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Hellam Township Board of Supervisors

Solar Energy Ordinance Packet

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   Revision 9 Draft 11/8/2023

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Hellam Township Planning Commission

Solar Energy Systems Ordinance

(Revision 9 Draft 11/8/2023)

- WHEREAS, the Pennsylvania Municipalities Code, act of July 31, 1968, as amended, 53 P.S. 10101 et seq., enables the Municipality through its zoning ordinance to regulate the use of property and the conservation of energy through access to and use of renewable energy resources; and
- WHEREAS, the Municipality, as defined below seeks to promote the general health, safety and welfare of the community by adopting and implementing this ordinance providing for access to and use of solar energy systems; and
- WHEREAS, the purpose of this ordinance is to set requirements for solar energy systems;
- IT IS HEREBY ENACTED AND ORDAINED by the governing body of the Municipality as follows:

SECTION 2- DEFINITIONS

MUNICIPALITY: Hellam Township, York County

APPLICANT: The individual or entity seeking approval for a solar energy system pursuant to this ordinance. The owner of the real property upon which the solar energy system is erected and the Applicant shall be responsible for compliance with this ordinance.

ACCESSORY SOLAR ENERGY SYSTEM (ASES): An area of land or other area used for a solar energy system used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for on-site use. Ground mounted or freestanding Solar Energy Systems with an output size of not greater than 10kw shall be considered Accessory Solar Energy Systems. Roof Mounted Solar Energy Systems on the roofs of buildings on-site used primarily for on-site use shall have no limit as to energy output. An accessory solar energy system consists of one (1) or more free-standing ground, or roof mounted solar arrays or modules, or solar related equipment and is intended to primarily reduce on-site consumption of utility power or fuels.

AGRIVOLTAICS: The co-development of the same area of land for both solar photovoltaic power and agriculture.

GLARE: The effect produced by light with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility both onsite and offsite.

CONCENTRATED RADIATION- Focused energy in the form of heat or light (or both) that has the potential to cause or has caused damage.

PRINCIPAL SOLAR ENERGY SYSTEM (PSES): An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use. Principal solar energy systems consist of one (1) or more free-standing ground, or roof mounted solar collector devices, solar related equipment and other accessory structures and buildings including photovoltaic system equipment, light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures. PSES includes solar energy systems commonly referred to as "Utility" or "Commercial" Level systems designed to provide power to thousands on customers and "Community" Level systems that are designed to provide power to a defined number of customers such as a Planned Community.

SOLAR EASEMENT: A solar easement means a right, expressed as an easement, restriction, covenant, or condition contained in any deed, contract, or other written instrument executed by or on behalf of any landowner for the purpose of assuring adequate access to direct sunlight for solar energy systems.

SOLAR ENERGY: Radiant energy (direct, diffuse and/or reflective) received from the sun.

SOLAR ENERGY SYSTEM: An area of land used for a solar collection system principally to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power.

SOLAR PANEL: That part or portion of a solar energy system containing one or more receptive cells or modules, the purpose of which is to convert solar energy for use in space heating or cooling, for water heating and/or for electricity.

PHOTOVOLTAIC SYSTEM- A photovoltaic (PV) system is composed of one or more solar panels combined with an inverter and other electrical and mechanical hardware that use energy (photons) from the sun to generate electricity. Electricity output is DC and the inverter converts to AC.

SOLAR PROJECT AREA: The total area of land including the Principal Solar Energy System, battery storage, buildings/structures associated with the energy system, transmission equipment, the space between solar arrays, stormwater management area, access drives, fencing and internal access roads and perimeter access roads, emergency access roads and turnarounds.

BATTERY Energy Storage System (BESS): Includes the batteries and all connection equipment. The battery storage equipment shall be housed in a ventilated structure capable of limiting flammable gas to 25% of Lower Flammable Limit (LFL). The structure shall have flat and level concrete floors with acid and impact resistant coating, battery stands coated to withstand acid, rollers that are spark proof, hydrogen gas detectors, aerosol type fire suppression system, eye wash station, area for storage of personnel protective equipment (such as, but not limited to acid resistant face shields, goggles, aprons and gloves), spill kits, fire extinguishers (ABC, dry chemical, CO2 or foam) and maintenance equipment necessary to maintain battery storage operation. The structure shall meet NFPA 855 standard for the installation of stationary energy storage systems. The structure shall be centrally located in the PSES area. It shall be protected by an 8 foot fence and a locked gate. Noise outside the structure shall not exceed 65 decibels.

BUILDING- MOUNTED SYSTEM: A solar photovoltaic system attached to any part of a side or roof of a primary or accessory structure.

reference ordinance

BUILDING-INTEGRATED SYSTEM: A solar system that is constructed as an integral part of a primary or accessory building or structure.

IMPERVIOUS SURFACE: A surface that prevents or retards the infiltration of water into the soil or causes water to run off the surface of the ground in quantities or at an increased rate of flow from the conditions prior to development, construction, building or installation.

INTERCONNECTION: The technical and practical link between the solar system and the grid providing power to the greater community.

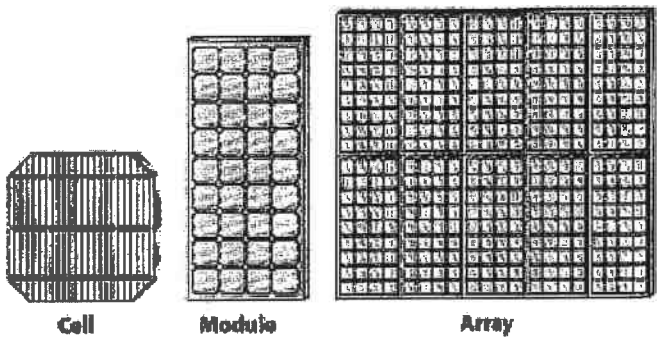
WATT: The metric measurement of power (not energy) and is the rate (not the duration) at which electricity is used.

KILOWATT (kW): A unit of electrical power equal to 1,000 watts, which constitutes the basic unit of electrical demand.

MEGAWATT (MW): 1 megawatt is equal to 1,000 kilowatts.

SOLAR RELATED EQUIPMENT: Items including a solar photovoltaic cell, module, panel, or array, or solar hot air or water collector device panels, lines, pumps, batteries, wiring (above and below ground), mounting brackets, framing and possibly foundations or other structures used for or intended to be used for collection of solar energy.

1. SOLAR CELL: The smallest basic solar electric device which generates electricity when exposed to light.
2. SOLAR MODULE: A grouping of solar cells with the purpose of harvesting solar energy.
3. SOLAR ARRAY: A grouping of multiple solar modules with purpose of harvesting solar energy.



SECTION 3- SCOPE, ADMINISTRATION AND ENFORCEMENT

A: Scope

1. From and after the effective date of this ordinance, all solar energy systems shall be in conformity with the provisions of this ordinance. In the event that a court of competent jurisdiction declares any part of this ordinance invalid, such decision shall not affect the validity of any remaining sections.

B. Applications

1. Permit applications shall document compliance with this ordinance and shall be accompanied by land development plan/drawings showing the location of the solar energy system on the property and, if applicable, on the building(s), including property lines.

2. The permit shall be revoked if the solar energy system, whether new or preexisting, is moved or otherwise altered, either intentional or by natural forces, in a manner which causes the system to be not in conformity with this ordinance.

C. Inspections (applies only to PSES)

1. Inspections (equipment function and safety equipment) shall be conducted on a quarterly basis by the owner or the facility operator to a checklist developed in accordance with recognized published industry standards. A copy of the checklist shall be given to the municipality for review and approval. A township representative (Zoning Officer or designee) shall accompany the owner or facility operator on one of the quarterly inspections per year.
2. A copy of the most recent inspections results shall be kept on the premises in the lock box at the main entrance gate. A copy of the results of each inspection shall be submitted to the municipality.

D. Fees

1. The applicant shall pay all permit application, plan reviews/approvals and inspection fees related to review and approval of the application.
2. The cost of the yearly inspection of PSES by the township shall be paid by the owner or facility operator.
3. All fees are set by resolution.
4. Any additional costs related to additional reviews or inspections or legal fees incurred by the municipality in resolving identified issues shall be reimbursed by the applicant.

SECTION 4- ALL SOLAR ENERGY SYSTEMS

A. The following regulations apply to all solar energy systems including Principal Solar Energy Systems and Accessory Solar Energy Systems.

1. Solar energy systems constructed prior to the effective date of this Section shall not be required to meet the terms and conditions of this Ordinance. Any physical modification to an existing solar energy system, whether or not existing prior to the effective date of this Section that materially alters the solar energy system shall require approval under this Ordinance. Routine maintenance or like-kind replacements do not require a permit. A permit will required for an upgrades, new technology or capacity increases.
2. The Solar energy system layout, design and installation shall conform to applicable industry standards, such as those of the American National Standards Institute (ANSI), Underwriters Laboratories (UL), the American Society for Testing and Materials (ASTM), Institute of Electrical and Electronics Engineers (IEEE), Solar Rating and Certification Corporation (SRCC), Electrical Testing Laboratory (ETL), or other similar certifying

organizations, and shall comply with the PA Uniform Construction Code as enforced by the Municipality and with all other applicable fire and life safety requirements. The manufacturer specifications for the key components of the system shall be submitted as part of the application.

3. Upon completion of installation, the solar energy system shall be maintained in good working order in accordance with standards of the municipal codes under which the solar energy system was constructed. Failure of the property owner to maintain the solar energy system in good working order is grounds for appropriate enforcement actions by the municipality in accordance with applicable ordinances. The solar energy system must be kept free of all hazards (including but not limited to faulty wiring, loose fastenings, non-functioning controls) being in an unsafe condition and detrimental to public health, safety or general welfare.
4. All on-site (inside the perimeter fence) transmission and plumbing lines shall be placed underground.

5. Glare/Noise

   a. All solar energy systems shall be placed such that concentrated solar radiation does not project onto nearby structures or roadways. Exterior surfaces shall have a non-reflective finish.
   b. The applicant has the burden of proving that any glare produced does not have significant adverse impact on neighboring properties or adjacent uses either through siting or mitigation.
   c. Noise level shall not exceed 65 decibel at the property line of all adjacent properties.

6. No portion of the solar energy system shall contain or be used to display advertising. The manufacturers name and equipment information and ownership information/contact information shall be on equipment provided it complies with prevailing sign regulations.
7. No more than 10% of existing trees in the solar system area shall be removed during construction. Landscaping required by the municipal land development ordinances or attached as a condition of approval of any plan, application, or permit shall be completed prior to commercial power generation operation of solar energy system. Landscaping (existing or added) shall be maintained with replacement of any dead or dying items within 2 months (or as soon as weather or growing season permits).

8. Prior to the issuance of a zoning or land use permit, solar energy system applicants must acknowledge in writing that the issuing of said permit shall not and does not create in the property owner, its, his, her or their successors and assigns in title or, create in the property itself;

a. The right to remain free of shadows and/or obstructions to solar energy caused by development of adjoining or other property or the growth of any trees or vegetation on such property; or

b. The right to prohibit the development on or growth of any trees or vegetation on such property.

c. Neighboring property owners can grow any vegetation anywhere on their property, unless there is an easement in place.

d. This acknowledgment shall be submitted to the municipality and placed on any required subdivision and/or land development plans.

9 Solar Easements

a. Where a subdivision or land development proposes a solar energy system, solar easements may be provided. Said easements shall be in writing, and shall be subject to the same conveyance and instrument recording requirements as other easements.

b. Any such easements shall be appurtenant; shall run with the land benefited and burdened; and shall be defined and limited by conditions stated in the instrument of conveyance. Instruments creating solar easement shall include but not be limited to:

i. A description of the dimensions of the easement including vertical and horizontal angles measured in the degrees or the hours of the day, on specified dates, during which direct sunlight to a specified surface or structural design feature may not be obstructed.

ii. Restrictions on the placement of vegetation, structures, and other objects which may impair or obstruct the passage of sunlight through the easement;

iii. Enumerate terms and conditions, if any, under which the easement may be revised or terminated;

iv. Explain the compensation for the owner of the real property subject to the solar easement for maintaining the easement and for the owner of the real property benefiting from the solar easement in the event of interference with the easement.

c. If necessary, a solar energy system owner and/or operator must obtain any solar easements necessary to guarantee unobstructed solar access by separate civil agreement(s) with adjacent property owner(s).

10. Stormwater Requirements

a. The following components of a solar energy system shall be considered impervious coverage and calculated as part of the impervious coverage limitations for the underlying zoning district:

i. Foundation systems, typically consisting of driven piles or monopoles or helical screws with or without small concrete collars.

ii. All mechanical equipment of the system including any structure and pads for batteries or storage cells.

iii. Gravel used in any application shall be considered impervious.

b. The surface area of the arrays of a solar energy system, regardless of the mounted angle of any solar panels, shall be considered impervious and calculated in the lot coverage of the lot on which the system is located.

c. The applicant shall submit a Stormwater Management Plan that demonstrates compliance with the municipal stormwater management regulations.

11. Impervious coverage limitations established in this section and a detailed stormwater analysis including Post Construction Stormwater Management (PCSM) and Pennsylvania Stormwater Best Management Practices (BMPs) Manual requirements are required for all solar energy systems unless the requirements listed below are met:

a. Impervious coverage requirements, and a detailed stormwater analysis including PCSM and BMP requirements do not apply to the solar energy systems if:

i. If earth disturbance and grading activities are minimized and natural vegetative cover preserved and/or restored using native species specified in applicable township ordinances.

ii. The low impact construction techniques must be utilized in accordance with the latest edition of the Pennsylvania Best Management Practices Manual.

iii. Vegetative cover must have a minimum uniform 90% perennial vegetative cover between rows and 80% under panel arrays with a density capable of resisting accelerated erosion and sedimentation.

(a) Meadows of native species as specified in applicable township ordinance is required for slopes of 5 to 10%.

(b) Vegetative cover shall not be cut or grazed to less than 4 inches in height.

(c) Vegetated areas will not be subject to chemical fertilization or herbicide/pesticides application, except for those applications necessary to establish and maintain the vegetative cover or replace nutrients in accordance with an approved Erosion and Sedimentation Control Plan.

(d) Vegetation along the fence lines shall be controlled by mechanical or chemical application.

(e) For this section, gravel is considered an impervious cover and is prohibited unless used for road or turnaround construction.

iv. The individual solar modules within an array are arranged in a fashion that:

(a) Allows the passage of runoff between each module, minimizing the creation of concentrated runoff.

(b) Individual solar panels shall not exceed 6 feet in width to allow for adequate vegetative cover to be established and maintained.

v. All panels must be placed on an area with 15^0 slope or less.

vi. The lowest vertical clearance of the solar array shall be 3 feet and the highest vertical height from the surface of the ground allowed by the applicable zoning requirement. The minimum height must be of adequate height to promote vegetative growth below the array.

Vii. A maximum of 5% of the solar project area may be occupied by the support structure/foundations used to support ground mounted solar panels.

12. Agrivoltaics is encouraged and permitted when:
    a. Cutting or mowing is limited to a height of no less than 4 inches.
    b. Application of chemical fertilization or herbicides/pesticides is limited to the agronomic needs to the crop(s).
    c. Written Erosion and Sediment plan is developed and approved to control runoff.
    d. When grazing, a Manure Management Plan shall be developed and approved.

SECTION 5- PRINCIPAL SOLAR ENERGY SYSTEMS (PSES)

A. Regulations Applicable to All Principal Solar Energy Systems:

1. PSES are permitted in specified zoning districts based upon the table below:

USE TABLE (Parcel Size)	
Zone	
Rural/Agricultural	Greater than 20 acres (Conditional Use)
	20 acres or less (Right)
Residential /Village Overlay	Not Permitted
Mu1/Historic Overlay/Restricted Development Overlay	Not Permitted
Mu2	Conditional Use
Commercial/Industrial/Quarry	Right
Interchange and Kreutz Creek Interchange	Right

2. Any proposed PSES shall be located within the following distances of an adequately sized power line, a substation that is capable of accepting solar energy into the electricity grid, or another solar facility.
   a. Substation- 2 miles
   b. Transmission Line- 1 mile

3. Plan Requirements: A report and plan highlighting the existing conditions of the property shall be included in the submission to the municipality. The information should highlight existing vegetation, topography, and other existing natural features.
   a. Ground mounted PSES require submission of a land development plan if the solar project area is greater than 5,000 square feet.
   b. Roof mounted PSES do not require submission of a land development plan.

4. Permit Requirements
   a. PSES shall comply with the municipal subdivision and land development ordinance requirements through submission of a land development plan. The installation of PSES shall be in compliance with all applicable permit requirements, codes and regulations.
   b. The PSES owner and/or operator shall repair, maintain and replace the PSES and related solar equipment during the term of the permit in a manner consistent with industry standards as needed to keep the PSES in good repair and operating condition.
   c. The PSES owner shall provide evidence a certificate of liability insurance of 1 million dollars naming the township as an additional insured on the policy.

5. Decommissioning Costs
   a. At the time of issuance of the permit for the construction of the PSES, the owner shall provide financial security in the form and amount acceptable to the municipality to secure its obligations under this Section.
      i. The PSES Developer shall, at the time of application, provide the municipality with an estimated cost of performing the decommissioning activities required herein, plus an administrative cost of 1% and an inflation factor of 2% per year times service life years. Assume 25 year service life (if the service life increases then the new service life years estimate shall be used in the formula). The decommissioning cost estimate formula shall be: Cost of decommissioning activities + (Decommissioning cost x 1%) + (Decommissioning cost x 2% x Service Life years) + estimated cost of permits = the decommissioning cost estimate. The Decommissioning Cost estimate is also the Decommissioning Financial Security cost.
      ii. On every third year anniversary of the date of providing the decommissioning cost estimate, the PSES Owner shall provide an updated decommission cost estimate, utilized the formula set forth above. If the decommissioning cost estimate amount changes, the PSES Owner shall remit the increased financial security to the municipality within 30 days of the approval of the updated decommissioning cost estimate by the municipality.

iii. Decommissioning security estimates shall be subject to review and approval by the municipality and the PSES Developer/ Owner shall be responsible for administrative, legal, and engineering costs incurred by the municipality for such review.

iv. The decommissioning security may be in the form of cash, letter of credit, bond, or an investment grade corporate guarantee rated BBB-/Baa3 or better by S&P, Moody's, or AM Best, as applicable. The security shall held by the municipality.

v. Prior to approval of any plan or permit for a PSES, the PSES Developer shall enter into a Decommissioning Agreement with the municipality outlining the responsibility of the parties under this Agreement as to the Decommissioning of the PSES.

6. Decommissioning

The solar energy system owner is required to notify the Municipality immediately upon cessation or abandonment of the operation.

a. The solar energy system shall be presumed to be discontinued or abandoned if no electricity is generated by such system within a period of 6 continuous months. No electricity generation shall be defined as no commercially usable power generated on a continuous basis of 60 consecutive days.

b. The solar energy system owner shall then have 6 months from abandonment in which to dismantle and remove the entire solar energy system including all solar related equipment or appurtenances related thereto, including but not limited to buildings, cabling, electrical components, roads, foundations and other associated facilities from the property in accordance with good industry practice and agreements (Decommissioning Agreement)with the landowner. If the owner fails to dismantle and/or remove the solar energy system within the established timeframe, the municipality may complete the decommissioning at the owner's expense. Any soil exposed during the removal shall be stabilized in accordance with applicable erosion and sediment control standards and requirements.

7. The solar energy system owner shall submit on a 6 month basis (July 1 and Jan 2) information (such as daily generation chart, significant outage incidents summary, significant operational issues, future planned outages and improvements) concerning the amount of energy generated by the solar energy system to the municipality. Also report any changes to the estimated service life.

8. Dimensional Requirements

See applicable Zoning requirements.

9. The PSES owner shall notify the township within 30 days of any changes in PSES ownership.

10. Environmental Protection

a. All PSES must be set back a distance of Twenty Five (25) feet (as measured from the PSES fence) from any area designated as a wetland, a FEMA Floodplain, or an area containing 15% slope or greater.

b. All PSES shall be set back 150 feet (as measured from the PSES fence) from a property listed on, or eligible for listing on the National Register of Historic Places as designated by the State Historic Preservation Office of the National Park Service.

c. In Agricultural Districts, the total of all solar project areas shall not be more than 25% of the total class I and class 2 soils and 50% class 3 soils in Agricultural defined districts. This requirement does not apply if the project area is proposing Agrivoltaics.

In no case shall the solar project area occupy more than 50 acres of class I and class 2 soils within an individual parcel.

11. PSES shall not be placed in any legal easement or right-of-way.

12. Ground mounted PSES shall be screened per the applicable zoning district.

13. PSES shall not be placed within any storm water conveyance system or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

14. Security

a. All ground-mounted PSES shall be completely enclosed by a minimum eight (8) foot high fence with a locked gate at each entrance point (people or vehicle). The fence shall meet setback requirements noted in this section.

b. A clearly visible warning sign (no smaller than 1 foot square) shall be placed at the base of all pad-mounted transformers and substations and on the fence surrounding the PSES at intervals of 100 feet informing individuals of potential voltage hazards.

c. The Owner or Facility Operator shall post a sign stating the name(s) and phone number(s) of the contact person(s) for all inquiries, emergencies and complaints. The contact list must cover a 24/7 schedule. The sign shall be posted on each entrance gate and be readable at night. The contact information shall also be given to the municipality.

d. The Owner or Facility Operator shall develop and Submit an Emergency Response plan to cover industry known issues. A copy shall be kept on site and copy given to the municipality.

e. There shall a lock box with a combination lock at each entrance gate (the combination lock at each gate shall have the same combination). Each lock box shall contain the applicable gate key, the battery storage lock key, copy of all permits and plans required by this ordinance (including the Emergency Response Plan). The lock combination shall be given to the municipality prior to facility startup.

f. Each gate (and contact sign) shall have downfacing motion activated lighting.

15. Access

a. At a minimum, a 25' wide access road must be provided from a state or municipal roadway into the site.

b. Each access road from a street shall be connected to the emergency access openings between the solar array system. Between every 8 solar arrays rows or 150 feet (whichever is less), a 20' wide emergency access opening shall be provided to allow access for maintenance vehicles and emergency management.

Access width is the distance between the bottom edge of a solar panel to the top edge of the solar panel directly across from it. There shall be 1 perpendicular access opening up the center of the array rows. At each end of these access openings shall be a Dead-End Fire Apparatus Access Road Turnaround. This turnaround shall in accordance with the "Acceptable Alternative to 120 foot Hammerhead" in Figure D103.1 of the 2021 International Fire Code (or an equivalent approved by the municipality and the Fire/Police/Emergency Services servicing the municipality). All roads, access openings and turnarounds shall be capable of supporting police/fire/emergency services vehicles (approximate maximum weight 80,000 pounds) and have a traveling grade of no more than 10 %.

i. If the PSES is exempt from stormwater requirements as specified in this section, vegetation must be maintained or replaced after maintenance and/or emergency use.

c. Access to the PSES shall comply with the municipal access requirements in the Subdivision and Land Development Ordinance.

16. The interior area (inside the gate and fencing) of the PSES shall not be artificially lighted except to the extent required for safety or applicable federal, state, or local authority.

17. The owner of a PSES shall provide the Municipality written confirmation that the public utility company to which the PSES will be connected has been informed of the customer's intent to install a grid connected system. The written confirmation shall include a statement of capacity and approval of the proposed connection.

18. Noise Study shall be conducted at any Battery building and at the property line of all adjacent properties. A copy of all reports shall be provided to the municipality.

B. Roof and Wall Mounted Principal Solar Energy Systems:

1. For roof and wall mounted systems, the applicant shall provide evidence that the plans comply with the Uniform Construction Code and adopted building code of the Municipality that the roof or wall is capable of holding the load imposed on the structure.

2. PSES mounted on the roof or wall of any building shall be subject to the maximum height regulations of the underlying zoning district.

SECTION 6- ACCESSORY SOLAR ENERGY SYSTEMS

A. Regulations Applicable to All Accessory Solar Energy Systems:

1. ASES shall be permitted as a use by right in all zoning districts. This permitted right applies only if the majority of the energy generated is used on the landowner's parcel.

2. Ground Mounted ASES of 10Kw or greater are considered PSES and shall follow PSES requirements.

3. Exemptions

a. ASES of 2 Kw or less are exempt from this ordinance.

4. Permit Requirements

a. Zoning /building permit applications shall document compliance with this Section and shall be accompanied by drawings showing the location of the system on the building or property, including property lines. Permits must be kept on the premises where the ASES is constructed.

b. The zoning/building permit shall be revoked if the ASES, whether new or preexisting, is moved or otherwise altered, either intentionally or by natural forces, in a manner which causes the ASES not to be in conformity with this Ordinance.

c. The ASES must be properly maintained and be kept free from all hazards, including but not limited to, faulty wiring, loose fastenings, being in an unsafe condition or detrimental to public health, safety or general welfare. In the event of a violation of any of the foregoing provisions, the Zoning Officer shall give written notice specifying the violation to the owner of the ASES to conform or to remove the ASES.

B. Roof Mounted and Wall Mounted Accessory Solar Energy Systems:

1. A roof mounted or wall mounted ASES may be located on a principal or accessory building.

2. ASES mounted on roofs or walls of any building shall be subject to the maximum height regulations specified for principal and accessory buildings within each of the underlying Zoning Districts.

3. The total building height with the ASES shall not exceed 3 feet above the applicable height requirement of the zoning district.

4. Wall mounted ASES shall comply with the setbacks for principal and accessory structures in the applicable zoning district.

5. Solar panels shall not extend past the roof edge.

C. Ground Mounted Accessory Solar Energy Systems:

1. Setbacks

a. Ground mounted ASES are prohibited in the front yard in all zoning districts.

b. ASES shall met Side and Rear yard setbacks for the applicable zoning district.

2. The total surface area of the ASES ground mounted arrays shall not exceed more than 10% of the lot area and met the impervious surface requirement of the applicable zoning district.

3. Height

a. Freestanding ground mounted ASES shall not exceed the maximum accessory structure height in the underlying zoning district.

4. Screening
   a. All Ground Mounted ASES shall be fenced (8 foot) with locked gate and screened with vegetative screening on all outward facing sides.

5. Appropriate safety/warning signage concerning voltage shall be placed at ground mounted electrical devices, equipment, and structures. All electrical control devices associated with the ASES shall be locked to prevent unauthorized access or entry.
6. Ground-mounted ASES shall not be placed within any legal easement or right-of-way location, or be placed within any storm water conveyance system or in any other manner that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.

D. Removal of ASES

1. ASES no longer functioning/repairable shall be removed entirely within 1 year and properly disposed/recycled. Removed ASES components shall not be kept on the property unless stored inside a locked structure.

Solar Energy Power Generation Pros and Cons

Item Number	Item	Pro	Con	Unknown	Insufficient Research
1	Reduction in use of Non Renewable Energy resources	X			
2	Assist in reduction in Greenhouse emissions	X			
3	Assist in mitigation of Climate changes	X			
4	Contribution to Energy independence	X			
5	Energy power generation operation safer	X			
6	Contribute to cleaner Air Quality	X			
7	Reduction in Energy power generation industry use of water resources	X			
8	Increase in land used for energy power generation		X		
9	Allows for multiple uses of the Land	X			
10	Requires use of scarce raw materials		X		
11	Supply Chain Issues for raw materials		X		
12	Reduces available Agriculture Land (without Agrivoltaics)		X		
13	Allows Farmers an additional income	X			
14	Allows better use of poorer soils on farm	X			
15	Allows for energy power in non traditional locations (off grid, boats, deserts, etc.)	X			
16	Allows for scaled to needs in defined local area (i.e. power generation for a community)	X			
17	Increases land value	X	X		
18	Increases competition for same land		X		
19	Energy power generation is "clean"	X			
20	Shorter Payback period for power generation equipment	X			
21	Impact on surrounding property values			X	X
22	Lower maintenance/operation costs for solar facility VS Fossil Fuel	X			
23	Lower energy prices	X			
24	Leased land goes unused (i.e. land leased or purchased, but yet developed)		X		
25	Technology still evolving (higher yields)	X	X		
26	Increase number of transmission lines		X		
27	Recycling or reuse program for panels known		X	X	X
28	Recycling or reuse program for batteries known		X	X	X
29	Long Range impact on Land			X	X

30	Health impacts during life cycle panel materials			X	X
31	Old Panels, old batteries or both stored at facility		X		
32	Additional Tax $ (real estate)	X			

		Solar Ordinance Comparison			
		Existing	VS	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
	General				
1	Ordinance has definitions	N		Y	
	ASES				
1	ASES allowed in all zones	Y		Y	
2	ASES requires principal building on parcel 1st	Y		N	
3	ASES less than 2Kw exempt	N		Y	
4	ASES of 10Kw considered a PSES	N		Y	
5	ASES power generation only for on site use	Y	must provide usage info to support need, unless off-grid	N	Majority to be used on site
6	ASES built to industry standards	Y		Y	
7	ASES certified by professional firm	Y		N	
8	ASES roof mounted can exceed Zone height requirement	Y	5 feet	Y	3 feet
9	ASES- no requirement on adjoining properties concerning casting of shadows on ASES or tree/veg growth	Y		Y	Owner should seek easement agreement
10	ASES must meet setbacks	Y	or no less than 15 feet	Y	Ground mounted not allowed in front yard
11	ASES Roof mounted panels				
11a	panels in excess of 50% of roof surface requires stamped plans by professional engineer	Y		N	
11b	Panels can't extend pass roof edge	N		Y	
12	ASES must meet Zoning's height requirement				
12a	Roof mounted	Y	except height +5 feet	Y	except height +3 feet
12b	Wall mounted	Y		Y	except height +3 feet
12c	Ground mounted	Y		Y	
13	ASES can't be in a legal easement, right-of-way or interfere with Stormwater control system	Y		Y	
14	ASES in RA zone must be roof mounted unless owner demonstrates not practical	Y		N	
15	ASES- installer and mfg. Info on equipment	Y		Y	
16	ASES- No Ads	Y		Y	
17	ASES – maintain in good working condition	Y		Y	

		Solar Ordinance Comparison			
		Existing	VS	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
18	ASES- if abandoned, remove everything in 60 days	Y	structures and equipment	Y	
19	ASES- Earth disturbance repair and reseeded	Y		Y	
20	ASES- All mods or additional systems require permits and professional engineer review	Y		Y	
21	Permit applications shall document compliance with Solar Ordinance/land development plans/drawings showing location/on building and property lines	Y	Zoning and building permits	Y	
22	Township revokes permit if system moved or modified causing non-compliance to ordinance	N		Y	
23	Permits kept on premises	N		Y	
24	Ground mounted systems area shall not exceed 10% of lot (parcel) area	N		Y	
25	Ground mounted systems shall be fenced (8 feet, locked gate and veg screened on outward facing sides and warning signs)	N		Y	
	PSES				
1	PSES requires a plan prepared by Professional Engineer	Y		N	
2	Plan details must include previous and proposed impervious surface calculations	Y		N	
3	Plan must include narrative on impact to surrounding properties (site selection, facility design and buffers info)	Y		N	
4	No Glare onto surrounding properties or roads	Y		Y	
5	No concentrated Radiation onto surrounding properties or roads	Y		Y	
6	Landscape plan by PA registered Architect	Y		N	
7	Copy of Leasing Agreement	Y		Y	
8	PSES is considered land development	Y		N	
9	Only foundation/base of panel array considered impervious if adequate space between panels for water from to flow to pervious surface	Y		Y	
10	Ground mounted not to exceed zoning requirements	Y		Y	
11	PSES allowed in following zones				
11a	KCI	Y	Conditional Use	Y	Right
11b	RA (greater than 20 acres)	N		Y	Conditional Use
11c	RA (20 acres or less)	N		Y	Right
11d	Residential/Village Overlay	N		N	

		Solar Ordinance Comparison			
		Existing	VS	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
11e	Mu1/Historic Overlay/Restricted Development Overlay	N		N	
11f	Mu2	N		Y	Conditional Use
11g	Commercial/Industrial/Quarry	N		Y	Right
11h	Interchange	N		Y	Right
12	Battery Storage structure				
12a	Size	Y	400 sq. ft.	Y	
12b	Location	Y	with zone setbacks	Y	centrally located
12c	Height	Y	15 feet max.	Y	Zone requirement + 3 feet
13	Signs				
13a	Equipment	Y	Mfg and owner	Y	Mfg and owner
13b	Warning	Y	transformers, substations, fence	Y	Equipment, 1 foot square sign at each gate and every 100 foot of fence
13c	Advertising	N		N	
13d	Information sign (contacts)	N		Y	
14	Perimeter fence	Y		Y	8 feet, lockable gates
15	PSES meets industry standards	Y		Y	
16	PSES meets building codes	Y		Y	
17	PSES meets Fire requirements	Y		Y	
18	PSES meets Life Safety requirements	Y ?	?	?	?
19	PSES certified by Professional firm	Y	Firm listed on PA Sunshine Program or North American Board of Certified Energy Practitioners	Y	
20	On site transmission/power lines underground	Y	to extent practicable	Y	All
21	PSES can't be in a legal easement, right-of-way or interfere with Stormwater control system	Y		Y	

		Solar Ordinance Comparison			
		Existing	VS	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
22	Owner required to provide certificate of insurance to township to provide evidence of liability insurance of not less than 1 Million dollars	Y		Y	
23	Decommissioning cost estimate- Owner provide financial security in amount to cover dismantling and removal of structure	Y	method to calculate not defined	Y	Cost formula defined
24	Every 3 years, owner to update decommissioning cost estimate and submit to township for review and approval with owner paying cost of review	N		Y	
25	Change of ownership notification to township	Y	30 days	Y	
26	Vegetative screening 6 feet at install or within 2 years	Y		Y	per zoning
27	Maintain vegetative screening	Y		Y	
28	Use only native species from township list	Y		Y	
29	Planting per township zoning requirements	Y		Y	
30	Decommissioning notification immediately upon cessation or abandonment	Y	Decom-mission defined as no operation for period of 6 months	Y	Decom-mission defined as no electricity (defined as no commercial useable power) generated in a period of 6 continuous months.
31	Dismantlement within X months of decommissioning	Y	12 months	Y	6 months
32	Define items to be removed upon decommissioning	Y	items not defined	Y	Items defined
33	PSES- Earth disturbance repair and reseeded	Y		Y	
34	Timely repair or removal of defective or unsafe system	Y	Township Building Code requirement	Y	
35	Permit applications shall document compliance with Solar Ordinance/land development plans/drawings showing location/on building and property lines	Y	Zoning and building permits	Y	
36	Copies of permits in lock box at each gate	N		Y	
37	Township revokes permit if system moved or modified causing non-compliance to ordinance	N		Y	
38	PSES – maintain in good working condition	Y		Y	Also free of hazards

		Solar Ordinance Comparison			
		Existing	VS	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
39	Facility Inspection by owner or operation on quarterly basis using industry published standards. Copy to township	N		Y	
40	Copy of Inspection Checklist to township for review and approval	N		Y	
41	Township inspects facility yearly	N		Y	
42	Copy of Inspection results in lock box at each gate	N		Y	
43	Cost of yearly inspection by township paid by owner or facility operator	N		Y	
44	All costs of permit reviews/additional reviews/inspections/legal fees incurred by township paid by owner/operator	N		Y	
45	No Glare onto surrounding properties or roads	Y		Y	
46	No concentrated Radiation onto surrounding properties or roads	Y		Y	
47	Owner has burden of proof on Glare issues/complaints	N		Y	
48	Noise study performed/paid by Owner/operator	N		Y	
49	Noise Level 65 decibel at properties line	Y	separate township ordinance	Y	
50	Noise Level at 65 decibel immediately outside Battery Storage structure	N		Y	
51	Emergency contact information in lock box at each gate	N		Y	
52	No more than 10% of trees can be removed during construction	N		Y	
53	All landscaping requirement completed prior to start of facility operation	N		Y	
54	Dead landscaping replaced within 2 months or start of next growing season	N		Y	
55	Owner/operator submit report on daily generation, outages, operational issues, future planned outages and future planned improvements and estimated service life every 6 months	N		Y	
56	Applicant submit written acknowledgment to township that there is no requirement on adjoining properties concerning casting of shadows on PSES or tree/veg growth and their right to grow trees/veg unless an easement exists	N		Y	
57	Any easements between facility owner/operator and other property owners shall included in plans and run with the land and copy given to township	N		Y	
58	Stormwater requirements defined	N		Y	

		Solar Ordinance Comparison			
		Existing	vs	Proposed	
Item No.	**Item**	**Existing**	Comment	**Proposed**	Comment
59	Impervious coverage requirements, PCSM, BMPs and defined exceptions	Y	Coverage calculations only	Y	
60	Agrivoltaics permitted with requirements	N		Y	
61	Additional Setback requirements from PSES perimeter fence				
61a	Wetlands, FEMA Floodplain or 15% slope area- 25 feet	N		Y	
61b	National or state designated historic structure- 150 feet	N		Y	
62	Solar facility % acre coverage in Agricultural Lands				
62a	Class 1 soils- 25 %	N		Y	
62b	Class 2 soils- 25%	N		Y	
62c	Class 3 soils- 50%	N		Y	
63	Solar facility can only cover 50 acres of class 1 and 2 soils per individual parcel	N		Y	
64	PSES can't be in a legal easement, right-of-way or interfere with Stormwater control system	Y		Y	
65	Ground mounted PSES screened per zoning requirements	Y	KCI Zone	Y	Applicable Zones with right and conditional use approval
66	Emergency Response Plan	N		Y	
67	Combination Lock Box each gate (same combination)	N		Y	
68	Lock Box Contents defined	N		Y	
69	Downfacing lighting at each gate	N		Y	
70	Facility access roads requirements	N		Y	
71	Facility interior lighting requirement	N		Y	
72	Owner provided Grid Connection letter from public utility company'	N		Y	
	Legend:				
	Light Blue 4 cell- Revised				
	Yellow- Proposed Ordinance Review for need				

Solar Energy Systems Survey

Number	Question	Answer Instructions	Possible Answers			
1	Do you think Solar is important as a renewable source of energy	Pick One	Yes	No	Uncerain	
2	Do you think Solar will help reduce global warming/ greenhouse emissions	Pick One	Yes	No	Uncertain	
3	What type of homeowner solar system would you support	Pick One	Home use only	Home and sell excess		
4	Would you support a Community scale solar facility in:	Pick One	Yes	No	Uncertain	
	- Your neighbor hood	Pick One	Yes	No	Uncertain	
	- Existing Neighborhood near you	Pick One	Yes	No	Uncertain	
	- Neighborhood far away	Pick One	Yes	No	Uncertain	
	- New development only	Pick One	Yes	No	Uncertain	
	- Commercial/ Industrial/ Interchange/Quarry type Zones	Pick One	Yes	No	Uncertain	
	- RA Zone	Pick One	Yes	No	Uncertain	
	- R / Village Overlay Zone	Pick One	Yes	No	Uncertain	
	- Mu1 Zone	Pick One	Yes	No	Uncertain	
	- Restricted Development Overlay	Pick One	Yes	No	Uncertain	
	- Historic Overlay	Pick One	Yes	No	Uncertain	
	- Mu2 Zone	Pick One	Yes	No	Uncertain	
5	Would you support a Utility Scale Solar facility					
	- Near you	Pick One	Yes	No	Uncertain	
	- On Class 1 soils	Pick any that apply	50 acres or less	50 to 150 acres	151- 300 acres	301 acres or higher
	- On class 2 soils	Pick any that Apply	50 acres or less	50 to 150 acres	151- 300 acres	301 acres or higher
	- On class 3 soils	Pick any that apply	50 acres or less	50 to 150 acres	151- 300 acres	301 acres or higher
	- On non prime soils	Pick any that apply	50 acres or less	50 to 150 acres	151- 300 acres	301 acres or higher
	- In the Commercial/ Industrial/ Interchange/Quarry type Zones	Pick One	Yes	No	Uncertain	
	- In the RA Zone	Pick One	Yes	No	Uncertain	
	- In the R / Village Overlay Zone	Pick One	Yes	No	Uncertain	
	- In the Mu1 Zone	Pick One	Yes	No	Uncertain	
	- In the Restricted Development Overlay	Pick One	Yes	No	Uncertain	
	- In the Historic Overlay	Pick One	Yes	No	Uncertain	

		Solar Energy Systems Survey					
Number		Question	Answer Instructions		Possible Answers		
		- In the Mu2 Zone	Pick One		Yes	No	Uncertain
6		Would you support farmers using part of their land for :					
		- To lease for a solar only facility					
		- On Class 1 soils	Pick One		Yes	No	Uncertain
		- On Class 2 soils	Pick One		Yes	No	Uncertain
		- On Class 3 soils	Pick One		Yes	No	Uncertain
		- On other soils (poorer crop yields)	Pick One		Yes	No	Uncertain
		- On unused areas	Pick One		Yes	No	Uncertain
		- To Lease for Agrivoltaics (dual use (crops or grazing))					
		- On Class 1 soils	Pick One		Yes	No	Uncertain
		- On Class 2 soils	Pick One		Yes	No	Uncertain
		- On Class 3 soils	Pick One		Yes	No	Uncertain
		- On other soils (poorer crop yields)	Pick One		Yes	No	Uncertain
7		Would you support additional transmission Lines running through the township to connect a Solar facility to the grid	Pick One		Yes	No	Uncertain
8		Are mining operations for material to produce solar panels harmful to the environment	Pick One		Yes	No	Uncertain
9		Is manufacturing solar panels harmful to the environment	Pick One		Yes	No	Uncertain
10		Do you believe that solar panels during their life span contaminate the soils	Pick One		Yes	No	Uncertain
11		Do you believe that Solar panels can be recycled safely	Pick One		Yes	No	Uncertain
12		Do you believe batteries from a solar facility can be recycled safely	Pick One		Yes	No	Uncertain
		Do you believe that batteries from a solar facility can be re-purposed	Pick One		Yes	No	Uncertain
13		Would you support a recycling business for solar panels in the township	Pick One		Yes	No	Uncertain
14		Would you support a recycling business for batteries from a solar facility	Pick One		Yes	No	Uncertain
15		Do you believe energy from a Solar Facility will be cheaper than from a fossil fuel facility	Pick One		Yes	No	Uncertain
		Do you believe solar energy is “clean” energy	Pick One		Yes	No	Uncertain

		Solar Energy Systems Survey						
Number		Question	Answer Instructions		Possible Answers			
16		Do you believe that living near a Solar facility will lower housing prices	Pick One		Yes	No	Uncertain	
17		Do you believe having solar facilities in the township will affect the "quality of life" for the residents	Pick One		Yes	No	Uncertain	
18		Would be interested in learning more about Solar energy and solar energy generation						
		- Information posted on the township website	Pick One		Yes	No		
		- Listening to a webinar on your computer	Pick One		Yes	No		
		- Attending an seminar held locally	Pick One		Yes	No		
19		Would you be willing to attend a Public Meeting at the township building to discuss the pros and cons of Solar power generation	Pick One		Yes	No		
20		Would you be willing to review and comment on a proposed Solar Energy Systems ordinance	Pick One		Yes	No		
21		Additional comments/thought on Solar Energy	Write in any comments					

Solar Energy Systems Survey

Number	Question	Answer Instructions	Possible Answers		
1	Do you think Solar is important as a renewable source of energy	Pick One	Yes	No	Uncerain
2	Do you think Solar will help reduce global warming/ greenhouse emissions	Pick One	Yes	No	Uncertain
3	Do you support solar systems on Homes	Pick One	Yes	No	
4	Would you support a small Utility scale that would provide power to 50 to 100 homes	Pick One	Yes	No	Uncertain
	- Your neighbor hood	Pick One	Yes	No	Uncertain
	- Neighborhood far away	Pick One	Yes	No	Uncertain
	- New development only	Pick One	Yes	No	Uncertain
5	Would you support a Large Utility Scale Solar facility on prime farm land (no farming allowed)	Pick One	Yes	No	Uncertain
6	Would you support a Large Utility Scale Solar facility on prime farm land (with farming allowed)	Pick One	Yes	No	Uncertain
7	Would you support additional transmission Lines running through the township to connect a Solar facility to the grid	Pick One	Yes	No	Uncertain
8	Are mining operations for material to produce solar panels harmful to the environment	Pick One	Yes	No	Uncertain
9	Is manufacturing solar panels harmful to the environment	Pick One	Yes	No	Uncertain
10	Do you believe that solar panels during their life span contaminate the soils	Pick One	Yes	No	Uncertain
11	Do you believe that Solar panels can be recycled safely	Pick One	Yes	No	Uncertain
12	Do you believe batteries from a solar facility can be recycled safely	Pick One	Yes	No	Uncertain
13	Would you support a recycling business for solar panels in the township	Pick One	Yes	No	Uncertain
14	Would you support a recycling business for batteries from a solar facility	Pick One	Yes	No	Uncertain
15	Do you believe energy from a Solar Facility will be cheaper than from a fossil fuel facility	Pick One	Yes	No	Uncertain
16	Do you believe that living near a Solar facility will lower housing prices	Pick One	Yes	No	Uncertain

		Solar Energy Systems Survey					
Number		Question	Answer Instructions	Possible Answers			
17		Do you believe having solar facilities in the township will affect the "quality of life" for the residents	Pick One	Yes	No	Uncertain	
18		Would be interested in learning more about Solar energy and solar energy generation					
		- Information posted on the township website	Pick One	Yes	No		
		- Listening to a webinar on your computer	Pick One	Yes	No		
		- Attending an seminar held locally	Pick One	Yes	No		
19		Would you be willing to attend a Public Meeting at the township building to discuss the pros and cons of Solar power generation	Pick One	Yes	No		
20		Would you be willing to review and comment on a proposed Solar Energy Systems ordinance	Pick One	Yes	No		
21		Additional comments/thought on Solar Energy	Write in any comments				