single, nonreflective matte-finished color or a camouflage scheme. Except for danger warnings, no lettering, company insignia, advertising or graphics shall be on any part of the tower, hub or blades.

G. Modification of standards. The Town of Delaware Planning Board may, subject to the limitations of this section and site plan review, appropriately modify other development standards of this chapter and Chapter **186**, Subdivision of Land, including but not limited to building and lot coverage, to accommodate renewable energy system; the purpose of this section being to promote rather than restrict the use of such systems.