



Solar Energy Systems Ordinance

This ordinance amends **Chapter 175, Zoning** of the **Code of Patton Township** to provide for the land planning, installation, and construction of solar energy systems subject to reasonable conditions in order to protect the public health, safety and welfare. The ordinance defines “solar energy systems” as:

SOLAR ENERGY SYSTEM - An energy system that converts solar energy to usable thermal, mechanical, chemical, or electrical energy. Solar energy systems may be mounted on a building or on the ground, integrated into the construction of a building, or self-contained whereas it generates energy exclusively for the device it is mounted to.

Solar energy systems (systems) are regulated as either a “**primary**” or “**accessory**” use based on their physical size, energy production capacity, connection to an electrical supply grid, and intended use.

Primary use systems include, but are not limited to those that are intended to consistently provide electricity to the utility grid or which can be defined as follows:

UTILITY SCALE SOLAR ENERGY SYSTEM - Any commercially sized or scaled Solar Energy System that is the principal use on the property and its operator has signed an official agreement of power purchase with a utility provider, or it produces energy in excess of one-hundred-twenty-five (125) percent of the energy needed by the property’s principal use, or produces energy in excess of ten (10) megawatts.

For **primary and accessory use systems**, the ordinance contains general regulations on location, height, property line and rooftop setbacks, lot coverage, battery storage, and airport notification for systems of a certain size or generation capacity within 5 miles of the University Park Airport runway.

Primary use systems, which would generally include larger-scale systems, would only be permitted in some zoning districts of Patton Township including Industrial, General Commercial, Planned Commercial, Planned Community, Planned Airport District, Rural, Natural Resources 1 & 2, and portions of the University Planned District. Primary uses systems would not be permitted in any residential zoning districts.

Accessory use systems, which generally include smaller-scale systems not intended to supply power to the electric grid, would be allowed in all zoning districts.

Depending on whether a **primary or accessory use**, the ordinance contains additional regulations including, but not limited to screening and visibility, warning signage, perimeter fencing, glare, and development/approval procedure.

**PATTON TOWNSHIP
CENTRE COUNTY, PENNSYLVANIA**

ORDINANCE NO. 2017 - _____

SOLAR ENERGY SYSTEMS

**AN ORDINANCE OF THE TOWNSHIP OF PATTON
AMENDING CHAPTER 175 (ZONING)
OF THE TOWNSHIP CODE FOR THE PURPOSE OF REGULATING
SOLAR ENERGY SYSTEMS IN THE TOWNSHIP.**

WHEREAS, the Board of Supervisors (“Board”) of Patton Township, Centre County, Pennsylvania (“Township”) desires to encourage the appropriate design and installation of solar energy systems in the Township in order to protect the public health, safety, and welfare; and

NOW THEREFORE, BE IT ORDAINED AND ENACTED by Patton Township, Centre County, Pennsylvania, after Public Hearing and in accordance with the general powers permitted by the Second Class Township Code (53 P.S. §65101 et seq.), that the following Ordinance be enacted:

SECTION 1: TITLE

This Ordinance shall officially be known as the “Solar Energy Systems” Ordinance in the Township.

SECTION 2: INTENT

The Township intends to provide for the land planning, installation, and construction of solar energy systems subject to reasonable conditions.

SECTION 3: DEFINITIONS

Amend **§175-6 Definitions; interpretations of regulations** to add the following:

SOLAR ENERGY SYSTEM - An energy system that converts solar energy to usable thermal, mechanical, chemical, or electrical energy. Solar energy systems may be mounted on a building or on the ground, integrated into the construction of a building, or self-contained whereas it generates energy exclusively for the device it is mounted to.

SOLAR COLLECTOR SURFACE – Any part of a solar energy system that absorbs or reflects solar energy for use in the system’s transformation process including any portion of the frames, supports, and mounting hardware.

UTILITY SCALE SOLAR ENERGY SYSTEM - Any commercially sized or scaled Solar Energy System that is the principal use on the property and its operator has signed an official agreement of power purchase with a utility provider, or it

produces energy in excess of one-hundred-twenty-five (125) percent of the energy needed by the property's principal use, or produces energy in excess of ten (10) megawatts.

SECTION 4: MAXIMUM HEIGHT REQUIREMENTS

Amend **§175-41C, General regulations.** as follows:

~~Strikethrough~~ = deletion

Bold Italics = addition

C. Exceptions to maximum height requirements.

- (1) In Rural, Commercial and Industrial Districts the maximum height requirements shall not apply to the following: barns and silos, belfries, bulkheads, chimneys, church spires, domes, monuments, observation towers, skylights, smokestacks, utility poles and towers, ventilators, water tanks, windmills and ~~solar collectors~~ ***solar energy systems***, provided that:
 - a. They are erected only to such height as is necessary to accomplish the purpose they are to serve; and
 - b. If over 45 feet in height, they shall not exceed a height equal to their setback distance from any property line.
- (2) The maximum height for telecommunications towers and antennas shall be in accordance with the requirements of **§175-48.1, Telecommunications facilities.**
- (3) In the Low-Density Residential District (R-2), antennas and supportive structures on residential dwellings for private noncommercial amateur purposes, including but not limited to ham radios and citizen band radios, may exceed the maximum height requirements for buildings but in no instance shall they exceed a fixed height of 45 feet or, for crank-up or variable height antennas, an extended height of 60 feet, provided that:
 - a. They are erected only to such height as is necessary to accomplish the purpose they are to serve.
 - b. They shall not exceed a height equal to their setback distance from any property line.

- c. The height of antennas mounted on a building shall be measured from ground level.

SECTION 5: REGULATIONS FOR SOLAR ENERGY SYSTEMS

Amend **Chapter 175: Zoning** to add a new Article entitled “**Solar Energy Systems**” with the following provisions:

A. General Regulations

(1) Location.

- a. Primary use solar energy systems may only be located in the zoning districts where they are listed as a Permitted Use, Conditional Use, or Designated Use.
- b. Accessory use solar energy systems shall be permitted in all zoning districts.
- c. In the University Planned District, ground-mounted solar energy systems, whether primary or accessory, shall be located only in the subdistricts that permit “Utility uses, facilities, and structures.” The exception to this shall be ground-mounted systems that are minimal in size and designed to only provide energy to an adjacent device or structure.
- d. In the Planned Airport District, solar energy systems must additionally conform to all Federal Aviation Administration (FAA) regulations as specified in **§175-36C, Use regulations.**

(2) Height. All solar energy systems shall follow the maximum height requirements of the zoning district they are located in with the following additional requirements for building-mounted systems:

- a. Systems on sloped roofs that face an adjacent right-of-way shall be installed at the same angle as the roof with a maximum distance, measured perpendicular to the roof, of eighteen (18) inches between the roof and highest edge of the system.
- b. Systems on sloped roofs that do not face an adjacent right-of-way shall be installed at any angle, given that the highest point of the

system does not exceed the highest point of the roof it is attached to.

- c. Systems on flat roofs shall be installed so that the highest point is no greater than six (6) feet above the roof to which it is attached.

(3) Setbacks.

- a. No portion of any solar energy system or its related appurtenances may be located within the setback areas specified by the zoning district in which they are located.
- b. Building-mounted systems shall not extend beyond the edge of the roof, wall, or other surface they are located on.
- c. Systems located on roofs of primary use structures shall maintain at least a thirty (30) inch wide pathway on at least three sides of the system except on flat roofs, in which case all four sides of the system must have a minimum thirty (30) inch wide pathway.
 - i. If the thirty (30) inch pathway limits the effective size of the system, the Township Zoning Officer may request that the Centre Region Fire Director determine whether a lesser width pathway is permissible and that it will not jeopardize the safety of firefighters in the event of an emergency.
 - ii. In the event that a sloped roof has two roof planes that meet to form “hips” or “valleys”, the thirty (30) inches shall be measured between the solar energy systems located on each roof plane.
 - iii. This requirement shall not apply to non-habitable accessory structures such as garages, carports, sheds, and the like.

- (4) Lot Coverage.** The horizontal area projected by the system in addition to all impervious surfaces shall not exceed the maximum lot coverage allowed in the zoning district. For a tracking solar collector or other moveable solar energy system, the horizontal projection area shall be calculated at a thirty-three (33) percent tilt angle.

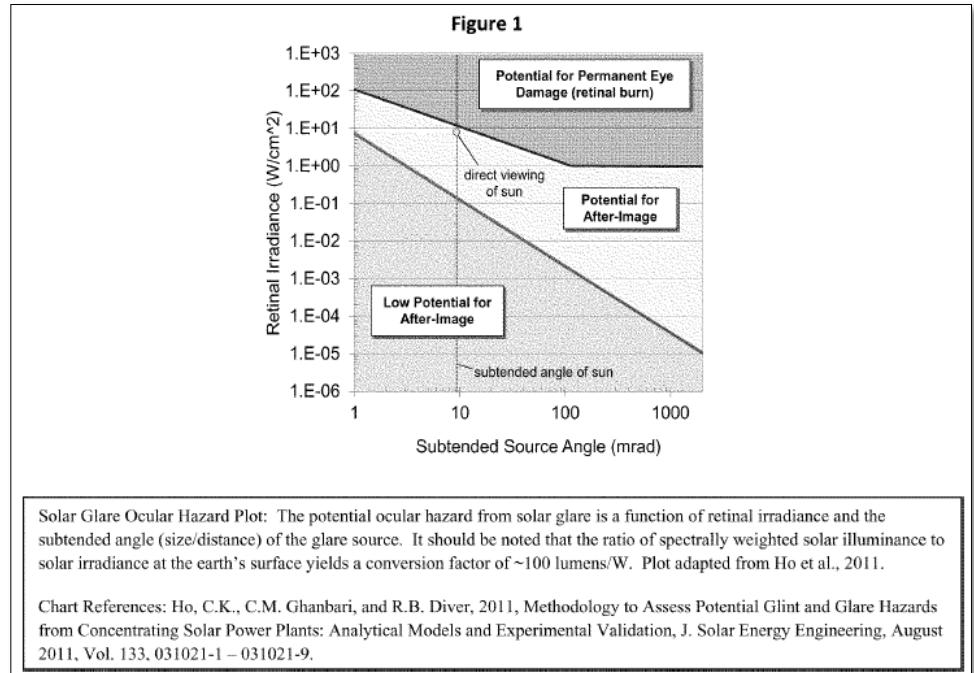
- (5) **Battery.** If the system utilizes a battery system, the battery(s) must be placed in a secure container or enclosure.
- (6) **Aviation Notification.** All proposals for systems 7,500 ft² or greater in size, or which are intended to produce 100 kilowatts or greater, and which are located within five (5) miles of the end of the University Park Airport runway will be forwarded to the University Park Airport by the Township to ensure that there are no aviation-related concerns.

B. Solar Energy Systems as a Primary Use

- (1) **Applicability.** A solar energy system shall be considered a primary use under the following conditions:
 - a. The system is a Utility Scale Solar Energy System, as defined in **§175-6 Definitions; interpretations of regulations.**
 - b. The system is connected into the utility grid and produces electricity at a capacity that consistently provides energy to the grid. Grid-connected systems that are only utilized periodically will be considered an accessory use to the primary permitted use of the lot(s) and regulated as such.
- (2) **Screening and Visibility.**
 - a. All building-mounted solar energy system appurtenances should be painted and/or coated a color similar to the surface upon which they are mounted or otherwise designed to be as inconspicuous as possible.
 - b. All ground-mounted system installations must adhere to the following buffering requirements:
 - i. In the Industrial, General Commercial, and Planned Commercial districts, installations must meet the requirements of **§175-44, Districts design and landscaping controls for R-3, Commercial (C), Office Buffer (OB) and Industrial (I) Districts.**

- ii. In the Commercial Transitional District, installations shall adhere to the buffering requirements of **§175-17.3G(1), Screening.**
 - iii. In the Planned Community District, installations shall meet the buffering requirements of **§175-24A(4), Buffer yards and landscaping.**
 - iv. In the Planned Airport District, installations shall follow the buffering requirements of **§175-40, Design and improvement standards.**
 - v. In the Rural, Natural Resources, Natural Resources and Recycling districts, and the University Planned District, installations must adhere to the buffering requirements of **§175-42, Procedures and criteria for conditional uses.**
 - vi. Any installations within the I-99 Interchange Overlay district shall adhere to the additional buffering requirements of **§175-40.3 Setbacks and landscaping.**
- (3) **Warning Signage.** The identification and contact information of the owner, installer, or manufacturer of the system and warning signage shall be posted at the site in a clearly visible manner.
- (4) **Fencing.** Primary use systems shall be enclosed by perimeter fencing of an appropriate height to restrict unauthorized access.
- (5) **Power Lines.** To the greatest extent possible, on-site power lines shall be placed underground.
- (6) **Glare.** Primary use solar energy systems shall be designed and installed in a manner as to not project any glare or glint onto any adjoining property or roadway as follows:
- a. A glare and glint study report from the latest version of the ForgeSolar GlareGauge[®] tool, or equivalent, shall be provided to the Township by a Registered Professional, as defined in **§147-11 Definitions and word usage.** The tool shall be used to

determine that the solar energy system will have no ocular impact or low potential for temporary after-image ocular impact as illustrated by the solar glare ocular hazard plot in **Figure 1**. The observation points used with the tool shall be determined in coordination with the Township.



- b. The Township reserves the right to require one or more of the following to limit glare:
- i. Modification of the location, angle of tilt, and/or azimuth angle of the solar collector(s).
 - ii. Placement of landscaping or other physical object to limit the projection of glare or glint.
 - iii. Utilization of Anti-Reflective (AR) glass on the solar energy system.
 - iv. Utilization of glass with a light-diffusing texture on the front surface.

(7) **Procedure.** All applications for primary use systems shall be reviewed and approved pursuant to the plan review procedures of **Chapter 153, Subdivision and Land Development.**

(8) **Removal.**

- a. If a primary use system ceases to perform for more than twelve (12) consecutive months, it shall be considered abandoned and all equipment, devices, and other appurtenances shall be removed by the owner within ninety (90) days.
- b. Upon determining that a primary use system has been abandoned, the Zoning Officer shall issue notice to the property owner. The owner shall have the right to respond to within thirty (30) days of receipt of the notice.
- c. If all equipment, devices, and other appurtenances are not removed or repaired within ninety (90) days of receipt of the notice of abandonment, the Township may pursue legal action to have the solar energy system removed at the owner's expense.

C. Accessory Solar Energy Systems

(1) **Applicability.** A solar energy system shall be considered an accessory use under the following conditions:

- a. The system does not meet the criteria for a Utility Scale Solar Energy System, as defined in **§175-6 Definitions; interpretations of regulations.**
- b. Large developments or institutions may utilize a solar energy system as an accessory use given that its capacity is such that it is designed to supplement the energy needs of the development or institution.
- c. Interconnection of a system into the utility grid shall not disqualify it from being an accessory use given that the interconnection is only utilized periodically and the system can be defined as a customer-generator under **52 PA Code §75.1 of the Pennsylvania Code.**

(2) **Glare.** Glare or glint from a solar energy system shall be regulated as follows:

- a. It shall be the responsibility of the applicant to demonstrate to the Township that the proposed system will be installed in a manner that will limit glare or glint.
- b. The latest version of the ForgeSolar GlareGauge© tool or an acceptable equivalent may be used to demonstrate to the Township the amount, location, and time of day that glare may be projected onto any habitable structure(s) on an adjacent property or right-of-way.
- c. Any ground-mounted or building-mounted solar energy system with a solar collector surface area greater than one-half ($\frac{1}{2}$) acre shall perform a solar glare analysis study in accordance with the regulations for primary use solar energy systems.
- d. The Township reserves the right to require one or more of the following to limit glare:
 - i. Modification of the location, angle of tilt, and/or azimuth angle of the solar collector(s).
 - ii. Placement of landscaping or other physical object to limit the projection of glare or glint.
 - iii. Utilization of Anti-Reflective (AR) glass on the solar energy system.
 - iv. Utilization of glass with a light-diffusing texture on the front surface.

(3) **Building-integrated solar energy systems.** The regulations herein shall not apply to building-integrated solar energy systems, given that they do not make the structure nonconforming with any other zoning regulations.

(4) **Self-contained solar energy systems.** Solar energy systems located on a light fixture, sign, or other similar device shall be permitted with the following regulations:

- a. The system is limited in size so that it provides only enough energy for the device it is mounted on.
- b. No part of the system shall extend more than three feet above the device it is mounted to or the maximum height permitted in the district; whichever is greater.

(5) Parking lots and structures. Solar energy systems placed in parking lots shall be designed and installed as follows:

- a. Systems shall be placed at a minimum height to sufficiently allow access for motor vehicles to park underneath them. If the system is placed over a drive aisle, the minimum clearance at the lowest point of the system shall be fourteen (14) feet.
- b. A system located over the top level of a multilevel parking structure shall not exceed a maximum height of 20 feet as measured from the driving surface to the highest point of the system.

(6) Procedure.

- a. All solar energy systems as defined herein shall require a zoning permit pursuant to **§175-56, Zoning permit.**

SECTION 6: DISTRICT USE REGULATIONS

Amend **Article III Commercial Districts** to add “Solar energy systems” to the list of Permitted Uses in **Table 3 (§175-16B, C-1 Uses and §175-17B, C-2 Uses)**

Amend **Article IV Planned Community District** to add “Solar energy systems” to the list of Permitted Uses in **Table 1 (§175-20A, PC Uses)**

Amend **Article V Conservation Districts** to add “Solar energy systems” to the list of Conditional Uses in **Table 1 (§175-26B, A-1 Uses and §175-27B, NR-1 Uses and §175-27.1B, NR-2 Uses)**

Amend **Article VI Industrial Districts** to add “Solar energy systems” to the list of Conditional Uses (**§175-30B(1)**)

Amend **Article VII University Planned District (UPD)** to add “Solar energy systems” to the list of Designated Uses (**§175-33B(2)**)

Amend **§175 Attachment 2 – Table 1: Land Use Permitted in the Planned Airport District (PAD)** to add “Solar energy systems” to the list of Permitted Uses in the Mixed-Use, Nonresidential, and Approach areas

SECTION 7: EFFECTIVE DATE

This Ordinance shall become effective immediately upon enactment by the Patton Township Board of Supervisors.

ENACTED AND ORDAINED by the Township of Patton this the ____ day of _____, 2017.

Attest:

PATTON TOWNSHIP BOARD OF SUPERVISORS

Secretary

[Seal]