PLAIN GROVE TOWNSHIP, LAWRENCE COUNTY

ORDINANCE NO. _____ OF 20_____

AN ORDINANCE OF PLAIN GROVE TOWNSHIP, LAWRENCE COUNTY, PENNSYLVANIA, AMENDING THE PLAIN GROVE TOWNSHIP ZONING ORDINANCE BY ESTABLISHING REQUIREMENTS FOR SOLAR ENERGY SYSTEMS (SOLAR FARMS).

WHEREAS, the Pennsylvania Municipalities Planning Code, Act 247 of July 31, 1968, as amended, 53 P.S. §10101 et seq., enables the Township, through its zoning ordinance, to regulate the use of property and to promote the conservation of energy through access to, and use of, renewable energy resources; and

WHEREAS, Plain Grove Township seeks to promote the general health, safety, and welfare of the community by adopting and implementing an amendment to the Zoning Ordinance providing for access to, and use of, solar energy systems (solar farms); and

WHEREAS, the purpose of this Ordinance is to set forth requirements for solar energy systems.

NOW, THEREFORE, BE IT ORDAINED AND ENACTED by the Board of Supervisors of Plain Grove Township, Lawrence County, Pennsylvania, as follows:

SECTION 1 – DEFINITIONS

This section is amending Section 202.1 of the Plain Grove Township Zoning Ordinance, by supplementing these definitions to the Ordinance:

AGRIVOLTAICS: The co-development of the same area of land for both solar photovoltaic power and "Normal Farming Operations" as defined by P.L. 454, No. 133 (1982), the Protection of Agricultural Operations from Nuisance Suits and Ordinances Act, or any successor laws. Solar Grazing, regardless of meeting the definition of "Normal Farming Operations", qualifies as a form of Agrivoltaics.

BATTERY ENERGY STORAGE SYSTEM (BESS): One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a stand-alone 12-volt car battery or an electric motor vehicle. A battery energy storage system for the purposes of this Ordinance is defined as having an aggregate energy capacity greater than 600kWh or are comprised of more than one storage battery technology in a room or enclosed area.

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

LARGE NET-METERING FACILITY: a Non-Residential Net-Metering Facility with a maximum nameplate generating capacity greater than 25 kilowatts (kW) and not more than 3 megawatt (MW).

OPERATOR - The entity responsible for the day-to-day operation and maintenance of the Solar Energy System.

OWNER - The entity or entities having an equity interest in the Solar Energy System, including their respective successors and assign.

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 light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.

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, store power, including but not limited to Principal Solar Energy System (PSES), Battery Energy Storage System (BESS), Large Net-Metering Facility or Green Hydrogen System.

SOLAR GRAZING: The practice of grazing livestock on solar farms. Sheep are the most common solar grazing animals, as they are the best-suited species. For the safety of low mount solar arrays, goats, cows, pigs, and horses are not recommended. This is also referred to as agrivoltaics.

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.

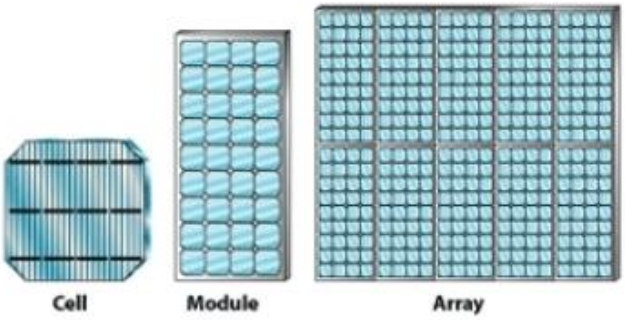
SOLAR PROJECT AREA: The total area of land including the Battery Energy Storage System, Green Hydrogen Facility, Large Net-Metering Facility and/or Principal Solar Energy System, the space between solar arrays, stormwater management area, access drives, fencing, screening and internal access roads. This term is intended to include anything associated with the proposed project.

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, 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 2 – ALL SOLAR ENERGY SYSTEMS

This Section is Amending Table 1, Table 2 and Section 501 of the Plain Grove Township Zoning Ordinance as the following regulations apply to all Solar Energy Systems:

1. **Applicability.** 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.

2. **Standards.** 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), Florida Solar Energy Center (FSEC) 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. **Maintenance.** 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, including but not limited to all screening and fencing. Failure of the Owner or Operator to maintain the Solar Energy System in good working order is grounds for appropriate enforcement actions by the Municipality in accordance with applicable ordinances.

4. **Permitted Zones.** Solar Energy Systems are permitted in specified zoning districts based upon the table below:

Use Table	
District	**Solar Energy Systems**
Agricultural	Permitted
Conservation	Permitted
Residential	Permitted
Business	Permitted

5. **Plan Requirements.** A report and plan highlighting the existing conditions of the property where the Solar Energy System will be installed shall be included in the submission to the Municipality. The information should highlight existing vegetation, topography, and other existing natural features.

a. Ground mounted Solar Energy Systems require submission of a County approved land development plan if the solar project area is greater than 5,000 square feet.

b. Roof mounted Solar Energy Systems do not require submission of a land development plan.

6. **Permit Requirements.**

a. Solar Energy Systems shall comply with the County Subdivision and Land Development Ordinance requirements through submission of a land development plan and all other requirements of this Ordinance. The installation of Solar Energy Systems shall follow all applicable permit requirements, codes and regulations.

b. The Owner and/or Operator shall repair, maintain and replace the Solar Energy System and related solar equipment during the term of the permit in a manner consistent with industry standards as needed to keep the Solar Energy System in good repair and operating condition.

c. All on-site transmission and plumbing lines shall be placed underground to the extent feasible.

d. Solar Energy System shall not be artificially lit except to the extent required for safety or applicable federal, state, or local authority.

e. The Owner or Operator shall provide the Municipality with written confirmation that the public utility company to which the Solar Energy System 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. No permit shall be issued by the Municipality until this is received.

f. Solar Energy Systems 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.

g. 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 can hold the load imposed on the structure.

h. Solar Energy Systems mounted on the roof or wall of any building shall be subject to the maximum height regulations of the underlying zoning district.

7. **Dimensional Requirements**

System Type:	**Requirement:**	**Zoning Districts**			
		Agricultural	**Conservation**	**Residential**	**Business**
Solar Energy Systems	Minimum Lot Size (acres)	10	10	10	10
	Minimum Setbacks (feet)	250 feet	250 feet	250 feet	250 feet

	Maximum Height (feet)	20 (at maximum tilt)	20 (at maximum tilt)	20 (at maximum tilt)	20 (at maximum tilt)
	Maximum Impervious Coverage	30-40%	50%	70%	70%
Impervious coverage requirements do not apply if the proposed facility is exempt from Stormwater requirements as noted in this section. Solar Energy Systems that abut Solar Energy Systems on another parcel shall not be subject to setback requirements.					

8. **Glare**

a. All Solar Energy Systems shall be placed such that concentrated solar radiation, or Glare does not project onto nearby structures or roadways. Exterior surfaces shall have a non-reflective finish.

b. The applicant has the burden of proving, by producing a Glare study, that any Glare produced does not have significant adverse impact on neighboring or adjacent uses. The cost of the Glare study and the cost for the Municipality to have the study reviewed by appropriate professionals shall be the obligation of applicant.

9. **Signage**. No portion of the Solar Energy System shall contain or be used to display advertising. The manufacturer's name and equipment information or indication of ownership shall be allowed on any equipment of the Solar Energy System provided they comply with the prevailing sign regulations. At the applicable points of entry and exit, the Solar Energy System shall contain a display with pertinent information, including but not limited to contact information and information pertinent to emergency response for the Solar Energy Systems.

10. **Decommissioning**

a. The Owner and Operator shall, at its expense, complete decommissioning of the Solar Energy System, within twelve (12) months after the end of its useful life. The Solar Energy System will presume to be at the end of its useful life if no electricity is generated for commercial production and distribution for a continuous period of twelve (12) months or in the case of a Battery Energy Storage System when it ceases to operate consistently for twelve (12) months.

b. Decommissioning shall include removal of Solar Energy System, buildings, cabling, electrical components, roads, foundations to a depth of thirty-six (36) inches, and any other associated facilities.

i. To the extent possible the materials shall be re-sold or salvaged. Materials that cannot be re-sold or salvaged shall be disposed of at a facility authorized to dispose of such materials as required by federal or state law.

c. Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads, storm water facilities or other land surface areas not be restored.

i. If the landowner(s) waives the reclamation clause, they must also agree to assume responsibility for all permitted facilities with the appropriate regulatory agency. Copies of approved permit transfers must be provided to the Municipality.

d. An independent and certified Professional Engineer shall be retained by the Owner or Operator, at their cost, to estimate the total cost of decommissioning ("Decommissioning Costs") without regard to salvage value of the equipment ("Gross Decommissioning Costs"), and the cost of decommissioning net salvage value of the equipment ("Net Decommissioning Costs"). The Owner or Operator shall provide financial security of 110% of the Decommissioning Cost Estimate. The estimate may include an estimated salvage and re-sale value, discounted by a factor of 10%.

The decommissioning cost estimate formula shall be:

Gross Cost of Decommissioning Activities
- 90% credit of salvage and re-sale value
= the Decommissioning Cost Estimate.

Said estimates shall be prepared by an independent and certified Professional Engineer and submitted to the Municipality as part of the permitting process and every fifth year after the issuance of a permit. Upon concurrence from the Municipal engineer, whose review fee shall be paid by the Owner/Operator the decommissioning bond shall be updated to reflect the approved amount.

e. Decommissioning Funds may be in the form of a performance bond, surety bond, or other form of financial assurance that are in an acceptable form to the Municipality. These funds must be posted to the Municipality as a condition for approval of a permit.

f. If the Owner or Operator fails to complete decommissioning within the period prescribed by(a), above, the landowner shall have six (6) months to complete decommissioning. The Municipality may draw on the financial security to reimburse the landowner for decommissioning costs upon the request of the landowner and submission of proof of costs in a form satisfactory to the Municipality.

g. If neither the Owner or Operator, nor the landowner complete decommissioning within the periods prescribed by (a) and (f), above, the Municipality may take such measures as necessary to complete decommissioning.

h. The Municipality shall release the Decommissioning Funds when the Owner or Operator has demonstrated and the Municipality concurs that decommissioning has

been satisfactorily completed, or upon written approval of the Municipality in order to implement the decommissioning plan.

i. In the event of sale or transfer of the Solar Energy System, the acquiring agency shall adhere to the monetary and operational decommissioning requirements set forth for the original Owner and/or Operator.

11. **Acknowledgment.** Prior to the issuance of a permit, Solar Energy System applicants must acknowledge in writing that the issuing of said permit shall not and does not create in the Owner, Operator or landowner, 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.

This acknowledgement shall be submitted to the Municipality and placed on any required subdivision and/or land development plans.

12. **Solar Easements.**

a. Where a subdivision or land development proposes a Solar Energy System, solar easements must be provided to the Municipality. 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.

c. If necessary, Owner and/or Operator must obtain any solar easements necessary to guarantee unobstructed solar access by separate agreement with adjacent property owner(s).

13. **Stormwater Requirements.**

a. 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.

b. Impervious coverage limitations established in this section and a detailed stormwater analysis including post construction stormwater management (PCSM) and BMP 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. In accordance with the latest edition of the Pennsylvania Best Management Practices Manual, earth disturbance and grading activities shall be minimized and natural vegetative cover shall be preserved and/or restored using native species.

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 with a density capable of resisting accelerated erosion and sedimentation within one year.

(a) A meadow condition is required for project located on slopes between 0- 7%

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

(d) For this section, gravel is considered an impervious cover and is prohibited.

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

vi. The lowest vertical clearance of the solar array shall be 10 feet or less from the surface of the ground but 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.

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

d. All storm water runoff from the Solar Energy System shall be managed in accordance with the requirements of the Plain Grove Township Stormwater Management Ordinance.

14. **Agrivoltaics.** Agrivoltaics are permitted when:

a. Only crops and vegetative cover tolerant of growing conditions shall be utilized.

b. Plowing is prohibited, no-till application is required.

c. Grazing, cutting or mowing is limited to a height of no less than 4 inches.

d. Application of chemical fertilization or herbicides/pesticides is limited to the agronomic needs to the crop or vegetative cover and to control invasive weeds.

e. A written erosion and sediment control plan must be developed for agricultural plowing or tilling activities or a portion of the overall farm conservation plan must identify BMPs used.

f. If property is used for grazing of livestock, a manure management plan must be developed.

15. **Noise**

a. A noise management plan, supported by a noise study, that addresses noise produced during construction and operation shall be included with the permit application. The cost of the noise study and the cost for the Municipality to have the study reviewed by appropriate professionals shall be the obligation of applicant.

b. The plan at a minimum shall separately address noise during construction and operation and include, mitigation, an assessment of the noise that will emulate at the perimeter fence and the contact information for the individual who is responsible for implementation and compliance both during construction and operations.

c. The volume of sound inherently and recurrently generated shall be controlled so as not to cause a nuisance to adjacent uses.

d. During operation audible sound shall not exceed a maximum of 60 dBA during daytime hours and 55 dBA during nighttime hours as measured at the exterior of the perimeter fence.

16. **Environmental Protection**

a. All Solar Energy Systems must be set back a distance of 10 feet from any area designated as a wetland, a FEMA Floodplain, or an area containing 15% slope or greater.

17. **Screening**

a. Vegetative buffering shall be installed around the entire perimeter of the Solar Energy System, except where it is determined by the Zoning officer that the retention of existing trees within the vegetative buffering area may constitute the required vegetative buffer or where the Zoning Officer determines the solar panels cannot be viewed from a public roadway or residential building.

b. Vegetative buffering shall be installed along the exterior side of the fencing. All required vegetative buffering shall be located within fifty (50) feet of the required fencing.

c. Vegetative buffering shall be selected to provide year round buffering and shall be sufficient height, density and maturity to screen the Solar Energy System from visibility, as set forth herein within thirty six (36) months of the installation. This buffering shall

minimally include two (2) alternative rows, staggered with fifteen (15) foot centers of evergreen trees a minimum of six (6) feet tall at the time of planting.

d. A combination of natural topography and vegetation can serve as a buffer provided that the Solar Energy Systems will not be visible from public roads, public parks or existing residences on surrounding properties. Earthen berms may not be created to serve as a buffer.

e. At least yearly maintenance of the vegetative buffer shall be required, said maintenance to include appropriate, trimming, weeding and replacements of vegetative buffer. Owner or Operator shall promptly, but not more than ninety (90) days after discovery, replace any dead or unhealthy portions of the vegetative buffer.

18. **Security**

a. All ground-mounted Solar Energy Systems shall be completely enclosed by a minimum eight (8) foot high fence with a self-locking gate. The fence shall meet setback requirements noted in this section. A down light on a motion detector and Knox Box or the like shall be installed at each gate.

b. A clearly visible warning sign shall be placed at the base of all pad-mounted transformers and substations and on the fence surrounding the Solar Energy System informing individuals of potential voltage hazards. The signs on the fence shall be placed every 150 feet.

c. An Emergency Response plan shall be included with the permit application which shall be reviewed by the Township, all first responders for the municipality and any approved County Emergency Management Agency. An Emergency Response plan shall be submitted on an annual basis thereafter by the Owner and/or Operator.

d. The Owner and/or Operator shall maintain a phone number and identify a person responsible for the public to contact with inquiries and complaints throughout the life of the project and provide this number and name to the Township and all First Responders serving the Municipality. The Owner/Operator shall make all reasonable efforts to promptly respond to inquiries. Owner/Operator shall provide a key to open any gates to the Township and to the Chief of each First Responder Department servicing the Municipality.

e. No less than thirty (30) days prior to becoming operational, Owner and/or Operator shall conduct an in person training for First Responders to be educated on the Emergency Response plan for the site. If requested by the First Responders servicing the Municipality, Owner and/or Operator shall conducted trainings, however, shall not be required to hold more than one (1) training in a three (3) year period. All reasonable costs of training shall be paid by the Owner and/or Operator.

19. **Access**

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

b. A minimum of a 20' wide cartway shall be provided on the inside of the perimeter fencing between the fence and the solar arrays, with at least 30' of turning radius at each intersection with the below described emergency accesses.

c. A minimum of a 20' wide emergency access shall be provided to allow access for maintenance vehicles and emergency management, as needed to provide appropriate emergency response in the opinion of the Township and contingent on the Solar Energy System design. Emergency 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.

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

d. Access to the Solar Energy System shall comply with the municipal access requirements in the Subdivision and Land Development Ordinance.

SECTION 3 – SEVERABILITY

The provisions of this Ordinance are declared to be severable, and if any provision of this Ordinance shall, for any reason be held to be invalid, such invalidity shall not affect the Ordinance as a whole or any other part or part thereof. If any provisions of this Ordinance conflict with or be inconsistent with other provisions of the Zoning Ordinance, the provisions of this Ordinance shall control.

SECTION 4– REPEALER

Any and all ordinances/resolutions, or parts thereof, conflicted herewith, are repealed insofar as the matters herein are affected.

SECTION 5 – EFFECTIVE DATE

This Ordinance shall become effective five (5) days after enactment.

ORDAINED AND ENACTED this _____ day of _____, 20__.

ATTEST:

PLAIN GROVE TOWNSHIP
BOARD OF SUPERVISORS

_____

Beverly Blair

_____

Chairman

_____

Supervisor

_____

Supervisor